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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 LINNÆAN SOCIETY.

THE FIGURES BY

JAMES SOWERBY, F.L.S.

——"VIRESQUE ACQUIRIT EUNDO."——*Virg.*

VOL. XIV.

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MDCCCII.

EQUISETUM sylvaticum.

Branched Wood Horsetail.

CRYPTOGAMIA Filices.

GEN. CHAR. *Cathin* composed of peltate scales, flowering on their inside. *Partial calyx* of 2 valves. *Seeds* numerous, naked, enfolded by 4 pollen-bearing filaments.

SPEC. CHAR. Branches compound, curved downwards, rough.

SYN. Equisetum sylvaticum. *Linn. Sp. Pl.* 1516. *Sm. Fl. Brit.* 1102. *Huds.* 447. *With.* 753. *Hull.* 233. *Lightf.* 646. *Relh.* 403. *Sibth.* 263. *Abbot.* 221. *Bolt. Fil.* 60. *t.* 32, 33. *Hedw. Theor.* 33. *t.* 1. *Raii Syn.* 130. *Ehrh. Crypt.* 161.

β. E. sylvaticum procumbens, setis uno versu dispositis. *Dill. in Raii Syn.* 131.

THIS very elegant species occurs in moist shady places, often under dripping rocks, chiefly in the mountainous counties, fructifying in the early spring. Our specimen was gathered by Lady Wilson between Glasgow and Edinburgh.

The whole plant conveys the idea of some Indian palm-tree, with its simple stem, and numerous whorls of compound, drooping, slender, roughish branches, crowned at the summit by a cone tessellated with peltate scales. Each of these scales is beset at its back with several bivalve partial calyxes, enfolding numerous minute seeds, (technically speaking) naked, that is, destitute of a seed-vessel, though each of them is enfolded with 4 spiral filaments, whose powdery summits are with great reason presumed by Hedwig to perform the office of anthers, as we have already mentioned, *p.* 915.

The root of this plant is perennial, the stems annual, 12 or 18 inches high. The branches are generally not pushed forth till the cone is nearly ripe.

Apr. 1808. Publish'd by Ja.s Sowerby, London.

EQUISETUM arvense.

Corn Horsetail.

CRYPTOGAMIA Filices.

GEN. CHAR. *Catkin* composed of peltate scales, flowering on their inside. *Partial Calyx* of 2 valves. *Seeds* numerous, naked, enfolded by 4 pollen-bearing filaments.

SPEC. CHAR. Sterile stems branched in every direction; the branches roughish, with simple angles: flowering ones unbranched; their sheaths distant, with broad deep teeth.

SYN. Equisetum arvense. *Linn. Sp. Pl.* 1516. *Sm. Fl. Brit.* 1103. *Huds.* 447. *With.* 753. *Hull.* 233. *Relh.* 403. *Sibth.* 263. *Abbot* 222. *Curt. Lond. fasc.* 4. *t.* 64. *Bolt. Fil.* 62. *t.* 34.

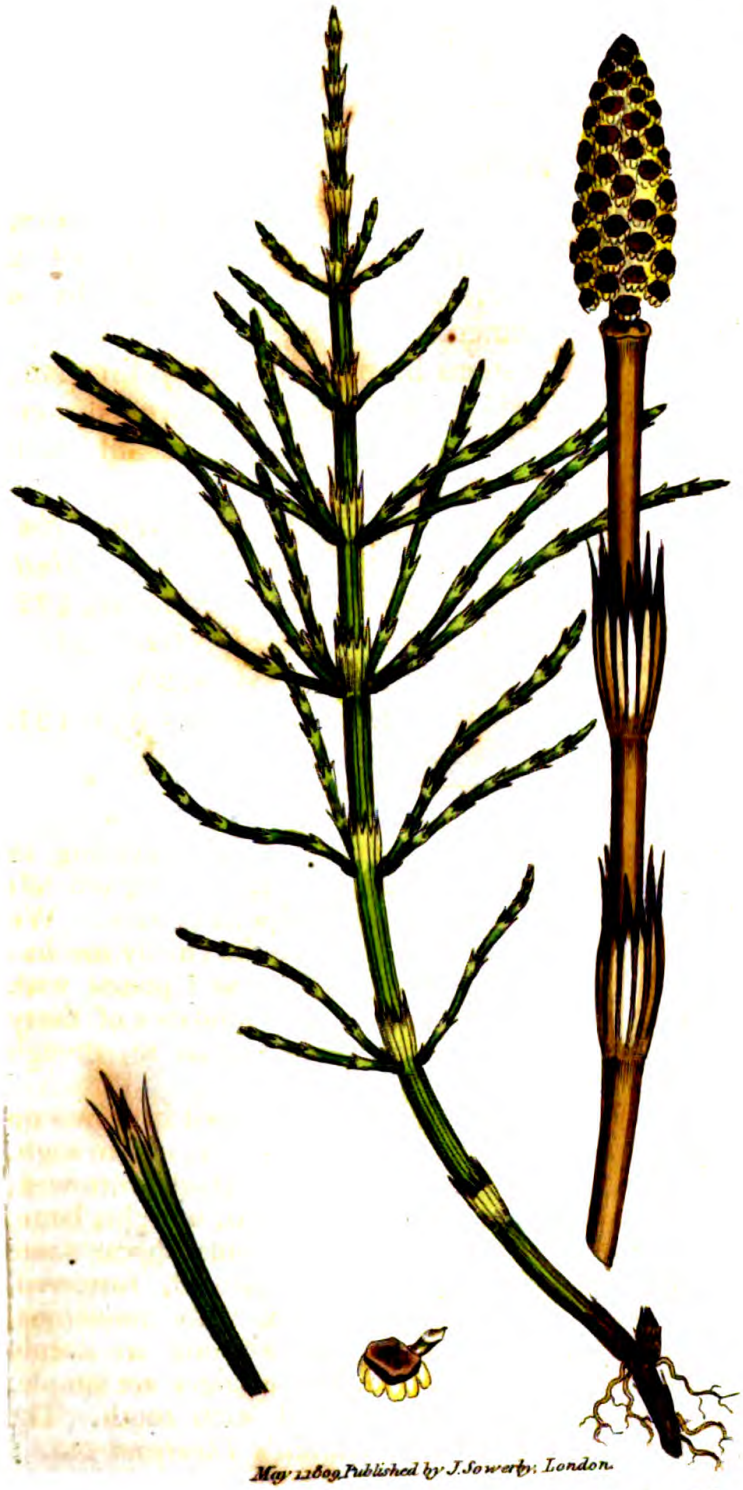
E. arvense, longioribus setis. *Raii Syn.* 130.

β. E. pratense, longissimis setis. *Dill. in Raii Syn.* 131.

IN low moist cornfields very frequent, and according to Mr. Curtis, very troublesome to the farmer, as being difficult of extirpation, and noxious to cattle, especially kine. We presume its action on their intestines may be chiefly mechanical, considering the sharp rough angles and points with which its whole form abounds, and the abundance of flinty earth in its cuticle, which forms a file similar to, though finer than *E. hyemale, t.* 915.

The root is creeping and perennial. In April it throws up several simple, pale brown, smooth, juicy stems, a span high, each encompassed with about 4, rather distant, furrowed, brown-toothed sheaths, and bearing a terminal, upright, large, ovate-oblong, brown catkin. The sterile stems appear some time afterwards, and are much taller, jointed, furrowed, rough-edged, beset from top to bottom with numerous, whorled, simple, jointed branches, whose joints are deeply furrowed, and the intermediate angles or ridges are simple, one of them extending to the point of each tooth. The variety β is but a trifling one; see Bauhin's *Theatrum* 246.

The flowering stems of this plant were evidently mistaken for our *E. variegatum, t.* 1987, by Mr. Lawson. See *Raii Syn.* 130. *n.* 3.



May 1 1809 Published by J. Sowerby, London.

EQUISETUM palustre.

Marsh Horsetail.

CRYPTOGAMIA Filices.

GEN. CHAR. *Catkin* composed of peltate scales, flowering on their inside. *Partial Calyx* of 2 valves. *Seeds* numerous, naked, enfolded by 4 pollen-bearing filaments.

SPEC. CHAR. Stems deeply furrowed, branched; branches simple, erect, roughish, with simple angles. Catkin terminal.

SYN. Equisetum palustre. *Linn. Sp. Pl.* 1516. *Sm. Fl. Brit.* 1103. *Huds.* 448. *With.* 754. *Hull.* 233. *Relh.* 403. *Sibth.* 264. *Abbot* 222. *Bolt. Fil.* 64. *t.* 35. *Raii Syn.* 131. *Ger. em.* 1114.

β. E. palustre, tenuissimis et longissimis setis. *Dill. in Raii Syn.* 131.

γ. E. palustre minus polystachion. *Ibid. t.* 5. *f.* 3.

THIS grows in a black boggy soil not unfrequently, and is readily known from the last by its fructification terminating the leafy stems. The roots are perennial and creeping. Stem branched throughout, deeply furrowed, with prominent, roughish, intervening angles. Branches whorled, upright, various in length, simple, jointed, deeply furrowed, with simple intermediate angles, minutely granulated in the surface, but scarcely rough to the touch. Catkin terminal, solitary, blackish, cylindrical inclining to ovate; its scales at length becoming widely separated. Dillenius has delineated, from Buddle's herbarium, a variety in which many of the upper branches bear catkins, as well as the main stem.

The branched state of *E. limosum*, *t.* 929, somewhat resembles this, but has a much thicker stem, with about twice the number of furrows, and those much more superficial than in the species we are describing.

May 1, 1809 Published by J. Sowerby London.

4.

EQUISETUM fluviatile.

Great Water Horsetail.

CRYPTOGAMIA Filices.

GEN. CHAR. *Cathin* composed of peltate scales, flowering on their inside. *Partial Calyx* of 2 valves. *Seeds* numerous, naked, enfolded by 4 pollen-bearing filaments.

SPEC. CHAR. Sterile stems with innumerable roughish branches, whose angles are double: flowering ones unbranched; their sheaths not far distant, with numerous slender teeth.

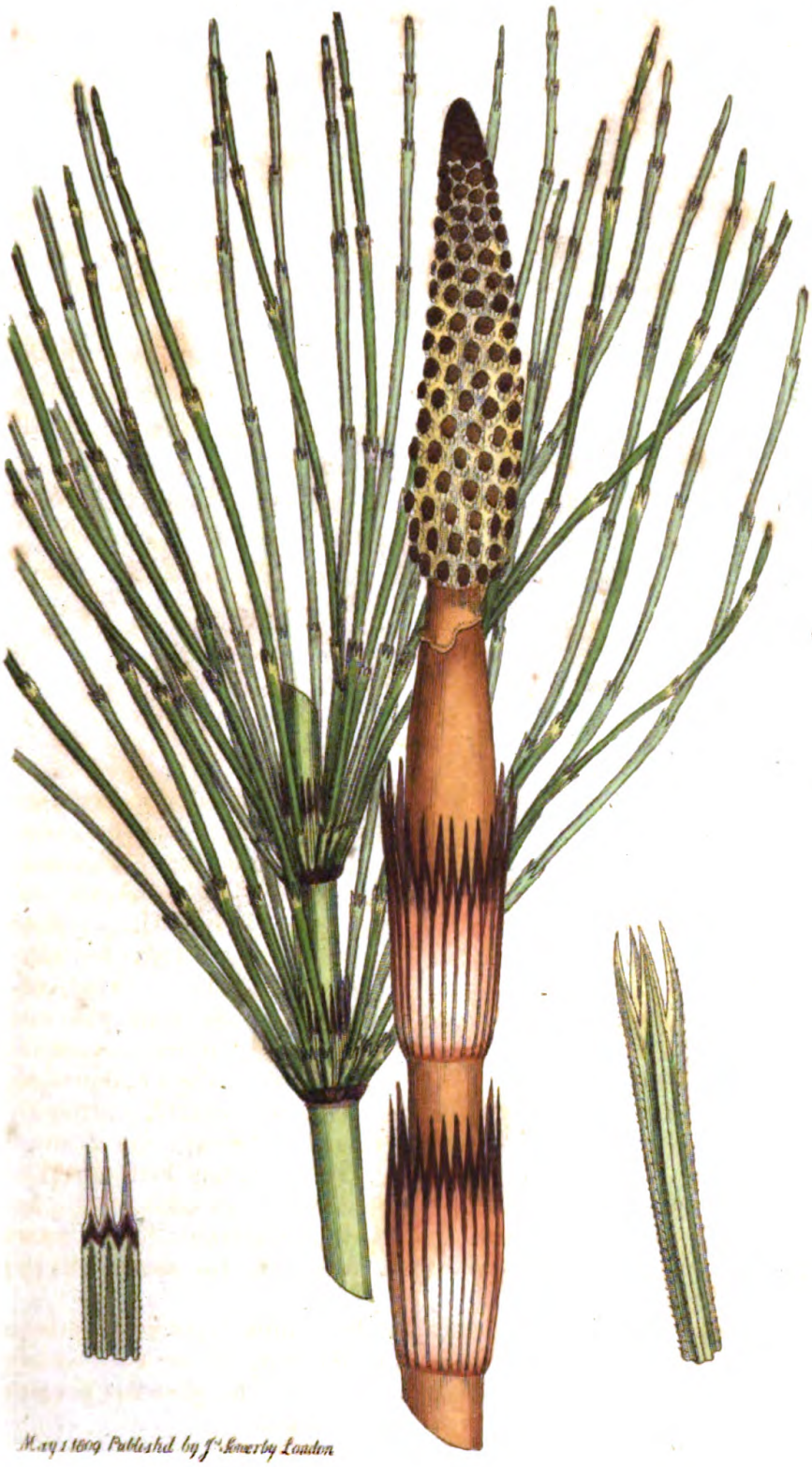
SYN. Equisetum fluviatile. *Linn. Sp. Pl.* 1517. *Sm. Fl. Brit.* 1104. *Huds.* 448. *With.* 755. *Hull.* 233. *Relh.* 404. *Sibth.* 264. *Abbot* 222. *Bolt. Fil.* 66. *t.* 36, 37.

E. majus. *Raii Syn.* 130.

E. Telmateia. *Ehrh. Crypt. n.* 31.

FOUND here and there in watery places, about the sheltered banks of rivers and lakes, where its large long-branched stems, often 6 feet high, make a magnificent and Indian-like appearance. The flowering stalks come forth in April, resembling those of *E. arvense*, but are twice as large, with more abundant and less distant sheaths, whose teeth are narrower and full twice as numerous as in that plant. The leafy or rather branched stems are later, their main stalk pale and scarcely furrowed, though roughish to the touch; branches very numerous from top to bottom, whorled, often subdivided, spreading, at length pendulous, slender, jointed, extremely rough, deeply marked with 4, rarely 5, furrows, as in the 2 foregoing species, but Mr. J. D. Sowerby has first observed that the intermediate angles, terminating in each tooth, are double, affording an excellent specific character. The same circumstance is observable in the angles of the sheaths to the main stem.

Ehrhart took *E. limosum* for the Linnæan *fluviatile*, there being indeed much obscurity concerning these two widely distinct species in authors, and therefore he gave the present a new name, which happily is not wanted.



May 1 1809 Published by J^s Lowerby London

EQUISETUM limosum.

Smooth Naked Horse-tail.

CRYPTOGAMIA Filices.

GEN. CHAR. *Catkin* composed of peltate scales, flowering on their inside. *Partial calyx* of 2 valves. *Seeds* numerous, naked, enfolded by 4 pollen-bearing filaments.

SPEC. CHAR. Stem partly naked, smooth as well as the branches. Catkin terminal.

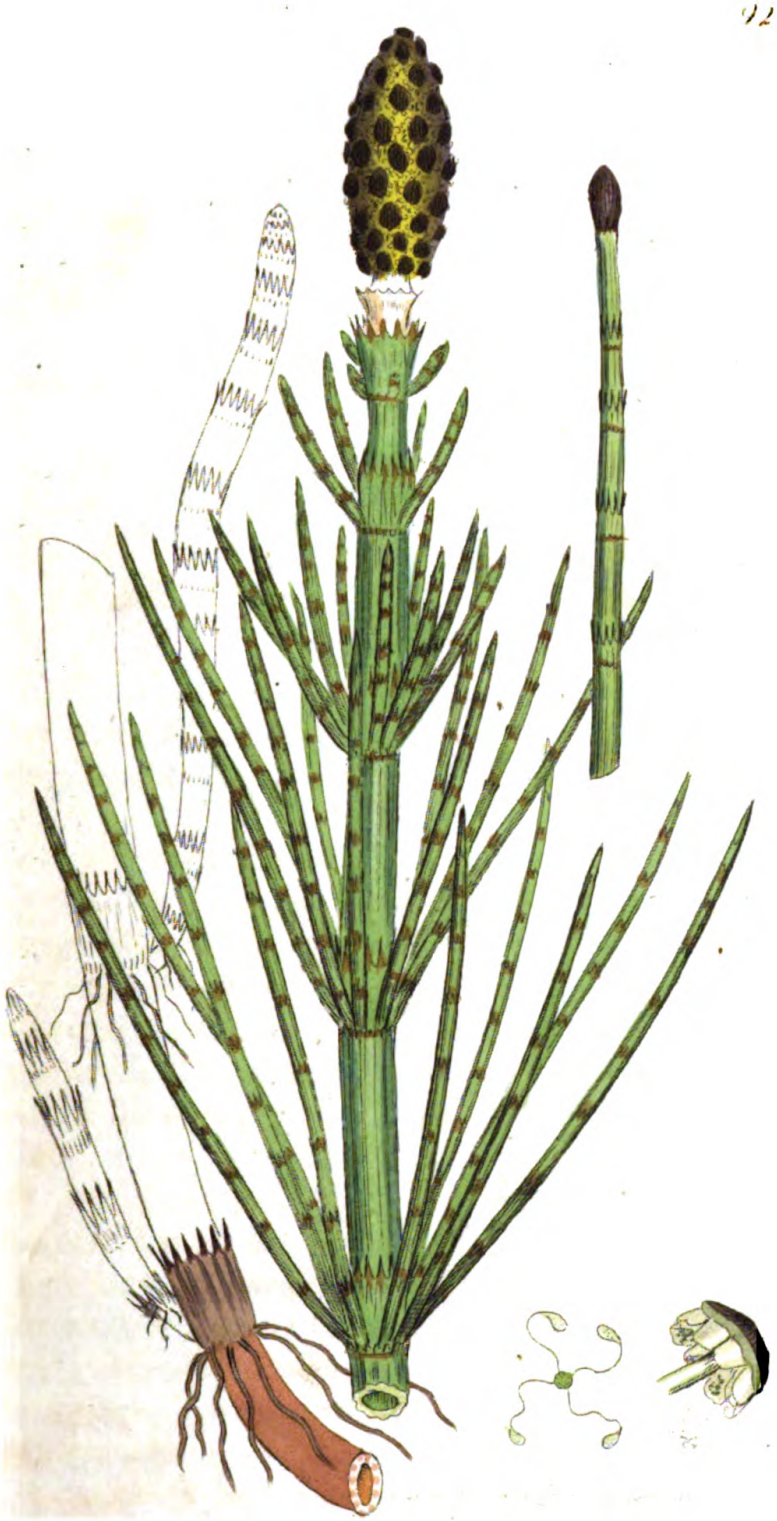
SYN. Equisetum limosum. *Linn. Sp. Pl.* 1517. *Hudf.* 448. *With.* 755. *Hull.* 234. *Relh.* 385. *Sibth.* 264. *Abbot.* 222. *Bolt. Fil.* 68. *t.* 38.

E. nudum lævius nostras. *Raii Syn.* 131. *t.* 5. *f.* 2.

ONE of the most common of its genus in watery marshy places, where it comes to perfection and fructifies early in June.

Root perennial, creeping. Stems erect, 2 feet high, jointed, furrowed, quite smooth to the touch, simple and quite naked in their lower part, but towards the top generally set with a few simple, erect, whorled branches, which are furrowed and smooth like the stem. The teeth of all the sheaths are a little blackish. Catkin solitary, terminal, large, ovate, brown, composed of many series of close-set scales, producing seeds as in *E. hyemale*, *t.* 915.

The *Equisetum* mentioned in Ray's Synopsis, 132, *n.* 12, appears to have been a specimen with more branches than usual. Many have confounded the plant before us with the *fluviatile* of Linnæus, who himself did not well understand their differences. The latter is a much larger plant, bearing its fructification on early simple stalks, as in *E. arvense*, while its principal stems are whorled from top to bottom with numerous very long spreading branches, and produce no catkins.



EQUISETUM hyemale.

Rough Horse-tail.

CRYPTOGAMIA Filices.

Gen. Char. *Catkin* composed of peltate scales, flowering on their inside. *Partial calyx* of 2 valves. *Seeds* numerous, naked, enfolded by 4 pollen-bearing filaments.

Spec. Char. Stem naked, very rough, mostly branched at the base. Sheaths whitish, black at the base and summit.

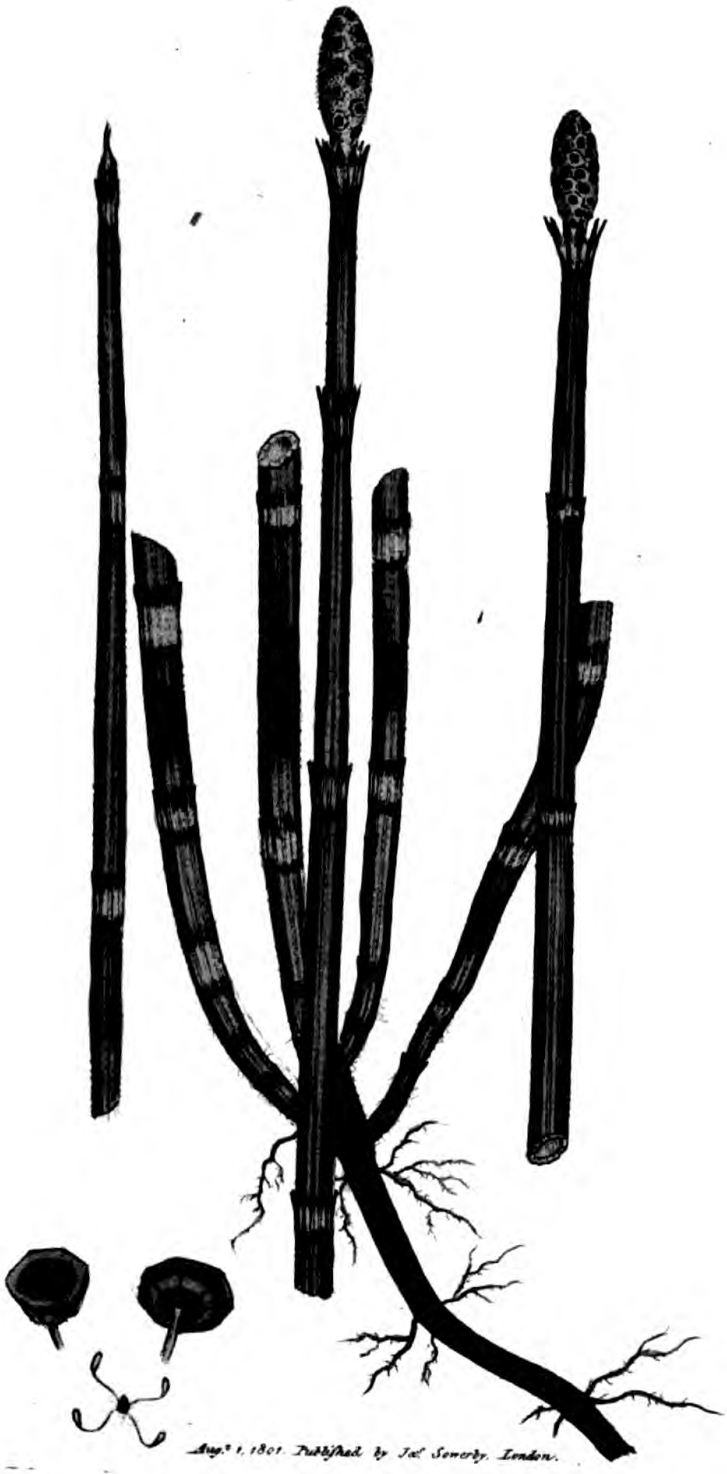
Syn. Equisetum hyemale. *Linn. Sp. Pl.* 1517. *Hudf.* 448. *With.* 756. *Hull.* 234. *Lightf.* 650. *Relh.* 385. *Abbot.* 222. *Bolt. Fil.* 70. *t.* 39.

E. nudum. *Raii Syn.* 131.

GATHERED near Rippon, Yorkshire, by Mr. W. Brunton junior of that place. Although generally esteemed a very rare plant, it is found, always indeed sparingly, in boggy woods and thickets in several parts of Britain.

The roots are perennial, black, creeping. Stems erect, simple, except at the base, naked, round, jointed, hollow, furrowed, rough, each joint encircled with a membranous, short, black and white, toothed sheath or ruffle. Catkin terminal, ovate, dark-brown, splitting into many angular peltate scales, within whose clefts on the inside are lodged numerous minute germens, (afterwards becoming naked seeds,) each of which is invested by 4 spiral filaments, which bear the pollen, according to Hedwig's just remarks.

The fructification appears in summer. The stems last throughout the winter, (whence the name *hyemale*,) and have long been imported from Holland to polish cabinet-work, ivory, and even brass. Their cuticle is extremely rough and hard; the ingenious Mr. Davy, now lecturer at the Royal Institution, has found it to contain a large portion of siliceous earth.



Aug.st 1, 1801. Published by Jas. Sowerby, London.

EQUISETUM variegatum.

Variegated Rough Horsetail.

CRYPTOGAMIA Filices.

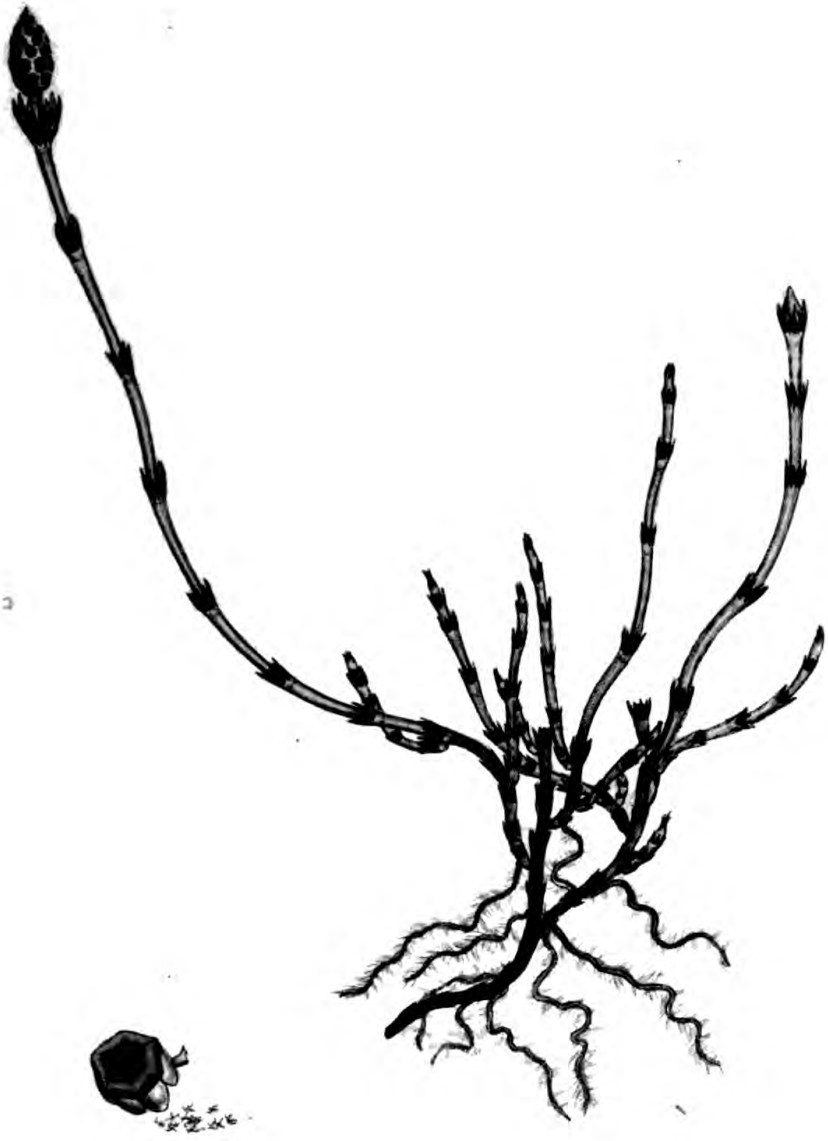
GEN. CHAR. *Catkin* composed of peltate scales, flowering on their inside. *Partial calyx* of 2 valves. *Seeds* numerous, naked, enfolded by 4 pollen-bearing filaments.

SPEC. CHAR. Stem naked, very rough, branched at the base. Sheaths black, with white, membranous, lanceolate teeth. Catkin terminal.

SYN. Equisetum variegatum. *Schleich. Catal.* 21.
E. campanulatum. *Poiret in Lam. Encycl. v.* 5. 613.
E. nudum minus variegatum basileense. *Bauh. Pin.* 16. *Prodr.* 24. *Theatr.* 250.
E. n. 1678. *Hall. Hist. v.* 3. 3.

FOR the discovery of this very distinct species of *Equisetum* in Britain, we are obliged to Mr. G. Don, who gathered it, in July 1807, on the sands of Barry on the sea coast of Angusshire. It is preserved in Jacquin's herbarium, which now makes a part of Sir J. Banks's rich collection, by the apt name of *variegatum*, a name peculiarly eligible, as adopted from the synonym of C. Bauhin, the first discoverer of this plant, and as being that by which it is known in Switzerland. There is a Swedish specimen in the Linnæan herbarium, confounded with *hyemale*, *t.* 915, and in the *Fl. Suec.* it is not distinguished as even a variety, though both appear to grow in Sweden.

The root is perennial, black, creeping, with very woolly fibres. Stems from 4 to 6 inches high, slender, deeply furrowed, rough like those of *E. hyemale;* in our plants decumbent or ascending, and zigzag, in Swiss ones erect and straight. This difference we conceive to arise from the different places of growth, as in *Carex incurva*, *t.* 927, and *juncifolia* of Allioni, erroneously separated by some botanists. Each joint is encircled with a little short black cup-like sheath, crowned with a row of lanceolate white membranous teeth, by which the species is evidently distinguished from *hyemale*. The uppermost sheath is very much larger than the rest. Catkin short, ovate, blacker than in the *hyemale*, and on a more slender stalk.



Feb. 1. 1809. Published by Jas. Sowerby London.

OPHIOGLOSSUM vulgatum.

Adder's Tongue.

CRYPTOGAMIA Filices.

GEN. CHAR. *Capsules* numerous, connected in a two-ranked spike by an enveloping membrane, roundish, bursting transversely, destitute of a ring. *Seeds* many, very minute.

SPEC. CHAR. Leaf ovate, without veins, bearing the spike.

SYN. Ophioglossum vulgatum. *Linn. Sp. Pl.* 1518. *Hudson. Fl. An.* 449. *With. Bot. Arr. v.* 3. 45. *Relh. Cant.* 386.

Ophioglossum. *Raii Syn.* 128.

HERE we have another vulnerary, which Ray says "is excellent, either taken internally or applied outwardly;" and that "an infusion of its leaves in olive oil is famous for curing wounds and ulcers. The powder is good for ruptures." Gerarde remarks, that the above oil is of so beautiful a green, many have supposed it made of verdegris. It is at present out of use, though astringent and tonic; the shops abounding with much better medicines of that description.

This singular vegetable is by no means very uncommon in boggy meadows, and is to be found in perfection about May, or not later than June. Mr. B. M. Forster favoured us with this specimen from a field at Walthamstow. The whole herb is succulent and very smooth. Roots of a few simple fibres like those of the Orchis tribe, from whose point of union arises a simple stem, with one or more buds for the next year. The spike, generally simple, is very rarely found cloven more or less deeply. When ripe it splits transversely on each side into numerous little portions, from whose interstices the seeds are discharged, the capsular valves being imbedded in the portions of the spike.

The genus has little connexion with ferns, except through the medium of the true Osmundas—see Dr. Stokes's excellent remarks in the third volume of Bot. Arr. p. 46, &c. The Linnæan term *frons* cannot without violence be used in the genus of Ophioglossum, as there is no necessary connexion between the leaf and fructification, one species, O. *muticaule*, if not more, having them on distinct stalks.

9.

OSMUNDA Lunaria.

Moonwort.

CRYPTOGAMIA Filices.

GEN. CHAR. *Capsules* naked, globose, two-valved.

SPEC. CHAR. Stalk on the stem, solitary. Frond pinnate, solitary.

SYN. Osmunda Lunaria. *Linn. Sp. Pl.* 1519. *Huds. Fl. An.* 449. *With. Bot. Arr. vol.* 3. 46. *Relh. Cant.* 386. *Sibth. Ox.* 266.

Lunaria minor. *Raii Syn.* 128.

IN plate 209 of the present publication we exhibited the other only true British species of *Osmunda* (for *O. Spicant.* is a *Blechnum*, and *O. crispa* a *Pteris*), and we then promised to give the fructification in a future plate. All we know of that part is the capsule, consisting of a small globe, separating into two equal hemispheres, without any ring or bandage, and containing innumerable seeds like fine dust.

The Moonwort, so called from an obscure crescent-like shape in its leaves, is by no means a common plant; it grows in both moist and dry pastures, among grass, and arrives at perfection the end of June or early in July. Mrs. Kett of Seething favoured us with this specimen from a meadow near her house.

The root consists of thick fibres, from which arises one simple stem, or (as analogy requires it to be called) a frond, composed of a pinnate notched leaf, and a branching spike of capsules. Every part is smooth, but not polished, of a pale green, the capsules turning to a yellowish brown as they ripen. Sometimes the leaf is bipinnate, but that variety is rare.

Apr. 1st 1796 Published by J. Sowerby London

V

OSMUNDA regalis.

Osmund royal, or Flowering Fern.

CRYPTOGAMIA Filices,—spicatæ.

GEN. CHAR. *Capsules* naked, globose, two-valved.

SPEC. CHAR. Frond bipinnate, terminating in a compound cluster of fructification.

SYN. Osmunda regalis. *Linn. Sp. Pl.* 1521. *Hudf. Fl. An.* 449. *With. Bot. Arr. v.* 3. 47.
Filix ramosa non dentata florida. *Raii Syn.* 125.

OSMUNDA belongs to that tribe of ferns whose fructification, instead of being borne on the back of the frond, is produced by a metamorphosis, as it were, of the leaf itself; neither are the capsules bound with a ring, as in most of the dorsiferous ferns. See an excellent note of Dr. Stokes's *Bot. Arr. v.* 3. 46. and Dr. Smith's paper *de filicum generibus dorsiferarum*, in the 5th vol. of the Memoirs of the Turin Acad. p. 147.

The species before us occurs here and there in watery shady meadows and spongy bogs, making a conspicuous figure with its clusters of fructification in July or August. Its root is large and woody, a decoction or extract of which is esteemed in Switzerland very useful for curing the rickets. Fronds several, 3 or 4 feet high, not unlike in hue and figure to young ash trees, as Gerarde observes; they are bipinnate, the leaflets alternate or opposite occasionally, finely serrated, and often slightly lobed at the base. The clusters are thrice compounded, bearing roundish tufts of innumerable bivalve capsules full of minute seeds. A magnified figure of the capsule has, by accident, been omitted in our plate, but we shall take a future opportunity of exhibiting the generic character.

Ray, in the first edition of his Synopsis, p. 26, has described and figured young plants of this species as a new fern, by the name of *Hemionitis pumila trifolia vel quinquefolia maritima.*

Oct. 1. 1794. Published by J. Sowerby, London.

LYCOPODIUM clavatum.

Common Club-moſſ.

CRYPTOGAMIA Miſcellaneæ.

GEN. CHAR. *Capſules* axillary, ſolitary, naked, kidney-ſhaped, of two elaſtic valves and one cell. *Seeds* numerous, minute.

SPEC. CHAR. Leaves ſcattered, terminating in threads. Spikes cylindrical, on footſtalks, about two together.

SYN. Lycopodium clavatum. *Linn. Sp. Pl.* 1564. *Hudſ. Fl. An.* 462. *With. Bot. Arr. v.* 3. 68. *Relh. Cant.* 393. *Sibth. Oxon.* 265.

Lycopodium. *Raii Syn.* 107.

L. vulgare piloſum, amfragoſum et repens. *Dill. Muſc.* 441. *t.* 58. *f.* 1.

COMMON on mountainous heaths, eſpecially in the North. The branched ſtem creeps cloſe to the ground to a great extent, throwing out a ſtrong branched white perennial root at the diſtance of every two or three inches. The leaves are crowded thick together, entirely covering the ſtem, all curved upwards from the ground, lanceolate, finely ſerrated, tipped with a white filament. Flowering branches erect, ſolitary, leafy at the bottom, then bearing a few ſcattered, entire, pale-green ſcales only, and terminating in one, two, or three cylindrical ſpikes, thickly clothed with the ſame kind of ſcales, but broader, in the axilla of each of which is a ſmall yellowiſh kidney ſhaped capſule, called by Linnæus *anthera*, full of very minute ſeeds. The fructification is produced about the middle of ſummer. The whole plant is of a harſh, dry, and laſting nature, but its colour ſoon fades. The ſeeds are highly inflammable, and explode like gunpowder, as all authors mention.

