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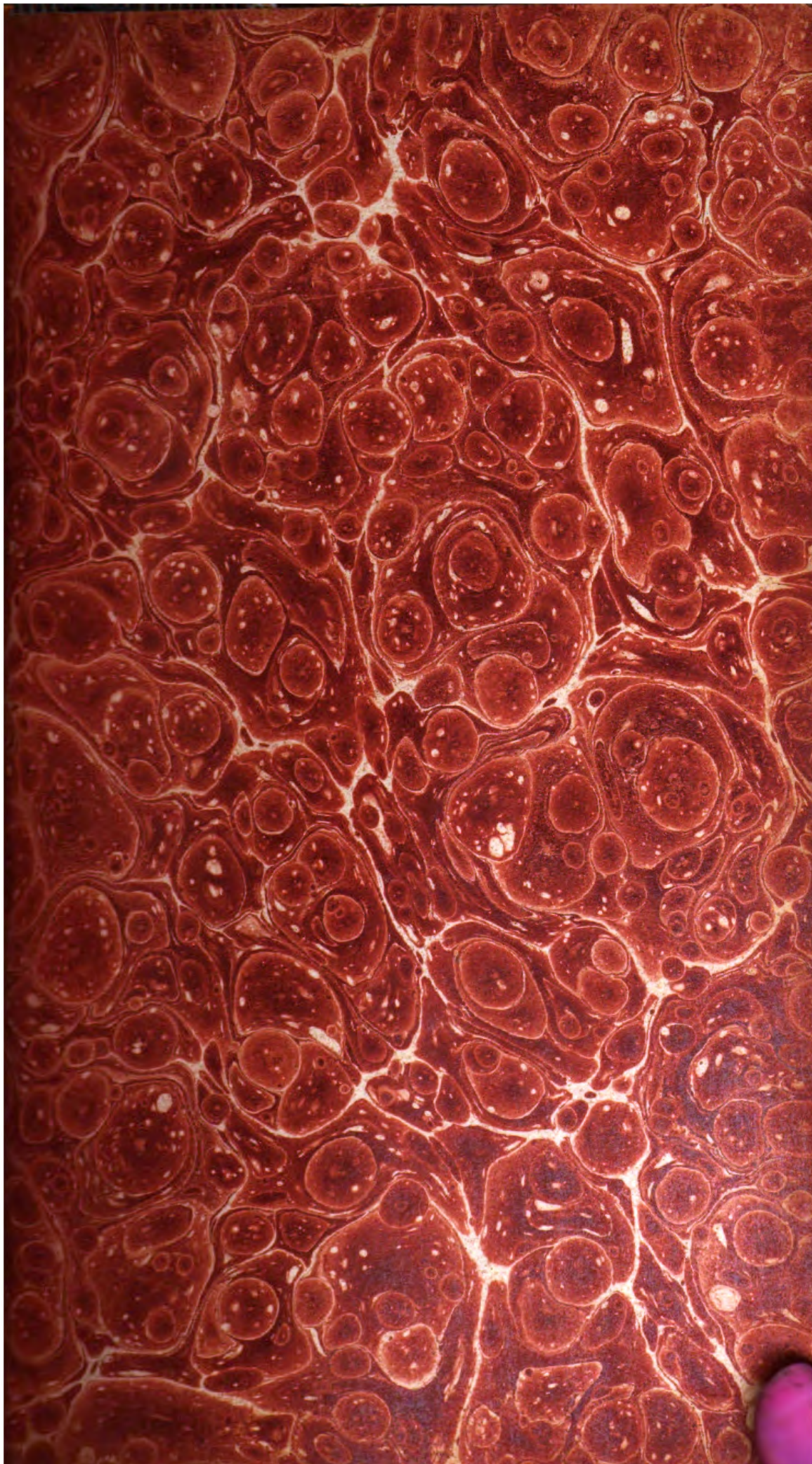


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ENGLISH BOTANY;  
OR,  
COLOURED FIGURES  
OF  
BRITISH PLANTS,  
WITH THEIR  
ESSENTIAL CHARACTERS, SYNONYMS,  
AND PLACES OF GROWTH.  
TO WHICH WILL BE ADDED,  
OCCASIONAL REMARKS.

BY

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

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LISBON, LUND, BERLIN, PHILADELPHIA, AND  
THE NAT. HIST. SOCIETY OF PARIS;  
PRESIDENT OF THE LINNEAN SOCIETY.

THE FIGURES BY  
JAMES SOWERBY, F.L.S.

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—“VIRESCQUE ACQUIRIT EUNDO.”—*Virg.*

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VOL. XX.

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MDCCCV.







## LICHEN scrobiculatus.

*Pitted Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, creeping, roundly lobed, crenate, pitted; glaucous above, with mealy warts; brown and downy beneath, with white bald spots. Shields small, scattered, tawny.

SYN. Lichen scrobiculatus. *Scop. Carn. n.* 1391.

*Lightf.* 850. *With. V.* 4. 59.

*L. verrucosus.* *Huds.* 545. *Sibth.* 331. *Jacq. Coll. V.* 4. 278. *t.* 18. *f.* 2.

*Lichenoides pulmoneum villosum*, superficie scrobiculata et peltata. *Dill. Musc.* 216. *t.* 29. *f.* 114.

*L. arboreum foliosum cinereum et sinuatum*, inferne scabrum. *Raii Syn.* 75.

*Pulmonaria verrucosa.* *Hoffm. Pl. Lich. t.* 1. *f.* 1.

**F**OUND on the trunks of trees, sometimes on mossy dry rocks, in the mountainous parts of England, Scotland and Wales, but not frequently. The fronds spread loosely over each other, and are rather leafy than coriaceous, cut into round lobes and obtusely notched. Their upper side is glaucous, full of irregular pits, smooth towards the base or centre, but towards the margin they are sprinkled with grey mealy warts. The under side is downy, brown, paler towards the edge, and spotted all over with irregular bare white spots. The shields are so rare that Dillenius never saw them, but copied them from Micheli, in whose figure *t.* 49. they are drawn without any margin. After the examination of many hundred specimens we have found two in fructification. In these the shields are about the size of mustard seed, of a tawny brown, flat, with an elevated, inflexed, downy (not mealy) margin, of the colour of the frond.

We know not why Mr. Hudson chose to change Scopoli's expressive name for this Lichen: we restore it with the more satisfaction, as there is another *L. verrucosus* in Weber.



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## L I C H E N pulmonarius.

*Lungwort Lichen.*C R Y P T O G A M I A *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, lacinated, obtuse, smooth; above green and pitted, somewhat reticulated; downy beneath. Shields mostly marginal.

SYN. Lichen pulmonarius. *Linm. Sp. Pl.* 1612. *Huds.* 542. *With. v. 4.* 54. *Relb.* 432. *Sibth.* 331. *Abbot.* 267.

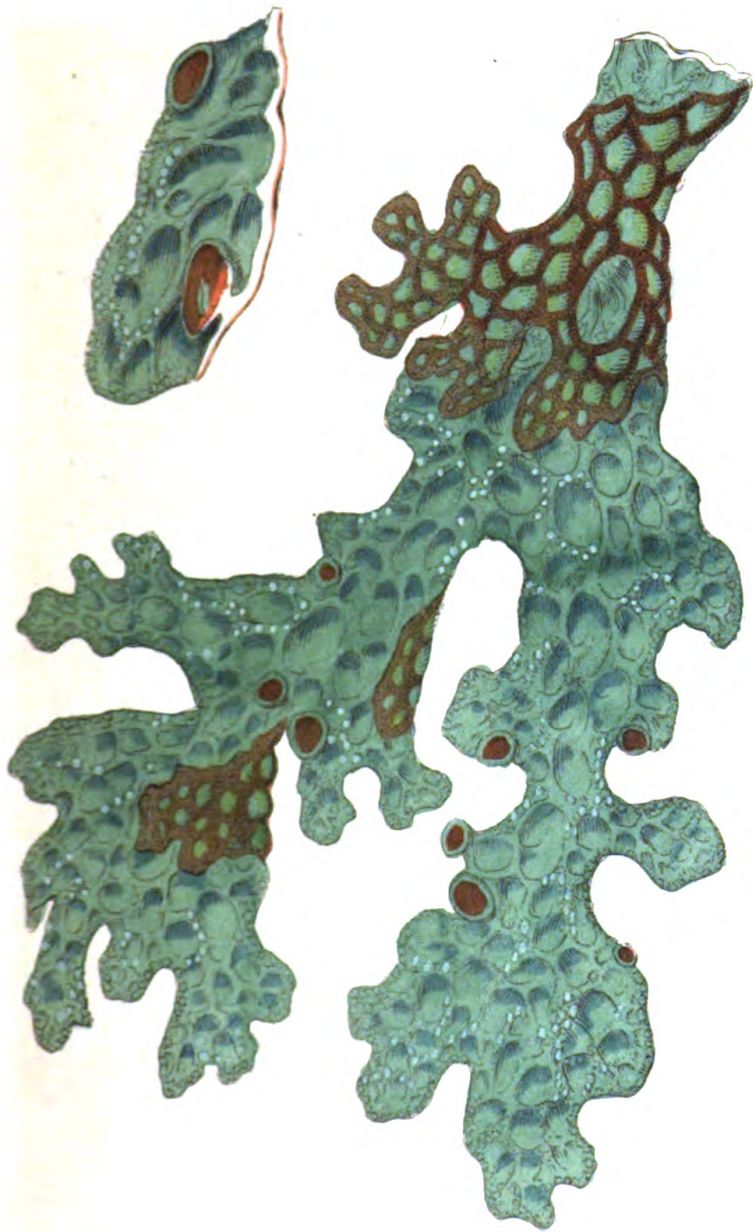
Lichenoides peltatum arboreum maximum. *Raii Syn.* 76.

L. pulmoneum reticulatum vulgare, marginibus peltiferis. *Dill. Musc.* 212. t. 29. f. 113.

Pulmonaria reticulata. *Hoffm. Pl. Lich. t.* 1. f. 2.

**M**OST plentiful in the northern or mountainous countries, where it clothes the trunks of large trees with a rich leafy garment. The fronds grow a little imbricated, but considerably raised from the bark into which their roots are inserted. They are leathery, green, deeply divided, irregularly and bluntly lobed, strongly pitted, the interstices forming a kind of network, which towards the margin of the frond is powdery or warty, bearing the supposed *pollen*. The under side is downy, blistered, pale, with a correspondent network of brown veins. Shields for the most part marginal, but not always; they are nearly sessile, flat, chestnut-coloured, with an elevated, smooth, green border. They are found at all times of the year, and in tolerable plenty.

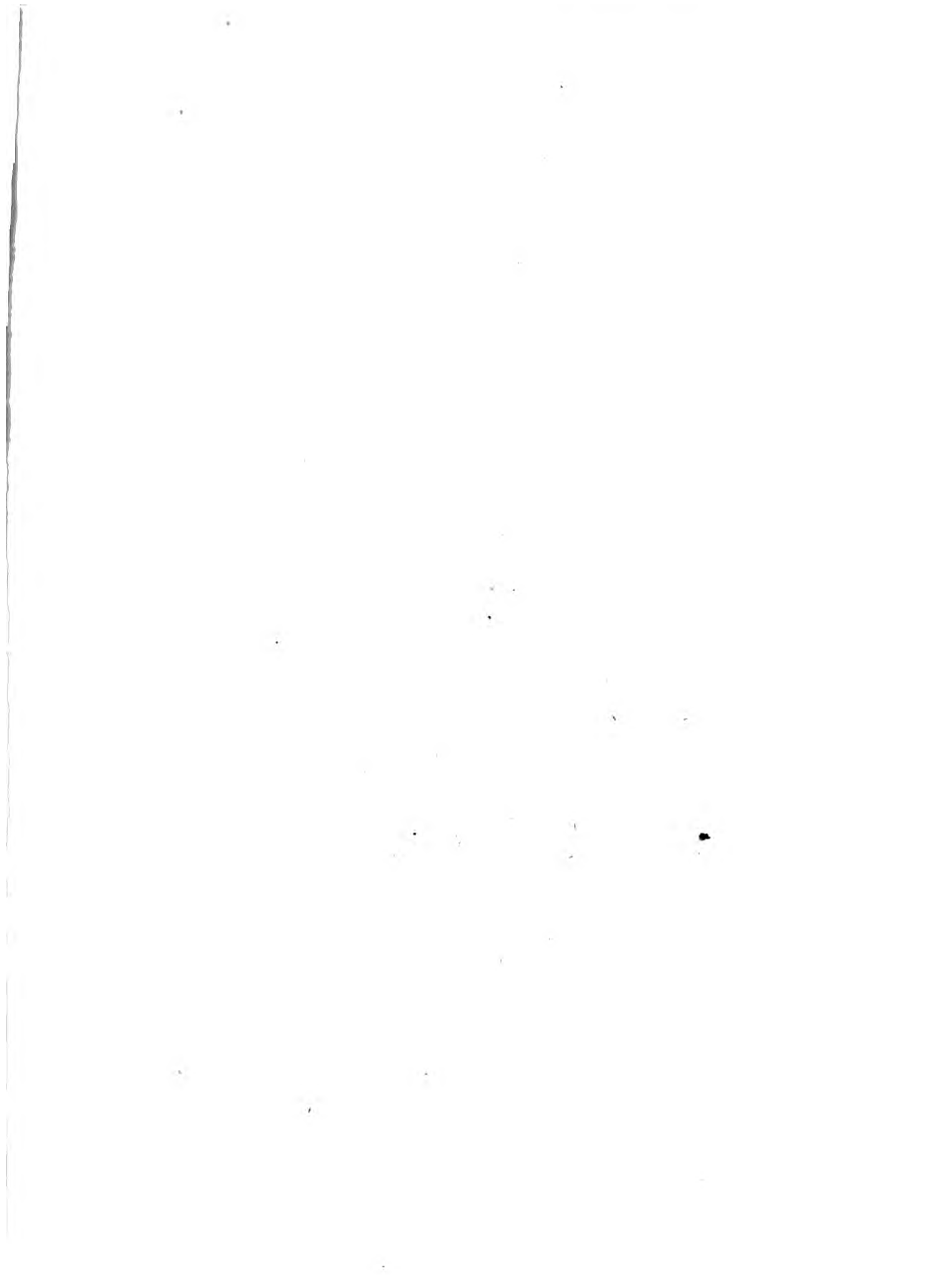
This Lichen is used on the Continent not unsuccessfully, in a decoction with milk, to cure coughs. It is bitter, astringent and mucilaginous, and promotes expectoration, much like *Polygala vulgaris*, t. 76, which it is said to resemble in taste. It seems to be an instance of a foolish principle having led to truth, for it was first used to cure coughs because its figure resembled the lungs. So the *Orchis* tribe were used as stimulants for a peculiar purpose, on account of the shape of their roots. Like many other Lichens it dyes wool brown; some say of a deep orange.