This genus has been reckoned among the moſſes, till Dr. Hedwig obſerved that tribe more accurately. We adopt for the preſent only Profeſſor Schreber's order of *Miſcellaneæ*, becauſe we really do not know what elſe to do; but the term is unſcientific, and the order too vague. Ophioglofſum and Oſmunda have much analogy in fructification with Lycopodium.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LYCOPODIUM Selaginoides.

Prickly Club-Moſs.

CRYPTOGAMIA Filices, exannulatæ.

GEN. CHAR. *Capſules* axillary, ſolitary, of 2 valves, naked, ſomewhat kidney-ſhaped, compreſſed.

SPEC. CHAR. Leaves ſcattered, ciliated, lanceolate; the floral ones larger and more ſpreading.

SYN. Lycopodium Selaginoides. *Linn. Sp. Pl.* 1565. *Hudſ.* 463. *With.* 757. *Hull.* 236. *Dickſ. Dr. Pl.* 90. *H. Sicc. faſc.* 7. 19.

Selaginoides foliis ſpinoſis. *Raii Syn.* 106. *Dill. Muſc.* 460. *t.* 68.

BLACK boggy ſpots watered with ſmall alpine rills, in the moſt mountainous parts of Great Britain, produce this rare ſpecies of Club-moſs, which ripens its fruit in Auguſt and September. We have gathered it on the tops of hills in Weſtmoreland and Scotland, and have received it from near Middleton in Teeſdale, by favour of the Rev. Mr. Harriman, Mr. Oliver and Mr. Robſon.

The roots are ſmall, fibrous and perennial. Stems much branched, ſpreading, weak and ſlender below; the branches erect, leafy, cylindrical, obtuſe; thoſe which bear fructification longer and ſtouter than the others. Leaves of a bright graſs green, ſhining, imbricated, lanceolate, fringed with minute teeth: thoſe in whoſe boſoms the fruit is lodged are larger, yellowiſh, and more ſpreading. The capſules differ a little from the reſt of the genus, being rounder, and containing each four round white large ſeeds, to whoſe ſhape as they ſtand, one on the other three, the valves of the capſule exactly conform. In the upper part of each ſpike Mr. Sowerby has found kidney-ſhaped capſules full of fine duſt, like the fruit of the other ſpecies, which might be taken for antheræ, were it not contrary to all analogy in this tribe. We rather ſuppoſe them to be young or abortive fruit.

Apr.l 1 1803 Published by Jas. Sowerby, London.

13.

LYCOPODIUM inundatum.

Marſh Club-moſs.

CRYPTOGAMIA Miſcellaneæ.

GEN. CHAR. *Capſules* axillary, ſolitary, naked, kidney-ſhaped, of two elaſtic valves and one cell. *Seeds* numerous, minute.

SPEC. CHAR. Leaves ſcattered, entire. Spikes terminal, leafy.

SYN. Lycopodium inundatum. *Linn. Sp. Pl.* 1565. *Hudſ. Fl. An.* 463. *With. Bot. Arr. v.* 3. 69. *Relh. Cant.* 393.

L. paluſtre repens, clava ſingulari. *Dill. Muſc.* 452. *t.* 62. *f.* 7.

Muſcus terreſtris repens, clavis ſingularibus foliofis erectis. *Raii Syn.* 108.

ONE of our leſs common ſpecies of Club-moſs. It may however be met with on the wet part of turfy bogs, eſpecially on a ſandy bottom, as Bagſhot Heath, and St. Faith's bogs near Norwich.

The roots are perennial, and the ſtems creeping, cloſe-preſſed againſt the ground. Leaves thickly ſet without any regular order; thoſe on the proſtrate ſtems curved upwards from the ground, pointed, entire, ſlightly concave, of a paliſh green. Short upright ſimple ſtems or branches, on which the leaves ſpread in every direction, ariſe here and there, each bearing one erect leafy ſpike of roundiſh capſules, the leaves accompanying which capſules have ſometimes a large tooth on each ſide towards their baſe.

The fructification may be found from the end of June to September.

LYCOPODIUM Selago.

Fir Club-moſs.

CRYPTOGAMIA Miſcellaneæ.

GEN. CHAR. *Capſules* axillary, ſolitary, naked, kidney-ſhaped, of two elaſtic valves and one cell. *Seeds* numerous, minute.

SPEC. CHAR. Leaves ſcattered, in eight ſeries. Stem forked, erect, branches equal at the top. Flowers ſcattered.

SYN. Lycopodium Selago. *Linn. Sp. Pl.* 1565. *Hudſ. Fl. An.* 463. *With. Bot. Arr. v.* 3. 70. *Sibth. Oxon.* 265.

Selago foliis et facie Abietis. *Raii Syn.* 106.

S. vulgaris, Abietis rubræ facie. *Dill. Muſc.* 435. *t.* 56. *f.* 1.

THIS kind of Club-moſs is by far leſs common than that we have already figured, *t.* 224, except about the clefts of rocks in mountainous woods, and on heaths in Wales and the north of England, where it abounds; and it has even been found on Felthorpe bogs in Norfolk, a ſpot rich in curious plants. It is perennial, and flowers all ſummer long.

Root of many ſtrong fibres, not creeping. Stem erect, three or four inches high, forked, all the branches making a level ſurface at the top,—a proper example of *caulis faſtigiatus*. It is entirely clothed with bright-green, lanceolate, entire, pointed, concave, ſhining, permanent leaves, in the axillæ of which, about the uppermoſt branches, ſtand the capſules (1). Frequently the plant appears to be viviparous, bearing buds of ng leaves, ſome of which we have repreſented (2), inſtead of capſules, an appearance which did not eſcape the obſerving Dillenius.

That the duſt of the capſules of this plant is really the ſeeds is now certain from the experiments of Mr. Fox of Norwich, who has raiſed plants from it. See *Tranſ. of the Linn. Society, vol.* ii. 315.


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LYCOPODIUM annotinum.

Interrupted Club-moss.

CRYPTOGAMIA Filices.

GEN. CHAR. *Capsules* axillary, solitary, of 2 valves, naked, somewhat kidney-shaped, compressed.

SPEC. CHAR. Leaves scattered, slightly serrated, naked-pointed, spreading in five rows; the floral ones short and broad. Flowering-branches annually proliferous at the summit.

SYN. Lycopodium annotinum. *Linn. Sp. Pl.* 1566. *Sm. Fl. Brit.* 1111. *Huds.* 464. *With.* 759. *Hull.* 236. *Lightf.* 689. *Ehrh. Crypt.* 62.
L. elatius juniperinum, clavis singularibus, sine pediculis. *Dill. Musc.* 455. *t.* 63. *f.* 9. *Raii Syn.* 107.

A NATIVE of the Scottish and Welch mountains, but it is the least general of our alpine species of *Lycopodium*.

The plant is perennial and evergreen, bearing fructification in the summer. Stems creeping, leafy, rigid and tough; their flowering branches erect, forked, a span high, extending themselves annually at the summit, being proliferous in the sense used by Linnæus in *Philosophia Botanica, p.* 40. A contraction in the size of the leaves at the base of each annual shoot, gives the whole branch a jointed appearance characteristic of the species. The leaves are irregularly placed, but crowded, spreading in 5 directions; their form lanceolate, flat, obscurely serrated, sharp, but without any hair at the point; the floral ones are dilated, shortened, membranous, undulated, yellowish, closely imbricated, forming an obtuse spike. Capsules kidney-shaped.—Whether the whole spike is deciduous, or whether its main stalk remains, and bears leaves the year after flowering, we have no means of determining without an inspection of the growing plant in autumn, but we are inclined to believe the latter.

Apr. 1. 1807. Published by Ja.s Sowerby London.

16.

LYCOPODIUM alpinum.

Alpine Club-moſs.

CRYPTOGAMIA Miſcellaneæ.

GEN. CHAR. *Capſules* axillary, ſolitary, naked, kidney-ſhaped, of two elaſtic valves and one cell. *Seeds* numerous, minute.

SPEC. CHAR. Leaves acute, imbricated in four rows. Shoots erect, cloven. Spikes ſeſſile, cylindrical.

SYN. Lycopodium alpinum. *Linn. Sp. Pl.* 1567. *Hudſ. Fl. An.* 464. *With. Bot. Arr. v.* 3. 70. *Dickſ. Dr. Plants*, 46.

L. Sabinæ facie. *Raii Syn.* 108. *Dill. Muſc.* 445. *t.* 58. *f.* 2.

AN inhabitant of ſeveral high mountains of the north of England, Scotland and Wales, communicated to us by Mr. Robſon of Darlington.

The ſtems are round, leafy, ſtrong and woody, proſtrate, creeping along the ground with roots at intervals like *L. clavatum.* Tufts of erect ſhoots, ſeveral times forked, or rather cloven, ariſe here and there, from one to three inches in height, their branches entirely clothed with four rows of imbricated leaves, which are lanceolate, concave, entire, ſmooth, beardleſs, and but little ſpreading. Some longer branches terminate in one or two ſhort erect ſpikes, compoſed of ſcales ſomewhat membranous, ovate, pointed at each end, each of which is accompanied by a capſule like that of other ſpecies of the ſame genus.

POLYPODIUM vulgare.

Common Polypody.

CRYPTOGAMIA Filices, annulatæ.

GEN. CHAR. *Fructifications* ſcattered, in roundiſh dots, not marginal. *Involucrum* none.

SPEC. CHAR. Frond pinnatifid: lobes oblong, ſomewhat ſerrated, obtuſe. Root ſcaly.

SYN. Polypodium vulgare. *Linn. Sp. Pl.* 1544. *Hudſ.* 455. *With.* 773. *Hull.* 236. *Relh.* 409. *Sibth.* 269. *Abbot.* 226. *Curt. Lond. faſc.* 1. *t.* 68. *Woodv. Suppl. t.* 271. *Bolt. Fil.* 32. *t.* 18.

Polypodium. *Raii Syn.* 117.

VERY frequent on the tops of walls, old thatched roofs, ſhady banks, and the moſſy trunks of rotten trees. The fructification is plentiful from the beginning of ſummer till the plants are deſtroyed in the courſe of the winter.

Root perennial, creeping, twiſted, thickly clothed with lanceolate brown ſhining ſcales; its fibres woolly, of a ſhining brown. Fronds from 6 to 12 inches high, erect, ſtalked, lanceolate, acute, deeply pinnatifid, ſmooth; the lobes linear-oblong, bluntiſh, ſometimes entire, but moſt generally crenate or ſerrated, rarely lobed. Spots arranged in a ſimple ſeries on each ſide the rib of each lobe, at nearly an equal diſtance between that and the edge, round, of a yellow brown, convex, larger than in moſt ferns, perfectly naked or deſtitute of an involucrum. Every ſpot conſiſts of numerous ſtalked round pale capſules, each encompaſſed with a browniſh jointed ring. Tournefort moſt unaccountably denies the exiſtence of this ring; and Adanſon, though a profeſſed reformer, follows him.

We now agree with Dr. Swartz in ſeparating from this real genus of *Polypodium* ſuch ſpecies as have an involucrum, by the name of *Aſpidium*. Of the ferns already figured in this work, *t.* 1018 and 1019 belong to the latter genus, and *t.* 616 to the former.

The medical virtues of the Common Polypody are not enough to make it worth inquiring whether that of the oak, or that of any wall or cottage, be moſt endowed with them.

P. cambricum is a barren laciniated variety of this.

POLYPODIUM hyperboreum.

Hairy Alpine Polypody.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, in roundish dots, not marginal. *Involucrum* none.

SPEC. CHAR. Frond lanceolate, bluntish, pinnated: leaflets heart-shaped, pinnatifid, hairy on both sides: lobes rounded, waved.

SYN. Polypodium hyperboreum. *Sw. Fil.* 39.
P. arvonicum. *With.* 774. *Sm. Fl. Brit.* 1115. *Hull.* 238. *Syn.* 191.
P. ilvense. *With.* 774. *Hull.* 237.
Acrostichum hyperboreum. *Liljeblad in Stockh. Tr. for* 1793. 201. *t.* 8.
A. ilvense. *Huds.* 451. *Dicks. H. Sicc. fasc.* 8. 17; but not of Linnæus.
A. alpinum. *Bolt. Fil.* 76. *t.* 42.
Filix alpina, pedicularis rubræ foliis subtùs villosis. *Raii Syn.* 118.

SENT from Ben Lawers by Mr. G. Don, who informs us it is rare in Scotland, growing out of the fissures of alpine rocks, and often not above an inch high. Mr. Dickson gathered it on the same mountain. But the place where it was originally observed in Ray's time, and still grows, is on a moist black rock on Snowdon, almost at the top of the point called Clogwyn y Garnedh, looking North West. It is in perfection in July.

The root is black and tufted. Fronds from 1 to 3 inches high, linear-lanceolate, bluntish, clothed with tawny hairs, and composed of numerous, nearly opposite, sessile, short, heart-shaped, rounded, pinnatifid leaflets, whose segments are rounded and waved, without any terminal prickles or bristles. Masses of capsules red-brown, hairy, numerous, at length often confluent. This is very distinct from the real *Acrostichum ilvense*. Withering, who describes it twice over, has given the name adopted in *Fl. Brit.*, but although Mr. Liljeblad be wrong as to the genus, we gladly concur with Professor Swartz in preferring his of *hyperboreum*, as of a prior date and far more eligible in itself.

...lish'd by J. Sowerby London

POLYPODIUM Phegopteris.

Pale Mountain Polypody.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, in roundish dots, not marginal. *Involucrum* none.

SPEC. CHAR. Frond pinnated: leaflets lanceolate, pointed, pinnatifid, united at their base; the lower pair reflexed.

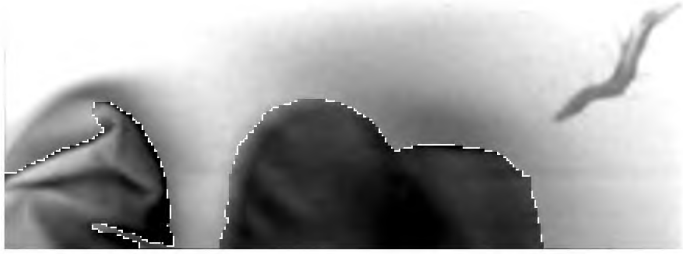
SYN. Polypodium Phegopteris. *Linn. Sp. Pl.* 1550. *Sm. Fl. Brit.* 1116. *Huds.* 456. *With.* 775. *Hull.* 238. *Lightf.* 669. *Winch. v.* 1. 95. *Bolt. Fil.* 36. *t.* 20. *Ehrh. Crypt.* 131.

P. n. 1698. *Hall. Hist. v.* 3. 12.

Filix minor britannica, pediculo pallidiore, alis inferioribus deorsùm spectantibus. *Dill. in Raii Syn.* 122.

STONY rather moist places, on mountains in the south of Scotland and north of England, produce this delicate fern; but it is certainly not, as its Greek specific name imports, a native of our Beech woods, at least not of those of the midland counties. We have gathered it in Westmoreland, not only in the shade, but sometimes on open stony moors, where it cannot fail to attract the notice of a botanist by its upright position, pale delicate aspect, whitish stalk, and especially the dependent posture of the two lowermost leaflets or wings. Very rarely it grows in considerable patches, more frequently scattered, having a creeping root. Each plant is about a foot, or more, in height, with a very long, slender, naked, smooth, brittle stalk. Principal pinnatifid leaflets about ten pair, not exactly opposite, though sessile and slightly united at their base, and yet not decurrent. They join about as many simple, gradually shorter, and finally entire ones, above them, surmounted by a taper point. All are fringed and besprinkled with pale soft hairs on both sides, which are often clustered, somewhat stellate, on the rib at the back. The capsules form little round naked yellowish dots, about the lower part of the edges of the segments.

Dec. 1 1810 published by J.d Sowerby London.



POLYPODIUM Dryopteris.

Three-branched Polypody.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* ſcattered, in roundiſh dots, not marginal. *Involucrum* umbilicated, burſting almoſt all round.

SPEC. CHAR. Frond three-branched: branches bipinnate, the lobes bluntiſh and toothed.

SYN. Polypodium Dryopteris. *Linn. Sp. Pl.* 1555. *Hudſ.* 460. *With.* 780. *Hull.* 240. *Dickſ. Dr. Pl.* 16. Filix ramoſa minor. *Raii Syn.* 125.

SENT from Staffordſhire by the Rev. Thomas Giſborne, the ſame gentleman to whom we were obliged for *Epimedium alpinum*. This elegant fern is found only in ſtony parts of the more mountainous counties. The variety we have here figured is more tender and delicate in ſtructure than the Derbyſhire ſpecimens in Mr. Dickſon's *Dried Plants*, inſomuch that ſome have thought them diſtinct ſpecies. We cannot, however, diſcover a good ſpecific difference.

Root creeping. Frond about a foot high, upright, diſtinguiſhed from all our other Polypodies by being compoſed of three branches, which are very gracefully diſplayed, and each more or leſs perfectly bipinnate, the pinnulæ drooping, bluntiſh, and more or leſs toothed. The whole are of a pleaſant green. Dots of fructification pretty regularly arranged, and at length confluent.

POLYPODIUM calcareum.

Rigid Three-branched Polypody.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, in roundish dots, not marginal. *Involucrum* none.

SPEC. CHAR. Frond three-branched: branches bipinnate, erect, somewhat rigid, the lobes bluntish and slightly notched. Dots of seeds confluent.

SYN. Polypodium calcareum. *Sm. Fl. Brit.* 1117.
P. Dryopteris. *Dicks. Dr. Pl.* 16. *Bolt. Fil.* 53. *t.* 1.
Dryopteris Tragi. *Ger. em.* 1135.

GATHERED on the 27th of last June at Matlock bath, Derbyshire. It grows copiously among grass and bushes on the crumbling calcareous stone, or *tufa*, deposited, in the lapse of ages, by the Matlock water, and in removing a large bed of which, before Saxton's Lodging-house, the skeleton of a large animal of the Deer kind was lately found. See *Pennant's Brit. Zool. ed.* 4. *v.* 1. 52.

I never observed this species in any other place, nor was I for some time convinced of its being distinct from *P. Dryopteris* figured in our 9th *vol. t.* 616. I am still uncertain whether the synonyms of any of the more accurate cryptogamists of Germany belong to it.

The root is, of course, perennial, and creeps like that of *P. Dryopteris*, but is thicker and commonly shorter. The base of the stem is scaly, not smooth, and the whole frond is firmer and more rigid, the three principal branches generally smaller, nearly erect, and by no means flaccid or loosely pendent. The young capsules are pale, without any involucrum; when ripe they become brown or black, and run together, covering the whole back of the leaf, whereas those of *P. Dryopteris* remain in distinct dots.

Nov. 1. 1805. Published by Jas. Sowerby. London.

POLYPODIUM Lonchitis.

Rough Alpine Polypody.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* ſcattered, in roundiſh dots, not marginal. *Involucrum* umbilicated, burſting almoſt all round.

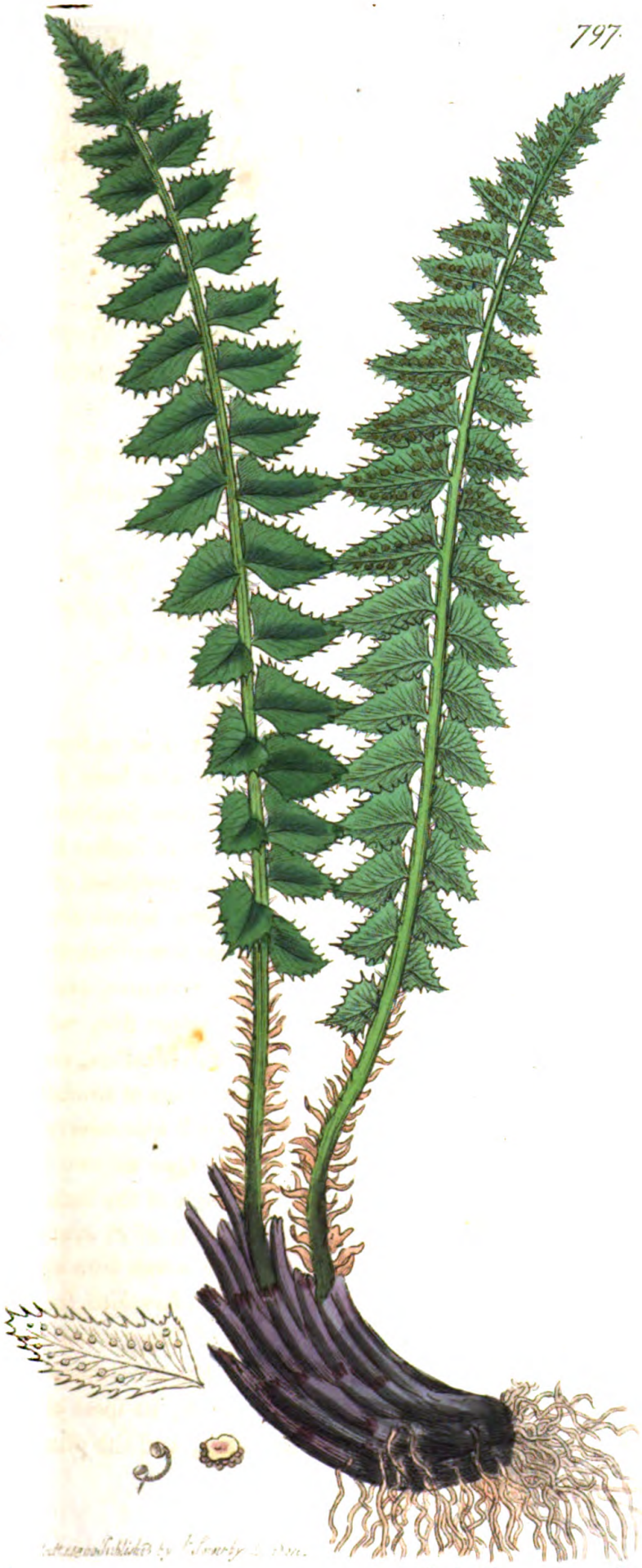
SPEC. CHAR. Frond ſimply pinnate; leaflets creſcent-ſhaped, bent downwards, briſtly-ſerrated. Stalks ſcaly.

SYN. Polypodium Lonchitis. *Linn. Sp. Pl.* 1548. *Hudſ.* 455. *With.* 773. *Hull.* 237. *Lightf.* 668.
Lonchitis aſpera major. *Raii Syn.* 118.

A NATIVE of high rocky mountains, ſent us from Durham by the Rev. Mr. Harriman. It has alſo been found in Wales and Scotland, but is confined to alpine ſituations.

The fronds grow in tufts, upright, 8 or 10 inches high, of a narrow lanceolate figure, rigid and harſh, compoſed of numerous alternate ſeſſile ſimple *pinnæ* or leaflets, which are bent a little downwards, and are of a lanceolate ſomewhat creſcent-ſhaped figure, acute, fringed with briſtly ſerratures, and having a projecting angle at their baſe on the upper ſide, while the under is ſloped or cut away. About half the leaflets, and thoſe the uppermoſt, are thickly ſet with round ſpots of fructification in a ſingle line on each ſide of the rib, each ſpot covered with a round truly umbilicated involucrum. One or two ſmaller dots ſometimes ſtand on the projecting angle of the leaflet.

This has often been ſuppoſed a mere variety of *P. aculeatum*, which, when tranſplanted from its native woods into an open garden, often dwindles away to the ſize of *P. Lonchitis*, ſee *Pluk. Phyt. t.* 180. *f.* 3, as Mr. W. Brunton of Rippon has proved by experiment. The *Lonchitis* however has the leaflets much leſs inclined to be lobed, and never auricled; its ſpots of fructification are thrice as large as in the other, and the plants are manifeſtly different.



ASPIDIUM fontanum.

Smooth Rock Shield-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, in roundish dots, not marginal. *Involucrum* umbilicated, bursting almost all round.

SPEC. CHAR. Frond linear-lanceolate, smooth, mostly bipinnate; leaflets alternate, rounded; their segments very sharply toothed. Stalks winged. Involucrum oblong.

SYN. Aspidium fontanum. *Sw. Fil.* 57.

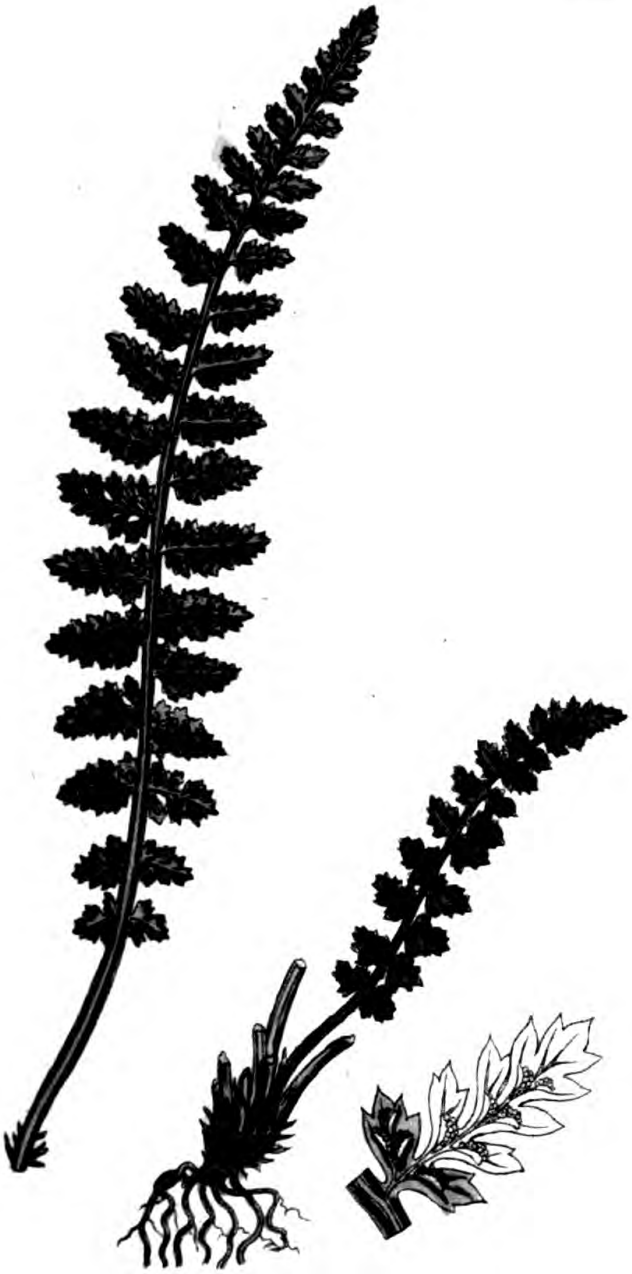
Polypodium fontanum. *Linn. Sp. Pl.* 1550. *Sm. Fl. Brit.* 1114. *Huds.* 456. *With.* 777. *Hull.* 238. *Villars Dauph. v.* 3. 849.

P. n. 1706. *Hall. Hist. v.* 3. 15.

Adiantum filicinum durius crispum minimum. *Barrel. Ic. t.* 432. *f.* 1.

WE have at length ascertained this fern to our satisfaction, and hasten to correct the errors respecting it in *Fl. Brit.* into which we were led by Linnæus having confounded with it a specimen that we now believe to be our *Polypodium hyperboreum, t.* 2023. The above synonyms are certainly correct, as, we trust, is the following information.

Mr. Hudson gathered this plant above Wybourn in Westmoreland, and received it from Agmondesham, or Amersham, church, Bucks. We have a specimen gathered by the late Mr. Aiton in the spot last mentioned, though the plant is said to be found there no longer; but this ascertains the species. The character and description of Linnæus agree with it, though not with the mistaken specimen above mentioned, whose capsules are intermixed with hairs, and which we had in view while writing *Fl. Brit.* The tufted root bears many fronds, from 2 to 6 inches high, rigid, smooth, of a somewhat glaucous green, linear-lanceolate, composed of numerous, alternate, pinnate or pinnatifid leaflets, whose lobes are very sharply toothed and slightly spinous, and all the stalks are winged. Dots at the midrib of each lobe, round, which makes the plant an *Aspidium*, though the singularly white involucrum is lateral and oblong, approaching to the nature of a *Darea*. There seems moreover some general affinity between the present fern and *Asplenium lanceolatum, t.* 240. One of our specimens was communicated by Mr. Dickson. We have seen no living ones.



Pinx. & sc. published by J. Sowerby, London.

POLYPODIUM Thelypteris.

Marſh Polypody.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* ſcattered, in roundiſh dots, not marginal. *Involucrum* umbilicated, burſting almoſt all round.

SPEC. CHAR. Frond pinnate; leaflets pinnatifid, ſomewhat crenate, ſeparate but croſſing each other at the baſe. Dots confluent.

SYN. Polypodium Thelypteris. *Linn. Mant.* 505. *With.* 776. *Hull.* 239. *Abbot.* 227. *Dickſ. H. Sicc. faſc.* 6. 15.

Acroſtichum Thelypteris. *Linn. Sp. Pl.* 1528. *Bolt. Fil.* 78. *t.* 43, 44.

Filix minor paluſtris repens. *Raii Syn.* 122.

THIS Fern is always found in wet ſpongy marſhes and bogs, but not frequently. Mr. Pitchford diſcovered it long ago on St. Faith's bogs near Norwich, and Mr. Turner lately at Lound near Yarmouth. It is alſo mentioned as growing in Bedfordſhire, Yorkſhire, and Scotland.

The root is long, ſlender, and creeps horizontally, producing ſeveral upright lanceolate fronds, ſcarcely more than a foot high, often leſs, of a bright green, with a longiſh, ſlender, almoſt entirely naked ſtalk. Leaflets oppoſite, ſpreading, ſeſſile, diſtinct, lanceolate, pointed, pinnatifid, generally ſmooth, ſometimes clothed with ſcattered hairs; the lobes are more or leſs crenate, bluntiſh, the lowermoſt of each leaflet lengthened out or divaricated ſo as to croſs thoſe of the oppoſite one. The ſpots of capſules are numerous, ſmall at firſt and each covered by a very thin white lacerated ſcale, but in proceſs of time they run together and nearly cover the leaf.—The ſlender creeping root, and the croſſing but ſeparate leaflets, diſtinguiſh this ſpecies of Polypody from every other with which it could be confounded.

Published by J. Sowerby London.

POLYPODIUM Oreopteris.
Heath Polypody.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* ſcattered, in roundiſh dots, not marginal. *Involucrum* umbilicated, burſting almoſt all round.

SPEC. CHAR. Frond pinnate; leaflets pinnatifid, entire, ſprinkled beneath with reſinous glands. Dots marginal, confluent.

SYN. Polypodium Oreopteris. *Dickſ. Tr. of Linn. Soc. v.* 1. 181. *H. Sicc. faſc.* 1. 18. *With.* 775. *Hull.* 238. *Sibth.* 270.

P. Thelypteris. *Hudſ.* 457. *Bolt. Fil.* 40. *t.* 22, *f.* 1, 2. *Hedw. Theor.* 44. *t.* 6.

Filicis maris vulgaris varietas. *Raii Syn.* 122.

THE Polypody here repreſented, much more common than the laſt, for which it has often been taken, grows in mountainous, heathy, or dry woody places, moſt plentifully in Scotland, Wales, and the north of England, though Mr. Lambert has found it in Hampſhire. We received it from the Rev. Mr. Harriman of Eggleſton.

It is generally three times the ſize of *P. Thelypteris*, and agrees both in that particular as well as general habit with the moſt common *P. Filix mas*, having like that a fibrous tufted large ſcaly root, from which many fronds ariſe in a circle. The pinnæ likewiſe are continued almoſt to the bottom, gradually diminiſhing towards the root; their lobes entire, very rarely crenate at the tip. The dots of capſules run in one marginal ſeries, (which has led ſome to ſuppoſe this the *P. marginale* of Linnæus,) and become confluent as they ripen. But the moſt peculiar characteriſtic of this ſpecies, by which it may at all times be known from every other Britiſh fern, are the yellowiſh reſinous glands ſprinkled over the back of the leaves. Theſe ſometimes exhale a ſweet ſcent, remarked by Mr. Teeſdale, which probably cauſed Mr. Hudſon to miſtake a plant of this ſpecies for the *P. fragrans* of Linnæus.

Published by J. Sowerby London

ASPIDIUM Filix mas.

Male Shield-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, in roundish dots, not marginal. *Involucrum* umbilicated, bursting almost all round.

SPEC. CHAR. Frond bipinnate; leaflets obtuse, serrated. Stalk scaly. Involucrum circular.

SYN. Aspidium Filix mas. *Swartz. Fil.* 38. *Sm. Fl. Brit.* 1121.

Polypodium Filix mas. *Linn. Sp. Pl.* 1551. *Huds.* 458. *With.* 775. *Hull.* 238. *Relh.* 411. *Sibth.* 270. *Abbot.* 226. *Bolt. Fil.* 44. *t.* 24. *Woodv. Med. Bot. t.* 49. *Dicks. H. Sicc. fasc.* 3. 19.

Filix mas vulgaris. *Raii Syn.* 120.

VERY common in dry hedge bottoms and other shady places, where as it unrolls its scaly buds in the spring it excites notice by its singularity. When fully grown, and covered with its innumerable spots of future seeds in June and July, it forms a handsome tuft, not unlike an ostrich plume.

The root is perennial, large, scaly, tufted, not creeping. Fronds 3 feet high, lanceolate, with brown scaly stalks, and composed of numerous compound leaves, whose leaflets are crowded, mostly alternate, oblong, smooth, obtuse, serrated, the serratures without bristles or spines. Dots of capsules in a single row on each side, near the rib, not reaching much more than half the length of each leaflet. Each dot is covered by a strong durable crenated scale, fixed by the side towards the base of the leaflet, but bursting all round, so as to become circular as the capsules swell. We have already announced the establishment of the genus *Aspidium* in *v.* 16. 1149.

The root of this species is a famous Swiss cure for worms; and we are told its nauseous and peculiar taste is perceptible in a quack medicine at present popular.

May 1. 1805. Published by Jos Sowerby, London.

V

27.

ASPIDIUM cristatum.

Lesser Crested Shield-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, in roundish dots, not marginal. *Involucrum* umbilicated, bursting almost all round.

SPEC. CHAR. Frond nearly bipinnate; leaflets ovate, obtuse, with shallow lateral serratures and sharp little terminal teeth. Common stalk scaly. Involucrum nearly circular.

SYN. Aspidium cristatum. *Swartz. Fil.* 52.
Polypodium cristatum. *Linn. Sp. Pl.* 1551.
P. Callipteris. *Ehrh. Crypt.* 53.

GATHERED in hedge rows, on Apse heath and near Ryde, in the isle of Wight, by the Rev. G. R. Leathes. We have a specimen gathered in 1806 by the Rev. R. B. Francis near Holt, Norfolk, and have heard of others from Scotland, so that this species can no longer be refused a place in the *Flora Britannica*. Our specimens accord with original ones of Linnæus and Ehrhart, and are very distinct from *A. dilatatum*, *t.* 1461, long mistaken for the *P. cristatum* of Linnæus.

Root tuberous, somewhat creeping. Fronds 1 or 2 feet high, ovato-lanceolate, acute, pinnate; the leaves either again pinnate, or deeply pinnatifid; leaflets rather alternate, ovate, obtuse, veiny, with wide shallow serratures along their sides, and several broad, sharp, scarcely spinous, little teeth at their summits. The ribs are somewhat zigzag. Dots of capsules tawny, about the upper part of the frond, but on the lower part of each leaflet or segment. Involucrum between kidney-shaped and circular. The common stalk is very scaly in the lower part, and more or less so up to the summit. The fronds when drying have a faint sweet scent, unlike the generality of British ferns.

Sowerby Published by Jos. Sowerby, London.

ASPIDIUM aculeatum.

Common Prickly Shield-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, in roundish dots, not marginal. *Involucrum* umbilicated, bursting almost all round.

SPEC. CHAR. Frond bipinnate; leaflets ovate, somewhat crescent-shaped, fringed with spines, hairy beneath. Common stalks scaly.

SYN. Aspidium aculeatum. *Sm. Fl. Brit.* 1122.

Polypodium aculeatum. *Linn. Sp. Pl.* 1552. *Huds.* 459. *With.* 777. *Hull.* 239. *Relh.* 412. *Sibth.* 271. *Abbot.* 227. *Bolt. Fil.* 48. *t.* 26. *Mill. Illustr. t.* 101.

Filix mas non ramosa, pinnulis latis auriculatis spinosis. *Raii Syn.* 121. *n.* 2; also *n.* 4 and 5.

FREQUENT in shady stony places, and often in dry hedge bottoms, bearing seed in the summer and autumn.

Root perennial, tufted, large. Fronds numerous, large and handsome, of a dark and blueish green, paler beneath, lanceolate, acute, elegantly and closely bipinnate; their general and partial stalks remarkably scaly. Leaflets mostly alternate, ovate, a little curved into a crescent-shape, sharply serrated, each tooth tipped with a spine: all the leaflets are more or less lobed or dilated at their upper edge near the base, and sometimes the lowermost are pinnatifid. Spots of seeds scattered over the disk, their membranous coverings quite circular, attached by the centre, perfectly entire, not, as in most of the genus, cloven on one side.