*Cladophora* *sp.*



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## LICHEN perlatus.

*Pearly Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

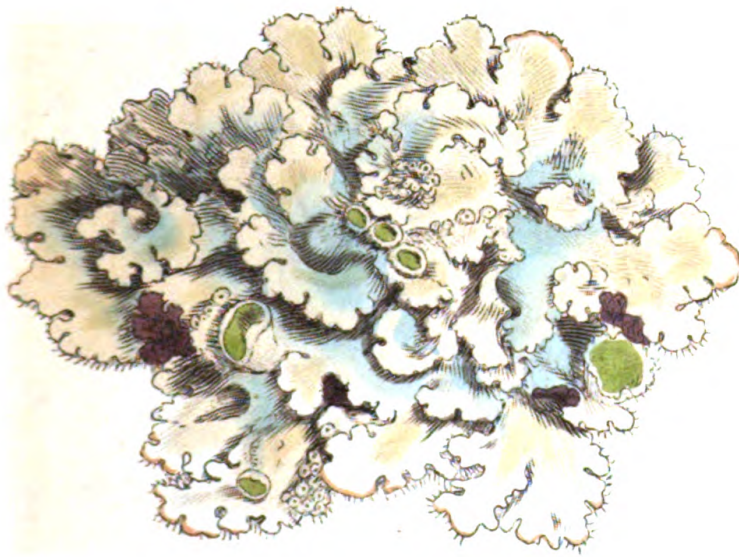
SPEC. CHAR. Leafy, creeping, lobed; grey and smooth above; black and hairy below; bordered with powdery tubercles. Shields on short foot-stalks, olive-coloured, concave, with a crenate powdery inflexed margin.

SYN. Lichen perlatus, *Linn. Syst. Nat. ed. 12. v. 2. 712. Huds. Fl. An. 543. With. Bot. Arr. v. 3. 205. Relh. Cant. 434. Sibth. Ox. 330. Smith's Tour, v. 1. 225. 260.*

Lichenoides glaucum perlatum, subtus nigrum et cirrosum. *Dill. Musc. 147. t. 20. f. 39.*

**F**OUND on the trunks of trees, old park pales, &c. very frequently, but it is one of the most rare of all Lichens in fructification. Our specimen in that state was gathered in Cardigan-shire last summer, and is the only British one we ever saw.

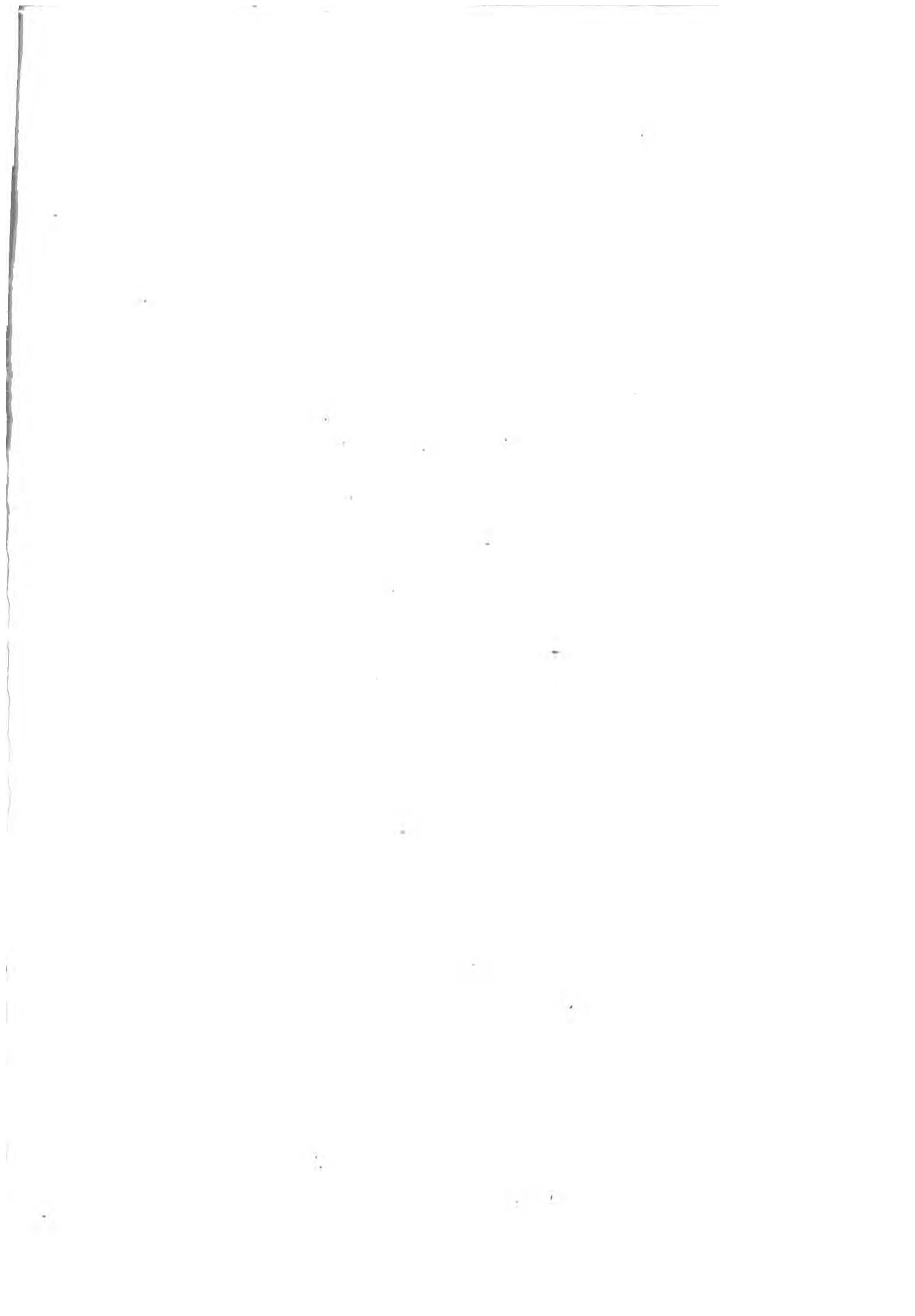
The fronds spread into patches about as broad as the hand, not very firmly attached in any part, and the margin is quite loose and generally erect. Their upper surface is of a greyish white, greenish when very much moistened, smooth, though a little pitted; sometimes indeed it becomes sprinkled with mealy cracks and tubercles intermixed with short black hairs. The under side is very black, partly smooth and shining, partly clothed with short black rigid branched or forked hairs, which sometimes project beyond the margin like a fringe; at other times the margin is smooth, and chestnut-coloured, beneath. The more elevated parts of the frond, especially in the centre of each patch, are bordered with roundish grey mealy tubercles, compared by Dillenius to pearls, by which this species is essentially distinguished from *L. saxatilis*, *glaucus*, and some others near it. Shields a little elevated, cup-shaped, concave; their disk of a greenish olive when wet, browner when dry; their margin inflexed, grey, powdery, crenate and lobed. Dillenius errs in describing the hairs of the under surface as not branched.