The size of the plant is much diminished when it meets with a very dry or barren soil, in which case it approaches *Aspidium Lonchitis* in habit, but is a very distinct species. See *t.* 797.

Feb.y 1 1816 Published by Jas. Sowerby, London.

ASPIDIUM lobatum.

Close-leaved Prickly Shield-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, in roundish dots, not marginal. *Involucrum* umbilicated, bursting almost all round.

SPEC. CHAR. Frond bipinnate; leaflets elliptical, somewhat crescent-shaped, fringed with spines, hairy beneath: the foremost of the lowest pair very large. Common stalk scaly.

SYN. Aspidium lobatum. *Sm. Fl. Brit.* 1123.
Polypodium lobatum. *Huds.* 459.
Filix aculeata major, pinnulis auriculatis crebrioribus, foliis integris angustioribus. *Raii Syn.* 121.
F. aculeata, Lonchitidis æmula nostras. *Pluk. Phyt. t.* 180. *f.* 3.

SINCE Ray, whose description is excellent, we believe no one has well understood this fern except Mr. Edward Forster, to whom we are obliged for directing our attention particularly to the subject. It has not been observed out of Essex, where it is not uncommon in shady places under hedges. It varies in size, but often equals *A. aculeatum* in the height of its fronds, though their breadth is always less in proportion. The whole frond is more firm and rigid, of a paler and more shining green. The leaflets are rather elliptical than ovate, crowded, less cut or lobed, but more remarkable for the great size of the foremost or uppermost one at the base of each subdivision of the frond, which often extends its point beyond the stalk above it.

Feb.r 1. 1806. Published by Jas. Sowerby. London.

ASPIDIUM Filix fœmina.
Female Shield-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, in roundish dots, not marginal. *Involucrum* umbilicated, bursting almost all round.

SPEC. CHAR. Frond bipinnate; leaflets pinnatifid, serrated, pointless. Stalk smooth. Involucrum kidney-shaped.

SYN. Aspidium Filix fœmina. *Swartz. Fil.* 41. *Sm. Fl. Brit.* 1124.

Polypodium Filix fœmina. *Linn. Sp. Pl.* 1551. *Huds.* 458. *With.* 778. *Hull.* 239. *Relh.* 411. *Sibth.* 271. *Abbot.* 226. *Bolt. Fil.* 46. *t.* 25. *Dicks. H. Sicc. fasc.* 5. 18.

Filix mas non ramosa, pinnulis angustis raris, profundè dentatis. *Raii Syn.* 121.

ALMOST as common as the last, but in a different kind of situation, growing in marshy shady places. It is in perfection about July.

The root is large and tufted, bearing many very handsome fronds 18 or 20 inches high, of a broad acute lanceolate form, and a full grass-green colour, smooth in all their parts. Their stalk is slender, pale, and very smooth. Leaflets (or primary divisions) alternate, lanceolate, pointed, subdivided into other leaflets, which are elegantly pinnatifid sometimes even pinnate, and obtusely notched, their lobes all destitute of any bristly termination; the upper ones are decurrent. Spots of fructification much smaller than in *A. Filix mas*, and not circular but oblong, or crescent-shaped, the involucrum being kidney-shaped, bursting towards the rib of the leaflet. The name merely alludes to the greater elegance or delicacy of this species compared with the last.

June 2. 1815. Published by Jas Sowerby, London.

ASPIDIUM irriguum.

Brook Shield-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, in roundish dots, not marginal. *Involucrum* umbilicated, bursting almost all round.

SPEC. CHAR. Frond lanceolate, pinnate; leaflets deeply pinnatifid, cut and sharply toothed. Stalk quadrangular. *Involucrum* lateral, short, jagged.

DISCOVERED by T. F. Forster, Esq., about the watery margins of clear springs near Tunbridge wells. Our figure was taken in June, 1810, from a living plant in his garden, not at all changed by cultivation.

We can find no described fern, nor any exotic or British specimen, that accords with this. It agrees in some points with *A. Thelypteris*, (*Polypodium Thelypteris*, *t.* 1018,) but is much smaller, more tender and delicate, neither has it a creeping root. The main rib is exactly square, and of a delicate transparent green when living, pale brown when dried. Leaflets numerous, alternate, very deeply and copiously pinnatifid, their segments ovate-oblong, sharply cut and toothed, merely connected at the base by a sort of wing from the partial rib. Dots of fructification several about the lower part of each segment, small, round, brown, not reddish. Involucrum short and oblong, or somewhat square, very delicate, whitish, jagged or fringed at its edge, affixed laterally to the nerve of each segment, and separating inwards. It is scarcely umbilicated, but rather more approaches to the nature of our *Cyathea fragilis*, *t.* 1587, and *dentata*, *t.* 1588; yet as there is some doubt respecting even their genus, and the involucrum of the present fern has nothing of a cup shape, we rather refer it, like *t.* 2024, to *Aspidium*. It does not by any means agree with the character of Bernhardi's *Cystopteris*, Schrad. New Journ. v. 1. fasc. 2. t. 2, founded on *Cyathea fragilis*.

ASPIDIUM spinulosum.

Lesser Crested Shield-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, in roundish dots, not marginal. *Involucrum* umbilicated, bursting almost all round.

SPEC. CHAR. Frond nearly bipinnate; leaflets decurrent, elliptical, serrated or pinnatifid, their segments tipped with little spines. Common stalks smooth. Ribs zigzag.

SYN. Aspidium spinulosum. *Sm. Fl. Brit.* 1124.
Polypodium spinulosum. *Retz. Prod.* 250. *Fl. Dan. t.* 707. *With.* 778. *Hull.* 239. *Sym.* 191.
P. n. 841. *Muller. Fl. Fridr.* 193. *t.* 2. *f.* 2.
Filix pumila saxatilis altera. *Pluk. Phyt. t.* 179. *f.* 5.

MR. J. T. Mackay of Dublin gathered this specimen last September in a cavern on Spike Island, near Cove, below Cork, Ireland. Dr. Scott has found the same in the north part of that kingdom. We never saw it before except in Mr. Rose's herbarium. Muller and Plukenet have figured it well, but Dr. Withering first made it known as a British plant. Probably it may have been confounded with the following species.

The root is creeping. Fronds about a foot high, each with a long slender stalk, which is quite smooth except its very base. The primary divisions are so deeply pinnatifid as to be almost pinnate; their lobes elliptical, sharply serrated or pinnatifid, thin and delicate, each incision tipped with a spine. The rib of each pinnula is very much waved or zigzag. Dots of capsules rather small, with a circular covering.

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

ASPIDIUM dilatatum.

Great Crested Shield-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, in roundish dots, not marginal. *Involucrum* umbilicated, bursting almost all round.

SPEC. CHAR. Frond bipinnate; leaflets deeply pinnatifid, sharply cut, segments tipped with little spines. Common stalks scaly. Involucrum circular.

SYN. Aspidium dilatatum. *Sm. Fl. Brit.* 1125.
Polypodium dilatatum. *Hoffm. Germ. v.* 2. 7.
P. cristatum. *Huds.* 457. *With.* 778. *Hull.* 239. *Relh.* 410. *Sibth.* 270. *Abbot.* 226. *Bolt. Fil.* 42. *t.* 23.
P. n. 845. *Muller. Fl. Fridr.* 193. *t.* 2. *f.* 4.
Filix mas ramosa, pinnulis dentatis. *Raii Syn.* 124. *Pluk. Phyt. t.* 181. *f.* 2.

IN shady moist sandy places, or moist rocky woods, not very unfrequent, producing seeds in July, and varying much in size.

The root is tuberous, scarcely creeping. Fronds from 1 to 3 feet high, broad and spreading, twice or almost thrice pinnate, their common and partial stalks all more or less scaly. Their secondary leaflets are nearly opposite, pinnate, at their base, pinnatifid upwards; the lobes small, oblong, deeply and sharply serrated or cut, their incisions spinous, their ribs less frequently zigzag than in the last. Dots of capsules numerous, distinct, with a circular covering.

June 1. 1806. Published by Jos. Sowerby. London.

ASPIDIUM cristatum.

Lesser Crested Shield-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, in roundish dots, not marginal. *Involucrum* umbilicated, bursting almost all round.

SPEC. CHAR. Frond nearly bipinnate; leaflets ovate, obtuse, crenate or pinnatifid, with sharp little terminal teeth. Stalk scaly at the base. Involucrum nearly circular.

SYN. Aspidium cristatum. *Swartz. Fil.* 52.
Polypodium cristatum. *Linn. Sp. Pl.* 1551.
P. Callipteris. *Ehrh. Crypt.* 53.

HAVING unfortunately been misled to figure a wrong plant under this name in *t.* 1949, we find it necessary now to exhibit the true one, gathered by the Rev. R. B. Francis in the low boggy parts of the heath between Holt and Hempstead, Norfolk, and to draw up our definition and description afresh.

Root tufted. Fronds pale green, 1 or 2 feet high, linear-lanceolate, the fertile ones, as Mr. Francis observes, remarkably erect, in which the leaves are more alternate than in the barren ones. The leaves (or *pinnæ*) are of moderate length, very deeply pinnatifid, acute; their segments or leaflets close, broad, obtuse, either crenate or slightly pinnatifid, their ends and lobes bearing sharp, scarcely spinous, little teeth. Ribs somewhat zigzag. Dots of capsules blackish when fresh, with a white nearly circular involucrum, the whole becoming tawny when dried. They are ranged equally in single rows along each side of every fertile leaflet. Common stalk scaly at its base chiefly.

The isle of Wight plant, *t.* 1949, is supposed to be only a variety of *A. Filix mas*, *t.* 1458, and its sweet scent, which still remains in the dried specimens, to be adventitious. Can this be what Hudson mistook for *Polypodium fragrans?* See the remark at the bottom of our *p.* 1019.

Mar 1 1810 published by J. Sowerby London

ASPLENIUM Trichomanes.

Common Maidenhair Spleenwort.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructif.* in ſcattered lines. *Involucrum* originating laterally from a vein, and burſting inwardly.

SPEC. CHAR. Frond pinnated. Leaflets roundiſh, crenate.

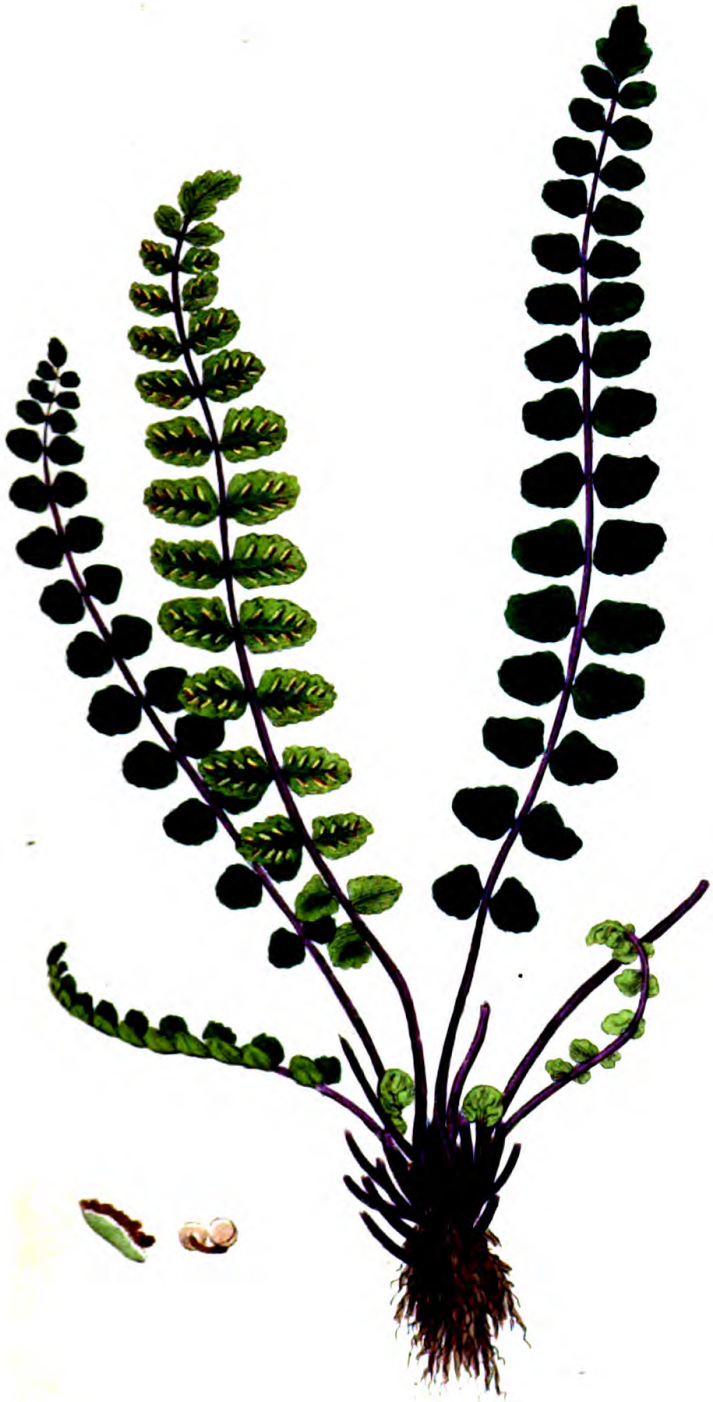
SYN. Aſplenium Trichomanes. *Linn. Sp. Pl.* 1540. *Hudſ.* 452. *With.* 768. *Relh.* 388. *Sibth.* 268. *Abbot.* 225. *Bolt. Fil. t.* 13. *Woodv. Med. Bot. t.* 204. *Dickſ. H. Sicc. faſc.* 4. 17.

Trichomanes. *Raii Syn.* 119.

NOT uncommon on ſhady rocks, old walls, the north ſide of churches and ſimilar ſituations, where its fructification may be found at almoſt all ſeaſons.

Root tufted, woolly, perennial. Fronds numerous, ſpreading, lanceolate, conſiſting of a ſmooth, dark-brown, poliſhed ſtalk, bearing many pairs of oppoſite, roundiſh, or rather ovate, crenate leaflets, of a deep green; their under ſide producing 6 or 8 oblong ſpots of fructification, whoſe covering membrane opens towards the mid-rib. The numerous capſules conſiſt of two hemiſpheres bound by an elaſtic jointed ring, as in moſt of the *Filices dorſiferæ*.

This is a pretty fern, not unworthy of a place on ſhady rockwork, and about grottos or fountains. Its medical virtues are very doubtful. It has been uſed as a ſubſtitute for the Maidenhair of warmer climates, *Adiantum Capillus Veneris*, from which a ſyrup is made, perfumed with orange-flowers, and called Syrup of Capillaire. The virtues of even this, as a cure for coughs and colds, are probably owing to the ſugar more than to the Maidenhair.



ASPLENIUM viride.

Green Maidenhair Spleenwort.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructif.* in scattered lines. *Involucrum* originating laterally from a vein, and bursting inwardly.

SPEC. CHAR. Frond pinnate; leaflets alternate, roundish-elliptic, crenate. Common stalk flattened beneath.

SYN. Asplenium viride. *Huds.* 453. *Sm. Fl. Brit.* 1127. *With.* 768. *Hull.* 241. *Dicks. H. Sicc. fasc.* 3. 18. *Lightf.* 663. *Winch. v.* 1. 97. *Bolt. Fil.* 24. *t.* 14. *Ehrh. Crypt.* 71.

β. A. Trichomanes-ramosum. *Linn. Sp. Pl.* 1541. *Bolt. Fil.* 25. *t.* 2. *f.* 3.

Trichomanes ramosum. *Bauh. Hist. v.* 3. 747. *Raii Syn. ed.* 2. 46. *ed.* 3. 119.

T. minus et tenerius. *Moris. sect.* 14. *t.* 3. *f.* 11.

FOUND on rocky mountains in Wales, Scotland, and the north of England. We have received wild specimens from Mr. Griffith and the Rev. T. Gisborne. It seems generally to prefer granite to calcareous rocks.

The present fern differs from *A. Trichomanes, t.* 576, in its paler green colour, with more yellowness in the fructification; but more essentially in the green midrib, which is flattened underneath, so as to be square, and in the alternate situation of the leaflets, whose base is besides more wedge-shaped. Sometimes the frond is divided, as in our *fig.* 2, and in this state the plant was first described, Linnæus adopting it from the older authors; but we much prefer Hudson's name to that of a mere variety. Mr. Lhwyd appears to have been one of the first British botanists who knew, and well defined, this species and its occasional variety. He described it "*Trichomanes* with a green rib, sometimes divided, and lenticular crenate leaves," before he knew that any author had noticed it.

Maund & Sowerby published by Jos. Sowerby London.

V

37.

ASPLENIUM marinum.
Sea Spleenwort.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructif.* in scattered lines. *Involucrum* originating laterally from a vein, and bursting inwardly.

SPEC. CHAR. Frond pinnated. Leaflets ovate, oblique, serrated, obtuse; unequal and wedge-shaped at the base.

SYN. Asplenium marinum. *Linn. Sp. Pl.* 1540. *Huds. Fl. An.* 453. *With. Bot. Arr. v.* 3. 53. *Discks. H. Sicc. fasc.* 7. 17. *Lightf. Scot.* 664.
Chamæfilix marina Anglica. *Raii Syn.* 119.

GATHERED by Mr. T. F. Forster, jun. on the rocks at Hastings, near the castle, where it was observed in the last century, as well as in some other parts of the south and west coast. Mr. Lightfoot found it in several places on the Scottish coast, and rightly refers to this plant Sibbald's wretched figures, *Scotia illustrata, tab.* 3. *f.* 1, 2, which have been taken for the *Adiantum trapeziforme* of Linnæus, an American fern, that has no right to a place in the British *Flora*.

Asplenium marinum grows in tufts from clefts of rocks, having a black scaly root, which throws up several lanceolate fronds, very various in degree of luxuriance, and consisting of many firm dark-green leaflets, the lower ones opposite, the rest alternate, and those about the summit confluent and decurrent. The form of these leaflets is ovate, approaching to a lozenge, the nerve dividing them unequally, as in many ferns; their base is entire, and protracted into a wedge shape; the rest of their margin is serrated, sometimes very unequally and deeply. The fructification is arranged in simple oblique lines, whose covering membrane bursts on the side looking towards the main nerve, which is proper to this genus. It may be found in perfection all summer long.


May 1st 1797 Published by J. Sowerby London

ASPLENIUM ſeptentrionale.

Forked Spleenwort.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructif.* in ſcattered lines. *Involucrum* originating laterally from a vein, and burſting inwardly.

SPEC. CHAR. Frond-wing three-cleft; ſegments alternate, linear, jagged at the points.

SYN. Aſplenium ſeptentrionale. *Hull.* 241.

Acroſtichum ſeptentrionale. *Linn. Sp. Pl.* 1524. *Hudſ.* 450. *With.* 764. *Bolt. Fil.* 12. *t.* 8. *Dickſ. Dr. Pl.* 45.

Filix ſaxatilis Tragi. *Raii Syn.* 120.

A NATIVE of clefts of rocks in ſome few mountainous parts of this iſland, as North Wales; Ingleborough, Yorkſhire, and above Amblefide, Weſtmoreland. At the Hermitage a mile ſouth of Edinburgh (a wild romantic ſpot), and upon Arthur's ſeat which overlooks that town, we have ſeen it in plenty, and it was obſerved there by Thomas Williſel in the days of Ray.

The roots are black, tufted and woody, throwing up innumerable fronds, 3 or 4 inches high, erect, rigid, ſmooth, dark-green; taper at the baſe; upward a little dilated, and cloven for the moſt part into two lateral alternate lobes or leaflets, with an intermediate terminal one, all linear, jagged at their tips. Lines of fructification oblong, each at firſt covered by a membrane originating laterally from one of the veins or ribs, and burſting toward the centre of the frond, never toward the edge; but theſe membranes are ſoon reflexed or obliterated, and the brown cluſters of capſules entirely cover the back of the leaf, which cauſed Linnæus to place it in the genus *Acroſtichum*. Mr. Yalden has well obſerved (*Lightf.* 656) that this fern and *Aſplenium Ruta muraria*, *v.* 3. *t.* 150, properly belong to one genus, and Dr. Hull has firſt rightly placed them ſo. Correct generic principles, deduced from the involucrum, confirm the propriety of this arrangement.

√

ASPLENIUM alternifolium.

Alternate-leaved Spleenwort.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructif.* in scattered lines. *Involucrum* originating laterally from a vein and bursting inwardly.

SPEC. CHAR. Frond pinnate; leaflets alternate, wedge-shaped, erect, jagged at the extremity.

SYN. Asplenium alternifolium. *Jacq. Misc. v.* 2. 51. *t.* 5. *f.* 2. *Dicks. Tr. of Linn. Soc. v.* 2. 290. *Sm. Fl. Brit.* 1130. *With.* 768. *Hull.* 241.

A. germanicum. *Weis. Gott.* 299. *Ehrh. Crypt.* 43.

Scolopendrium alternifolium. *Roth. Germ. v.* 3. 53.

Adiantum novum germanicum, rutæ murariæ facie. *Breyn. Cent.* 1. 97.

OUR good friend Mr. Dickson, whose discoveries have undoubtedly more copiously enriched the British Flora, than those of any other person since the days of Ray and Dillenius, favoured us with this specimen, gathered by himself on sunny rocks in the south of Scotland, about two miles from Kelso, on the Tweed. We are not aware that any other person in Britain has noticed the plant.

This is, as it were, an intermediate species between *A. septentrionale, t.* 1017, and *A. Ruta muraria, t.* 150, but quite distinct from both. The lanceolate form of the frond taken collectively, its brighter colour, and the numerous simply alternate leaflets, gradually smaller as they are nearest the point, are its clear characteristics. The figure of each leaflet is a narrow wedge-shape, jagged at the top, sometimes deeply divided, and very rarely indeed the lowermost is compound. The lines of fructification are short and pale.

2258.

Published by Jas Sowerby London

ASPLENIUM Ruta-muraria.

White Maiden-hair or Wall-rue.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* in ſcattered lines. *Involucrum* originating laterally from a vein, and burſting inwardly (that is towards the nerve). *Smith Mem. of the Turin Acad. Vol.* 5.

SPEC. CHAR. Frond alternately twice compound; leaflets wedge-ſhaped notched.

SYN. Aſplenium Ruta-muraria. *Linn. Sp. Pl.* 1541. *Hudſ. Fl. An.* 453. *With. Bot. Arr. V.* 3. 53. *Relh. Cant.* 389.

Ruta muraria. *Raii Syn.* 122.

OLD walls and ſhady rocks produce this little fern not unfrequently, varying much in ſize according to the degree of nouriſhment, or rather moiſture, that it meets with. The fructifications may be found early in ſummer in the beſt ſtate for examination, when the membrane which covers each line is about to burſt. The genera of ferns can only be determined in that early ſtate, as many whoſe involucra are widely different have the back of their fronds covered in an advanced ſtate with one confuſed maſs of capſules, and have hence been erroneouſly referred to the genus of Acroſtichum, as even the plant before us might be if only ſeen in ſuch a ſtate. This is not one of the moſt eaſy to be determined in any ſtate; but if carefully examined it will be found that the membrane always burſts towards an adjoining vein or nerve, and never towards the margin of the leaf without an intervening vein.

The root is perennial, of many dark thready fibres. Stalks upright. Fronds thick and rigid, a little inclined, of a dark glaucous green, ſmooth in every part. Involucrum notched in the margin.


c

41.

ASPLENIUM Adiantum-nigrum.

Black Maidenhair Spleenwort.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructif.* in scattered lines. *Involucrum* originating laterally from a vein, and bursting inwardly.

SPEC. CHAR. Frond somewhat deltoid, alternately thrice pinnated; leaflets lanceolate, sharpish, deeply serrated.

SYN. Asplenium Adiantum-nigrum. *Linn. Sp. Pl.* 1541. *Sm. Fl. Brit.* 1131. *Huds.* 454. *With.* 770. *Hull.* 242. *Relh.* 409. *Sibth.* 269. *Abbot.* 225. *Bolt. Fil.* 30. *t.* 17.

Adiantum nigrum officinarum. *Raii Syn.* 126. *n.* 10. also 127. *n.* 12, 13.

FREQUENT in dry shady hedge bottoms, about the roots of old trees, on ruined buildings and among rocks, bearing seed in the summer and autumn.

Root perennial, black and tufted. Fronds numerous, upright, a foot or thereabouts in height, firm, oblong, but assuming a deltoid or triangular figure from the elongation of their first pair of ramifications. They are throughout alternately tripinnate; the leaflets rather acutely and deeply serrated or cut, except at their base, which is entire and wedge-shaped. The colour of the frond is a darkish shining green; that of the stalk deep purple, and polished. The covers of the fructification are very conspicuous for their whiteness and abundance. Capsules red-brown.

The variety β of *Fl. Brit.* which is No. 13 of Ray's *Synopsis*, was found by Sherard in a dark cave on the mountains of Mourne, Ireland, and is preserved in his herbarium at Oxford, where, by the kind permission of Professor Williams, we have examined it. Nothing can be more delicate and elegant than the specimen. We think with Dillenius it most probably belongs to this species, and it seems analogous to the variety of *Polypodium vulgare*, called the *cambricum*, being like that finely cut and destitute of fructification.

Nov. 1.1801. Published by Jas. Sowerby London.

ASPLENIUM lanceolatum.

Lanceolate Spleenwort.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructif.* in ſcattered lines. *Involucrum* originating laterally from a vein, and burſting inwardly.

SPEC. CHAR. Frond lanceolate, alternately doubly pinnated; leaflets obovate, deeply and ſharply crenated.

SYN. Aſplenium lanceolatum. *Hudſ. Fl. An.* 454. *With. Bot. Arr. v.* 3. 54.

THIS fern, which ſeems to have been hitherto but very little known, was diſcovered by Mr. T. F. Forſter jun. on the Great Rocks at Tunbridge Wells. Specimens of it gathered by the celebrated circumnavigators of the ſame name in the Iſland of Fayal, one of the Azores, are preſerved in Sir J. Banks's herbarium. There appears to be no doubt of its being Mr. Hudſon's *A. lanceolatum*, but we dare not adopt his uncertain ſynonym of Ray; for it does not ſeem probable that the botaniſts of that day, inattentive to the fructification of ferns, would have judged the plant before us to be by any means allied to *A. Adiantum-nigrum*. Neither can we aſſent to its being *A. Trichomanes-ramoſum* of Linnæus. For although no ſpecies ſo marked is in his herbarium, and therefore it cannot poſitively be determined, it appears extremely probable he meant no other than *A. viride* of Hudſon, which has ſometimes a divided ſtem; moreover our plant is in the Linnæan herbarium, in one place paſted by M. de Sauvages to *Polypodium regium*, and in another unnamed, and laid looſe into the genus *Polypodium*, to which (having never ſeen it but in an advanced ſtate of fructification) Linnæus would doubtleſs have referred it.

The root is crowned with tufts of long narrow black ſcales. Fronds in ſize and habit ſomewhat like *Pol. fragile*, their general outline lanceolate, their colour bright green, which is but little changed by drying. Stalk ſmooth, black below, green upwards. Pinnæ lanceolate, pinnated in their lower part, lobed above; pinnulæ and lobes obovate, veiny, ſharply crenate or toothed. Fructification in lines, burſting towards their neareſt nerve, but ſometimes very ſhort, and in an advanced ſtate forming roundiſh as well as oblong patches of capſules.

V

SCOLOPENDRIUM vulgare.

Common Hart's-tongue.

CRYPTOGAMIA Filices, annulate.

GEN. CHAR. *Fructif.* in ſcattered double lines, between veins. *Invol.* ſuperficial, folding lengthwiſe over one another, ſeparating by a longitudinal ſuture.

SPEC. CHAR. Frond undivided, tongue-ſhaped; cordate at the baſe; ſmooth beneath.

SYN. Scolopendrium vulgare. *Sym. Syn.* 193.

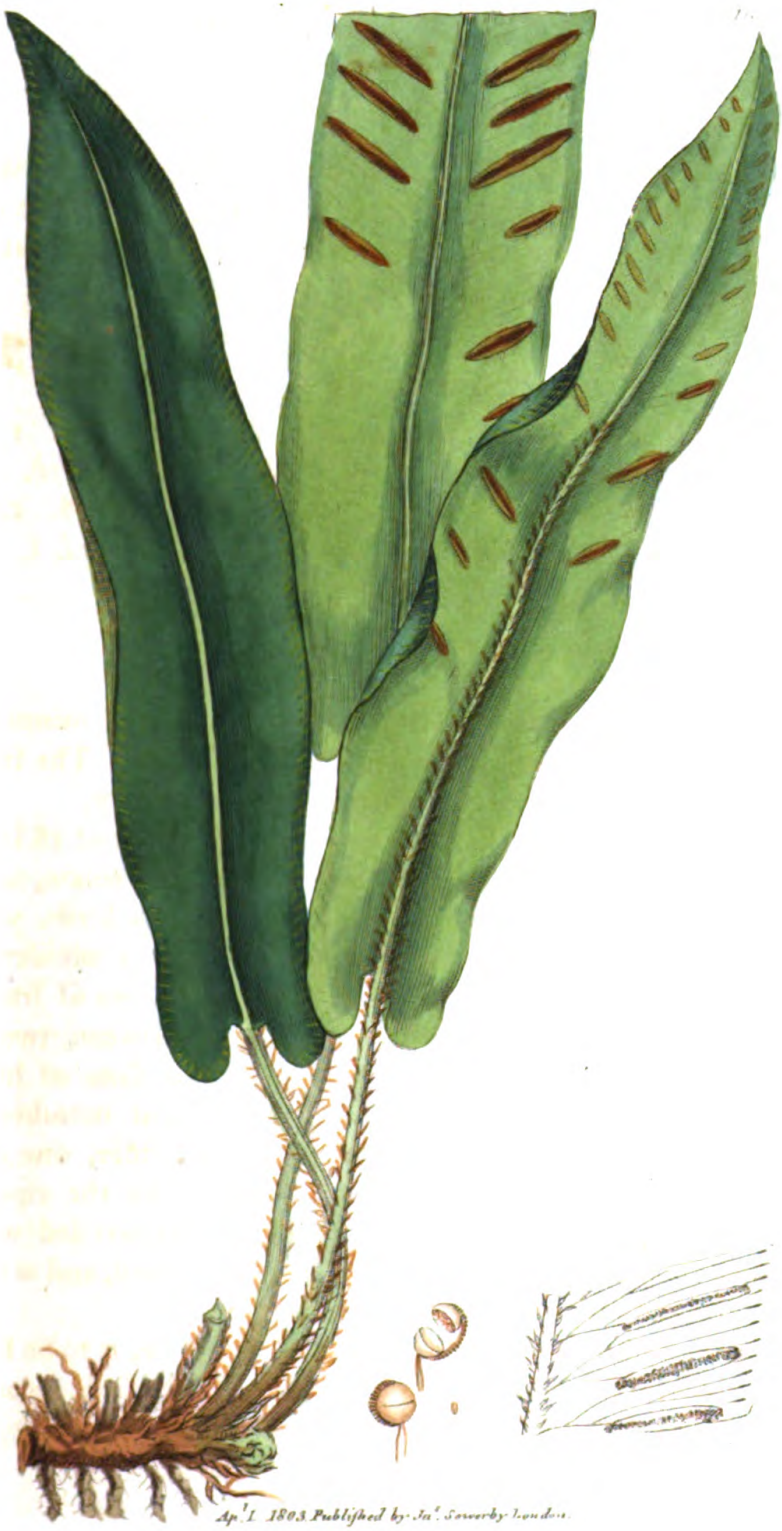
Aſplenium Scolopendrium. *Linn. Sp. Pl.* 1537. *Hudſ.* 452. *With.* 766. *Hull.* 241. *Relh.* 408. *Sibth.* 268. *Abbot.* 225. *Bolt. Fil.* 18. *t.* 11. *Curt. Lond. faſc.* 1. *t.* 67. *Woodv. Suppl. t.* 272.

Phyllitis. *Raii Syn.* 116.

COMMON about moiſt ſhady rocks, deſerted mines, the inſides of wells, and other damp hollow places. The fructification is moſt perfect for examination about July.

Root perennial, tufted. Fronds many, a foot or 18 inches high, erect, of a full graſs green, ſtalked, lanceolate, acute, entire, waved, ſmooth except the ſtalk and back rib, which are ſcaly; heart-ſhaped at the baſe; ſometimes accidentally cloven, or even branched, at the ſummit. Lines of fructification oblong, of various lengths, placed between two parallel veins, and conſiſting in fact of two lines of brown capſules, each accompanied by its own linear membranous involucrum; and as the lines are ſo cloſe together, one involucrum folds over the other, till ſeparated by the ripening fruit. Each capſule ſtands on a ſtalk, and is inveſted with a ring. The involucrum at length becomes reflexed, and is overgrown and concealed by the ripening capſules.

Although this fern, like that in our laſt plate, is to be found on the liſt of medicinal plants, its virtues are little regarded. Its juices are mucilaginous, partaking of ſome acrimony, and the ſmell of the plant is peculiarly unpleaſant.



Ap.l 1803 Published by Ja.s Sowerby London.

SCOLOPENDRIUM Ceterach.

Common Scaly Spleenwort.

CRYPTOGAMIA Filices, annulatæ.

GEN. CHAR. *Fructif.* in scattered double lines, between veins. *Invol.* superficial, folding lengthwise over one another, separating by a longitudinal suture.

SPEC. CHAR. Frond pinnatifid, lanceolate, scaly beneath.

SYN. Scolopendrium Ceterach. *Sm. Fl. Brit.* 1134. *Sym.* 193. *Roth. Germ. v.* 3. 48.
Asplenium Ceterach. *Linn. Sp. Pl.* 1538. *Huds.* 452. *With.* 767. *Hull.* 241. *Bolt. Fil.* 20. *t.* 12.
A. sive Ceterach. *Raii Syn.* 118.

LESS frequent than the other British *Scolopendrium* represented in our *t.* 1150, but still far from uncommon on calcareous rocks and walls in the west and north of England. About Bristol it has been constantly observed since the days of Ray. In Oxfordshire and even in Norfolk, it is sometimes seen on old churches or castles. It is found in fructification at all seasons, when situated in shady or moist places. We have preserved it for several years in a garden.

The root is perennial, furnished with many very black fibres. Fronds numerous, from 4 to 8 inches high, spreading, lanceolate, deeply cut into numerous alternate, entire, blunt, regular lobes; smooth and dark green above, not shining; densely covered beneath with membranous, lanceolate, reticulated, serrated, shining, rusty-coloured scales, which give this fern a very peculiar and striking appearance. The lines of capsules are numerous, bordered on each side by an entire involucrum, which however is so much concealed by the scales, as not to be discoverable without great care. The stalk of the frond is black and shining, more or less scaly.

Decr 1 1803 Published by Jas Sowerby London

BLECHNUM boreale.

Northern Blechnum.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructif.* in longitudinal continued lines, near the rib. *Involucrum* ſuperficial, continued, opening towards the rib.

SPEC. CHAR. Frond pinnated, ſmooth; its lobes linear, bluntiſh, entire, ſcarcely dilated at the baſe.

SYN. Blechnum boreale. *Swartz. in Schrad. Journ. ann.* 1800, *v.* 2. 75.

B. Spicant. *With.* 765. *Hull.* 242. *Sym.* 193. *Relh.* 407.

Oſmunda borealis. *Saliſb. Prod.* 402.

O. Spicant. *Linn. Sp. Pl.* 1522. *Hudſ.* 450. *Abbot.* 224. *Bolt. Fil.* 8. *t.* 6. *Curt. Lond. faſc.* 2. *t.* 67.

Acroſtichum Spicant. *Sibth.* 267.

Lonchitis aſpera. *Raii Syn.* 118.

A NATIVE of moiſt ſhady places, as well as of open barren and ſtony heaths, where its ſeeds are perfected in July and Auguſt.

Root perennial, black and ſcaly. Fronds ſeveral, a foot or more in height, erect, ſtraight, lanceolate, acute, ſmooth, of a deep green, formed of numerous parallel linear alternate ſegments, more or leſs cloſely ſet, entire, bluntiſh with a minute point, their baſe ſcarcely at all dilated or auricled. The ſegments of the fertile fronds are much narrower and more diſtant than thoſe of the barren ones. Innumerable capſules form a brown line cloſe to the rib of each lobe, covered when young with an uninterrupted membrane, ariſing from the ſurface of the leaf, at ſome diſtance from its margin, and opening at the ſide next the rib, being forced back by the ſwelling capſules. Each capſule is encompaſſed with a ring.

That this fern is a real *Blechnum* there can be no doubt; and of the various diſcordant ſynonyms above enumerated we truſt it will be found, on referring to the foreign ſpecies, that we have choſen the moſt expreſſive.

Mar. 1 1805 Published by Ja.s Sowerby London

46.

PTERIS aquilina.
Common Brakes.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructif.* in a marginal continued line. *Invol.* formed of the reflexed margin of the leaf itself, uninterrupted and bursting inwards.

SPEC. CHAR. Frond thrice pinnate; its segments lanceolate, bluntish; the lowermost pinnatifid; the uppermost smallest.

SYN. Pteris aquilina. *Linn. Sp. Pl.* 1533. *Sm. Fl. Brit.* 1136. *Huds.* 451. *With.* 765. *Hull.* 242. *Relh.* 407. *Sibth.* 267. *Abbot.* 224. *Bolt. Fil.* 16. *t.* 10.

Filix fœmina. *Raii Syn.* 124.

β. F. saxatilis ramosa maritima nostras. *Raii Syn.* 125. *Pluk. Phyt. t.* 182. *f.* 1.

THE most common of European ferns, growing copiously on heaths and open hilly places, as well as in thickets and woods, in all parts of our island. The root is perennial, the herb annual, springing up about April, when its unrolling scaly shoots are remarkable. It is sometimes killed down to the root by frosts in the spring, as happened all over Thetford heath this year, 1806.

The frond is erect, from 1 to 6 feet high, elegantly spreading, repeatedly compound, pinnate, its greater subdivisions more opposite than the smaller; the ultimate ones alternate, sessile, close, lanceolate, entire, rather blunt; smooth and striated above; broad at the base; their margin inflexed, jagged, hairy, covering the fructification. The barren leaflets are pale and hairy beneath. Capsules pale brown, each bound with a ring, and supported by a taper stalk. The main stem is angular and sharp-edged, cutting the hands of those who gather it unwarily. A transverse section shows the pith of a branched figure, compared by some to a spread-eagle, by others to King Charles in the oak; but rustic lovers fancy they here see the initials of their future spouse, of which there is no doubt, for the figures in question express any thing at the pleasure of the imagination. The principal use of this plant besides is for firing;

"*Neglectis urenda filix innascitur agris.*" Hor. Sat.

The delicate variety β grows on damp walls or rocks near the sea, and has rounder more distant leaflets. By culture it assumes the proper appearance of the species.

Dec.1.1806. Published by Jas. Sowerby London.

PTERIS crispa.

Curled or Rock Brakes.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructif.* in a marginal continued line. *Invol.* formed of the reflexed margin of the leaf itself, uninterrupted and bursting inwards.

SPEC. CHAR. Frond thrice pinnate; the barren leaflets wedge-shaped, cut; the fertile elliptical, obtuse, convex.

SYN. Pteris crispa. *Linn. Mss. in Sp. Pl.* 1522. *With.* 764. *Hull.* 243.

Osmunda crispa. *Linn. Sp. Pl.* 1522. *Hudf.* 450. *Lightf.* 655. *Bolt. Fil.* 10. *t.* 7.

Adiantum album crispum alpinum. *Raii Syn.* 126.

THE dry barren sides of mountains in Westmoreland, Wales and Scotland derive no inconsiderable degree of beauty from the pea-green feathery tufts of this elegant fern, which spring out of their stony crevices, sometimes in great abundance, and are strikingly different in appearance from every other British plant of the same family, looking, when young, more like the leaves of the umbelliferous tribe. The fructification is perfected in July, but "the fear the yellow leaf" remains to a late period of the year.

The root is fibrous, tufted and perennial. Fronds from 6 to 12 inches high, alternately twice or thrice pinnate, smooth, with long smooth pale stalks. Leaflets on short stalks; the barren ones wedge-shaped, veiny, cut and notched, flat; the fertile in a separate frond, elliptical, narrow, obtuse, convex, undivided, their edges a little waved, turned in, and forming the membranous wavy covering of the fructification. Capsules annulated as in the preceding.

Nothing can more strikingly evince the ignorance of systematic botanists respecting ferns than their having so long referred these two species to *Osmunda*.

May 1 1805 Published by Jas Sowerby London.

48.

ADIANTUM Capillus Veneris.

True Maidenhair.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* in roundish, marginal, distinct dots. *Involucra* like scales, from the margin of the frond turned in, distinct, opening inwards.

SPEC. CHAR. Frond doubly compound; leaflets alternate, stalked, wedge-shaped, lobed.

SYN. Adiantum Capillus Veneris. *Linn. Sp. Pl.* 1558. *Sm. Fl. Brit.* 1138. *Huds.* 460. *With.* 781. *Hull.* 243. *Lightf.* 679. *Bolt. Fil.* 24. *t.* 29. *Dicks. H. Sicc. fasc.* 6. 16.

Capillus Veneris verus. *Dill. in Raii Syn.* 123.

THIS rare and most elegant fern was gathered in the south islands of Arran near Galloway last October by Mr. J. T. Mackay. We are indebted to that gentleman, and to Dr. Scott of Dublin, for fine wild specimens.

Nothing can be more beautiful than this *Adiantum* when growing among trickling rills in the crevices of shady rocks, which it overhangs in the most graceful manner. The roots are perennial, fibrous, tufted and shaggy. Stalks from 6 to 12 or 15 inches high, slender, smooth, of a purplish shining black. Branches alternate, capillary, of the same colour. Leaflets alternate, wedge- or fan-shaped, smooth, thin, veiny, dilated upwards and unequally lobed, their summits turned back, as it were, in the form of brown scales, each of which covers a small congeries of capsules.

Feb.y 1. 1806. Published by Jas. Sowerby, London.

49.

CYATHEA fragilis.

Brittle Cup-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, roundish, growing out of an hemispherical calyx, which bursts at the top without a cover.

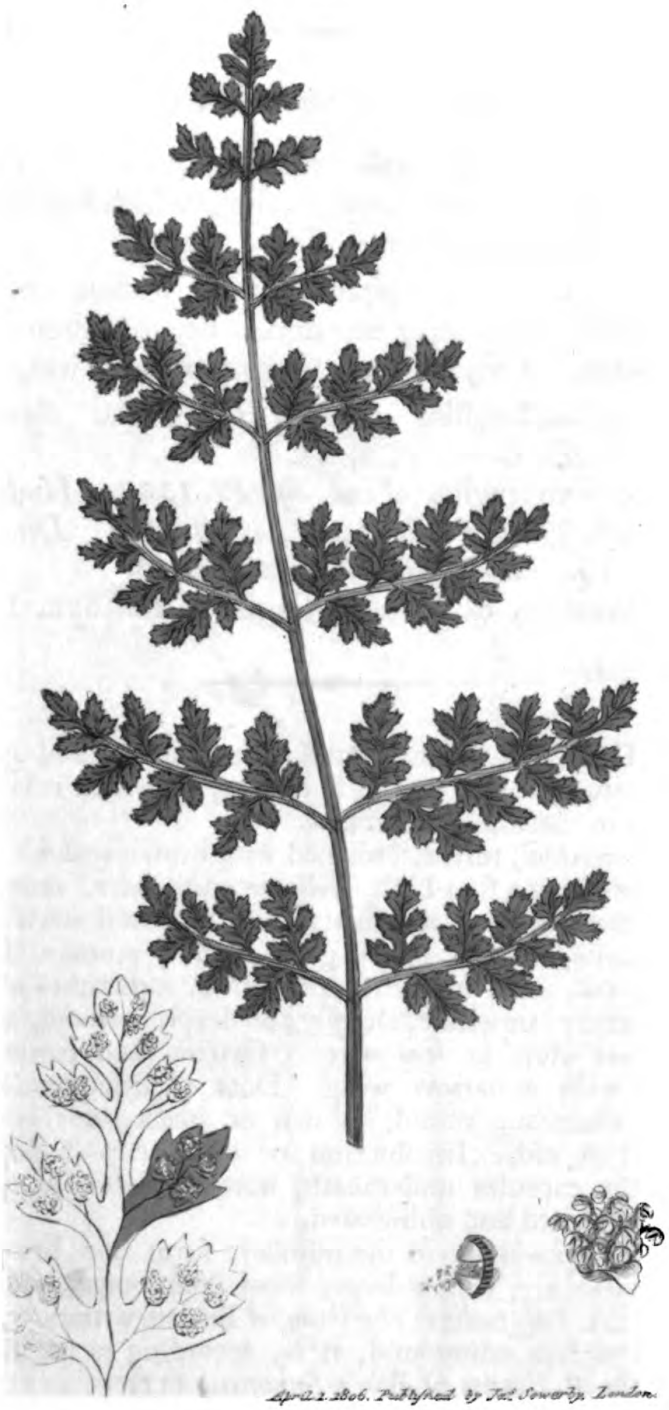
SPEC. CHAR. Frond bipinnate: its leaflets pinnatifid, sharply and deeply serrated. Fructifications a little distant. Calyx torn. Common stalks winged.

SYN. Cyathea fragilis. *Sm. Fl. Brit.* 1139. *Sym.* 194. *Roth. Fl. Germ. v.* 3. 94.
Polypodium fragile. *Linn. Sp. Pl.* 1553. *Huds.* 459. *With.* 779. *Hull.* 240. *Lightf.* 677. *Dicks. Dr. Pl.* 15. *Bolt. Fil.* 50. *t.* 27, & 46.
Filix saxatilis, caule tenui fragili. *Raii Syn.* 125.

ABUNDANT in the mountainous parts of Britain, growing on moist shady rocks, or old buildings, to which it is a great ornament in the summer months.

Root perennial, tufted, crowned with brown scales. Fronds from 4 inches to a foot high, delicate and tender, each with a smooth juicy brittle blackish stalk. The frond itself is lanceolate, acute, smooth, bright green, doubly pinnate. Leaflets alternate, cut, most frequently pinnatifid, sometimes obovate, more generally lanceolate, sharply and deeply serrated, pointed, their nerves more or less wavy. General and partial stalk bordered with a narrow wing. Dots of fructification numerous, alternate, round, brown or black, not confluent except when old. Involucrum or calyx cup-shaped, embracing the capsules underneath, bursting laterally, jagged, at length reflexed and obliterated.

No fern varies more in the number, form and breadth of its subdivisions. When large, most compound, and finely cut, it is the *Polypodium rheticum* of British writers. When smaller and less compound, it is, according to the Rev. H. Davies, the *P. ilvense* of Ray's *Synopsis*, 117.



April 2. 1806. Published by Jas. Sowerby, London.

CYATHEA incisa.

Laciniated Cup-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, roundish, growing out of an hemispherical calyx, which bursts at the top without an operculum. *Smith Mem. of the Turin Acad. vol.* 5.

SPEC. CHAR. Frond lanceolate, bipinnate, pinnatifid; its segments lobed, obtuse, and beardless. Stalk slightly winged. Calyx lacerated, and turned to one side.

WE received this fern from a wall near Walthamstow, where it was found by Mr. T. F. Forster jun. who thinks it distinct from Cyathea fragilis (Polypodium fragile of Linnæus). We dare not positively assert it to be so, but rather offer it for the consideration of botanists conversant with this intricate tribe. The chief difference consists in the divisions of the leaves of our fern being obtuse, and perfectly destitute of the bristly point observable in the other. There is also some difference in their habit and appearance, and the fructification of the fragilis is blacker. We have been inclined to believe ours the P. regium of Linnæus; but the original specimen of that in the Cliffortian herbarium has a triangular, not lanceolate, frond. Neither is ours P. alpinum of Jacquin, the divisions of which are linear, or nearly so.

With respect to the generic character, we hope to give a more clear idea of it in figuring C. fragilis, as in this the parts are too minute, and the structure too obscure; but it is essential to the genus that the young capsules are enveloped in a *globular* membrane, *which goes underneath them*, and bursts either at the top, in an even or lacerated manner, or at the side (fig. 1.) as in this species and some others.

In some specimens the fronds are broader and more dilated than those we have drawn.

CYATHEA dentata.

Toothed Cup-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* scattered, roundish, growing out of an hemispherical calyx, which bursts at the top without a cover.

SPEC. CHAR. Frond bipinnate: its leaflets ovate, obtuse, deeply and bluntly toothed, pointless.

SYN. Cyathea dentata. *Sm. Fl. Brit.* 1141.
Polypodium dentatum. *Dicks. Crypt. fasc.* 3. 1. *t.* 7. *f.* 1. *H. Sicc. fasc.* 5. 16. *With.* 776. *Hull.* 238.

FOUND only in the clefts of alpine rocks on the highest mountains of Scotland and Wales. Our specimen was communicated by the Rev. H. Davies from the last mentioned country. It grows at the foot of the walls of Castle *Dinas Bran*, Flintshire. Mr. Griffith has sent us fine specimens from Snowdon. In July it is in perfection.

This is generally smaller than the *C. fragilis*, and the frond less compound, being sometimes scarcely bipinnate. The specimen in our plate exhibits its most perfect form, which is bipinnate; the leaflets ovate, obtuse, very deeply but bluntly toothed, the teeth and termination quite destitute of any point or bristle. The main nerve of each leaflet is zigzag. The common stalk is winged towards the top only. Its base is mostly smooth, sometimes shaggy. Dots of fructification large, and soon becoming entirely confluent.

Some differences of opinion have arisen among botanists on the continent concerning my genus of *Cyathea*, for want, as I apprehend, of their being acquainted with all the species, in their different states, which form a chain from *C. arborea* to these small ones. The character consists in the calyx or involucrum, whether of 1 piece or of many, going entirely under the globular receptacle to which the capsules are fixed.

April 1 1806 Published by Sal Conway, London.

HYMENOPHYLLUM Tunbridgenſe.

Tunbridge Filmy-leaf.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* inſerted into the margin of the frond, diſtinct. *Involucrum* two-valved, flattiſh, ſtraight, opening outwards, longer than the *Column*. *Smith Mem. of the Turin Acad. vol.* 5.

SPEC. CHAR. Fronds alternately bipinnate, decurrent, ſharply ſerrated as well as the involucrum. Fructifications ſolitary at the upper edge of the baſe of each general diviſion of the frond.

SYN. Trichomanes Tunbridgenſe. *Linn. Sp. Pl.* 1561. *Hudſ. Fl. An.* 461. *With. Bot. Arr. vol.* 3. 65. Adiantum petræum perpuſillum Anglicum, foliis bifidis vel trifidis. *Raii Syn.* 123.

GATHERED near Tunbridge by Mr. T. F. Forſter jun. It grows alſo in Wales, Weſtmoreland, and the north parts of Yorkſhire, on horizontal moiſt rocks, which it clothes in large tufts. Mr. Lightfoot mentions this ſpecies as common in Scotland. The ſlender wiry roots ſpread very far, throwing out fibres here and there, and producing numerous upright leaves or fronds, which when ſometimes dried up in ſummer curl backwards. Their ſubſtance is extremely membranous and pellucid, appearing finely reticulated under a microſcope, as in all this genus (and in the real Trichomanes), their ſegments linear, obtuſe, ſharply ſerrated, and having a ſtrong ſimple central rib. The fructifications, when they occur, take place of the firſt ſegment of each *pinna* or general diviſion of the frond, each terminating its appropriate nerve, and pointing upwards. Their involucrum is of two ſlightly concave valves, ariſing from the ſubſtance of the leaf, irregularly notched and ſerrated in their margin. Between theſe is a ſhort column, beſet with ſmall round bivalve capſules, each embraced with an elaſtic ring as in the more common ferns.

The bivalve involucrum and ſhort column, ſo diſtinct from the urn-ſhaped undivided involucrum, and long column or ſtyle, of the true Trichomanes, have induced Dr. Smith to eſtabliſh this new genus in his Diſſertation on Ferns, printed by the Academy of Turin. We have attempted to give it an Engliſh name, which is a tranſlation of its Greek one.

HYMENOPHYLLUM alatum.

Wing-stalked Filmy-leaf.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* inserted into the margin of the frond, distinct. *Involucrum* 2-valved, flattish, straight, opening outwards, longer than the *column.*

SPEC. CHAR. Fronds tripinnate, lobed, decurrent; segments linear, bluntish, entire. Main stalk and branches winged. Fructifications oblong, crenate, solitary at the upper edge of the base of each subdivision of the frond.

SYN. Hymenophyllum Tunbrigense β. *Sm. Fl. Brit.* 1142.

Trichomanes pyxidiferum. *Huds.* 461. *Bolt. Fil.* 56. *t.* 30. *With.* 781. *Hull.* 243.

T. Tunbridgense var. 3. *With.* 782. *Hull.* 244.

Filix humilis repens, foliis pellucidis et splendentibus, caule alato. *Dill. in Raii Syn.* 127. *t.* 3. *f.* 3, 4.

WE have at length received specimens, one of them in fructification, of this rare fern, gathered in the county of Kerry, Ireland, by Mr. Mackay, gardener to the botanic garden at Dublin. We are now competent to describe it as a new species. That it is not the American *Trichomanes pyxidiferum* of Linnæus and Swartz, is plain from Plumier's figure, our only authority; nor does it agree with the characters of any *Hymenophyllum* in Dr. Swartz's Essay on Ferns in Schrader's Journal. It manifestly differs from *H. Tunbridgense, v.* 3. *t.* 162, in its much greater size and more compound frond, and in its main stalk being winged from the very bottom; but more especially in the margin of the segments being always entire, and in the *involucrum* or *calyx*, being oblong and cylindrical, not obovate and compressed, except towards the summit; neither is its margin serrated or toothed, but slightly and obtusely crenate. Few of our British plants have been more enveloped in doubt than this; very few could better repay the scrutiny of the curious botanist.

Published by Jas. Sowerby, London

54.

PILULARIA globulifera.

Pill-wort, or Pepper-grass.

CRYPTOGAMIA Miscellaneæ.

GEN. CHAR. *Common Receptacle* globose, with four cells and four valves, lined with numerous *antheræ*, and many globose *germens* beneath them.

SPEC. CHAR. - - - -

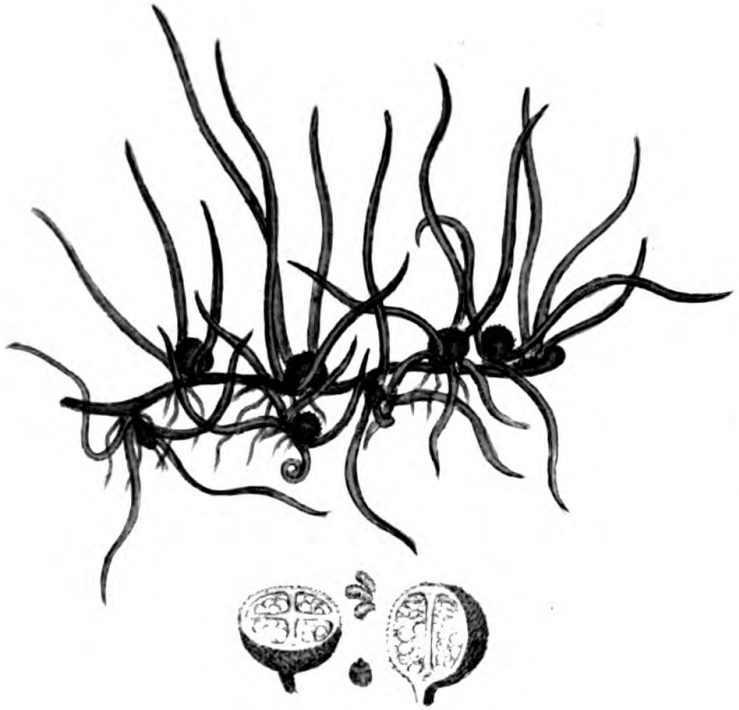
SYN. Pilularia globulifera. *Linn. Sp. Pl.* 1563. *Hudf.* 462. *With.* 760.

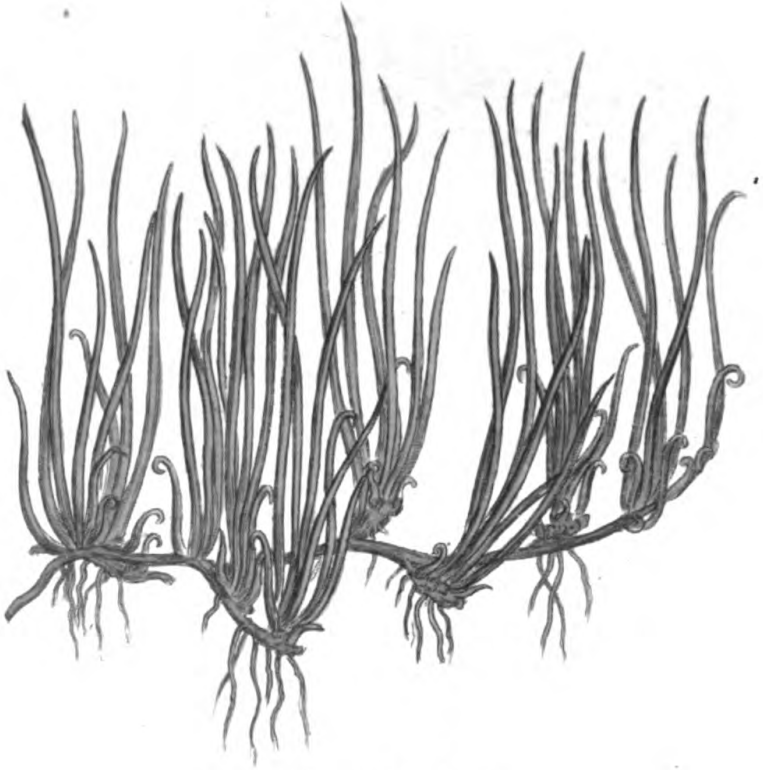
Graminifolia palustris repens, vasculis granorum piperis æmulis. *Raii Syn.* 136.

SENT from near Yarmouth by Mr. D. Turner. It grows in watery places on gravelly or sandy heaths, as at St. Faith's Newton near Norwich, as also on Hillingdon common and Hounslow heath, though by no means a general plant, for it is not mentioned in the Cambridge or Oxford Floras.

The stem is perfectly prostrate and trailing, throwing out numerous roots (supposed to be perennial) by which it creeps to a considerable extent. Leaves simple, upright, awl-shaped, narrow and smooth. Fructification resembling pepper-corns, but downy, sessile, solitary, axillary, produced from May to the end of Autumn. What at first sight seems a capsule, is, in fact, a hollow receptacle, as in the fig, which separates into four valves, and is internally divided into as many cells. The valves are lined with organs of fructification, several sessile club-shaped *antheræ* being in the upper part, and about as many oblong germens occupying the lower. Jussieu says the *antheræ* are most numerous. He also remarks that the seeds are coated. Mr. Sowerby found the germens shaped like an acorn reversed, and terminating in a small acute style.

From the above description it appears that the *Pilularia* has almost as good a right to a place among the perfect flowers as the fig, and might perhaps be ranged in the *Monœcia Polyandria*. In habit and sensible qualities it has most affinity with the *Equisetum*, *Lycopodium*, and other plants of obscure fructification, which are akin to the proper Ferns.





Nov 1, 98 Published by J. Sowerby London

ISOETES lacuſtris.

Quillwort.

CRYPTOGAMIA Filices.

GEN. CHAR. Male within the baſe of the inner leaves. *Anthera* ſolitary, ſtanding on a heart-ſhaped receptacle.

Female within the baſe of the outer leaves. *Germen* ſtanding on a heart-ſhaped receptacle. *Capſule* membranous. *Seeds* many, angular, rough.

SPEC. CHAR. Fronds awl-ſhaped ſemicylindrical. Capſules roundiſh, of two cells. Seeds granulated all over.

SYN. Iſoetes lacuſtris. *Linn. Sp. Pl.* 1563. *Hudſ.* 462. *With.* 760. *Hull.* 245. *Lightf.* 683. *Bolt. Fil.* 74. *t.* 41.

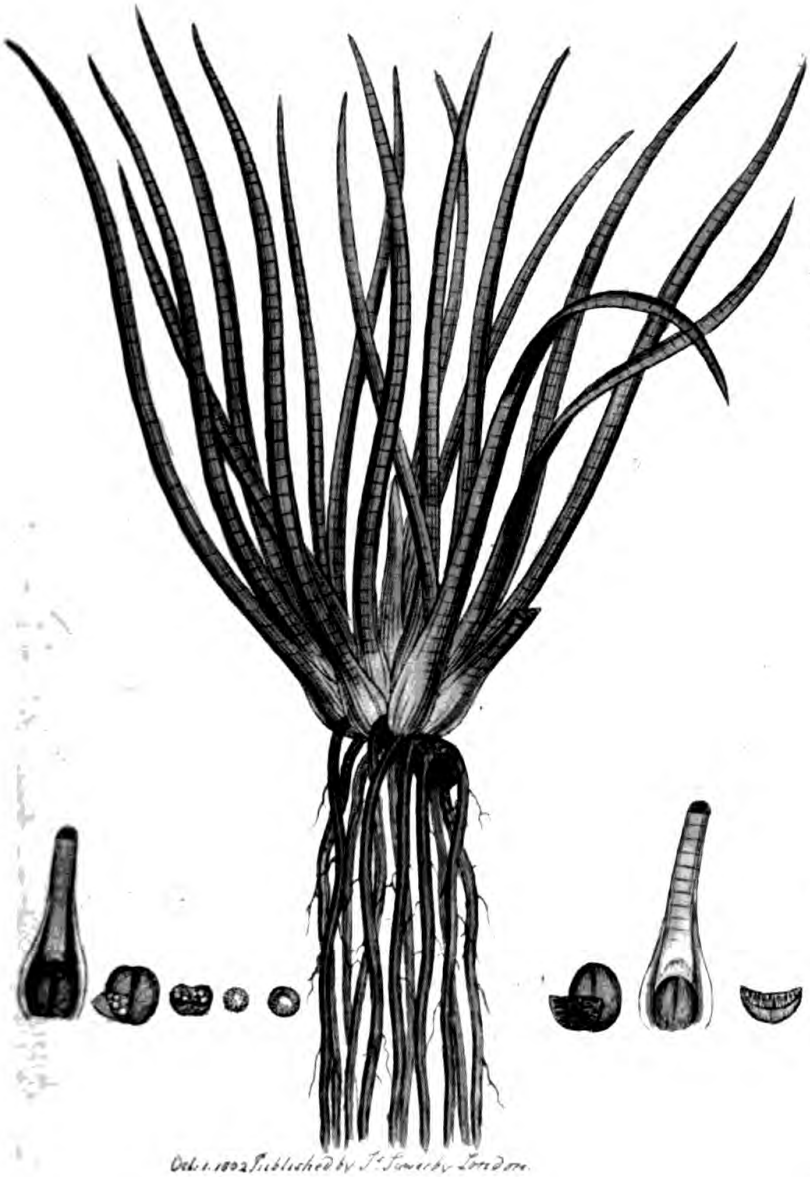
Calamaria folio breviore et craſſiore. *Dill. Muſc.* 540. *t.* 80. *f.* 1.

Subularia vulgaris erecta, folio rigidiſſimo. *Raii Syn.* 306.

QUILLWORT is only found under water about the margins of the moſt alpine Britiſh lakes, where it bears its fructification early in ſummer. We have received it from Mr. G. Donn, and from our late much eſteemed friend Mr. J. Mackay. The root is perennial, tuberous, throwing out many long, ſimple fibres. Each plant conſiſts of many ſimple, awl-ſhaped, ſemicylindrical, ſmooth fronds or leaves, rather ſpreading, and often recurved at the tip. Internally they are longitudinally divided into four cells, and furniſhed with numerous, tranſverſe *ſepta*. Their baſe is ſomewhat dilated, and bordered with a membrane, and the fructification is ſituated on the inner ſide, the inner row of leaves being male, the outer female.

The anthera and germen each ſtands on an inverſely heart-ſhaped receptacle. The capſule, when ripe, is nearly as large as a pea, immerſed in the baſe of the fronds, thin and membranous, divided into two cells, and containing numerous, ſmall, white ſeeds, covered with minute granulations.

The longer-leaved plants, repreſented in Dillenius's ſecond figure, though deſcribed by the accurate Dr. Richardſon as being remarkably brittle, and different in ſome other reſpects from the common kind, are now conſidered as a mere variety.



Oct. 1. 1802. Published by J. Sowerby, London.

56.

SPHAGNUM latifolium.

Broad-leaved Bog-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Veil* cut round, its base remaining on the base of the capsule. *Antheræ* surrounded with a ring.

SPEC. CHAR. Branches bent downwards, swelling. Leaves ovate, obtuse, concave.

SYN. Sphagnum latifolium. *Hedw. Sp. Musc.* 27. *Sm. Fl. Brit.* 1145. *Turn. Musc. Hibern.* 5.

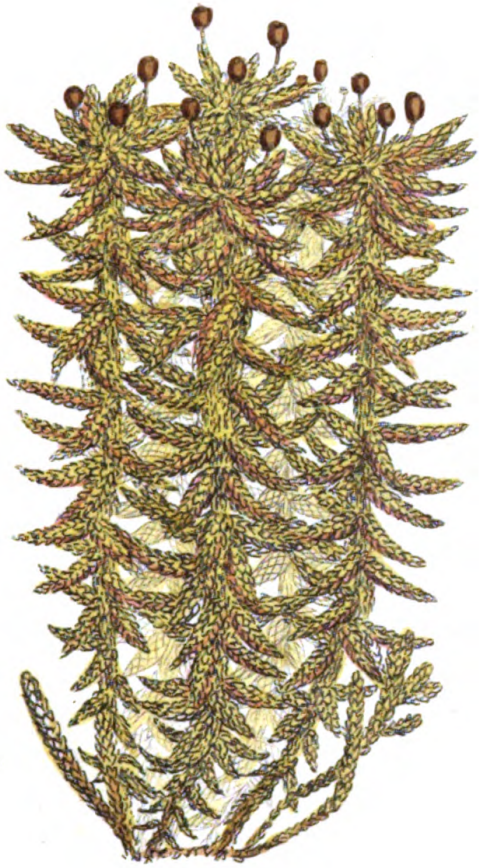
S. palustre α. *Linn. Sp. Pl.* 1569. *Huds.* 465. *With.* 783. *Hull.* 245. *Relh.* 412. *Sibth.* 273. *Abbot.* 228.

S. palustre molle deflexum, squamis cymbiformibus. *Dill. Musc.* 240. *t.* 32. *f.* 1.

S. cauliferum et ramosum palustre molle candicans, reflexis ramulis, foliis latioribus. *Dill. in Raii Syn.* 104.

THIS moss, in large soft elastic spongy tufts, covers the surface of watery turfy bogs, and is rendered conspicuous by its pale whitish-green colour, often tinged with red. The places it covers can seldom be walked upon with safety; and even when the ground is firm beneath, the moss is often filled with water like a sponge. *Droseræ*, *Erica tetralix*, and in some places the Cranberry, grow amongst it.

The fruit is chiefly to be met with in summer, but is not constantly produced. Stems erect, various in height, soft and flexible, leafy, clothed with numerous short swelling taper-pointed branches, situated in pairs, and inclining downward. Some much more slender branches, which accompany them, are closely pressed downward to the stem. Leaves imbricated, ovate, broad, obtuse, curved inward, entire, concave, without rib or veins, regularly reticulated. Fruit-stalks terminal, shortish, surrounded with new branches, swelled at the top. Capsule erect, ovate, short, smooth, cylindrical when dry. Lid almost flat. Veil thin, its circular base more or less permanent. Antheræ, according to Hedwig, surrounded by a very peculiar ring.



Jan.y 1 1806 Published by Ja.s Sowerby London.

57.

SPHAGNUM squarrosum.

Prominent-leaved Bog-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Veil* cut round, its base remaining on the base of the capsule. *Antheræ* surrounded with a ring.

SPEC. CHAR. Branches bent downwards, tapering. Leaves ovate, acute, with recurved, prominent, keeled points.

SYN. Sphagnum squarrosum. *Mohr. Ind.* 2.

NO author, as far as we are informed, has described this *Sphagnum*. It is merely mentioned in Mr. Mohr's *Index Musei Plant. Crypt.* by the above name, under which denomination we formerly received specimens gathered in *Hercynia* by our late much esteemed friend Dr. H. A. Noehden of Goettingen. We have Swedish specimens from Dr. Swartz. For its discovery in Britain we are indebted to Mr. D. Turner, who found it this summer on bogs at Belton near Yarmouth, bearing fruit in June and July.

In colour, size and general aspect at a distance this most resembles *S. latifolium*, *t.* 1405, but the tapering extremities of its branches agree with those of *S. capillifolium*, *t.* 1406. From both it differs essentially in the spreading recurved points of its broad ovate leaves, which have a central fold like a keel, and, projecting on every side, give the *squarrose* character of the species. Its capsule and fruit-stalk most agree with those of the latter, to which it is perhaps, of the two, nearest akin, differing chiefly in size, and in the breadth and posture of its leaves.

58.

SPHAGNUM capillifolium.

Slender Bog-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Veil* cut round, its base remaining on the base of the capsule. *Antheræ* surrounded with a ring.

SPEC. CHAR. Branches slender, bent downward. Leaves ovato-lanceolate, pointed, flattish, close-pressed.

SYN. Sphagnum capillifolium. *Hedw. Sp. Musc.* 28. *Sm. Fl. Brit.* 1146. *Turn. Musc. Hibern.* 6.

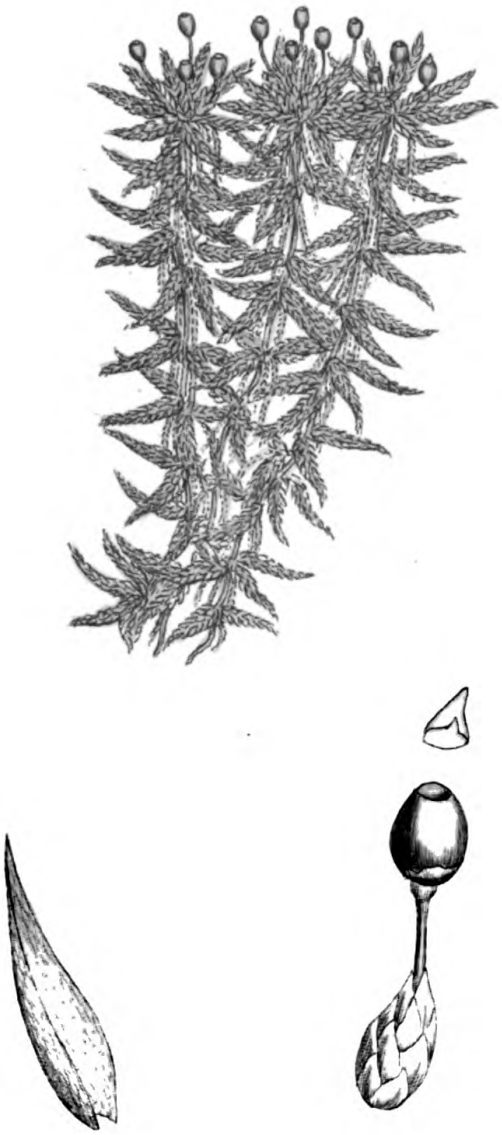
S. palustre β. *Linn. Sp. Pl.* 1569. *Huds.* 465. *With.* 783. *Hull.* 245.

S. palustre molle deflexum, squamis capillaceis. *Dill. Musc.* 243. *t.* 32. *f.* 2. A.

S. cauliferum et ramosum palustre molle candicans, reflexis ramulis, foliis angustioribus. *Dill. in Raii Syn.* 104.

NOT less abundant than the foregoing on bogs in rather mountainous places, and bearing fruit at the same season. It agrees with that in colour, but is more frequently tinged red, especially when in a dwarf state. The branches are much more slender, and generally more pendulous; at least the very slender close-pressed branches are in this species more numerous. The leaves afford a most certain distinction, being smaller, narrower, almost flat, tipped with a sharp point which varies in length. Capsule ovate, its stalk generally longer than in the last.

Mr. J. Sowerby has observed the reticulations of the leaves to be very different from those of the preceding, the little transverse veins running in pairs. A fold or keel like a nerve is frequently perceptible.



Jan.y 1. 1805. Published by Jas. Sowerby, London.

V

SPHAGNUM cuspidatum.

Long-leaved Floating Bog-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* sessile, without a fringe. *Veil* cut round, its base remaining on the base of the capsule. *Anthers* surrounded with a ring.

SPEC. CHAR. Branches spreading rather downwards. Leaves lanceolate, long-pointed, waved, lax.

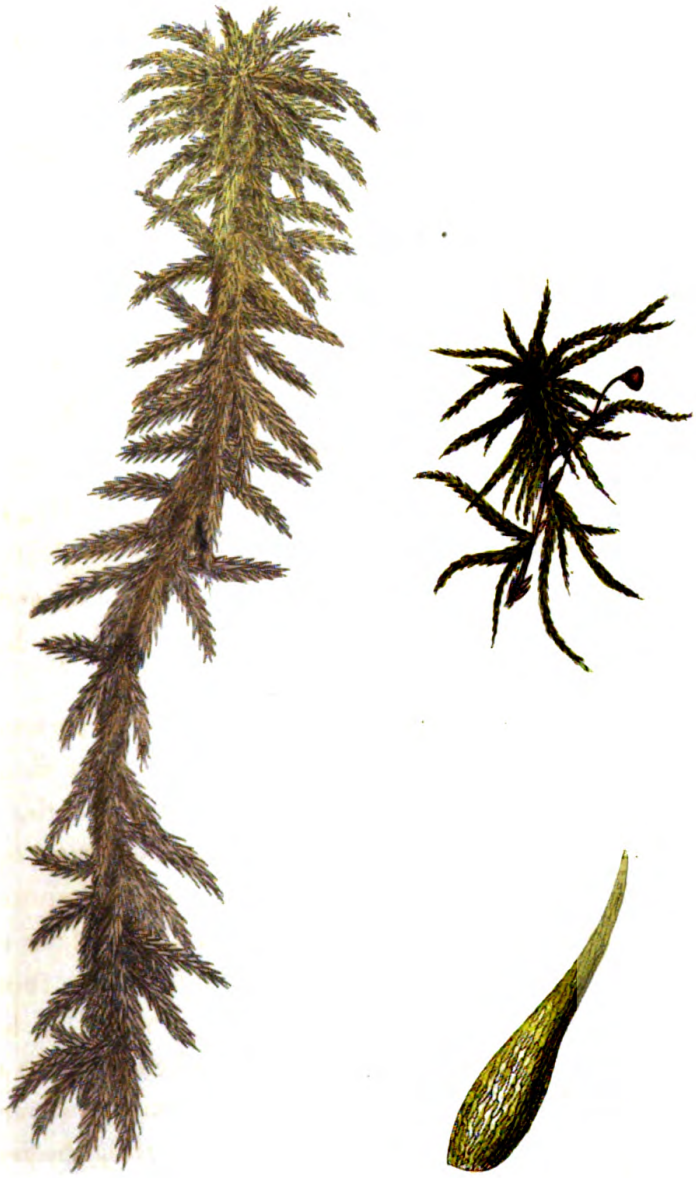
SYN. Sphagnum cuspidatum. *Hoffm. Germ. v.* 2. 22. *Sm. Fl. Brit.* 1147. *Ehrh. Crypt.* 251. *Turn. Musc. Hib.* 6.