v



v





LICHEN perforatus.

*Perforate-shielded Lichen.*

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, somewhat membranous, creeping, veinless, lobed; glaucous above; black and rough beneath; crenate and fringed with black hairs. Shields red-brown, at length perforated, with an entire, smooth, narrow margin.

SYN. Lichen perforatus. *Ach. Prodr.* 155. *Wulf. in Jacq. Coll.* v. 1. 116. t. 3.

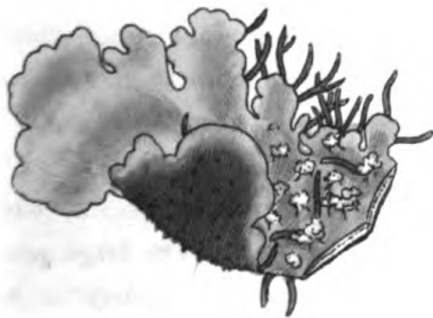
*Lichenoides glaucum*, foliorum laciniis crinitis. *Dill. Musc.* 149. t. 20. f. 42. also f. 43 and 44, and t. 82. f. 3.

*Platismia perforatum*. *Hoffm. Pl. Lich.* v. 1. 65. t. 13. f. 1. and t. 13 B; figures all copied from the above.

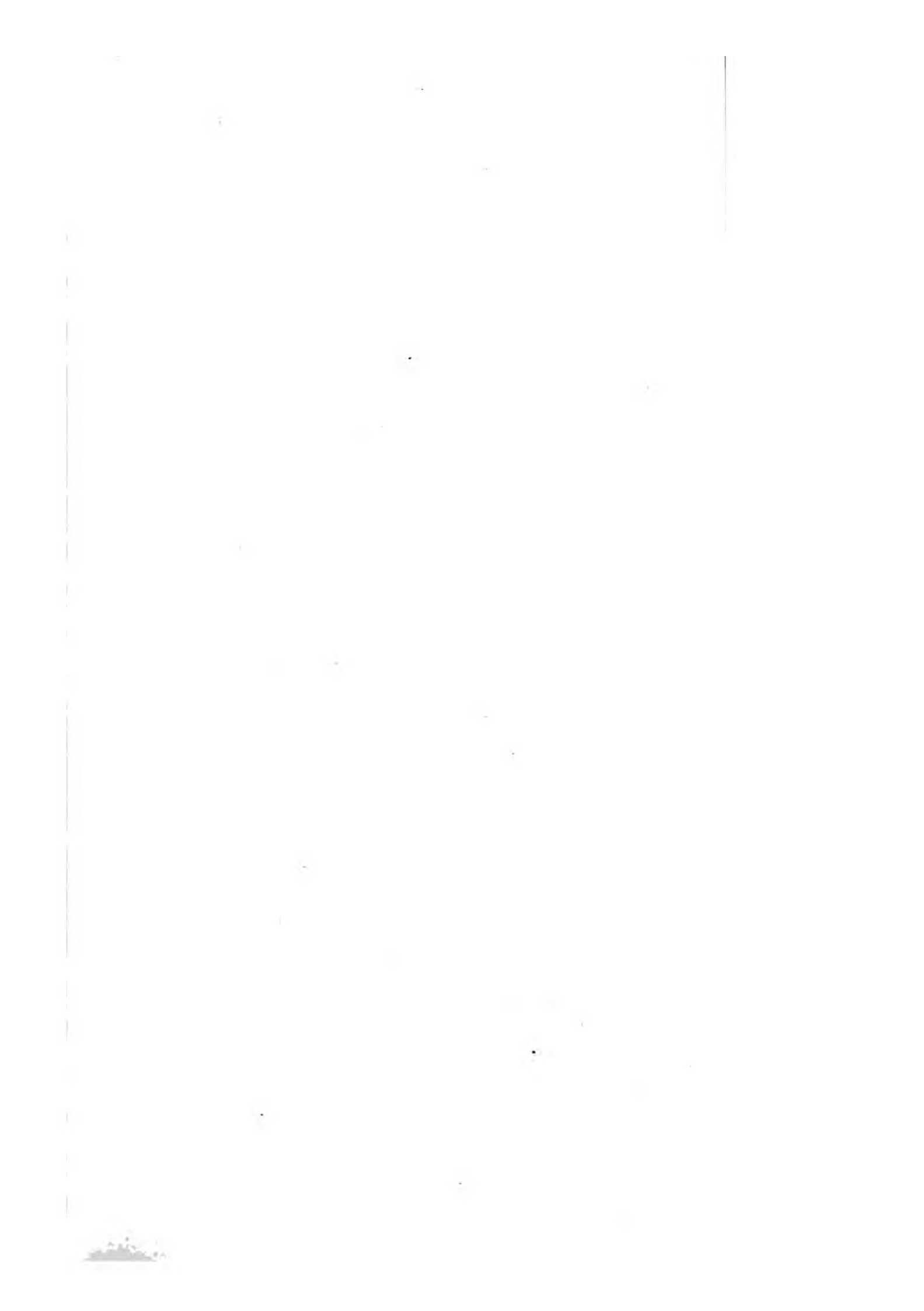
*Parmelia perforata*. *Ach. Meth.* 217.