S. palustris mollis deflexi, squamis capillaceis, varietas fluitans. *Dill. Musc.* 244. *t.* 32. *f.* 2. B.

MOST usual in mountainous countries, but Mr. Turner gathered our specimen near Yarmouth. It grows floating in pools and rivulets, bearing capsules in the middle of summer. For one of these, being of rare occurrence, we have had recourse to a German specimen.

The colour is a pale greenish grey, like the more common species, *t.* 1405, 1406; but the stems are much more elongated than in those, from their floating mode of growth. The branches are loosely directed downward, and more or less pointed. Leaves lanceolate, flattish, loosely spreading, lengthened out into an awlshaped point; their edges wavy, their substance elegantly reticulated, most like those of *S. capillifolium*, *t.* 1406. Capsule ovate, short, at length bell-shaped, on a long stalk which is thickened at the summit as in the other species. It must be observed however that this is a real flower-stalk; not a fruit-stalk, elevating the germen above the base or receptacle of the flower, as in all other known genera of mosses. The learned Mohr and Weber have remarked that the capsule is truly sessile in *Sphagnum*, and in that alone.

2092.



60.

BUXBAUMIA aphylla.

Naked-stalked Buxbaumia.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* ovate, oblique, gibbous on one side. *Outer fringe* obsolete: *inner* membranous, plaited.

SPEC. CHAR. Capsule on a granulated stalk, rising from a hairy bulb.

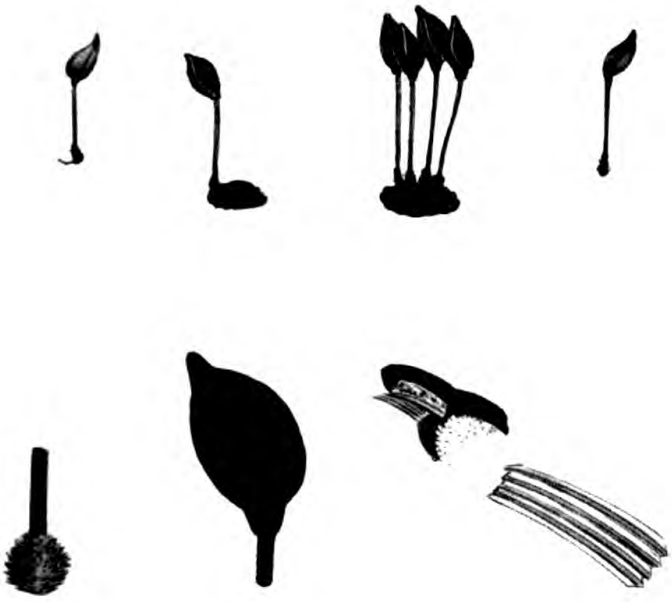
SYN. Buxbaumia aphylla. *Linn. Sp. Pl.* 1570. *Turn. Musc. Hib.* 104. *Wade Pl. Rar. Hib. cum Ic. Fl. Dan. t.* 44. *Ehrh. Phyt.* 10.

B. caulescens. *Schmid. Buxb.* 25. *t.* 1. *f.* 1—25.

Muscus capillaceus aphyllos, capitulo crasso bivalvi. *Buxb. Cent.* 2. 8. *t.* 4. *f.* 2. *Dill. Musc.* 477. *t.* 68. *f.* 5.

THIS curious moss, discovered by Buxbaum near Astracan, and since found in Sweden, Germany and Switzerland, was first mentioned as a native of Ireland by Dr. Wade. No one had observed it in Britain, though it might reasonably be expected here, till Mr. William Jackson Hooker, a young naturalist of great promise, brought me growing specimens, towards the end of December 1805, from a plantation at Sprowston, not 3 miles from Norwich on the borders of Moushold heath, where the soil is of a turfy and sandy nature. About half a score plants only have as yet been detected, though some of the most acute botanists of my acquaintance have been at the spot.

The root is presumed to be annual, and bears a bulb or knob clothed with brown hairs, which are perhaps equivalent to leaves, and among which the stamina are naturally to be expected, but no one has yet observed them. From this bulb rises a solitary, red, granulated, simple stalk, half an inch or more in height, bearing an elliptical oblique shining capsule, more or less green or red, the upper side of which shows the seeds through a semitransparent coat, the cavity in which they are lodged being oblique and lateral. The veil we have not seen. The lid is red, conical, short and obtuse. Inner fringe a plaited undivided membrane; outer, as figured by Hedwig, of 16 short blunt teeth, which look like the lacerated remains of the lid, and which do not appear in our specimens. Schmidel's exquisite figures countenance our ideas on this subject.



May 1 1806 Published by Jas Sowerby London

61.

BUXBAUMIA foliosa.

Leafy Buxbaumia.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* oblique, membranous on one side, gibbous on the other, with a lid. *Veil* deciduous.

SPEC. CHAR. Stem none. Capsule nearly sessile, surrounded with leaves.

SYN. Buxbaumia foliosa. *Linn. Fil. Meth. Musc.* 33. *t.* 1. *f.* 4. *With. Bot. Arr. v.* 3. 77. *Dicks. H. Sicc. fasc.* 2. 20.

Phascum montanum. *Huds. Fl. An.* 466.

P. maximum. *Lightf. Scot.* 693.

Sphagnum acaulon maximum, foliis in centro ciliaribus. *Dill. Musc.* 253. *t.* 32. *f.* 13.

OUR specimens of this rare moss were gathered by T. F. Forster, jun. Esq. in September 1794, on the rocks near Hamsil forge (commonly called Harrison's rocks), and on Eridge rocks, Sussex, near Tunbridge-Wells.

It grows in little patches on the upright stone, but each plant is separate from the rest, consisting of several erect leaves, the inner ones long-pointed, embracing a solitary nearly sessile capsule, which is oblique, the top pointing upwards; its orifice is ciliated with several white permanent teeth. Lid conical, with a little constriction in the middle. The veil we have not seen. The obliquity of the capsule forms its most obvious generic character.

PHASCUM subulatum.

Awl-leaved Earth-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* ovate, without any separate lid, deciduous. *Veil* minute, deciduous.

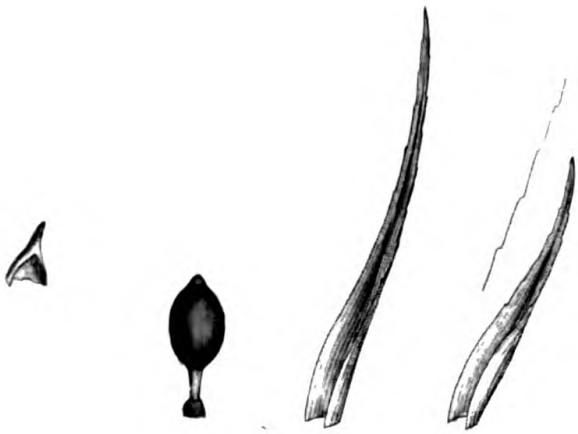
SPEC. CHAR. Stem simple. Capsule on a short stalk. Leaves awlshaped, spreading; dilated at the base; capillary at the point.

SYN. Phascum subulatum. *Linn. Sp. Pl.* 1570. *Sm. Fl. Brit.* 1149. *Hedw. Sp. Musc.* 19. *Crypt. v.* 1. 93. *t.* 35. *Huds.* 466. *With.* 785. *Hull.* 251. *Relh.* 412. *Sibth.* 272. *Abbot.* 229. *Curt. Lond. fasc.* 4. *t.* 67. *Ehrh. Crypt.* 182. *Turn. Musc. Hib.* 1.

Sphagnum acaulon trichodes. *Dill. Musc.* 251. *t.* 32. *f.* 10.

FREQUENT and abundant in shady hollows of sandy banks in woods or on heaths, bearing fruit in the early spring.

The roots are fibrous and annual. Plants forming rather loose velvet-like patches, of a lightish green hue. Stem scarcely one eighth of an inch high, simple, leafy, throwing out roots from the lower part. Leaves imbricated, numerous, spreading, awlshaped, entire, dilated and concave at the base, tapering and somewhat toothed at the point, single-ribbed. Capsule solitary, erect, brown and shining, elliptic-ovate, on a short stalk; the point pale or yellowish.



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63.

PHASCUM axillare.

Lateral-fruited Earth-Moſs.

CRYPTOGAMIA Muſci.

SPEC. CHAR. *Capſule* ovate, without any ſeparate lid, deciduous. *Veil* minute, deciduous.

SPEC. CHAR. Stem ſimple, leafy. Leaves awl-ſhaped, keeled, ſpreading. Fruit-ſtalk lateral. Capſule elliptical, drooping.

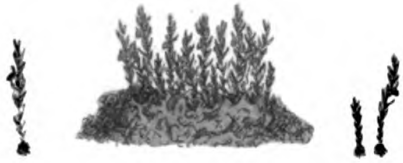
SYN. Phaſcum axillare. *Dickſ. Crypt. faſc.* 1. 2. *t.* 1. *f.* 3.

P. nitidum. *Hedw. Crypt. v.* 1. 91. *t.* 34. *Sp. Muſc.* 19. *With.* 787. *Hull.* 252.

FIRST diſcovered by Mr. Dickſon in moiſt places upon heaths. We gathered theſe ſpecimens in Kenſington gardens early in March.

The root is fibrous. Stem ſolitary, ſimple, leafy, flowering when about a line in height; but being immediately extended two or three lines higher in one ſimple continued branch, the fruit-ſtalk becomes lateral, or apparently axillary; and this circumſtance affording a peculiar and ſtriking mark of the ſpecies, we prefer Mr. Dickſon's name *axillare*, as more expreſſive as well as older than Hedwig's; though we are well aware of the truth of that great phyſiologiſt's obſervation, that the fructification in this, as in other *Phaſca*, is originally terminal. The leaves are numerous, alternate, rather ſpreading, awl-ſhaped, keeled, entire, beardleſs, of a tranſparent bright green. Fruit-ſtalk ſhorter than the leaves, moſtly ſolitary, rarely (as Hedwig alſo obſerves) two together, recurved. Capſule elliptical, pointed, brown when ripe.

1036



June 1 1802. Published by Jas. Sowerby, London

64.

PHASCUM patens.

Spreading Earth-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* ovate, without any separate lid, deciduous. *Veil* minute, deciduous.

SPEC. CHAR. Stem short. Capsule globular. Leaves lanceolate, spreading, serrated towards the top.

SYN. Phascum patens. *Hedw. Sp. Musc.* 20. *Crypt. v.* 1. 28. *t.* 10. *Sm. Fl. Brit.* 1150. *Roth. Germ. v.* 3. 112. *Dicks. Crypt. fasc.* 4. 2.

β. P. recurvifolium. *Dicks. Crypt. fasc.* 4. 1. *t.* 10. *f.* 2.

SPECIMENS of this little moss have been sent us by Mr. Templeton from Ireland. They were found in August 1800, in a dry drain. It has already been observed in England, on a clay soil in shady places.

The plants grow together in great numbers, but not closely crowded, forming a beautifully verdant fairy turf. Root annual. Stem erect, very short, red, most leafy at the top. Leaves very much spreading, and more or less recurved, various in breadth, lanceolate, acute, beardless, of a light shining green, furnished with a single rib, serrated, especially towards the extremity. Fruit-stalk terminal, short, straight, sheathed at the base. Capsule erect, globular, brown, with a pale tip. Veil brown, sharp-pointed.

The variety β, according to Mr. Turner, differs merely in having more recurved leaves, which are broadest in their upper part and contracted from thence to the base.

March 1. 1804. Published by Jas Sowerby London.

65.

PHASCUM strictum.

Upright Earth-moss.

CRYPTOGAMIA Musci.

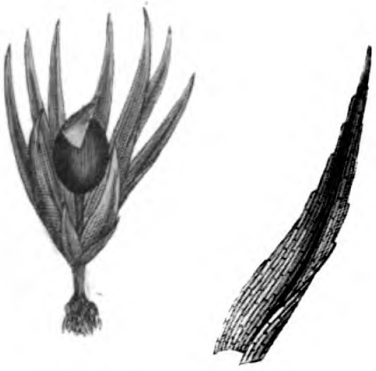
GEN. CHAR. *Capsule* ovate, without any separate lid, deciduous. *Veil* minute, deciduous.

SPEC. CHAR. Stem very short. Capsule ovate. Leaves awl-shaped, upright, straight, slightly serrated.

SYN. Phascum strictum. *Dicks. Crypt. fasc.* 4. 1. *t.* 10. *f.* 1. *Sm. Fl. Brit.* 1151.

MR. DICKSON only seems to have gathered this species of the minute genus *Phascum*, and we are obliged to him for the specimens described in the *Flora Britannica*, and delineated here. He mentions alpine bogs in Scotland as its native station.

The root is annual, fibrous, tufted. Plants not a line in height, with scarcely any stem, growing in tufts, of a dark, dull, or blackish, green. Leaves several, erect, straight, or slightly incurved, awl-shaped, single-ribbed, reticulated, furnished towards the point with a few shallow serratures, visible only by the help of a high magnifier. Fruit-stalk solitary, erect, short. Capsule ovate, dark brown when ripe, greatly overtopped by the leaves.



Mas. 1 Sp. 1. P. cochleodora.

PHASCUM piliferum.

Bearded Earth-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* ovate, without any separate lid, deciduous. *Veil* minute, deciduous.

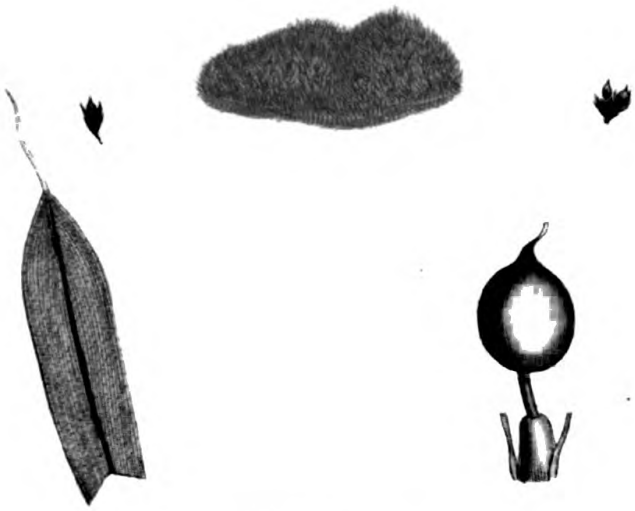
SPEC. CHAR. Stem simple or branched. Leaves ovate-oblong, erect, tipped with a bristle. Capsule globose, upright.

SYN. Phascum piliferum. *Schreb. Phasc.* 8. *t.* 1. *f.* 6—10. *Sm. Fl. Brit.* 1151. *Hedw. Sp. Musc.* 20. *Dicks. Crypt. fasc.* 2. 1. *Hull.* 252.

FOUND in barren places among short grass. Mr. Dickson first observed it near London. Mr. G. Don sent it from near Forfar in North Britain. It is annual, bearing capsules in the early spring, after which it entirely disappears till the following year. Schreber says it prefers a clay soil.

The plants are each furnished with a short, simple or divided stem, and form broad dense tufts of a lightish green or reddish colour, rendered somewhat hoary by the hair-like points of their foliage. Each leaf is ovate, or ovate-oblong, entire, keeled, upright, tipped with a slender bristle. When dry the leaves fold closer together, with a slight twist, but are not curled. Capsule solitary, central, on a short stalk bulbous at the base, upright, globular, crowned with the veil in many of our specimens which are not quite arrived at maturity.

1888



May 1, 1808. Publish'd by Ja.s Sowerby, London.

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67.

PHASCUM crispum.

Curled-leaved Earth-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* ovate, without any separate lid, deciduous. *Veil* minute, deciduous.

SPEC. CHAR. Stem branched. Stem-leaves very small, alternate; the floral ones awlshaped, curled and twisted when dry. Capsules several.

SYN. Phascum crispum. *Hedw. Sp. Musc.* 21. *Crypt. v.* 1. 25. *t.* 9. *Sm. Fl. Brit.* 1151. *Dicks. Crypt. fasc.* 4. 2. *Turn. Musc. Hib.* 2.

GATHERED near Bedford by the Rev. Dr. Abbot, and communicated to Mr. Sowerby in January 1805. It is annual, bearing fruit in the winter or early spring.

The stems grow in tufts, and are mostly branched, spreading, leafy, about a quarter of an inch high. Leaves light green, often yellowish, entire; the lower ones extremely small, alternate, lanceolate, concave; the upper ones gradually larger and closer: the floral leaves much the largest, clustered, single-ribbed, long-pointed, much curled and twisted when dry; dilated and pale at the base. Capsules few, terminal, nearly sessile, erect, elliptical, with a little oblique point, brown when ripe. Veil with a longish summit.

This being now ascertained as the true *Phascum crispum*, it is necessary to apply the following synonyms and character to our *tab.* 618.

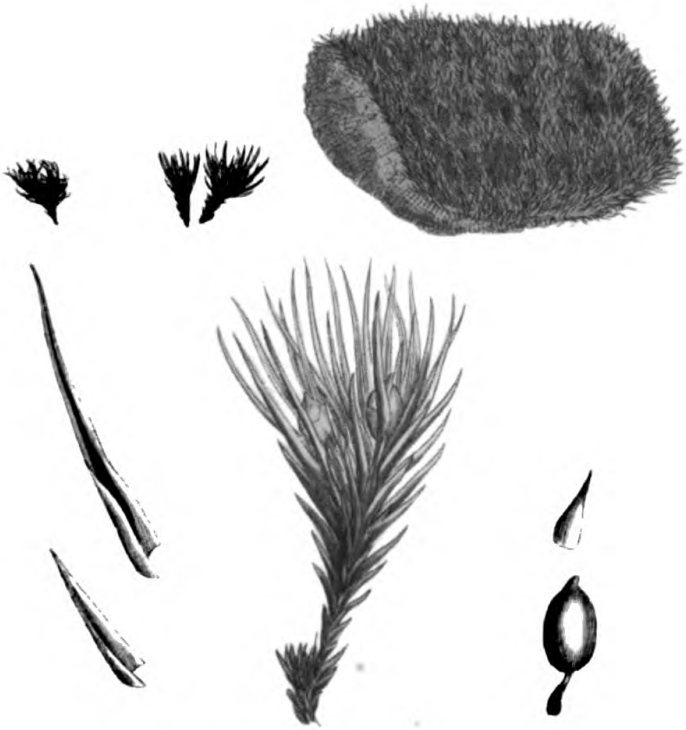
PHASCUM multicapsulare.

Many-fruited Earth-moss.

SPEC. CHAR. Stem branched. Stem-leaves alternate; the floral ones linear-lanceolate, straight. Capsules numerous.

SYN. Phascum multicapsulare. *Sm. Fl. Brit.* 1152.
Ph. sphaerocarpon. *Abbot.* 250.
Ph. crispum. *Swartz. Musc. Suec.* 17.

THIS is commonly of a duller green, and has much more numerous capsules. The floral leaves are more lanceolate, not contracting suddenly, and do not curl in the same manner by drying.



Dec.r 1.1806. Published by Ja.s Sowerby London.

PHASCUM crispum.

Curled Clustered Phascum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* ovate, without any separate lid. *Veil* minute, deciduous.

SPEC. CHAR. Stem-leaves minute, scattered; floral-leaves clustered, elongated, pointed, incurved, entire.

SYN. Phascum crispum. *Hedw. Musc. v.* 1. *t.* 9.

DISCOVERED at Ampthill, Bedfordshire, in March 1799, by the Rev. Mr. Abbot, to whom we are obliged for this specimen.

From Hedwig's excellent figure and description, there can be no doubt of its being his P. *crispum*, though he describes some of the floral leaves more incurved and contorted than we have found them.

This little moss grows in rather fertile places, especially (as Hedwig says) upon old mole-hills. It flowers in the beginning of winter, and ripens its capsules, with us at least, in April.

The roots are fibrous and much branched. Stems about a quarter of an inch high, simple or branched, spreading, clothed with minute, scattered, entire leaves, and crowned with a thick tuft of much longer, taper-pointed leaves, whose points are often incurved or contorted, especially when dry. The numerous capsules stand almost sessile among these long leaves, and are elliptical, with a minute beak, and a slender tapering veil.

Aug.1.1796 Published by Sr. Joseph Banks London.

69.

PHASCUM curvicollum.
Crooked-ſtalked Earth-Moſs.

CRYPTOGAMIA Muſci.

GEN. CHAR. *Capſule* ovate, without any ſeparate lid, deciduous. *Veil* minute, deciduous.

SPEC. CHAR. Stem none. Leaves lanceolate, bearded, ſpreading. Capſule elliptical, terminal, on a recurved ſtalk.

SYN. Phaſcum curvicollum. *Hedw. Crypt. v.* 1. 31. *t.* 11. *Dickſ. Crypt. faſc.* 2. 1. *H. Sicc. faſc.* 4. 20. *With.* 786. *Hull.* 252. *Schrad. Spicil.* 58.

FOUND on dry graſſy ſpots near Croydon by Mr. Dickſon, to whom we are obliged for this ſpecimen.

It grows in patches. The root is formed of numerous fibres. Leaves all radical, lanceolate, entire, furniſhed with a red prominent midrib, which terminates in a taper beard or *ariſta*. From the centre of the leaves ſprings a ſolitary naked ſtalk, about their own length, browniſh, ſoon becoming recurved, ſo as to bury in the earth the fruit it bears, which is a ſmall brown capſule, exactly elliptical, terminated by a ſhort ſlightly oblique point. The veil is ſhort and conical, ſoon falling off.

The ripe capſule is to be found about May.

Having in our 5th volume unluckily miſtaken another plant for this, which with regard to ſuch minute objects it is hoped may be pardoned, we would wiſh to change the ſynonyms and characters given at *t.* 330, for the following.

PHASCUM rectum.
Long-ſtalked Earth-Moſs.

SPEC. CHAR. Stem none. Leaves ovate, beardleſs, ſpreading. Capſule ovate, tapering at each end, terminal, on a ſtraightiſh ſtalk.

SYN. Phaſcum rectum. *With.* 787. *t.* 18. *f.* 1. *Hull.* 252.

WE have received this from Newmarket and Denbighſhire. It differs from *P. curvicollum* in having beardleſs, though pointed, leaves, a longer and nearly upright ſtalk, and longer, pointed capſule.

July 1. 1801. Published by Jas Sowerby, London.

70.

PHASCUM curvicollum.
Crooked Phascum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* with a lid, the mouth ciliated. *Veil* minute, deciduous.

SPEC. CHAR. Stem none. Capsules on curved stalks. Leaves ovato-lanceolate, acuminated, spreading.

SYN. Phascum curvicollum. *Dicks. Crypt. fasc.* 2. 1. *With. Bot. Arr. v.* 3. 73. *Relh. Cant. fasc.* 3. 8.

GATHERED by the Rev. Mr. Hemsted on a dry bank near Newmarket; Mr. Dickson found it on barren grassy spots near Croydon. It ripens its fruit in April or May, and may probably be not uncommon, though so minute as to be rarely perceived.

Each plant is simple, with a fibrous root, a few lanceolate, entire, pointed, pellucid, spreading leaves, which vary in breadth, and from the centre of which arises a short, reddish, curved and recurved stalk, bearing a roundish capsule of the same colour. The lid ascends obliquely. The veil is more considerable and permanent than the generic character seems to require, nor can we discover any satisfactory reason why this plant should not be esteemed a *Bryum*, though for the present we leave it where the most accurate judges have placed it, at least till some more solid generic characters of mosses can be discovered.

PHASCUM bryoides.

The Earth-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* ovate, without any separate lid, deciduous. *Veil* minute, deciduous.

SPEC. CHAR. Stem simple. Leaves ovate, hair-pointed, upright. Capsule elliptical, beaked. Fruit-stalk erect, straight.

SYN. Phascum bryoides. *Dicks. Crypt. fasc.* 4. 3. *t.* 10. *f.* 3. *Sm. Fl. Brit.* 1154.

FOR this singular *Phascum*, whose long stalk gives it so much the appearance of a *Bryum*, we are obliged to the Rev. Dr. Abbot, who found it at Clapham springs, Bedfordshire. Mr. Dickson mentions "heaths and woods" as its natural places of growth, without specifying any particular spot. It is annual, ripening its fruit in the spring.

This is one of the largest species of the genus. The root consists of numerous fibres. Stem erect, various in length, simple, leafy. Leaves imbricated, very little spreading, lanceolate or inclining to ovate, entire, tipped with a bristle, and keeled with a strong nerve. Stalk terminal, upright and firm, reddish, exceeding the stem in length. Capsule erect, brown, smooth, of a broadish elliptical figure, tipped with a lighter-coloured, tapering, rather inclined, lid, which does not fall off, but the seeds escape from the capsule by its decaying or being accidentally torn. Veil tapering, pale.

March 1 1804 Published by Jas Sowerby London.

72.

[2259]

PHASCUM curvisetum.

Short bent-stalked Earth-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* ovate, without any separate lid, deciduous. *Veil* minute, deciduous.

SPEC. CHAR. Stem very short, nearly simple. Leaves oblong, hair-pointed. Capsule globose. Fruit-stalk very short, bent.

SYN. Phascum curvisetum. *Dicks. Crypt. fasc.* 4. 2. *t.* 10. *f.* 4. *Sm. Fl. Brit.* 1154. *Turn. Musc. Hib.* 3.

FOUND by Mr. Dickson in cultivated ground near Croydon, Surrey, in the early spring. The Rev. Dr. Abbot informs us he has gathered the same near Bedford.

The little short stems, sometimes, though rarely, divided, grow in tufts, overtopped by their crowded, ovate-oblong, concave, entire leaves, which stand almost upright, and have each a keel formed by a mid-rib, terminating in a short hair. Fruitstalks terminal, solitary, very short, and soon bent to one side with an angle. Capsule globose with something of a point, smooth, red brown, not rising so high as the leaves, but turned to one side. The veil is whitish, deeply torn, soon cast off, as in others of the genus, because of its own narrow dimensions, and the very tumid capsule.

This is nearly related to *P. cuspidatum*, *t.* 2025, and still more nearly perhaps to *Schreberianum*, *t.* 2026, but we believe all the three to be distinct.

Mar 1 1821 published by Jos. Sowerby London.

73.

PHASCUM cuspidatum.

Sharp-leaved Dwarf Earth-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* ovate, without any separate lid, deciduous. *Veil* minute, deciduous.

SPEC. CHAR. Stem slight. Leaves ovate, concave, hair-pointed; the upper ones folding over each other. Capsule broad-oval, nearly sessile.

SYN. Phascum cuspidatum. *Hedw. Sp. Musc.* 22. *Sm. Fl. Brit.* 1155. *Relh.* 413. *Sibth.* 273. *Abbot.* 229. *Ehrh. Crypt.* 162. *Turn. Musc. Hib.* 3.

P. acaulon. *Linn. Sp. Pl.* 1570, α. *Huds.* 466, α. *With.* 784. *Hull.* 251. *Curt. Lond. fasc.* 4. *t.* 66. *Fl. Dan. t.* 249. *f.* 3.

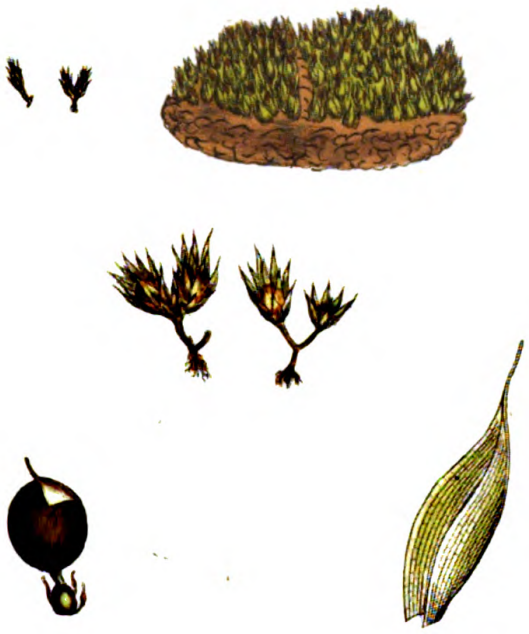
Sphagnum acaulon bulbiforme majus. *Dill. Musc.* 251. *t.* 32. *f.* 11.

S. acaulon, foliis in bulbi formam congestis, majus. *Raii Syn.* 105.

COMMON on sandy or gravelly banks, heaths or neglected garden walks, in the month of March. It forms broad even patches, conspicuous enough, and readily recognized.

The root is apparently annual, though it often makes offsets. Stems short, simple, though not always solitary. Leaves pale green, almost white at their base, crowded, ovate, concave, entire, pointed, furnished with a strong mid-rib and tipped with a hair; all imbricated or folded together, except the small lower ones. Capsule on a short oblique fruit-stalk springing from a bulb, oval, broad, indeed almost globular, brown, smooth, quite concealed by the leaves. The minute veil may be seen in our figure, crowned with the style, and sticking to the top of the capsule. Some abortive flowers surround the base of the bulb.

2025



June 1 1809 published by J. Sowerby London

74.

PHASCUM Schreberianum.

Schreberian Earth-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* ovate, without any separate lid, deciduous. *Veil* minute, deciduous.

SPEC. CHAR. Stem elongated and branched. Leaves oblong, flattish, hair-pointed, erect. Capsule globose, nearly sessile.

SYN. Phascum Schreberianum. *Dicks. Crypt. fasc.* 4. 2. *Sm. Fl. Brit.* 1155.

P. cuspidatum. *Schreb. Phasc.* 8. *t.* 1. *f.* 1—5, exclusive of the quotation of Dillenius, which belongs to our *t.* 2025.

COMMUNICATED by Mr. William Backhouse, from wet barren fields near Darlington, in the spring. Mr. Dickson first distinguished this from the moss in our preceding plate, from which it seems distinct, though some of our most observing friends judge it a variety caused by luxuriance and moisture of soil.

It differs in being much larger, taller and decidedly branched, each stem, which is leafy throughout, bearing several capsules; but especially in its flatter and more elongated leaves, which often spread so as to expose the fruit. In other respects we find no material difference, and Mr. Turner thinks he has traced it, by intermediate specimens about Yarmouth, to the preceding.

2021

June 1809 published by J. Sowerby London

75.

PHASCUM muticum.

Common Dwarf Earth-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* ovate, without any separate lid, deciduous. *Veil* minute, deciduous.

SPEC. CHAR. Stem none. Leaves ovate, concave, closely imbricated, beardless; the upper ones serrated towards the point. Capsule globose, nearly sessile.

SYN. Phascum muticum. *Schreb. Phasc.* 8. *t.* 1. *f.* 11—14. *Sm. Fl. Brit.* 1156. *Linn. MSS. in Sp. Pl.* 1570. *Hedw. Sp. Musc.* 23. *With.* 784. *Hull.* 251. *Ehrh. Crypt.* 172. *Turn. Musc. Hib.* 3.

P. acaulon β. *Linn. Sp. Pl.* 1570. *Huds.* 466.

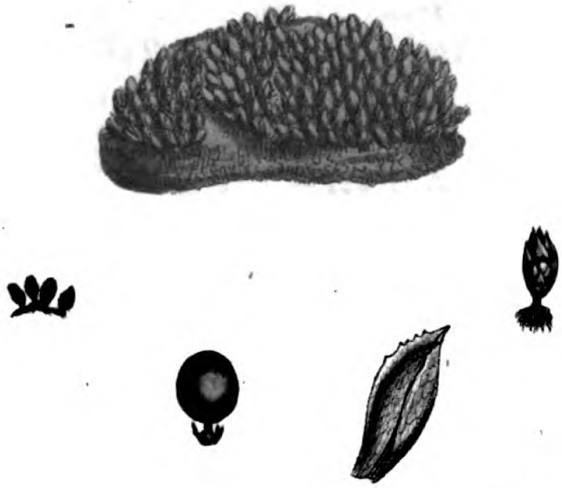
Sphagnum acaulon bulbiforme minus. *Dill. Musc.* 252. *t.* 32. *f.* 12.

S. acaulon, foliis in bulbi formam congestis, minus. *Dill. in Raii Syn.* 105.

VERY common upon sandy banks and heaths in winter and early spring. It is an extremely small species, though larger than *P. serratum*, *t.* 460, and growing in broad dense patches is easily observable. Its general hue is usually a more tawny and shining green than *P. cuspidatum*, *t.* 2025, with which it was formerly, but very improperly, confounded.

Root annual, creeping. Stem absolutely wanting. Leaves cohering into an oval shape resembling a little bulb, each of them ovate, concave, with a mid-rib and minute recurved point, though no terminal hair. They have been thought entire, but Mr. J. D. Sowerby has found some of the upper or inner ones more or less deeply serrated towards the point. Capsule globular, quite hidden by the leaves, very nearly sessile.

2027



Jun. 1. 1820 Publ.d by J.s Sowerby London

76.

PHASCUM ferratum.

Serrated Phaſcum.

CRYPTOGAMIA Muſci.

GEN. CHAR. *Capſule* ovate, without any ſeparate lid. *Veil* minute, deciduous.

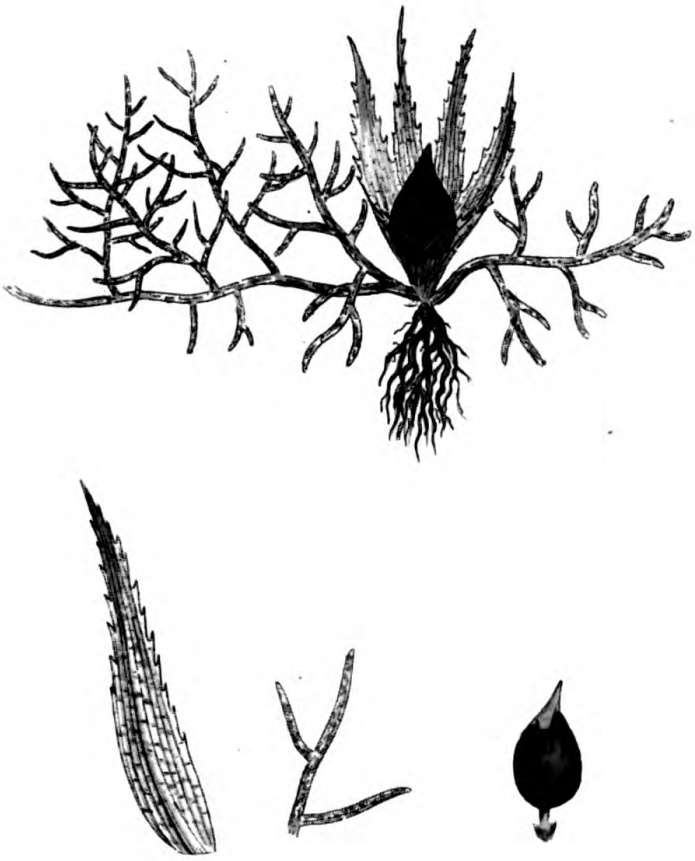
SPEC. CHAR. Shoots capillary, jointed, branched. Capſule ſurrounded with lanceolate ſerrated leaves riſing above it.

SYN. Phaſcum ſerratum. *Dickſ. Crypt. faſc.* 1. *t.* 1. *f.* 1. *With.* 785.

THIS minute vegetable, hardly viſible to the naked eye, was firſt diſcovered in England by Mr. Dickſon, on the north ſide of Muſwell-hill near Highgate. Our ſpecimens were gathered in Cambridgeſhire, by the Rev. Mr. Hemſted, in March laſt.

It forms tufts of pellucid green jointed filaments, very much reſembling a *Byſſus* at firſt ſight, but, when highly magnified, as in our figure, aſſuming the appearance of a *Conferva*. From the common origin of theſe filaments, near the crown of the little root ariſe about four erect lanceolate reticulated and ſerrated pellucid leaves, enveloping an almoſt ſeſſile ovate brown capſule, tapering to a paliſh point, but without any ſeparating cover or lid. The veil, which Mr. Dickſon mentions not having ſeen, is ſmall, oblique and ſharply pointed.

At page 330 of this work we have been led by Linnæus into an error concerning the generic character of *Phaſcum*, which is here corrected.



March 1. 1790 Published by J. Sowerby, London.

PHASCUM stoloniferum.

Branching-rooted Earth-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* ovate, without any separate lid, deciduous. *Veil* minute, deciduous.

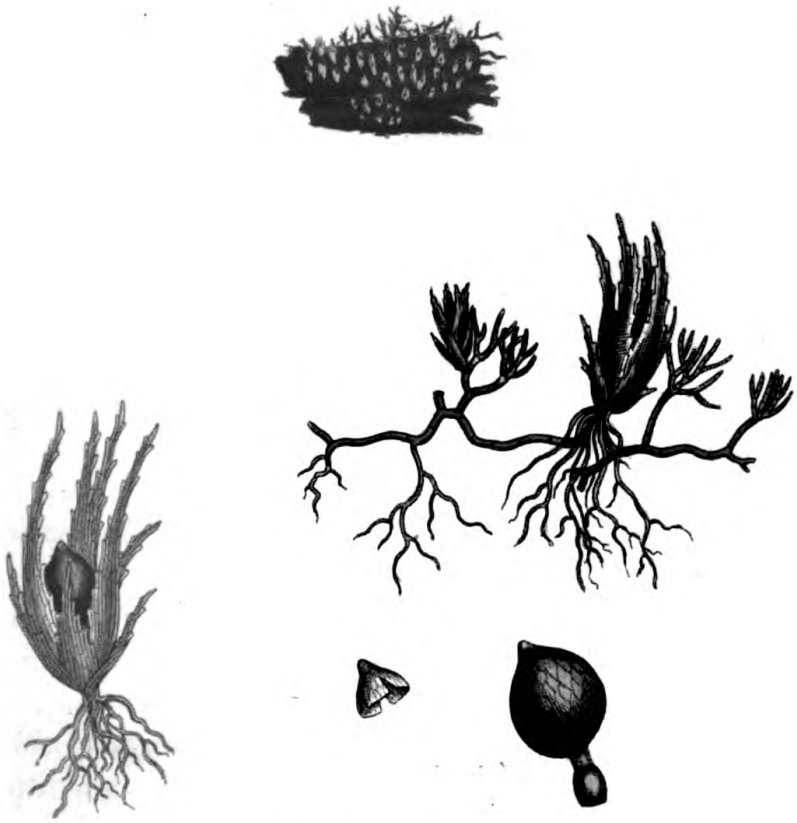
SPEC. CHAR. Shoots creeping, jointed, branched. Leaves ovato-lanceolate, pointed, toothed.

SYN. Phascum stoloniferum. *Dicks. Crypt. fasc.* 3. 1. *t.* 7. *f.* 2. *Sm. Fl. Brit.* 1157. *Hedw. Sp. Musc.* 24. *With.* 786. *Hull.* 252.

Ph. serratum β. *Turn. Musc. Hib.* 4.

FIRST discovered by Mr. E. Forster in the neighbourhood of Walthamstow. Our specimens were communicated by Mr. G. Don from Scotland. It grows on naked clay in damp places, and is presumed to be perennial. The capsules are ripened in April.

Mr. Turner has always suspected this to be but a variety of the *serratum*, *t.* 460, from which indeed it principally differs in having very distinctly creeping, strong, branched shoots, which, like proper creeping roots, throw up, here and there, tufts of erect, ovato-lanceolate, taper-pointed, strongly toothed leaves, in whose centre stands an ovate, or nearly globular, brown, almost sessile capsule. How far the singular, compound, Conferva-like shoots of *Ph. serratum*, otherwise seemingly of no use, may be capable of becoming hardened perennial roots, we are not furnished with sufficient observations to decide, but we are much inclined to assent to that opinion.



Jan. 1810 published by J. Sowerby London.

PHASCUM alternifolium.

Alternate-leaved Earth-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* ovate, without any separate lid, deciduous. *Veil* minute, deciduous.

SPEC. CHAR. Stem branched. Branches simple; the barren ones longest and ascending. Leaves awl-shaped, alternate.

SYN. Phascum alternifolium. *Dicks. Crypt. fasc.* 1. 2. *t.* 1. *f.* 2. *Sm. Fl. Brit.* 1157. *Hedw. Sp. Musc.* 24. *With.* 786. *Hull.* 252. *Relh.* 413. *Abbot.* 229.

OUR specimens were gathered in moist spots upon Epping forest by Mr. E. Forster, but the plant has been found in various parts of the midland counties. It is annual, bearing fruit in April.

The stems form tufts, and are commonly once or twice divided, the barren branches being much elongated, ascending or straggling, leafy; the fertile ones short, terminating in a tuft of longer leaves, among which is found one little oval sessile capsule. Sometimes we have found, instead of a capsule, an elliptical congeries of apparent *gemmæ*, or bulbs, for it is not easy to say which. The leaves are all alternate, awl-shaped, acute, single-ribbed and entire.

Lin. 1 Nov. published by J. Sowerby, London.

GYMNOSTOMUM truncatulum.

Little Blunt-fruited Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Leaves ovate, pointed, flat, entire. Capsule top-shaped, with a dilated mouth.

SYN. Gymnostomum truncatulum. *Hoffm. Germ. v.* 2. 27. *Sm. Fl. Brit.* 1158. *Sibth.* 274. *Turn. Musc. Hib.* 7. *t.* 1. *f.* d—f.

G. truncatum. *Hedw. Sp. Musc.* 30. *Crypt. v.* 1. 13. *t.* 5.

Bryum truncatulum. *Linn. Sp. Pl.* 1584. *Huds.* 477. *With.* 818. *Hull* 258. *Relh.* 424. *Abbot.* 242. *Curt. Lond. fasc.* 2. *t.* 71.

B. exiguum, creberrimis capsulis rufis. *Dill. Musc.* 347. *t.* 45. *f.* 7. F—K.

B. parvum, erectis subrotundis majusculis capitulis subfuscis, foliis serpilli pellucidis. *Dill. in Raii Syn.* 93.

FREQUENT about banks, dry ditches, and fallow fields, bearing fruit early in the spring.

The roots are annual. The plants scarcely grow crowded, but rather scattered, and have short, mostly simple, stems. Leaves bright green, spreading, ovate or rather somewhat obovate, flat or slightly keeled, not concave, acute with a small point, but not tipped with a hair, furnished with a mid-rib, their margins entire. When dry they are slightly twisted, but not closed together. Fruit-stalk terminal, erect, longer than the stem, almost always solitary. Capsule brown, smooth, short, ovate at the base, its mouth abrupt, dilated, wider in diameter than any other part of the capsule. Lid broad, convex, with an oblique, obtuse, roundish beak, all together about as long as the capsule. Veil brownish, splitting obliquely.

This moss has been celebrated as the "Hyssop of Solomon which springeth out of the wall," but what that really is may be seen in our 18th vol. *t.* 1245.

We beg leave to correct an error respecting *Gymnostomum Griffithianum*, *t.* 1938. The Rev. Mr. Dalton and Mr. Hooker found it on rocks on the west side of Ingleborough, Yorkshire, not in Scotland.

Published by Jas. Sowerby London.

GYMNOSTOMUM intermedium.

Longer Blunt-fruited Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Leaves ovato-lanceolate, pointed, flat, entire. Capsule elliptic-oblong, obtuse.

SYN. Gymnostomum intermedium. *Sm. Fl. Brit.* 1159. *Turn Musc. Hib.* 7. *t.* 1. *f.* a—c.
Bryum truncatulum. *Ehrh. Crypt.* 14.
B. exiguum, creberrimis capsulis rufis. *Dill. Musc.* 347. *t.* 45. *f.* 7. A—E.
B. exiguum, erectis parvis subrotundis creberrimis capitulis rufis, foliolis serpilli angustis pellucidis. *Dill. in Raii Syn.* 94.

WHAT escaped the great Hedwig it may seem presumptuous to decide upon as obvious, and yet we cannot hesitate to consider this as a very distinct species from *G. truncatulum*, as Mr. Turner and Mr. Dickson have long ago done. Dillenius indeed discriminated them as varieties, but Mr. Turner thinks Hedwig confounded them entirely, and moreover that all his figures of *truncatulum*, except *f.* 12, belong to the present plant. To this we can scarcely assent, and we have sometimes presumed to doubt Mr. Turner's own figure of *intermedium*. However that may be, we are indebted to him for the specimens here delineated, which agree with our own.

This species is very common on heaths and banks, growing more in tufts than the preceding, which it also exceeds in size, and its colour is rather paler. The leaves are narrower, more incurved and closed together by drying, and the fruit-stalk is longer. The capsule is nearly elliptical, or rather truly ovate, without any dilatation of the mouth, and not by any means top-shaped. Lid scarcely half so long as the capsule, obtusely-pointed, slightly curved.——This moss varies considerably in size. Sometimes it is smaller than *G. obtusum*, *t.* 1407, sometimes larger, but the capsule is never so short and abrupt, the fruitstalk so strong and thick, nor the leaves so straight, or strongly ribbed.

1976

Jan. 1. 1819. Published by Jas. Sowerby, London.

GYMNOSTOMUM obtusum.

Dark Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Leaves ovate-oblong, acute, flat, mostly entire. Capsule obovate, obtuse. Lid awl-shaped.

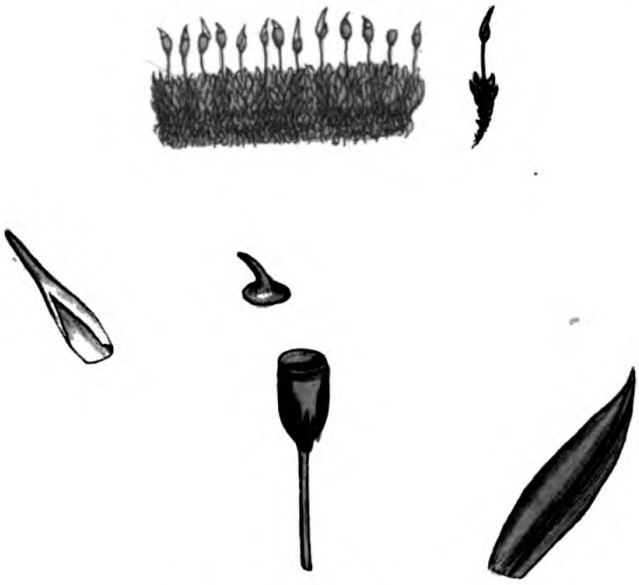
SYN. Gymnostomum obtusum. *Hedw. Sp. Musc.* 34. *t.* 2. *f.* 1—3. *Sm. Fl. Brit.* 1159. *Turn. Musc. Hibern.* 9. *t.* 1. *f.* g—i.

Bryum obtusum. *Dicks. Crypt. fasc.* 2. 5. *t.* 4. *f.* 7. *With.* 811. *Hull.* 256.

THIS little moss was found by Mr. Dickson, its original observer, on the highland rocks and stones of Scotland. It is not however confined to that country, but, thriving in a barren sandy soil, is extremely common about Yarmouth. We are obliged to Mr. Turner and Mr. Teesdale for specimens. The fruit ripens in June. The root is believed to be annual.

This is not quite so small as the common *G. truncatulum*. It grows like that in large patches, the stems being very short, and generally simple. Leaves oblong, inclining to ovate or elliptical, flat, acute, beardless, generally quite entire; sometimes we have thought them slightly toothed. They have a strong brownish midrib, but are otherwise of a dark dull green, turning pale and brownish by age. Fruit-stalk firm and rather stout for its short height, which is but little more than that of the stem, red, straight. Capsule red-brown, upright, obovate, or rather elliptical with a wide mouth, as if abruptly cut off. Lid very slightly convex, with an awl-shaped, curved, bluntish point, somewhat shorter than the capsule itself. Veil cylindrical, brownish.

One of Mr. Dickson's Scottish specimens has a more taper elongated fruit-stalk, and paler leaves, than ours generally bear.



Jan.y 1 1805 Published by Jas Sowerby, London

GYMNOSTOMUM ovatum.

Gary-leaved Beardless-moss.

CRYPTOGAMIA Musci.

Gen. Char. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

Spec. Char. Leaves ovate, obtuse, entire, concave, tipped with a bristle. Capsule ovate.

Syn. Gymnostomum ovatum. *Hedw. Sp. Musc.* 81. *Crypt.* v. 1. 16. t. 6. *Sm. Fl. Brit.* 1160. *Sibth.* 274. *Turn. Musc. Hib.* 9.

Bryum ovatum. *Dicks. Crypt. fasc.* 2. 4. *H. Sicc. fasc.* 3. 20. *With.* 811. *Hull.* 256. *Relh.* 424. *Abbot.* 240.

Muscus coronatus minimus, foliolis et capitulis oblongis in pediculis brevissimis. *Moris.* v. 3. 631. *sect.* 15. *t.* 7. *f.* 18.

FREQUENT enough on dry banks and mud walls, bearing fruit in April and May, though long overlooked or confounded with others of its genus. Bobart however gathered and published it in the 3d volume of Morison, which he edited; but his herbarium alone, which I have examined for the purpose, could determine what he meant.

The plant is annual, growing in patches. Stem very short, always simple. Leaves light green, single-ribbed, ovate, or obovate, obtuse, concave, entire, each tipped with a conspicuous white bristle. Fruitstalk solitary, with a reddish pellucid bulb at its base, upright, twisted when dry. Capsule ovate, smooth, reddish brown, a little lengthened at the base, abrupt, but not dilated, at the summit. Lid flattish, with a nearly straight awlshaped beak, almost equal to its own length. Veil of a rusty brown, splitting up at one side.

1889

May 1, 1808. Publish'd Ja.s Sowerby, London

GYMNOSTOMUM osmundaceum.

Fern-leaved Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Stem perfectly simple, elongated; naked at the base. Leaves acute, two-ranked. Capsule roundish. Lid pointless.

SYN. Gymnostomum osmundaceum. *Hoffm. Germ. v.* 2. 28. *Sm. Fl. Brit.* 1161.

G. pennatum. *Hedw. Sp. Musc.* 31. *Crypt. v.* 1. 77. *t.* 29.

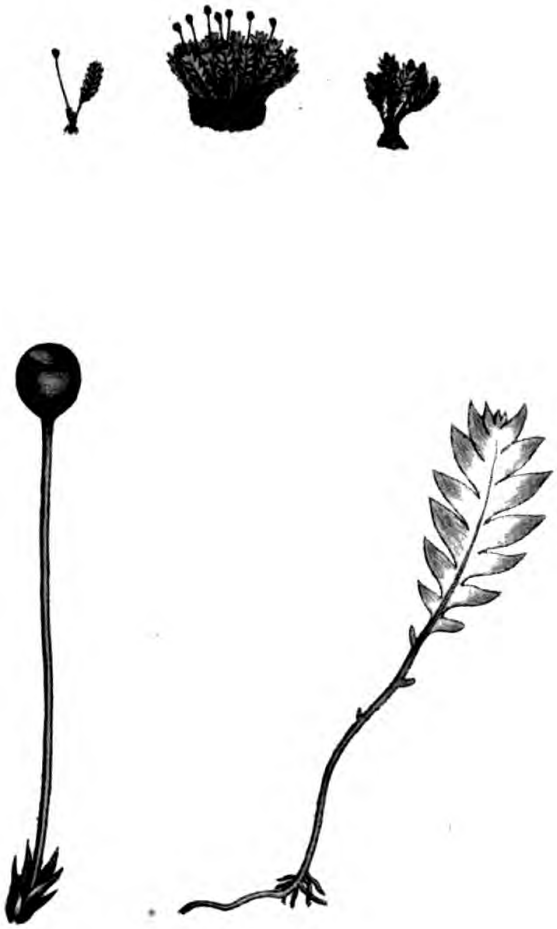
Mnium osmundaceum. *Dicks. Crypt. fasc.* 1. 3. *t.* 1. *f.* 4. *H. Sicc. fasc.* 12. 21.

Bryum pennatum. *With.* 821. *Hull.* 259.

Dicksonia pusilla. *Ehrh. Crypt.* 65.

NONE of our British Mosses is more elegant, scarcely any so rare as the present, which has been found in Devonshire only, by the Rev. Mr. Newberry, in the road from Zele to South Tawton church, four miles from Okehampton. It ripens fruit in the early part of summer, and is annual, or, according to Hedwig, biennial. This distinguished author changed the specific name given by Mr. Dickson, who first described the plant; but Hoffmann properly restored it, and we gladly follow him. Ehrhart dedicated it, as a genus, to Mr. Dickson, but we know not how he distinguished it from his own *Pottia*, hereafter described *t.* 2214.

The root consists of several capillary, often branched, fibres. Stems in lax tufts, half an inch high, erect, simple, thread-shaped, leafless in the lower part. Leaves lanceolate, acute, entire, flat, ribless, vertical, spreading in two ranks, resembling some kind of fern. Flowers terminal, diœcious, each surrounded with several acute spreading leaves, which form a sort of scaly sheath to the base of the fruitstalk. The capsule is almost globular, erect, delicately shaped and reticulated. Lid, according to Hedwig, very thin, slightly convex, pointless, at length revolute and torn at the edges.



Nov. Acad. Ed. Sc. Rom. Lond.

84.

GYMNOSTOMUM Griffithianum.

Succulent Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Leaves spatulate, obtuse, fleshy, with a single rib. Capsule obovate. Lid blunt.

SYN. Gymnostomum Griffithianum. *Sm. Fl. Brit.* 1162.
Bryum Griffithianum. *Dicks. Crypt. fasc.* 4. 8. *t.* 10. *f.* 10.
Splachnum frœlichianum. *With.* 794. *Hull.* 246; but not of Hedwig.

THE gentleman whose name this curious moss bears, and who sent our present specimens, first discovered it on the east side of Snowdon, near the summit. Mr. W. J. Hooker found it this summer very sparingly on Ben Lawers in Scotland, no other botanist than Mr. Griffith and Mr. Hooker having ever gathered the plant in any country.

Root fibrous, perhaps annual. Stems short, simple, or branched from the base, leafy. Leaves imbricated, palish, pellucid and succulent, obovate or spatulate, obtuse, wavy, entire, finely marked with round reticulations, and furnished with a central rib which does not reach the top. Fruitstalk solitary, terminal, succulent, curved. Capsule erect, obovate, brown, smooth. Lid convex, with a little blunt point. Veil conical, acute, brown, white at the base, tipped with the withered stigma. Some plants bear green terminal grain-like bodies, resembling the anthers of a *Sphagnum*.

1938

Sept.1.1808. Published by Jas. Sowerby, London.

85.

GYMNOSTOMUM Heimii.

Long-stalked Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Leaves elliptic-lanceolate, acute, minutely serrated towards the point. Capsule cylindrical. Lid obliquely beaked.

SYN. Gymnostomum Heimii. *Hedw. Sp. Musc.* 32. *Crypt. v.* 1. 80. *t.* 30. *Sm. Fl. Brit.* 1162. *Turn. Musc. Hib.* 9.

Bryum Heimii. *Dicks. Crypt. fasc.* 2. 4. *With.* 815. *Hull.* 257.

OUR specimens of this uncommon moss were gathered in Anglesea by the Rev. H. Davies, bearing ripe capsules in May. Mr. G. Don has found the same species near Forfar, Angusshire, and Mr. Turner in Ireland.

The roots are annual. Stems simple, forming dense tufts, scarcely half an inch high, leafy. Leaves of a light, often brownish, green, strongly reticulated, slightly spreading, elliptic-lanceolate, acute, flat, or somewhat carinated, with a prominent rib. Their margin minutely serrated about the point only, sometimes entire throughout, especially in the inner leaves. Fruitstalk solitary, terminal, about an inch long, yellow when young with a reddish base, at length brown. Capsule upright, brown, smooth, cylindrical with a widish mouth. Lid taper, oblique, rather shorter than the capsule, springing from a flat base, and attached by its centre to the *columella*, which, as usual in the genus, rises above the edge of the capsule.

Nov. 1, 1808. Published by Jas. Sowerby, London.

86.

GYMNOSTOMUM Donnianum.

Donnian Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Stem none. Leaves bristle-shaped. Capsule turbinate, smooth. Lid oblique, the length of the capsule.

FOR the knowledge of this, one of the minutest of mosses, we are entirely obliged to Mr. G. Donn of Edinburgh, who first observed it in 1779, when he was a very young botanist, clothing the surface of a rock in the Den of Dupplin, Perthshire. He has repeatedly visited it in its native situation since, and found it in other parts of the same valley, but not in fructification. The season for the capsules is November, and the root is probably annual.

No stem is discernible. The leaves grow in either one or more clusters, nearly erect, bristle-shaped, beardless, sheathing one another at their base, of a full rich opaque green. Fruitstalk solitary, upright, capillary, yellowish, about a line high. Capsule erect, turbinate or topshaped, very minute, yellowish, opaque, quite smooth as if neatly turned out of box wood, tapering at the base, wide at the mouth, with the little column projecting in the centre as in several species of *Splachnum*. Fringe certainly none. Lid tapering, according to Mr. Donn, oblique, as long as the capsule.

The bristle-shaped leaves and long lid distinguish it from *G. Davallianum*, mentioned by Mr. Drake in the *Annals of Botany*, *v.* 1. 577, while the smooth and rounder capsule keeps it quite separate from *G. trichodes* of Mohr. It is indeed smaller than either of those species, and scarcely half the size of *Grimmia pusilla*, which at first sight it otherwise greatly resembles.

April 1 1806 Published by Jas Sowerby London

87

GYMNOSTOMUM viridissimum.

Bright-green Branched Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Stem branched, tufted. Leaves crowded, lanceolate, recurved. Capsule ovate, furrowed, erect. Lid awlshaped, curved.

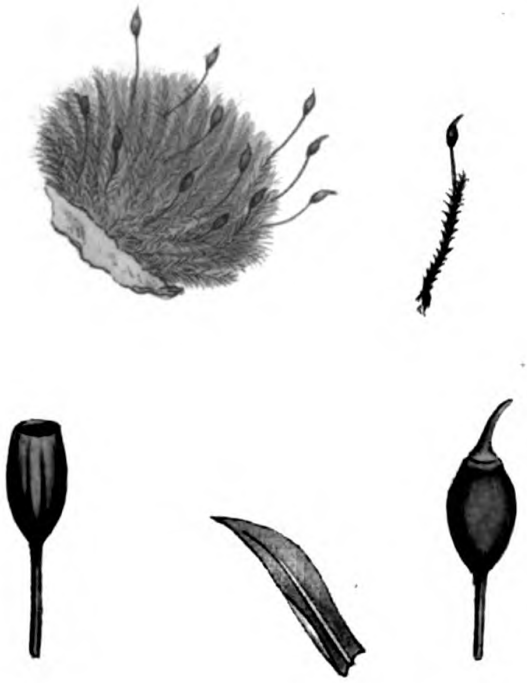
SYN. Dicranum viridissimum. *Sm. Fl. Brit.* 1224. *Turn. Musc. Hib.* 71. *Turn. and Dillw. Botanist's Guide*, 728.

Bryum viridissimum. *Dicks. Crypt. fasc.* 4. 9. *t.* 10. *f.* 18.

GATHERED on trees near Ripon, Yorkshire, by Mr. W. Brunton junior, to whom we are obliged for the final determination of its genus, about which there has been some dispute. I could not at first trace out the origin of my own mistake in *Fl. Brit.*, but I find the account of the *peristomium* was communicated by a very excellent friend, not there mentioned, who has few errors to correct. In this intricate department some must be expected from the most careful investigator; and the difficulty of proving a negative renders the determination of a *Gymnostomum* peculiarly hazardous.

This moss seems by the *Botanist's Guide* to be not very uncommon. Possibly it may have been overlooked for *Orthotrichum crispum*.

The stems form level-topped tufts about an inch high, and are more or less branched, leafy, rusty in their lower part. Leaves crowded, spreading (close-pressed and twisted when dry), lanceolate, acute, beardless, entire, keeled, single-ribbed, of a fine opaque bright green, turning at length to a rusty brown. Fruitstalks brown, half an inch long. Capsule erect, ovate, brown, at length furrowed and somewhat cylindrical, with a narrow naked mouth. Lid awlshaped, rather shorter than the capsule.



Apr. 1. 1830. Published by Jas. Sowerby, London.

88.

GYMNOSTOMUM æruginosum.

Verdigrise Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Stem branched, tufted. Leaves awl-shaped, keeled, entire. Capsule bell-shaped. Lid obliquely beaked.

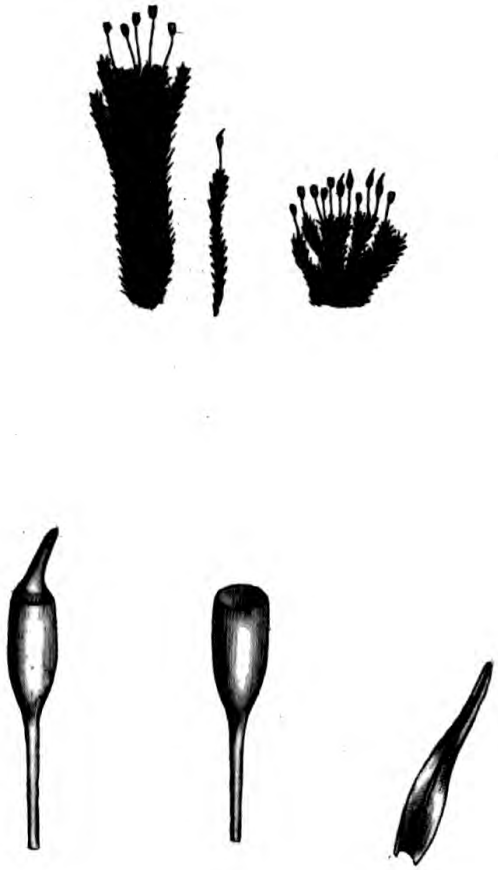
SYN. Gymnostomum æruginosum. *Sm. Fl. Brit.* 1163. Bryum fasciculatum. *Dicks. Crypt. fasc.* 3. 3; on his own authority. *Mr. Eagle.*

THE specimens described in *Fl. Brit.* were gathered in North Wales by Mr. Griffith, and constitute the tallest tuft in our plate; the lower tuft, with the lid, was gathered by Mr. Eagle, F.L.S., on a wet rock in the north-west corner of Yorkshire, in August, 1806.

This moss Mr. Eagle assures us is certainly Mr. Dickson's *Bryum fasciculatum,* which we have referred to *Grimmia verticillata,* t. 1258; but it is different from *Gymnostomum curvirostrum* of Hedwig and *Fl. Brit.* 1164.

It grows in moist alpine spots, and is perennial, bearing fruit in summer. The stems form dense tufts, various in height, and are erect, branched, clothed all over with leaves, which are permanent, imbricated, slightly spreading, incurved by drying, awlshaped, or rather lanceolate, channelled, entire, bright green with a verdigrise cast, and have a prominent rib. Fruitstalks erect, capillary, nearly straight, pale brown. Capsule upright, ovate, or rather bell-shaped, brown, shining, certainly destitute of a fringe. Lid nearly half as long, awl-shaped, bent obliquely, red at the base.

2200



Published by Jas. Sowerby London.

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89.

[2201]

GYMNOSTOMUM luteolum.

Yellowish Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Stem branched, tufted. Leaves lanceolate, concave, keeled. Capsule oblong. Lid hemispherical, pointless.

SYN. Gymnostomum luteolum. *Sm. Fl. Brit.* 1163. G. æstivum. *Hedw. Sp. Musc.* 32. *t.* 2. *f.* 4—7.

SENT by the Rev. H. Davies from Wales. Mr. Dickson, Mr. Turner and Mr. Hooker assure us it is common on the mountains of Scotland. It has been taken for the Linnæan *Bryum æstivum,* which is Dillenius's t. 47. f. 36, referred in *Fl. Brit.* to *G. curvirostrum;* but Mr. Eagle, who has accurately studied the subject, and who we hope will illustrate it, thinks all the three are distinct.

The present is certainly distinct enough from our *G. æruginosum, t.* 2200. The foliage is of a more yellow cast, though not much differing in shape, but much more incurved and twisted when dry. The fruitstalk was found by Mr. J. D. Sowerby to have a very remarkable scaly sheath at its base, like a *Hypnum.* The capsule is ovate and elongated, not bell-shaped, of a pale brown. Lid essentially different, in being merely convex, with a minute protuberance, like the boss of a shield, not elongated or awlshaped.

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90.

GYMNOSTOMUM curvirostrum.

Curve-beaked Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Stem branched, tufted. Leaves awl-shaped, recurved, in interrupted clusters. Lid awl-shaped, curved.

SYN. Gymnostomum curvirostrum. *Hedw. Sp. Musc.* 33. *Crypt. v.* 2. 68. *t.* 24. *Sm. Fl. Brit.* 1164.

Bryum æstivum. *Linn. Sp. Pl.* 1585. *With.* 826. *Hull.* 254.

B. palustre. *Huds. ed.* 1. 411.

B. palustre æstivum, confervæ facie. *Dill. Musc.* 375. *t.* 47. *f.* 36.

B. angustissimis foliis crebrioribus, capitulis erectis brevibus, pediculis e surculis novis et longis enascentibus. *Dill. in Raii Syn.* 99.

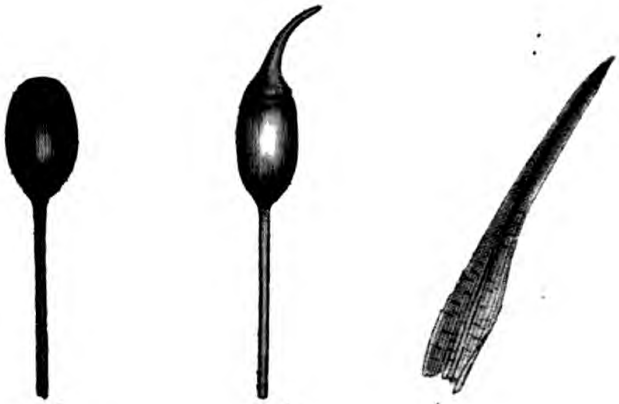
B. verticillatum. *Dicks. H. Sicc. fasc.* 5. 19.

Pottia curvirostra. *Ehrh. Crypt.* 93.

DOUBTS have been started by Mr. Eagle, at present deeply intent on the subject of Mosses, and by whose labours we hope hereafter to profit, whether the German moss, indicated by the first and the last of the above synonyms, be not a distinct species from that of Dillenius and Dickson, to which all the rest belong. We would not anticipate our able friend's discovery; but to prevent error, however the point may be decided, we exhibit at *f.* 1 Mr. Dickson's Cumberland plant, and at *f.* 2 a German specimen of Ehrhart's. Both grew on alpine wet rocks, and are encrusted with white calcareous earth.

The stems are branched, an inch or two high, composing dense tufts. Leaves alternate, crowded here and there into clusters, awlshaped, recurved, keeled, single-ribbed, pointed, entire or nearly so, light green, permanent, yellowish brown when old. Fruitstalks from among the clusters of leaves, whether lateral or terminal, erect, capillary, straightish. Capsule upright, elliptical, abrupt, narrow-mouthed, red at top and bottom, when old of a dark shining chesnut all over. Lid the length of the capsule, awlshaped, obliquely curved.

1 1 2



2 1 1

Now in course of publication by Jas. Sowerby, London.

91.

GYMNOSTOMUM stelligerum.

Star-topped Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Stem branched, spreading. Leaves linear-lanceolate, spreading; the uppermost stellated. Capsule hemispherical. Lid oblique.

SYN. Gymnostomum stelligerum. *Schrad. Journ. v.* 2. 55. *Bridel. Muscol. v.* 1. 46. *Sm. Fl. Brit.* 1164.

Bryum stelligerum. *Dicks. Crypt. fasc.* 2. 3. *t.* 4. *f.* 4. *With.* 823. *Hull.* 253.

ALL our knowledge of this little moss is derived from a specimen given by Mr. Dickson, who found it in woods in the highlands of Scotland. The stems are erect, but the branches spread much, and seem to have their annual shoots very distinctly defined. Leaves alternate, crowded, light green, linear-lanceolate, somewhat ovate at their base, entire, keeled, with a strong mid-rib; the upper ones elongated, and spreading in the form of a star. Fruitstalks solitary, terminal, though overtopped by the more recent shoots, upright, straight, red Capsule short and nearly hemispherical, its mouth being very wide. Its colour is a bright shining bay. Lid flat, with a taper point, as long as the capsule, and somewhat curved.

2202.

Published by Jos. Sowerby, London.

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92.

GYMNOSTOMUM microstomum.

Small-mouthed Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Stem nearly simple. Leaves awlshaped, incurved by drying. Lid awlshaped. Capsule elliptical, much contracted at the mouth.

SYN. Gymnostomum microstomum. *Hedw. Sp. Musc.* 32. *Crypt. v.* 3. 71. *t.* 30, B. *Sm. Fl. Brit.* 1165. *Swartz. Musc. Suec.* 21.

Bryum microstomum. *Dicks. Crypt. fasc.* 4. 9.

MR. DICKSON mentions this curious little moss as growing in pastures. We have compared his native specimens with ours sent by Dr. Swartz, and they precisely agree, as well as with Hedwig's figure and description; but we are obliged to take our drawing from some of Swedish growth, a measure we think it our duty to acknowledge, though there is no uncertainty nor ambiguity in the case.

This was supposed to be the smallest of its genus, but it yields in that respect to some later discoveries. The roots are perennial. Stems tufted, very short, for the most part quite simple, but occasionally they are divided at the bottom. Leaves dense, lightish green, awlshaped, or rather lanceolate when wet, keeled, pointed, entire, broad at the base; when dry curled inward. Fruitstalk taller than the stem, upright, capillary, twisted when old and dry. Capsule erect, elliptical, very small, dark brown, smooth, its mouth reddish, greatly contracted. Lid awlshaped, oblique, shorter than the capsule.

We suspect the peculiar adhesion of the lid to the central column, which is noticed in *t.* 1951, and some others of this genus, chiefly, if not exclusively, belongs to species whose capsule is dilated at the mouth. Do these circumstances indicate any generic difference?

Veronica [illegible]

93.

GYMNOSTOMUM paucifolium.

Few-leaved Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Stem short and quite simple. Leaves linear-lanceolate, bluntish, beardless, single-ribbed, entire. Capsule slightly ovate.

SYN. Bryum paucifolium. *Dicks. Crypt. fasc.* 4. 7. *t.* 11. *f.* 3.

MR. EAGLE communicated these specimens to Mr. Turner as the indubitable *Bryum paucifolium* of Mr. Dickson, found on ruinous brick walls, near Wetherby, Yorkshire, and given him by its discoverer, with whose own description, and with the drawing made originally by Mr. Sowerby from his specimens, it precisely agrees; except, that the capsule is not "toothed," but naked at the mouth. This synonym therefore must be erased from *Dicranum cylindricum, Fl. Brit.* 1221, which, on the authority of Mr. Turner's herbarium, was believed to be Mr. Dickson's plant; and we presume the said *Dicranum* is to be struck out of the British list.

The present moss is very distinct from all the short simple-stemmed kinds of *Gymnostomum* hitherto described. The leaves are linear-lanceolate, somewhat revolute, bluntish, with a strong mid-rib, but no capillary point, and spread moderately in every direction. Fruitstalk terminal, solitary, yellowish. Capsule oblong, slightly ovate, obscurely striated; sometimes contracted just under the orifice. Lid beaked. Veil awlshaped, slender, smooth. The whole plant scarcely exceeds the height of half an inch.

2506

Jan. 1 1823 published by Jos. Sowerby London

94.

GYMNOSTOMUM fasciculare.

Blunt Pear-shaped Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Stem simple, very short. Leaves ovate, acute, minutely serrated. Capsule pear-shaped. Lid convex, blunt.

SYN. Gymnostomum fasciculare. *Sm. Fl. Brit.* 1165.
Bryum fasciculare. *Dicks. Crypt. fasc.* 3. 3. *t.* 7. *f.* 5. *With.* 815. *Hull.* 257.
B. Ægypti. *Hasselquist's Voyage*, 263.

FEW mosses have been more celebrated, very few less understood, than this. The herbarium of Linnæus shows it to be what Hasselquist gathered on the walls of Jerusalem, and supposed might be the Hyssop of Solomon "which springeth out of the wall;" an ingenious idea which Linnæus adopted, and others have retailed in various places. Our great master, however, has led us all astray by very inaccurately referring Hasselquist's excellent specimens to his own *Bryum truncatulum*. Mr. Dickson, who could not be aware of this, finding the same moss in Britain, described it as new by the name of *B. fasciculare*. To sum up all, the German botanists have mistaken for this plant of Dickson a most slight variety, or rather no variety at all, of *B. pyriforme*, figured by Hedwig as *Gymnostomum fasciculare*, *Sp. Musc. t.* 4; for which last observation, confirmed by authentic specimens, we are indebted to Mr. D. Turner.

Our true *G. fasciculare* is annual, ripening its fruit in the spring. We have it from various parts of Great Britain and Ireland, but it does not often occur. It differs from *G. pyriforme*, *t.* 413, in being more slender, with narrower leaves, slightly serrated, (those of *pyriforme* we now find minutely toothed), twisted when dry, scarcely concave, strongly reticulated. Fruit-stalk slender, of a shining red. Capsule reddish, truly pear-shaped, or contracted above the base. Lid slightly convex, but entirely destitute of a point. Veil long and awl-shaped.