WE have many times gathered this Lichen in Wales, on the trunks of old trees and on rocks, but could never find shields. We have it of a very large size, like *Dill. f.* 43, but still barren, from South America. Mr. W. Borrer sent the annexed specimen from Sussex, where the plant is not uncommon on trees and sand-rocks, but no fructification has been discovered. The shields in our plate are from America.

Although nearly related to *L. perlatus*, t. 341, there is an evident difference in the aspect of the present species, whose edges are much more finely crenate or cut. The large pearly marginal warts also are wanting, though the surface is here and there granulated. The shields have a very thin smooth and entire border, not an inflexed powdery or crenate one, and they are very remarkable for acquiring a large irregular hole in the centre, as soon as they advance towards maturity.



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## LICHEN glomuliferus.

*Ball-bearing Lichen.*CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Foliaceous, creeping, even and glaucous above, bearing dark-green, branched, tufted excrescences. Shields tawny.

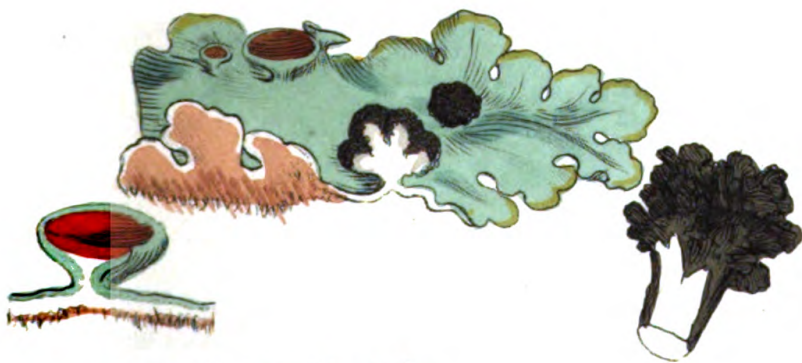
SYN. Lichen glomuliferus. *Lightf. Scot.* 853.

*L. laciniatus.* *Huds. Fl. An.* 544. *With. Bot. Arr.* v. 3. 198.

*Lichenoides subglaucum cumatile, foliis tenacibus, eleganter laciniatis.* *Dill. Musc.* 197. t. 26. f. 99.

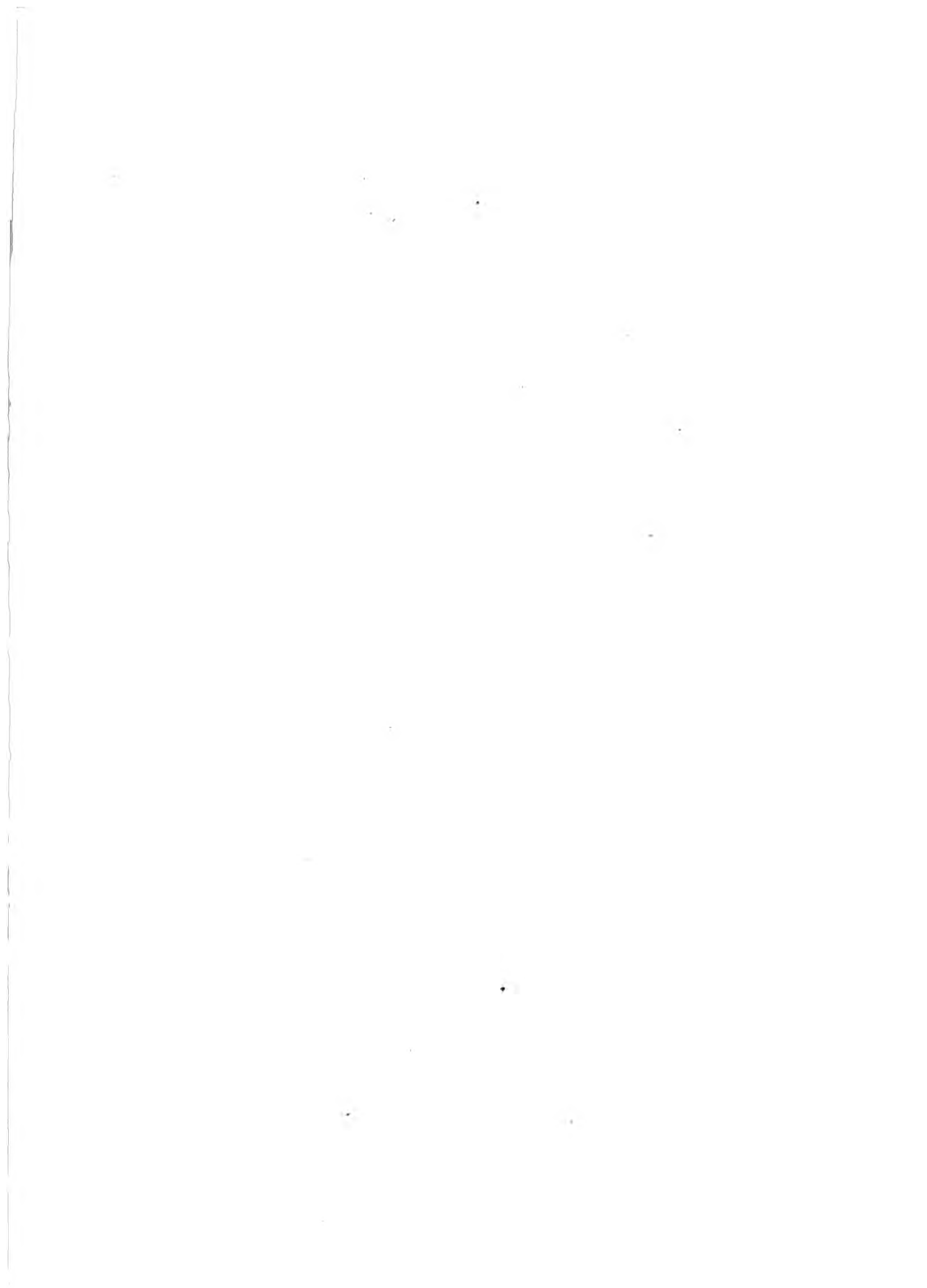
THIS is by far the largest and broadest *Lichen* known, often measuring two or three feet in diameter, and therefore Scopoli's original name *amplissimus* ought not to have been changed; but Mr. Lightfoot's is so apt, and has been so generally adopted by practical botanists, we retain it in preference to that given by Mr. Hudson, *laciniatus*, which is not expressive nor discriminative at all.

*Lichen glomuliferus* is found on the trunks of trees in old mountainous woods in England, Scotland, and Wales, very abundantly in Colonel Johnes's woods at Hafod, where ours was gathered. Its fronds spread loosely over the bark, a little imbricated, of a pale glaucous green above when moist, whitish grey when dry, very smooth, scarcely ever rugged; beneath downy, light reddish brown, the margin white. They are elegantly lobed and scalloped, the lobes being all round, and the little sinuses between them often quite circular. The shields are numerous, and by no means very rarely produced, not large, a little elevated, their margin smooth, of the colour and substance of the frond, out of which indeed it is formed by the gradual elevation and increase of the shield from a small immersed point; the disk is concave, of a brownish orange-colour, darker when dry. Besides these shields remarkable tufts or balls, of a dark-green soft branchy substance, with a solid white stem, arise out of the frond. These are more frequent than the shields, found on the same individual plants, and distinguish the species, being supposed to have a share in the fructification. We will not add any new conjectures to those to be found in Withering and Lightfoot, in both which authors this curious plant is well described.



201170 R.M. Healy f. Swarby London

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LICHEN læte-virens.

*Bright-green Lichen.*

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CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Foliaceous, creeping, obtusely lobed and crenated; bright green above; whitish, downy and without veins beneath. Shields tawny.

SYN. Lichen læte-virens. *Lightf. Scot.* 852. *Dicks. Dr. Pl.* 23.

*L. herbaceus.* *Huds. Fl. An.* 544. *With. Bot. Arr.* v. 3. 195.

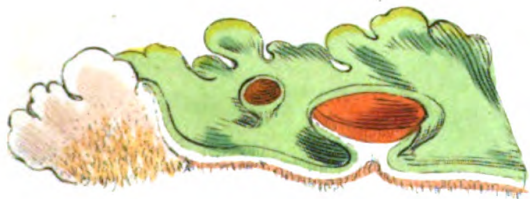
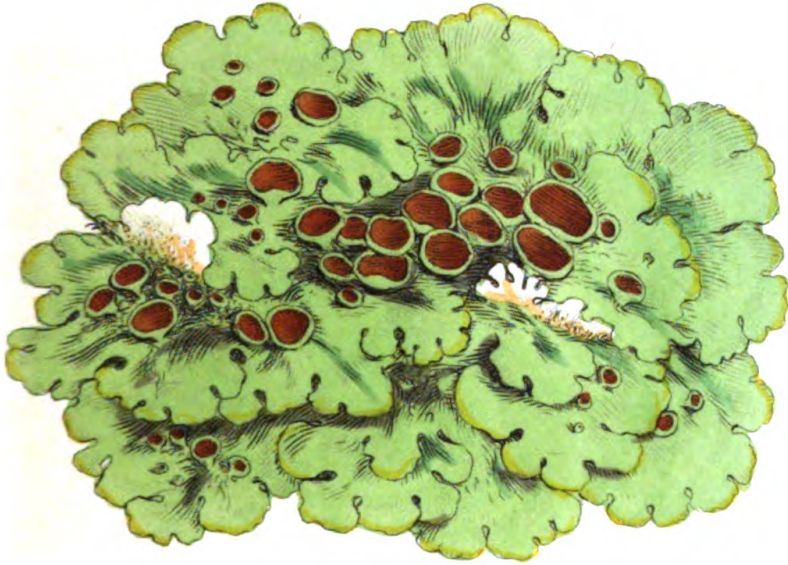
*Lichenoides arboreum cinereo virens, tenue et læve ubique, scutellis minoribus.* *Raii Syn.* 73.

*L. læte virens, scutellis fulvis.* *Dill. Musc.* 195. t. 25. f. 98.

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THIS *Lichen* is next akin to that in our last plate, but a perfectly distinct species. We prefer Mr. Lightfoot's name also in this instance, because it has been most generally received, and is expressive of the peculiarly beautiful green which this plant assumes when moistened. Besides, *herbaceus* in botanical language is too generally used to express duration, to be intelligible when applied to colour.

The species before us is found in similar places with the preceding, but more frequently, especially in Derbyshire and Westmoreland. It differs from that in being thinner, less extensive, without the tufted excrescences, and of a very different colour. When dry it becomes brown. The shields are copiously produced, a little elevated, their margin smooth, turned in, their disk deep orange, turning brown in drying.



*2000 1798 P. ul. r. 188 by H. R. 188*

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## LICHEN sylvaticus.

*Wood Pitted Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Membranous, ascending, deeply lobed, bluntly cut, divaricated, of a greenish rusty hue, and somewhat pitted, above; beneath downy, tawny, blackish, with white pits. Shields marginal, vertical, convex, dark brown.

SYN. Lichen sylvaticus. *Huds.* 547. *Linn. Syst. Veg.* ed. 14. 961. *Achar. Prod.* 156. *With.* v. 4. 71.

*Hull.* 300. *Lightf.* 848. *Sm. Tour to Hafod,* 12.

*Lichenoides polyschides, villosum et scabrum, peltis parvis.* *Dill. Musc.* 199. t. 27. f. 101.

*Sticta sylvatica.* *Achar. Meth.* 281. *Winch.* v. 2. 61.

*Peltigerasylvatica.* *Hoffm. Pl. Lich.* v. 1. 21. t. 4. f. 2.

WE have long waited, and have hunted for many an hour in vain, for British specimens of the shields of this Lichen, of which we once saw a fine specimen, sent by Dr. Burgess to Dr. Hope; so that we can vouch for the accuracy of what we are at length obliged to borrow from Hoffmann's beautiful work, at *fig. 1.* The plant itself, brought by Lady Wilson from the falls of Moness, is plentiful enough under trees in reclude mountainous woods of Oak, Birch, &c. The fronds compose light elastic tufts, as they spread nearly horizontally, slightly touching the ground or each other with their divaricated narrow lobes. Their upper surface is of a rich, often greenish, brown, full of little hollows; the under besprinkled with whitish pits, among short soft down; for this species belongs to the family of *Sticta*, see t. 1103, 1104. When moist, the whole has a foetid alkaline scent. The shields stand pressed vertically to marginal segments, and are small, convex, brown, without borders.



*Fig. 1. - published by J. L. Smith, 1840.*

V





LICHEN fuliginosus.  
Sooty leafy Lichen.

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CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Membranous, spreading, roundly lobed, dark greenish grey, rough with blackish granulations: beneath downy, with white pits. Shields red brown, with a pale border.