Decr 1. 1803. Published by Jas. Sowerby, London.

95.

BRYUM pyriforme.

Pear-shaped Bryum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* with a lid. *Veil* smooth. *Flower-stalk* from a terminal tubercle.

SPEC. CHAR. Stem none. Capsules obovate, erect, without ciliæ. Veil awl-shaped. Leaves ovate, spreading, acute, beardless.

SYN. Bryum pyriforme. *Linn. Sp. Pl.* 1580. *Huds. Fl. An.* 475. *With. Bot. Arr. v.* 3. 104. *ed.* 2. *v.* 3. 812. *Relh. Cant. Suppl.* 1. 18. *Dicks. H. Sicc. fasc.* 4. 22.

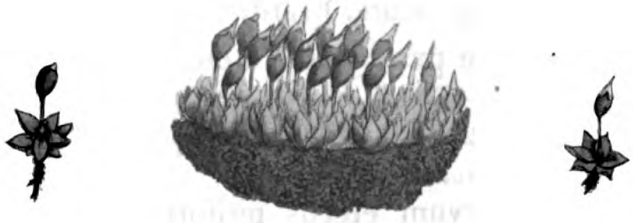
Bryum parvum erectis piriformibus majusculis capitulis, foliis Serpilli pellucidis. *Raii Syn.* 93.

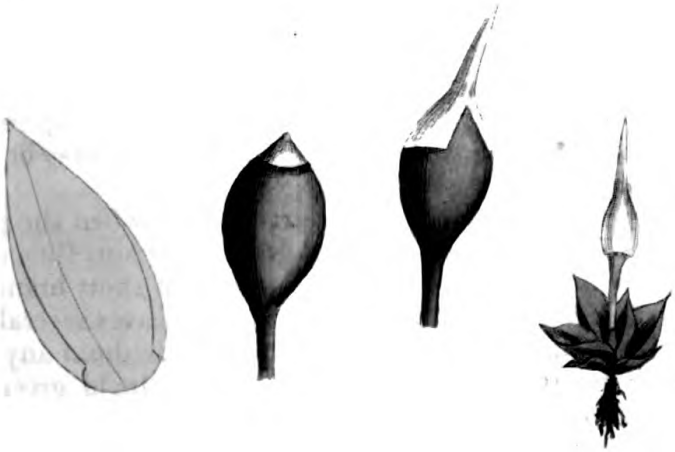
B. serpillifolium pellucidum, capsulis pyriformibus. *Dill. Musc.* 344. *t.* 44. *f.* 6.

Gymnostomum pyriforme. *Sibth. Ox.* 274.

FREQUENT on heaths, ditch-banks, &c. in moist shady places, bringing its capsules to maturity in the spring for the most part, though, as Dillenius remarks, they may be met with occasionally all the year long.

Root annual. Stem none, except that when the plants are produced early in the year, and grow luxuriant, they throw out lateral shoots of leaves a little elevated on short branches, and these flower later than the parent plant. Leaves several, spreading like a star, ovate, entire, acute, but without any terminal hair or bristle; their colour is a pale pellucid green. Stalk central, very short, bearing a large erect capsule, oval when young, and capped with a whitish awl-shaped veil, which Dillenius describes as being angular like that of B. *hygrometricum*, *t.* 342, but we have found it cylindrical. In ripening the capsule becomes pear-shaped, or thicker towards the top, and the veil splits and falls off. The cover is conical. The orifice destitute of teeth or *ciliæ*, which character makes the genus *Gymnostomum* (naked-mouth) of Hedwig, and it is perhaps one of his best defined ones; but for reasons already given, p. 180, we defer adopting any of them till experience has fixed them.





96.

GYMNOSTOMUM lapponicum.

Lapland Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Stem branched. Leaves linear-lanceolate, channelled, curled when dry. Capsule abrupt, furrowed.

SYN. Gymnostomum lapponicum. *Hedw. Crypt. v.* 3. 10. *t.* 5, A. *Sm. Fl. Brit.* 1167. *Swartz. Musc. Suec.* 20.

Anictangium lapponicum. *Hedw. Sp. Musc.* 40.

Bryum lapponicum. *Dicks. Crypt. fasc.* 4. 10.

As we approach so near to the end of our long labours, we think it best to finish all the species of a genus together, if possible. This then, with the three preceding plates, concludes the British species of *Gymnostomum*, as far as they are described. It was discovered on the alpine rocks of Scotland by Mr. Dickson. Our specimen accompanied by a dark *Jungermannia* was gathered in Cwm Idwell, North Wales, by Mr. Griffith. The other, given us by Dr. Swartz, came from Lapland. Professor Thunberg sent a similar one to Hedwig, destitute, like ours, of a lid to the capsules, nor are we informed of the season for gathering the plant in perfection.

The stems compose loose perennial tufts, about an inch high, and are for the most part very much branched, leafy throughout, and spreading. Leaves of a full green, imbricated, linear-lanceolate, acute, beardless, keeled, single-ribbed, entire; when dry incurved and crisped. Fruit-stalks terminal, solitary, short, erect. Capsule erect, somewhat pear-shaped, with a wide mouth, its sides marked with eight longitudinal furrows and as many strong ribs. The colour of the fruit is a bright bay. We find nothing of the tulip-like red and yellow exhibited in Hedwig's plate; so difficult is it to command exactness in subordinate colourers!

Mrs. Wood del. Drawn & Lith. by J. Sowerby

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97.

GYMNOSTOMUM imberbe.

Branched Green Beardless-moss.

CRYPTOGAMIA Musci.

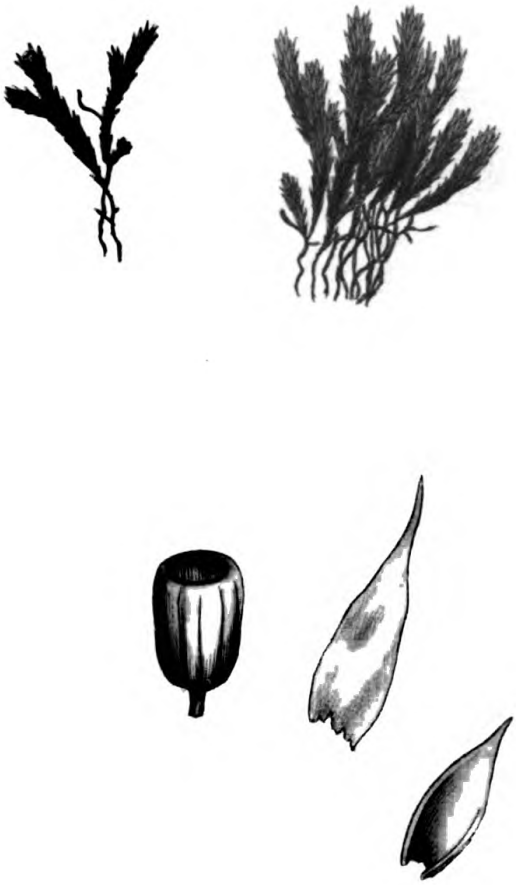
GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Stem much branched, spreading. Leaves ovate, without rib or nerve, green at the point. Capsule bell-shaped, nearly sessile.

DISCOVERED on dry rocks upon mountains in the west of Ireland by Miss Hutchins, who in 1809 sent specimens to Mr. Turner, which he has kindly communicated to us.

This moss comes nearest to *G. ciliatum, t.* 1179, from which it differs in wanting the essential character of that species, the white transparent point of its leaves, even of the upper and longer ones which overtop the fruit. There is also a more membranous habit in all the leaves, and their margins are always somewhat revolute. The old ones are very black. The capsules, which rarely occur, are obscurely furrowed and their mouths contracted, but whether this be the effect of drying in a young state may admit of doubt. We have seen no lid.

Ehrhart's own specimen of his *Hedwigia Anodon,* Crypt. 192, approaches this in having revolute leaves, with much less transparency in their tips than is usual in *ciliatum;* but those which surround its fruit have the proper pellucid and even fringed termination, not to be seen in our *imberbe*; nor do the colour and habit of Ehrhart's plant resemble ours, being precisely like the common *ciliatum.*



Jones sculpt. published by Jas. Sowerby London.

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GYMNOSTOMUM ciliatum.

Branched Hoary Beardless-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

SPEC. CHAR. Stem much branched, spreading. Leaves ovate, without rib or nerve, pellucid at the point. Capsule bell-shaped, nearly sessile.

SYN. Gymnostomum ciliatum. *Swartz. Musc. Suec.* 19. *Roth. Germ. v.* 3. 129.

Hedwigia ciliata. *Hedw. Crypt. v.* 1. 107. *t.* 40.

Bryum apocarpum β. *Linn. Sp. Pl.* 1579. *Hudf.* 474. *With.* 809.

Fontinalis albicans. *Hull.* 275.

Phascum piliferum. *With.* 786!

Sphagnum nodosum, hirsutum et incanum. *Dill. Musc.* 246. *t.* 32. *f.* 5.

S. cauliferum et ramosum saxatile hirsutum incanum, capitulis virentibus. *Raii Syn.* 105.

NOTHING can more plainly shew the necessity of attending to the Hedwigian characters of mosses than the mistake of former botanists in confounding this with *Grimmia apocarpa*, see *t.* 1134; and we now on thorough conviction adopt his principles, so far at least as they accord with Nature. When they seem to us too arbitrary, as respecting the situation of the male flowers, or too minute, as when they refine too much on the structure of the inner fringe in *Bryum* and *Hypnum*, we have recourse to our own judgment and the Linnæan principles of natural genera.

The moss before us grows on great stones in mountainous countries. We have received it from Mr. Harriman and Mr Turner; also from several friends in Scotland. It varies much in size, quantity of branches, and length of the transparent point of the leaves. The stems form dense tufts. Leaves entire, pale green, without a rib. Capsules sessile at the end of each little branch, solitary, roundish, red, with a naked mouth, and almost flat lid, overtopped by the torn points of the surrounding leaves.

Published by Jas. Sowerby London.

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SPLACHNUM mnioides.

Green Tapering Gland-moss.

CRYPTOGAMIA Musci.

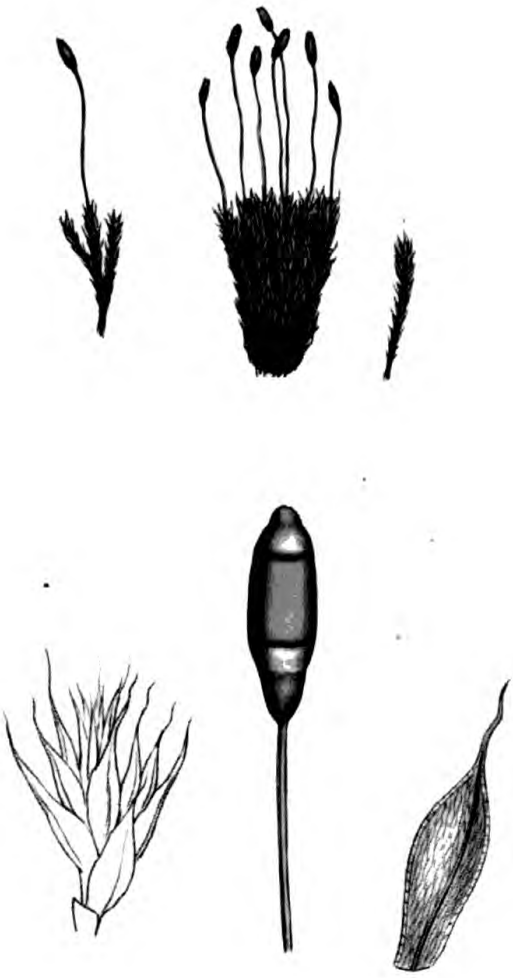
GEN. CHAR. *Caps.* cylindrical, placed on a fleshy *receptacle.* *Fringe* simple, of 16 teeth, standing in pairs.

SPEC. CHAR. Receptacle obconical, green. Leaves elliptic-lanceolate, bearded, entire.

SYN. Splachnum mniodes. *Linn. Fil. Meth. Musc.* 26. *Sm. Fl. Brit.* 1169. *Hedw. Sp. Musc.* 51. *Crypt. v.* 2. 35. *t.* 11. *Dicks. Crypt. fasc.* 1. 2. *With.* 793. *Hull.* 246.

IN the 11th volume of this work, *t.* 786, a *Splachnum* is figured by the name of *mnioides*, which has since been distinguished from that species, and is the *fastigiatum* of the *Flora Britannica*, which name is therefore to be applied to our *t.* 786, and all the references, except to *Dill. t.* 44. *f.* 5, which is certainly right, exchanged for those indicated in *Fl. Brit.* 1172. It is also to be observed that the receptacle in our above-mentioned figure should be of a deep red rather than brown.

The true *mnioides* here represented was received from Mr. Dickson, and agrees with the original Linnæan specimens. Dillenius does not appear to have been acquainted with this. It is scarcely more than half the size of the *fastigiatum*, and of a paler, more yellowish, aspect altogether. It is found in the summer, in moist alpine parts of Scotland and Wales, generally on the dung of foxes and badgers, according to Mr. Griffith. The stems are branched, about an inch high. Leaves upright, entire, tipped with a yellow wavy hair. Receptacle small, inversely conical, green when fresh, not at all red. Capsule as thick, and full as long, as the receptacle, tawny. Lid conical, obtuse, pale brown or yellowish.



April 2. 1806 Published by Jas Sowerby, London.

SPLACHNUM angustatum.

Narrow-leaved Splachnum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* cylindrical, placed on a fleshy *receptacle.* *Fringe* simple, of 16 teeth, standing in pairs.

SPEC. CHAR. Receptacle obovate, brownish. Leaves lanceolate, pointed, bearded; the upper ones serrated.

SYN. Splachnum angustatum. *Linn. fil. Meth. Musc.* 33. *Hedw. Sp. Musc.* 51. *Crypt. v.* 2. 37. *t.* 12. *Dicks. Crypt. fasc.* 2. 3. *With.* 792. *Hull.* 246.

WE believe the species of *Splachnum* generally grow on the dung of animals, and for the most part in mountainous situations. Mr. G. Donn gathered the present kind upon cow-dung on the side of Lochawen, Scotland, growing with *S. sphæricum*, see *vol.* 11. *t.* 785.

It was originally described by Dr. Swartz in his Dissertation upon Mosses, published under the presidency of the younger Linnæus, and was first announced as a British plant by Mr. Dickson.

The stems form very dense tufts, and are from one to two or three inches high, simple or divided, leafy, thickly clothed with rusty fibres below. Leaves bright green, lanceolate, acute, tipped with a long taper point; the uppermost serrated. Fruit-stalk shorter than in any other known species, being scarcely half an inch long, yellowish-brown, straight. Receptacle obovate, brown when ripe, much shorter than the ripe capsule, and somewhat broader. Capsule brown, with a spreading mouth, surrounded with yellowish teeth. Lid convex. Veil conical, whitish.

The *Splachna* may be presumed to be annual or biennial, from the transient duration of the soil on which they grow. They generally flower early in summer, and soon bring their fruit to perfection.

Feb.y 1 1803 Published by Ja.s Sowerby London

101.

SPLACHNUM urceolatum.

Elliptical Gland-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* cylindrical, placed on a fleshy *receptacle.* *Fringe* simple, of 16 teeth, standing in pairs.

SPEC. CHAR. Receptacle obovate, greenish-brown. Leaves elliptical, concave, entire, taper-pointed.

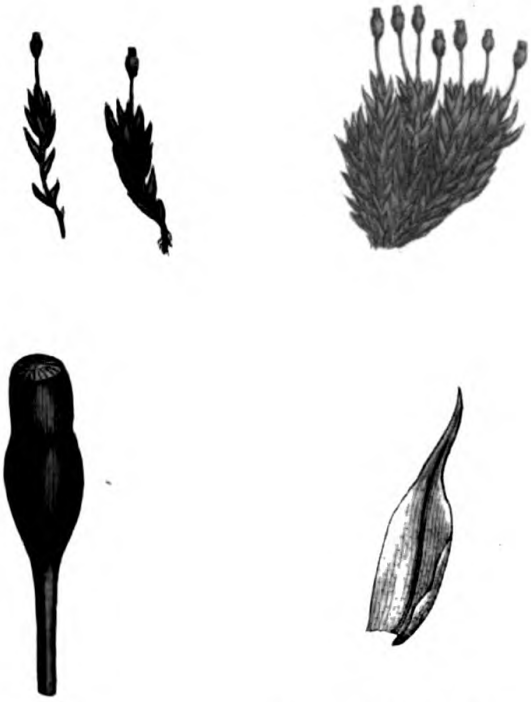
SYN. Splachnum urceolatum. *Hedw. Sp. Musc.* 52. *Crypt. v.* 2. 39. *t.* 13. *Sm. Fl. Brit.* 1170. *Dicks. Crypt. fasc.* 2. 2. *With.* 793. *Hull.* 246.

S. ampullaceum. *Fl. Dan. t.* 192; bad.

S. bryoides. *Zoeg. Fl. Island.* 12. *Von Troil Isl.* 119.

FOUND on the Scottish mountain of Ben High, by Mr. Dickson, to whom we are indebted for a specimen, which we have compared with original ones in the Linnæan herbarium, gathered by Zoega in Iceland.

The stems compose dense tufts, about an inch high, and are either simple or divided. Leaves numerous, imbricated, darkish green, elliptical, obtuse, concave, entire, with one rib, and a long, taper, very slender green point, along which the rib is continued, but there is no positive hair-like appendage. Fruitstalk various in length, stout, red or tawny, quite straight. Receptacle obovate, tolerably smooth, at first green, then brown. Capsule brown, narrower than the receptacle, and but about half as long, finally contracted in the middle. Lid hemispherical. Fringe yellowish, turning brown in decay.



Mary Lowe published by Jas. Sowerby London.

SPLACHNUM tenue.

Slender Splachnum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsf.* cylindrical, placed on a fleshy *receptacle.* *Fringe* simple, of 16 teeth, standing in pairs.

SPEC. CHAR. Receptacle obconical, slender, brown. Leaves ovate, acute, serrated, beardless.

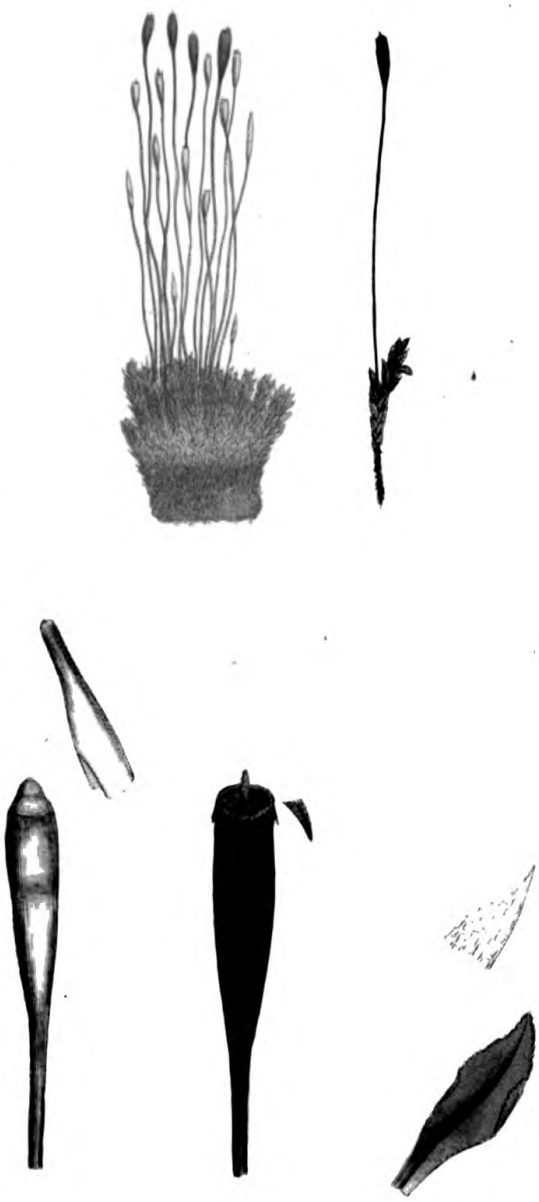
SYN. Splachnum tenue. *Dicks. Crypt. fasc.* 2. 2. *With.* 793. *Hull.* 246.

S. purpureum. *With.* 794. *t.* 18. *f.* 9. *Hull.* 246.

GATHERED last October on the very lofty mountains of Inverness-shire by Mr. G. Donn. It has also been found by the same indefatigable and excellent observer, as well as by Mr. Dickson, upon Ben Lawers; and by Mr. Griffith in North Wales: but its original discoverer was Dr. F. Buchannan, who gathered it at his paternal seat at Leney near Stirling, in 1782. No foreign writer seems to have known this species, but Mr. D. Turner is possessed of specimens lately gathered at the Hartz by Mr. Mohr. Can it be *S. serratum* of *Hedw. Sp. Musc.* 53. *t.* 8.?

The stems are generally very short, forming tufts. Leaves ovate, or rather obovate, acute, not bearded, flat, finely serrated, evidently and beautifully reticulated, of a fine green, turning red in decay. Stalk an inch and half or two inches high, of a beautiful red in the lower part, pale or yellowish at the top, but as it grows old the whole becomes of a dark red. Receptacle slender, though rather long, inversely conical, green when young, dark red or brown when ripe, not thicker than the capsule, but in a dried state even more slender. Capsule dark-brown. Lid convex, brown. Veil conical, blunt, tipped with brown.

This species occurs twice in Dr. Withering's work, having been in one instance described from Mr. Griffith's specimens, and in the other adopted from Mr. Dickson.



Feb.y 1 1803. Published by Ja.s Sowerby. London.

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SPLACHNUM mnioides.

Brown tapering Splachnum.

CRYPTOGAMIA Mufci.

GEN. CHAR. *Capfule* cylindrical, placed on a fleſhy *receptacle*. *Fringe* of a ſimple row of teeth.

SPEC. CHAR. Receptacle oblong, brown. Leaves elliptic-lanceolate, entire, briſtle-pointed.

SYN. Splachnum mnioides. *Swartz. in Linn. fil. Meth. Mufc.* 26. *Dickſ. Crypt. fafc.* 1. 3. *With.* 793. *Hull.* 246.

Bryum ampullaceum, foliis et ampullis anguſtioribus. *Dill. Mufc.* 345. *t.* 44. *f.* 5.

SPECIMENS of this moſs were communicated to us from the mountains of Scotland by Mr. John Mackay in the month of July. It grows in denſe tufts, conſiſting of longiſh, ſimple or divided, leafy ſtems. The leaves are cloſely imbricated, lanceolate, approaching to an elliptical form (eſpecially the lower ones), entire, tipped with a long briſtly point, and having a not very conſpicuous rib. Fruit-ſtalks reddiſh-yellow, darkeſt at the ſummit. Receptacle a little inclined, oblong, or ſlender pear-ſhaped, brown, bearing a brown cylindrical capſule as in other ſpecies of this curious genus. The lid is flattiſh, with a blunt point; the teeth about 12.

We have aſcertained the above ſynonyms by actual compariſon of ſpecimens with the Linnæan and Dillenian collections, ſo that the doubts ſuggeſted by Dr. Withering are removed. The *Phaſcum pedunculatum* of Linnæus, and Hudſon's firſt edition, quoted by Dr. Swartz, is however a different plant, figured by Dillenius, *Hiſt. Mufc. t.* 44. *f.* 4. and *Raii Syn. t.* 3. *f.* 2, and named by Mr. Dickſon, in his ſecond *faſciculus*, *Splachnum ovatum*, having been miſtaken by the author of the *Flora Anglica* in his ſecond edition for S. *vaſculoſum* of Linnæus.

✓

SPLACHNUM ovatum.

Ovate Gland-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* cylindrical, placed on a fleshy *receptacle.* *Fringe* simple, of 16 teeth, standing in pairs.

SPEC. CHAR. Receptacle ovate, brownish. Leaves ovate, acute, entire.

SYN. Splachnum ovatum. *Dicks. Crypt. fasc.* 2. 2. *Sm. Fl. Brit.* 1172. *Hedw. Sp. Musc.* 54. *t.* 8. *f.* 4—6. *With.* 793. *Hull.* 246. *Turn. Musc. Hib.* 15.

Phascum pedunculatum. *Huds. ed.* 1. 397.

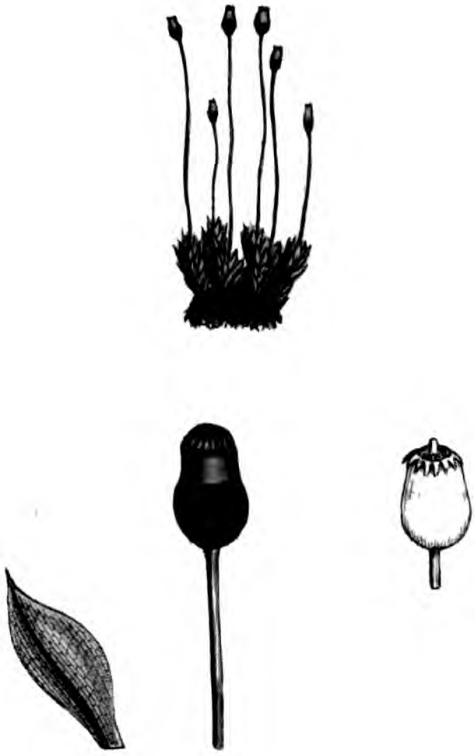
Bryum ampullaceum, foliis serpylli pellucidis, collo crassiore. *Dill. Musc.* 344. *t.* 44. *f.* 4.

B. erectis gigartinis capitulis, foliis serpilli pellucidis, obtusis. *Dill. in Raii Syn.* 93. *t.* 3. *f.* 2.

THESE specimens were gathered by Dr. Francis Buchannan in 1782, at Leney near Stirling, his native place. The glen of Leney has recently been celebrated in the beautiful poetry of Mr. Walter Scott; and from these romantic and sequestered scenes, a long residence in various parts of India has neither perverted the taste, nor weaned the heart, of our friend.

Splachnum ovatum grows on alpine spongy bogs in Scotland, Wales, Ireland and the north of England. The capsules are perfected in June or July. Roots annual. Stem short and simple. Leaves of a broad ovate figure, rather obtuse, with a small point, entire, reticulated, furnished with one strong rib. Fruit-stalk about an inch long, straight, rigid, tawny, paler upwards. Receptacle ovate or somewhat globular, at first green, but soon becoming brown, smooth, not wrinkled. Capsule contracted, much shorter and narrower than the receptacle, tawny. Fringe at length reflexed. Lid conical.

1590



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

105.

SPLACHNUM rugosum.

Rugged Gland-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* cylindrical, placed on a fleshy *receptacle.* *Fringe* simple, of 16 teeth, standing in pairs.

SPEC. CHAR. Receptacle globose, at length wrinkled, brown. Leaves broad-ovate, acute, entire.

SYN. Splachnum rugosum. *Dicks. Crypt. fasc.* 4. 8. *t.* 10. *f.* 7. *Sm. Fl. Brit.* 1173.

COMMUNICATED in 1803, by Mr. G. Don, from the Highlands of Scotland, where Mr. Dickson first found it.

Roots annual, black, elongated, forming dense tufts. Stems nearly all simple; the fertile ones short, bearing several crowded, spreading leaves of a dark green, strongly reticulated, entire, broad-ovate, contracted at each end, and acute at the summit, furnished with a strong central rib; the other stems or branches are taller, clothed with more distant, alternate, paler and blunter leaves. Fruitstalks solitary, terminal, erect, from half an inch to an inch high, thickish, firm, of a reddish brown. Receptacle globular, brown, strongly corrugated when verging towards decay. Capsule about half as wide as the receptacle, and scarcely so long, brown, cylindrical.

2044

Lewis roy published by J. Sowerby London

106.

SPLACHNUM ſphæricum.

Green globular Splachnum.

CRYPTOGAMIA Muſci.

GEN. CHAR. *Capſule* cylindrical, placed on a fleſhy *receptacle*. *Fringe* of a ſimple row of teeth.

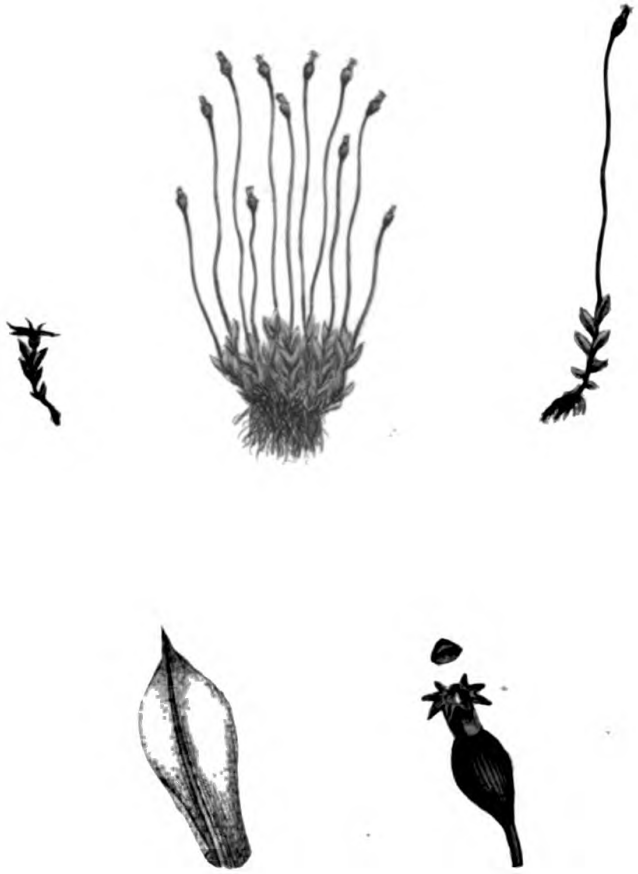
SPEC. CHAR. Receptacle nearly globular, green. Leaves ovate, pointed, entire.

SYN. Splachnum ſphæricum. *Swartz. in Linn. fil. Meth. Muſc.* 33. *t.* 1. *f.* 1. *Dickſ. Crypt. faſc.* 1. 3. *With.* 791. *Hull.* 245.

AMID all the doubts and difficulties that modern botaniſts have met with in fixing the genera of moſſes, the *Splachnum* remains unſhaken. Its eſſential character depends on the ſucculent receptacle, always thicker and more turgid than the cylindrical capſule which it ſuſtains. The male flowers form a little terminal ſtar on a ſeparate root from the female.

This rare ſpecies was firſt obſerved in Britain by my worthy friend and fellow-ſtudent Dr. Francis Buchannan, now reſident in Bengal, who gathered it on a mountain near Stirling in 1782. Mr. Sowerby received the preſent ſpecimens from North Wales, by favour of J. W. Griffith Eſq. bearing its ripe fruit in the month of July.

It forms green tufts, each plant being ſimple, with a fibrous, ſeemingly annual, root, and a ſhort, leafy, upright ſtem. Leaves alternate, broad, ovate, pointed, entire, undulated, of a fine reticulated ſtructure, with one ſimple rib. Fruit-ſtalk ſolitary, terminal, erect, a little waved, pale reddiſh yellow. green at the ſummit, terminated by a dark-green, almoſt globular receptacle, on which ſtands the ſmall cylindrical brown capſule, at firſt covered with a blunt hemiſphærical lid, which ſoon falls off, and the orifice appears fringed with a ſimple row of ſpreading teeth. The columella projects a little, with a blunt red head.



107.

SPLACHNUM gracile.

Zigzag Gland-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* cylindrical, placed on a fleshy *receptacle*. *Fringe* simple, of 16 teeth, standing in pairs.

SPEC. CHAR. Receptacle globose, rusty-brown. Leaves ovate, with a serrated point. Fruit-stalk zigzag.

SYN. Splachnum gracile. *Dicks. Crypt. fasc.* 4. 3. *t.* 10. *f.* 5. *Sm. Fl. Brit.* 1174.

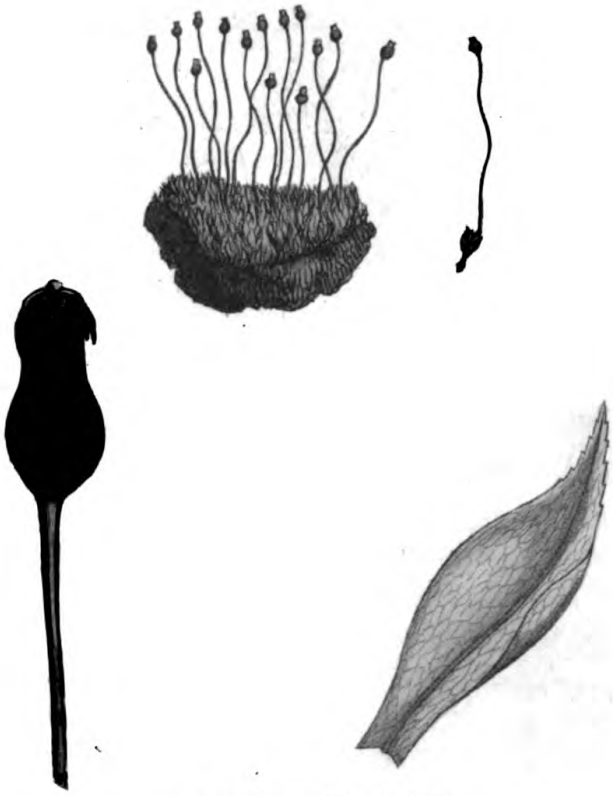
S. sphæricum β. *Turn. Musc. Hib.* 15.

S. vasculosum. *Huds.* 469. *Lightf.* 697. *With.* 791, with wrong synonyms and descriptions. *Hull.* 245.

BROUGHT from Ben Lawers in the Highlands by Mr. Turner and Mr. W. J. Hooker. We think, with Mr. Dickson, that it is a very distinct species. Before the species of *Splachnum* were well discriminated, this was taken for the *vasculosum* of Linnæus, a beautiful and very different one, never yet found in Britain; but it is rather wonderful that, after Hedwig's admirable and striking figures in his 2d vol. of *Cryptogamia* were published, this should still be misunderstood.

It grows generally on cow-dung, on wet alpine bogs or moors, being annual, of quick growth, and found in perfection about July. It is generally much smaller than *S. sphæricum, t.* 785. Stems very short. Leaves ovate, broad, entire except at the point, which is elongated and serrated. Fruit-stalks an inch or more in height, much bent or zigzag, of a tawny orange. Receptacle (or pedestal) globose, of a red rusty brown, smooth. Capsule paler and shorter, its teeth usually lasting, reflexed. Lid hemispherical, with a very blunt point.

1971



Aug. 1. 1808. Published by Jas. Sowerby, London.

108.

SPLACHNUM ampullaceum.

Purple Splachnum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* placed on the summit of a large coloured fleshy receptacle. *Veil* deciduous. Male flowers generally on a separate plant.

SPEC. CHAR. Receptacle swelling, obconical. Leaves serrated, acute.

SYN. Splachnum ampullaceum. *Linn. Sp. Pl.* 1572. *Hudf. Fl. An.* 468. *With. Bot. Arr. v.* 3. 78. *Relh. Cant.* 396.

Bryum erectis gigartinis capitulis, foliis Serpylli pellucidis acutis. *Raii Syn.* 93.

B. ampullaceum, foliis Thymi pellucidis, collo strictiore. *Dill. Musc.* 343. *t.* 44. *f.* 3. (compared at Oxford, *J. E. Smith.)*

GATHERED on Iver Heath near Uxbridge by Mr. Jacob Rayer, August 24 last, though it commonly bears its capsules in the spring.

The roots are said to be annual, and produce numerous short upright branches, clothed with lanceolate leaves, various in breadth, sharply pointed, serrated, pale and pellucid. Some branches are terminated by a stellated male flower. Others bear the capsule on a straight upright flower-stalk, which gradually rises to the height of two inches, and is round, smooth, pellucid, of a bright red. This stalk terminates in an obovate or conical purplish succulent body, compared by Dillenius to a vinegar cruet, on the blunt top of which stands a small cylindrical capsule, with eight teeth round its orifice, which at length are reflexed. The veil or calyptra is very minute and fugacious; the lid of the capsule small and blunt. The columella is lengthened out beyond the rim of the capsule, appearing like a pistillum, which it may really be.

Linnæus, too confident in Dillenius, who was a better observer than physiologist, took the capsule of Mosses for their anthera; but the celebrated Hedwig has now set us right in that particular.

SPLACHNUM Turnerianum.

Turnerian Splachnum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* cylindrical, placed on a fleshy *receptacle*. *Fringe* of a simple row of teeth, approaching each other in pairs.

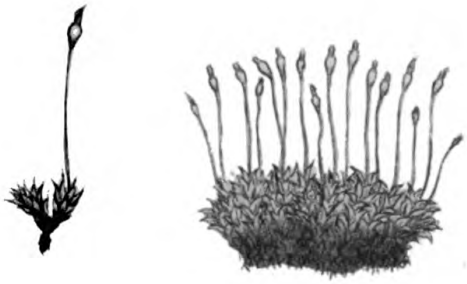
SPEC. CHAR. Receptacle obovate, green. Capsule rounded at the base, standing on a short stalk. Leaves lanceolate, taper-pointed, somewhat serrated.

SYN. Splachnum Turnerianum. *Dicks. Crypt. fasc.* 4. 3. *t.* 10. *f.* 11.