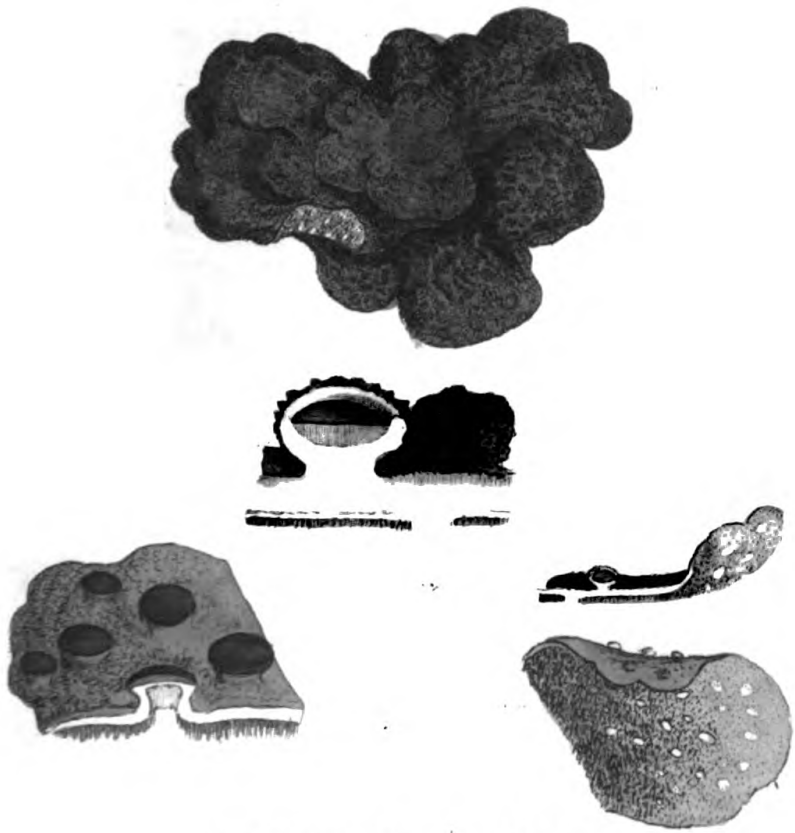
SYN. Lichen fuliginosus. *Dicks. Crypt. fasc. 1. 13. With. v. 4. 70. Hull. 299. Achar. Prod. 158.*

Lichenoides fuliginosum et pulverulentum, scutellis rubiginosis. *Dill. Musc. 198. t. 26. f. 100. A.*

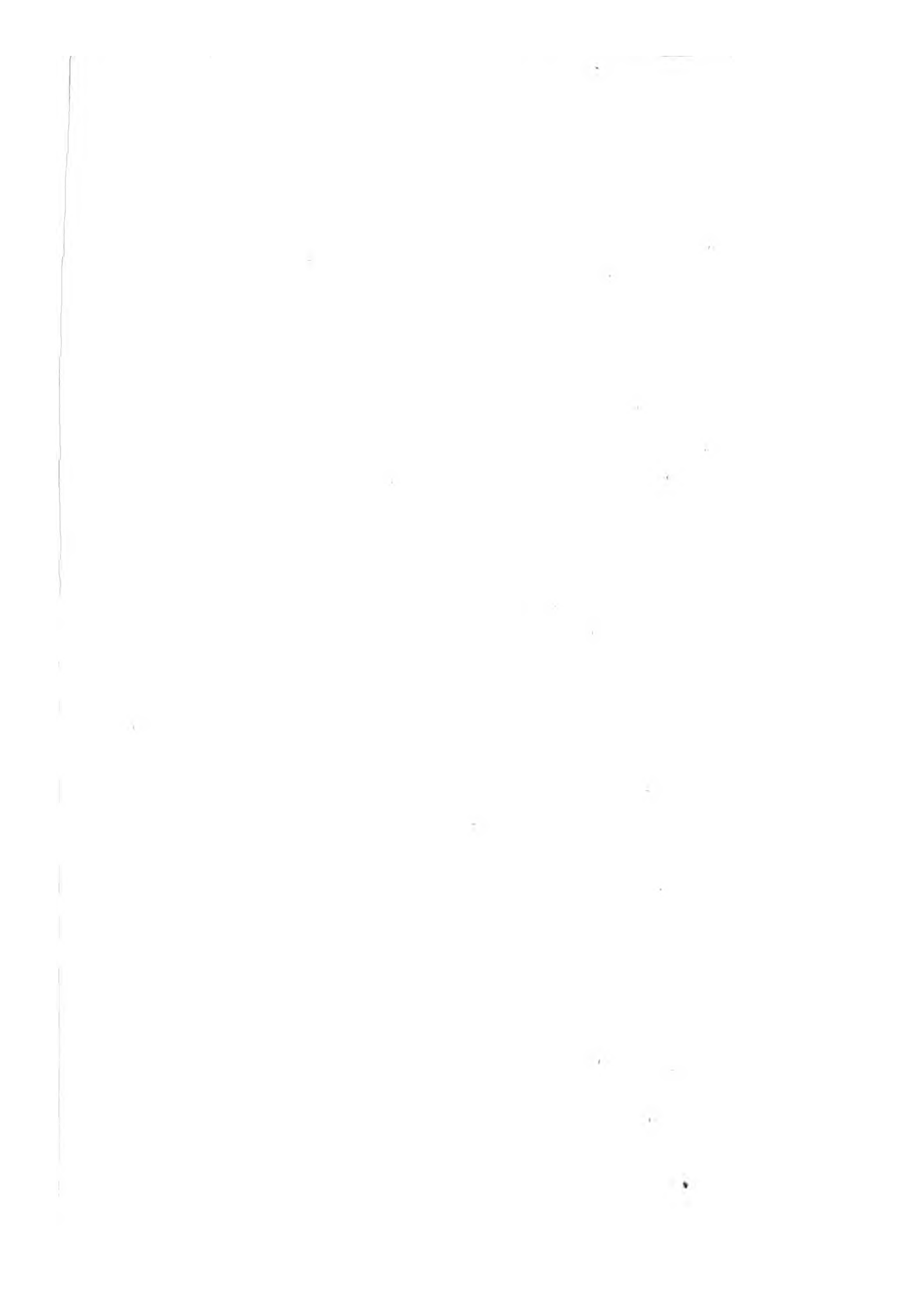
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**F**OUND on rocks, as well as on trees in old dark woods, but only in the alpine counties. We have gathered it about Ambleside, Westmoreland, and at Hafod, Cardiganshire. Mr. E. Forster found it in Rookwood grove, at Boconnoc, Cornwall, and Dillenius, Mr. Griffith and Mr. D. Turner in North Wales.