S. sagittifolium. *With.* 791. *t.* 18. *f.* 2, left hand figure.

A NATIVE of mountainous heaths and moors, found by Mr. Griffith in North Wales, and by Mr. Turner and Mr. Sowerby in a bog on a high hill 3 miles from Exeter towards Sydmouth.

This is one of the smaller kinds of *Splachnum*, being only an inch high. It is in perfection about the end of May or middle of June. The stem is very short and simple. Leaves lanceolate, broad in the middle, pale green, reticulated, terminating in a taper point; the upper ones serrated, especially in their upper part. Fruit-stalk purplish, changing abruptly into a pale green at the top. Receptacle of a pale pellucid green, obovate. Capsule light reddish brown, cylindrical, rounded off at the base, and contracted into a short foot-stalk which joins it to the receptacle. Lid red, convex. Fringe of 8 pairs of yellowish, at length reflexed, teeth. Veil short, oblique.



Jan.y 1. 1820. Published by Jas. Sowerby London

110.

SPLACHNUM lingulatum.

Tongue-leaved Gland-moss.

CRYPTOGAMIA Musci.

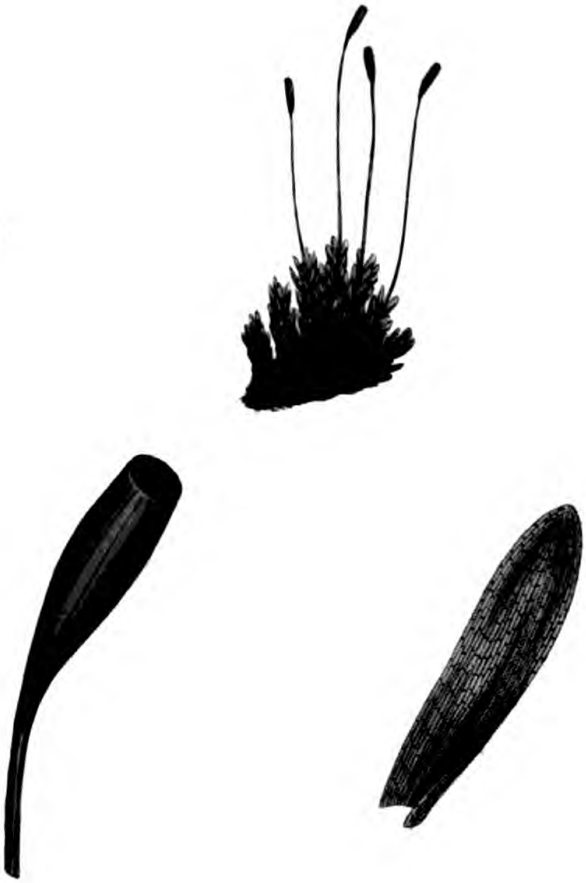
GEN. CHAR. *Caps.* cylindrical, placed on a fleshy *receptacle.* *Fringe* simple, of 16 teeth, standing in pairs.

SPEC. CHAR. Receptacle inversely conical, brown, narrower than the capsule. Leaves tongue-shaped, obtuse, entire, pointless.

SYN. Splachnum lingulatum. *Dicks. Crypt. fasc.* 4. 4. *t.* 10. *f.* 6. *Sm. Fl. Brit.* 1177.

SENT from the Highland mountain of Ben Lawers by Mr. G. Don. We have also been favoured with a specimen by Mr. Dickson, its original finder and describer.

This species forms tufts, supposed to be annual like the rest of its genus. Roots black, dense. Stems simple or divided, not an inch high. Leaves of a fine pellucid green, with strong oblong reticulations, tongue-shaped, rather concave, obtuse, entire, single-ribbed, without any terminal hair or point; the lower ones rather more acute. Fruitstalks solitary, terminal, above an inch high, of a fine deep crimson when fresh, not quite straight. Receptacle so small and narrow as to seem merely the elongated base of the capsule, which is of the same brown or chesnut hue, oblong, with a widish mouth. Fringe short, inflexed, brown.



Lee sculp. published by J. Sowerby London.

SPLACHNUM reticulatum.

Reticulated Gland-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* cylindrical, placed on a fleshy *receptacle.* *Fringe* simple, of 16 teeth, standing in pairs.

SPEC. CHAR. Receptacle inversely conical, brown, narrower than the capsule. Leaves ovate, acute, beardless, serrated towards the point.

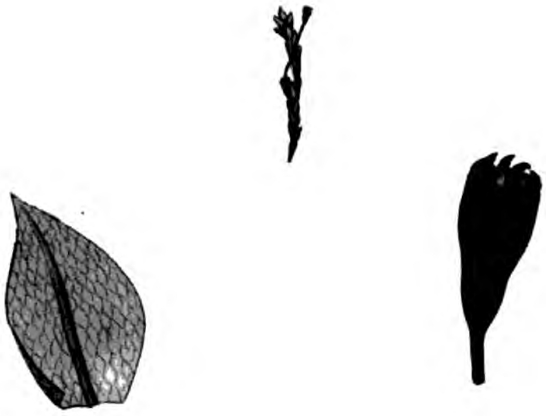
SYN. Splachnum reticulatum. *Sm. Fl. Brit.* 1177. Bryum reticulatum. *Dicks. Crypt. fasc.* 2. 4. *t.* 4. *f.* 6. *With.* 821. *Hull.* 255.

MR. DICKSON found this *Splachnum* on the Scottish mountain of Ben High. No other person has met with the same, and his original specimens were in an advanced and damaged condition. One of these only, from Mr. Turner's herbarium, could we procure; to which we annex a magnified capsule from Mr. Dickson's plate.

The broad ovate leaves, which are strongly reticulated, distinguish this species from *lingulatum*, *t.* 2095, with which the smallness of the receptacle nearly agrees. The latter, with the swelling capsule, both together form a pear-like figure. The fringe is inflexed. Fruitstalk from the bottom of the stem or branch.

S. Frœlichianum, Hedw. Crypt. v. 3. 99. t. 40, differs in having more spatulate and blunt leaves, with a terminal fruitstalk, and we can scarcely suppose it the same with our plant, though Dr. Swartz unites them. His synonym therefore, cited with doubt in the *Fl. Brit.*, should be excluded from thence, as belonging to the plant of Hedwig.

2507



Pub. 1803 published by Jas. Sowerby London

ANDRÆA rupestris.

Dusky Rock Andræa.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* very short. *Fringe* simple, of 4 incurved teeth, cohering at their tips, and bearing the *lid* and *veil.*

SPEC. CHAR. Leaves lanceolate, keeled, sickle-shaped, leaning one way.

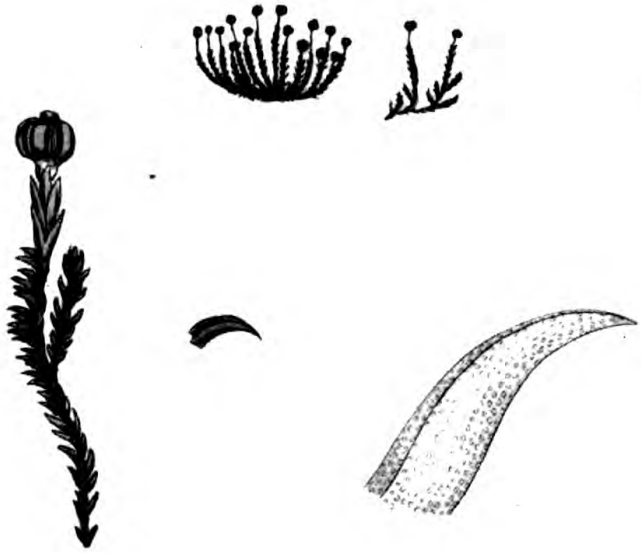
SYN. Andræa rupestris. *Sm. Fl. Brit.* 1178.

Jungermannia rupestris. *Linn. Sp. Pl.* 1601. *Huds.* 516. *With.* 882. *Hull.* 281. *Lightf.* 787. *Dicks. H. Sicc. fasc.* 7. 23.

Lichenastrum alpinum nigricans, foliis capillaceis reflexis. *Dill. Musc.* 507. *t.* 73. *f.* 40.

THE late Mr. Ehrhart of Hanover, one of the most industrious and correct botanists, and an ardent pupil of Linnæus, first separated this genus from *Jungermannia,* and removed it, with unquestionable propriety, to the true mosses. He was one of the first who understood the real genera of this tribe; and being entrusted with the printing of Linnæus's *Supplementum,* he had introduced some of his principles into that work; but the younger Linnæus, not having studied the subject, with misplaced indignation cancelled the sheet.

This plant grows on moist alpine rocks. We received it from Mr. Robson. It is perennial, bearing fruit in the spring and summer. The stems are half an inch high, branched, leafy, forming tufts. Leaves dull green or blackish, imbricated, curved to one side, acute, keeled, sickle-shaped, entire, without any nerve. Stalks terminal, solitary, short, pale brown, clothed with larger, closely imbricated, leaves. Capsule erect, whitish, small and shallow. Fringe of 4 very large, lanceolate, incurved, brown teeth, cohering at their points, and originally tipped with the lid and veil, see our next plate.



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

ANDRÆA Rothii.

Black Mountain Andræa.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* oblong, of four valves, whose points adhere to the *lid.* *Fringe* none.

SPEC. CHAR. Leaves lanceolate, keeled, sickle-shaped, with a midrib, leaning one way. Sheath-scales without a rib.

SYN. Andræa Rothii. *Mohr. Crypt. Germ.* 385. *t.* 11. *f.* 7—9. *Hooker's Mss.*

A. rupestris. *Sm. Fl. Brit.* 1178. *Turn. Musc. Hib.* 14.

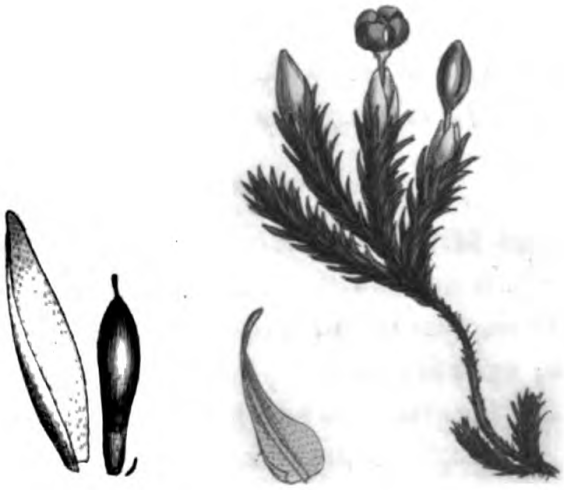
Lichenastrum alpinum nigricans, foliis capillaceis reflexis. *Dill. Musc.* 507. *t.* 73. *f.* 40.

OUR friend Mr. W. Hooker has enabled us to correct an error into which we had fallen concerning *A. rupestris, t.* 1277, nor were we singular in this mistake. The present plant, often gathered by us in Scotland and Westmoreland, proves distinct from the *A. rupestris*, with which we, like Linnæus, had confounded it, though aware of a difference in colour, which might have excited a more accurate scrutiny.

This grows upon dry exposed rocks, and is of a very dark blackish hue, though readily discernible by the paler reddish-brown capsules. The leaves, having a midrib, distinguish it from *rupestris*, though their perichætial scales nearly agree.

We learn also from Mr. Hooker's paper, communicated to the Linnæan Society, that the supposed 4 teeth of the fringe, are in fact valves of the capsule, as appears by the *columella*, equal to them in length, which bears the seeds over its whole surface.

2162.



June 1 1810 published by Jas Sowerby London.

ANDRÆA alpina.

Chocolate Alpine Andræa.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* very short. *Fringe* simple, of 4 incurved teeth, cohering at their tips, and bearing the *lid* and *veil.*

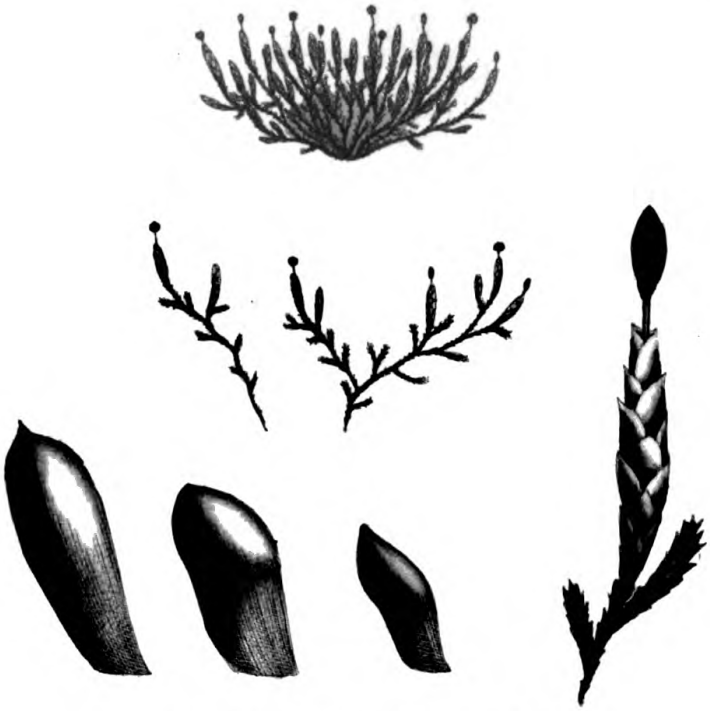
SPEC. CHAR. Leaves ovate, concave, imbricated every way.

SYN. Andræa alpina. *Sm. Fl. Brit.* 1179.
Andreæa alpina. *Hedw. Sp. Musc.* 49.
A. rupestris. *Hedw. Sp. Musc.* 47. *t.* 7. *f.* 2?
A. petrophila. *Ehrh. Crypt.* 67. *Beitr. v.* 1. 180. and 192.
Jungermannia alpina. *Linn. Sp. Pl.* 1601. *Huds.* 517. *With.* 882. *Hull.* 281. *Lightf.* 787. *Dicks. H. Sicc. fasc.* 3. 23.
Lichenastrum alpinum atro-rubens teres, calycibus squamosis. *Dill. Musc.* 506. *t.* 73. *f.* 39.

THIS is found like the last in the crevices of Alpine rocks. It agrees with that in size and habit, but is more invariably of a very dark brown colour approaching to black. It is also essentially distinguished by the leaves being concave, not keeled nor sickle shaped, and closely imbricated every way, never in any degree curved to one side. Those which invest the fruit-stalk are blunt with a little point. The capsule is brown, teeth purplish black, crowned with the withered veil and lid.

Mr. Turner first suggested to us that Hedwig seems to have figured and described this for the *rupestris*. We did indeed find his figure and description incorrect, but dare not suspect such a mistake.

The place of the *Andræa* is before *Tetraphis* in the natural arrangement. Ehrhart named it after Mr. Andrea an apothecary of Hanover. We think one *e* out of his *Andreæa* may be well spared.



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

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115.

ANDRÆA nivalis.

Tall Slender Andræa.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* oblong, of four valves, whose points adhere to the *lid.* *Fringe* none.

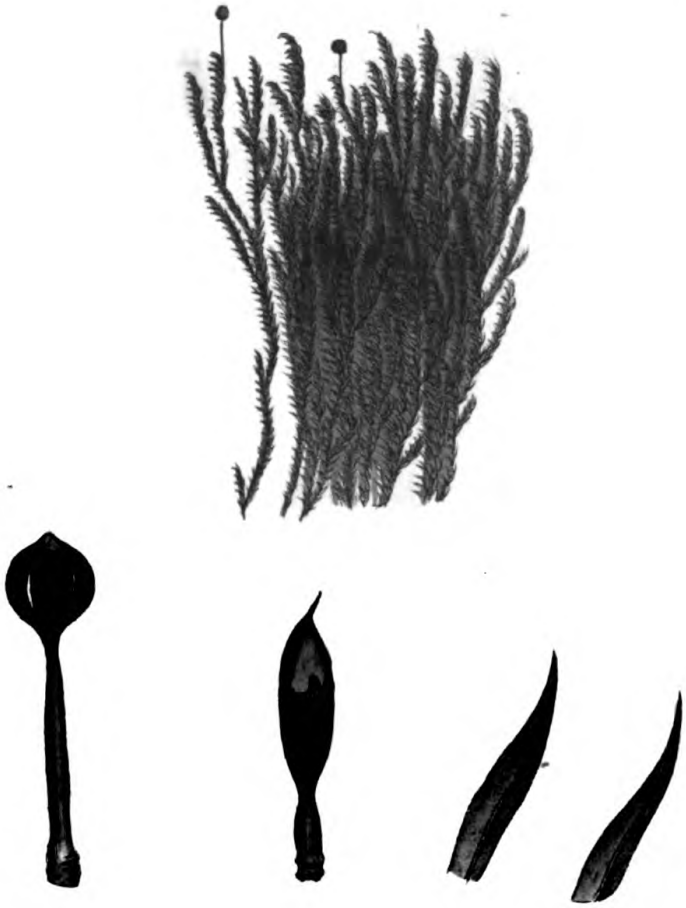
SPEC. CHAR. Stem branched. Leaves loosely imbricated, lanceolate, single-ribbed, curved toward one side. Sheath-scales similar to the leaves.

SYN. Andræa nivalis. *Hooker Tr. of Linn. Soc. v.* 10. 395. *t.* 10. *f.* 4.

COMMUNICATED by Mr. W. Borrer, who with Mr. Hooker discovered this new *Andræa* upon rocks on the summit of Ben Nevis, or Nivis, at the east end. It is perennial, producing fruit in the summer.

The present species greatly exceeds all previously known in its height, which is three inches, or more. The stems form dense tufts, and are upright, slender, leafy, alternately branched, rarely quite simple. Leaves rather loosely imbricated, lanceolate, pointed, beardless, entire, slightly concave, brownish, very minutely dotted, furnished with a strong, dark red midrib, all more or less sickle-shaped, and curved toward one side. The scales of the sheath resemble the leaves, except that, according to Mr. Hooker, the rib of the former extends to about half their length only. Fruitstalk terminal, solitary, tumid at the base, gradually elongated to about a quarter of an inch in height. Capsule elliptical, dark brown, strongly reticulated, with a small inversely conical base or *apophysis*, the valves cohering at their points by means of the immoveable lid, but gaping laterally in dry weather to discharge the seeds. Veil close, torn off irregularly from its base.

2334



Oct. 1810 published by Jas. Sowerby London.

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116.

TETRAPHIS pellucida.

Four-toothed Moſs.

CRYPTOGAMIA Muſci.

GEN. CHAR. *Capſule* oblong. *Fringe* ſimple, of 4 pyramidal, upright, ſeparate teeth.

SPEC. CHAR. . . . . .

SYN. Tetraphis pellucida. *Hedw. Sp. Muſc.* 45. *t.* 7. *f.* 1. *Swartz. Muſc. Suec.* 21. *Sibth.* 275.

Mnium pellucidum. *Linn. Sp. Pl.* 1574. *Hudſ.* 472. *With.* 799. *Hull.* 249. *Relh.* 398.

M. ſerpilli foliis tenuibus pellucidis. *Dill. Muſc.* 232. *t.* 31. *f.* 2.

M. minus non ramoſum, anguſtioribus et pellucidis foliis. *Dill. in Raii Syn.* 78.

Bryum pellucidum. *Abbot.* 237.

A NATIVE of wet ſhady places at the roots of trees, for ſpecimens of which we are obliged to Mr. Abbot. It flowers early in the ſpring, ripening its capſules in April or May.

Roots annual, tufted, ſhaggy with black or brown matted hairs. Stems ſimple, erect, clothed with alternate, ſeſſile, ovate or lanceolate, entire, pellucid, ſingle-ribbed, beardleſs leaves, various in breadth, the uppermoſt and lowermoſt gradually diminiſhing and remote. Male flower terminal, ſolitary, round, depreſſed, encircled with three or four large broad leaves. Sometimes, by Hedwig's deſcription, it ſeems to be abortive, and gemmiparous; at other times, in the early ſpring, hermaphrodite. Generally however the female flower terminates a different ſtem, and conſiſts of from 4 to 6 ſtyles, one of which only (as uſual) is fertile, and the oblong nearly upright capſule becomes elevated on a ſtraight ſlender ſtalk. The veil is torn at the baſe, orange-coloured at the tip. Lid conical, reddiſh, thin. Teeth 4, of a ſhining brown, erect, pyramidal, pointed, ſmooth, all ſeparate from top to bottom, by which the genus is clearly characterized, and this is its only known ſpecies.

1020.

117.

GRIMMIA Browniana.

Brownian Grimmia.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fringe* simple, of 16 teeth, broadest at their base. *Flowers* terminal. *Veil* cylindrical.

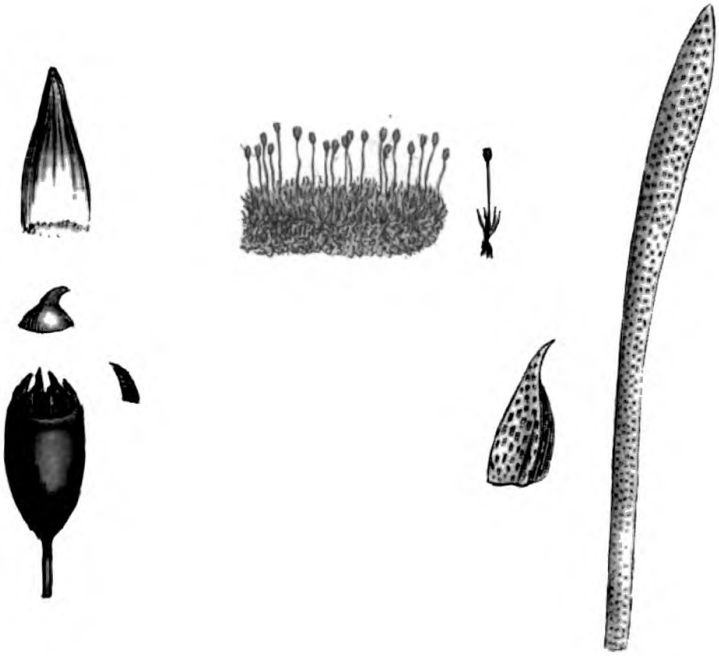
SPEC. CHAR. Radical leaves linear, flat; floral ones ovate, concave; all dotted. Capsule elliptical, erect, smooth. Stem none.

SYN. Bryum Brownianum. *Dicks. Crypt. fasc.* 4. 7. *t.* 10. *f.* 16.

Orthotrichum Brownianum. *Sm. Fl. Brit.* 1269.

FEELING it a duty to correct every error of which I am convinced, I take the earliest opportunity afforded me by numerous perfect specimens of this moss, gathered by Mr. W. Brunton on sand-stone rocks at Lord Grantley's lakes near Ripon, to remove it from *Orthotrichum* to *Grimmia*, to which its agreement in many respects with the species in the last plate has finally determined me. Having previously seen but one very poor specimen, and an incomplete drawing, I was led chiefly by the ribbed veil, which I still know only from that drawing, to suppose it an *Orthotrichum*, for such a veil is scarcely found in any other genus.

The root is small, fibrous, and probably annual. Stem none. Radical leaves few, erect, linear, very narrow, a little dilated upwards, obtuse, entire, ribless: those which form a *perichætium*, at the base of the fruit-stalk, are short, ovate, acute, with a central rib: all the leaves are of a pale olive brown, pellucid, dotted or reticulated. Stalk solitary, red. Capsule erect, ovate, smooth, brown. Lid short, acute, oblique when at maturity. Fringe red, the teeth cohering in pairs.



Feb.ᵒ 1. 1803. Published by Jas. Sowerby, London.

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118.

BRYUM extinctorium.
Extinguisher Bryum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* with a lid. *Veil* smooth. *Fruit-stalk* from a terminal tubercle.

SPEC. CHAR. Capsule cylindrical, entirely covered by the bell-shaped beaked veil. Leaves lanceolate, with a strong rib, entire.

SYN. Bryum extinctorium. *Linn. Sp. Pl.* 1581. *Huds.* 475. *With.* 816. *Relh.* 402. *Dicks. H. Sicc. fasc.* 8. 18. *Abbot* 239.

B. erectis capitulis, calyptrâ laxâ conicâ, foliis Serpilli pellucidis angustioribus. *Raii Syn.* 92.

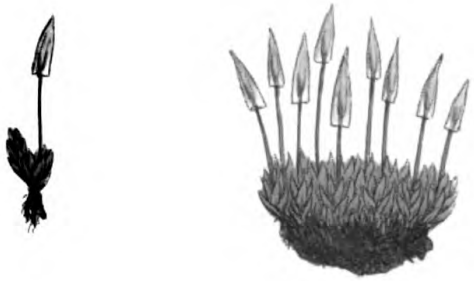
B. calyptrâ extinctorii figurâ minus. *Dill. Musc.* 349. *t.* 45. *f.* 8.

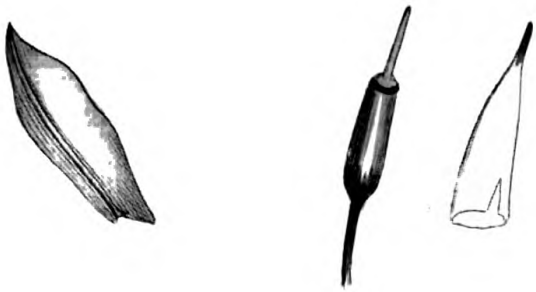
Encalypta vulgaris. *Sibth.* 277.

FOUND under the shade of rocks or walls in a dry sandy soil in many different places, perfecting its capsules in March and April. Mr. Teesdale, F. L. S. communicated it to us.

Root fibrous. Plants growing in tufts, generally simple and short, with a few thick-set, lanceolate, entire leaves, curling in when dry, and furnished with a very strong round reddish mid-rib. Stalk about an inch high, red. Capsule cylindrical, bluntish, with a slender cylindrical beak, and very minute teeth round the orifice. The pale semitransparent veil best distinguishes this species; it is beaked at the top, bell-shaped, cut off horizontally below, and hangs down much below the base of the capsule.

The plant figured by Dillenius *t.* 45. *f.* 9, is esteemed a variety by Linnæus, Hudson, and Withering, though Hedwig makes it a species. It is in every part more luxuriant, the stem branched, mouth of the capsule more evidently fringed, and veil torn at the base into about 6 segments. In other respects it agrees, except in flowering later; for the difference of retaining its colour when dried we have found to be fallacious, the common B. *extinctorium* when quickly dried remaining as green as any moss whatever for many years.





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119.

ENCALYPTA ciliata.

Fringed Extinguisher-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* cylindrical. *Fringe* of 16 linear upright teeth. *Veil* campanulate, inflated, wide.

SPEC. CHAR. Veil toothed at the margin. Stem branched. Leaves lanceolate.

SYN. Encalypta ciliata. *Hedw. Sp. Musc.* 61. *Sm. Fl. Brit.* 1181. *Turn. Musc. Hibern.* 18.

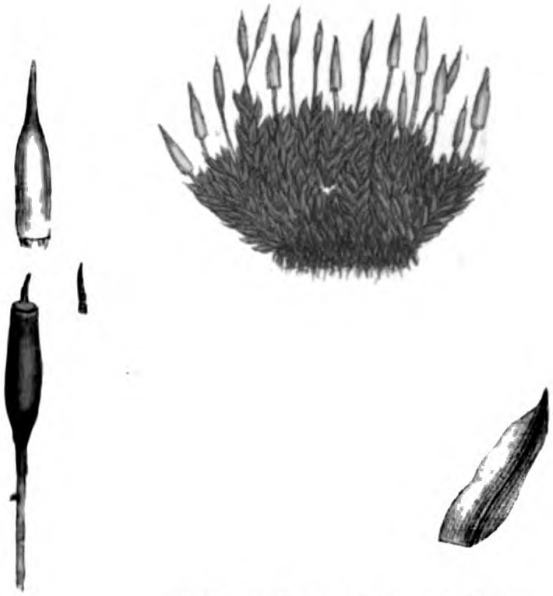
Leersia ciliata. *Hedw. Crypt. v.* 1. 49. *t.* 19.

Bryum extinctorium β. *Linn. Sp. Pl.* 1581. *Huds.* 476. *With.* 817. *Hull.* 258. *Lightf.* 719.

B. calyptrâ extinctorii figurâ, majus et ramosum. *Dill. Musc.* 350. *t.* 45. *f.* 9.

A NATIVE of rocky mountainous places, specimens of which gathered near Ripon, Yorkshire, have been sent us by Mr. W. Brunton junior. It is found in fruit in the summer season, and is perennial.

This species differs from the more common *Encalypta vulgaris* (figured by the name of *Bryum extinctorium* in our 8th vol. *t.* 558) in being generally of a larger size, with taller and more branching stems, but particularly in having a longer and more slender point to the veil, and in the border of that part being curiously fringed with an indeterminate number of flat membranous teeth, which when numerous are narrow, when few broad. These two latter circumstances are enough to fix the species. We alluded to it in p. 558, when under some doubts whether it were more than a variety.



Tab. 1 1808. Published by Jas Sowerby, London

ENCALYPTA alpina.

Alpine Extinguisher-moss.

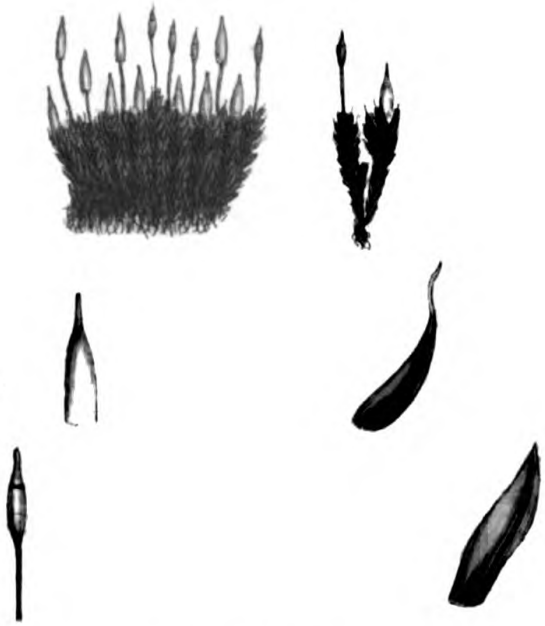
CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* cylindrical. *Fringe* of 16 linear upright teeth. *Veil* campanulate, inflated, wide.

SPEC. CHAR. Veil roughish at the margin. Stem branched. Lid as long as the capsule. Leaves ovato-lanceolate, acute; the uppermost hair-pointed.

GATHERED on rocks about the very summit of Ben Lawers by Mr. G. Don in October 1804. We have never seen it before, nor can we meet with any description answerable to it.

The whole plant is smaller than that in our last plate. Stems branched, forming tufts scarcely an inch high. Leaves dark-green with a red rib, lanceolate inclining to ovate, entire, pointed; the uppermost tipped each with a longish hair, inflexed when dry. Fruit-stalks terminal, red, half an inch long. Capsule erect, somewhat elliptical, with a slender lid of its own length. Veil with a longish point, the edge by no means fringed, nor yet quite smooth, but a little rough or uneven.



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

ENCALYPTA streptocarpa.

Spiral-fruited Extinguisher-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* cylindrical. *Fringe* of 16 linear upright teeth. *Veil* campanulate, inflated, wide.

SPEC. CHAR. Veil contracted and jagged at the margin. Stem branched. Leaves oblong. Capsule spirally furrowed.

SYN. Encalypta streptocarpa. *Hedw. Sp. Musc.* 62. *t.* 10. *f.* 10—15. *Sm. Fl. Brit.* 1182.

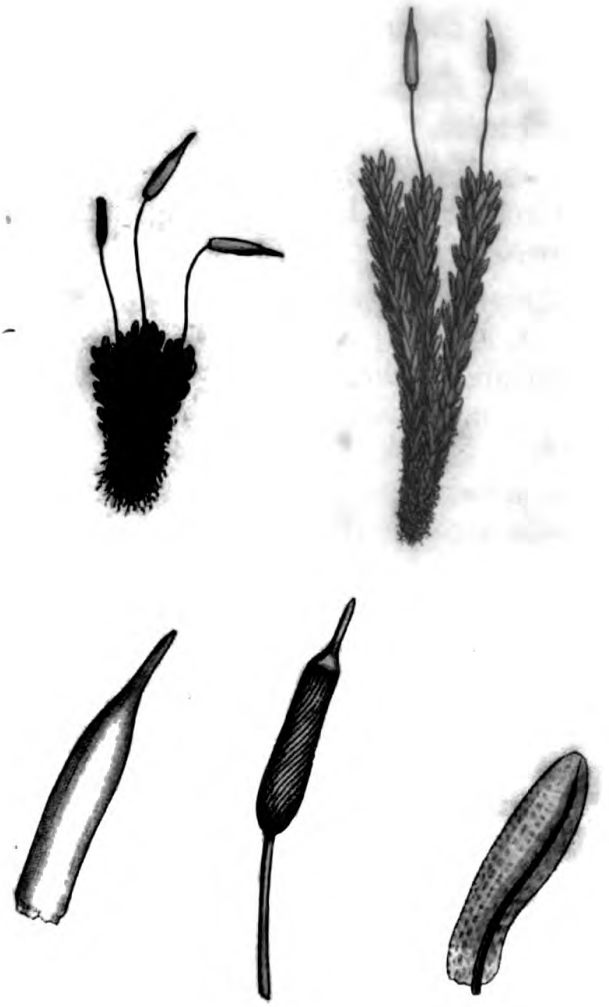
Bryum ciliare. *Dicks. Crypt. fasc.* 4. 15; exclusive of the synonyms.

B. *n.* 1828. *Hall. Hist. v.* 3. 48. *t.* 45. *f.* 3.

Hypnum saxatile erectum, ramulis teretibus, foliis subrotundis saturatè viridibus. *Dill. Musc.* 335. *t.* 43. *f.* 71.

FOUND by Mr. Dickson on the mountains of Scotland. Specimens from himself, one of which is the tallest in our plate, the other being from Switzerland, have enabled us to determine his plant; while an investigation of the herbarium of Dillenius has discovered the true synonym of that author, who has heretofore been erroneously quoted, and who never saw the fruit of this curious moss.

This is much larger than any other of its genus. The stems, which grow in tufts, vary in height from 1 to 2 inches or more, and are mostly branched; they are entirely clothed with dark-green, oblong, entire, obtuse and rounded leaves, imbricated every way, incurved and twisted when dry, each furnished with a strong coloured mid-rib. Fruit-stalks at first terminal, soon becoming lateral, solitary, nearly erect, strong, purplish, naked at the base. Capsule erect, cylindrical, a little swelling at the lower part, brown, very neatly and curiously furrowed in a spiral manner, an unique instance of the kind, as far as we know, in mosses. Lid not so long as the capsule, straight, bluntish, tawny, red at the bottom. Veil large, cylindrical, smooth, shining, pointed, jagged, and somewhat contracted, at the base. Fringe red, straight, deciduous.



June 1810 published by Jas. Sowerby London

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ENCALYPTA Daviesii.

Least Extinguisher-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* cylindrical. *Fringe* of 16 linear upright teeth. *Veil* campanulate, inflated, wide.

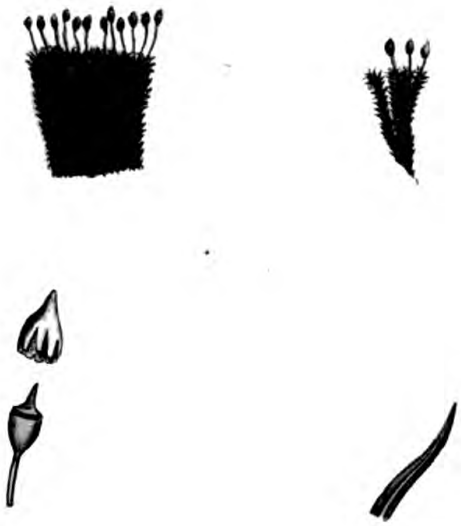
SPEC. CHAR. Veil furrowed, torn in the margin. Stem branched. Leaves awl-shaped.

SYN. Encalypta Daviesii. *Sm. Fl. Brit.* 1183.
Bryum Daviesii. *Dicks. Crypt. fasc.* 3. *t.* 7. *f.* 6. *With.* 835. *Hull.* 264.

FOREIGN botanists have not yet noticed this moss, the specific name of which was given by Mr. Dickson in honour of its original discoverer the Rev. Hugh Davies, who found it in Anglesea. Mr. R. Brown, now on a botanical expedition to New Holland, favoured us with specimens from the North of Ireland, having observed it on the rocks at Fairhead, and particularly on the fallen columns of the Giant's Causeway, growing in great abundance. It is perennial, but we are not informed of the precise time of its fructification.

The stems are branched, leafy, and grow in dense tufts half an inch or somewhat more in height. Leaves crowded, awl-shaped, keeled, entire, dark-green, curled inward by drying. Stalks terminal, erect, solitary, short, tawny, sheathed at the base. Capsule cylindrical inclining to ovate, short and abrupt. Lid convex, with a tapering straight point. Fringe short, inclining inwards. Veil yellow, shining, furrowed lengthwise, tipped with brown, and at length torn at the base.

It is not without great diffidence that we refer this plant to *Encalypta* rather than to *Grimmia*; but the linear teeth, and especially the inflated veil, have determined us. See the most common species of this genus in *vol.* 8. *t.* 558.



March 1 1804 Published by Jas Sowerby London.

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