The fronds spread from a centre in a loosely imbricated manner among moss, generally on the trunks of trees, especially hazels and thorns. Their texture is membranous and pliable; their lobes rounded, various in size; their upper side rather rugose, of a greyish or greenish brown, sprinkled all over with rough, dark-coloured warts or granulations; their under side pale reddish brown, downy, dotted with small, white, smooth, scattered pits. The shields are of very rare occurrence, standing for the most part near the margin, small, slightly elevated, having a rusty-brown disc, elevated by age, and a narrow, pale, entire border, which is obliterated as the shields grow old.—This has been confounded with *L. sylvaticus*, with which it agrees in a certain fœtid smell when moist, and somewhat in colour; but differs widely in fructification, as well as in the size and roundness of the lobes.



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## LICHEN limbatus.

*Mealy-bordered leafy Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

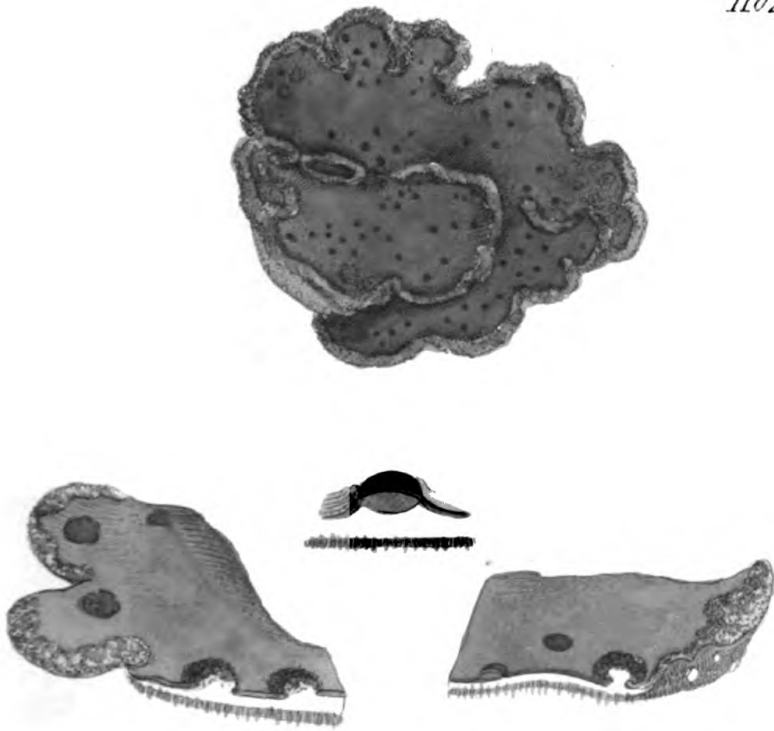
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Membranous, spreading, roundly lobed, glaucous brown, smooth; grey and powdery towards the margin: beneath downy, with white pits. Shields brown.

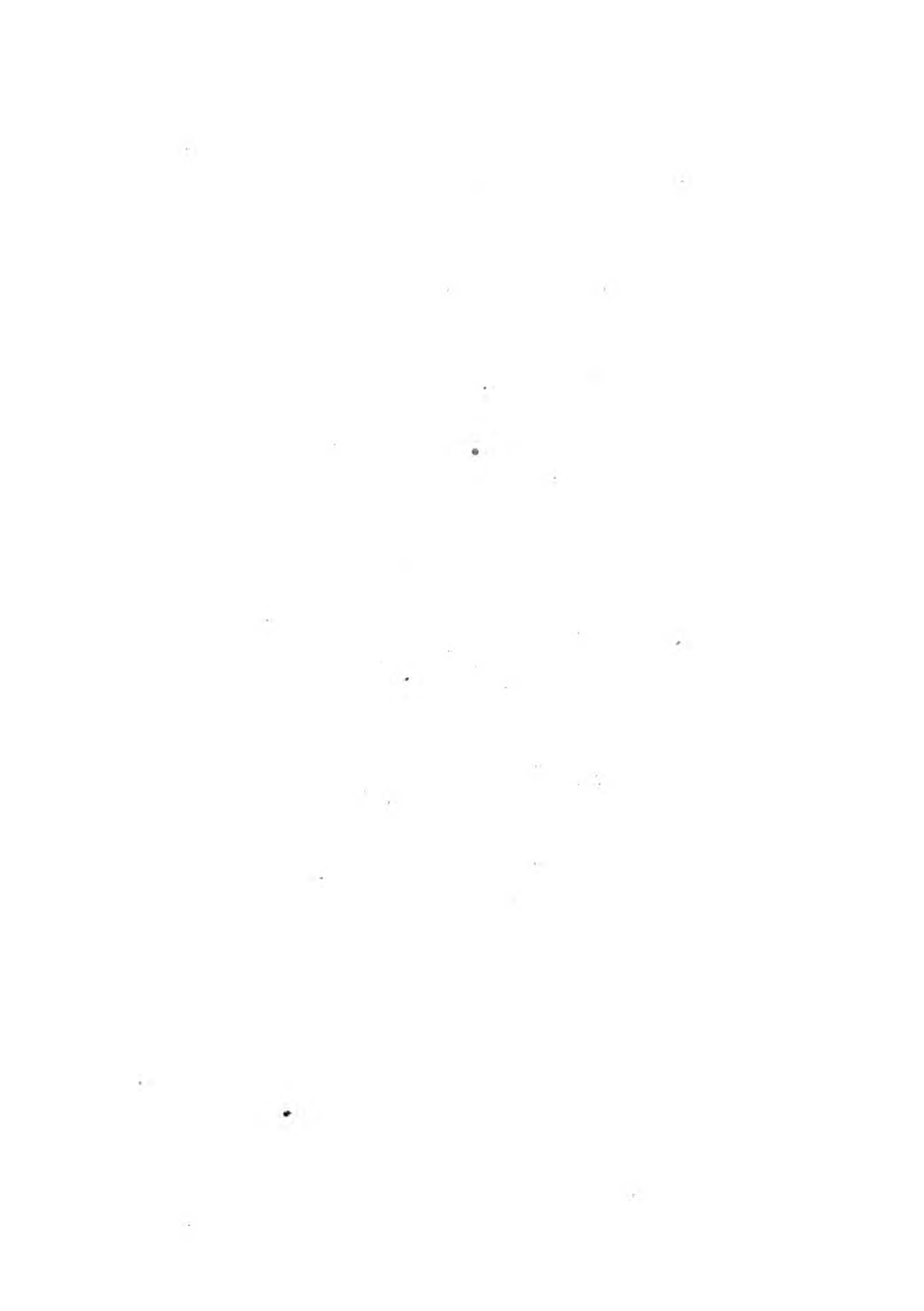
SYN. Lichenoidis, *Dill. Musc.* 198. t. 26. f. 100, varietas farinosa, B, C.

WE have long ago observed this Lichen, at the roots of trees, and on shady mossy rocks at the Hermitage near Edinburgh, as well as growing with *L. fuliginosus* at Hafod, and are convinced of its being distinct from that species, which Dillenius (who gathered the same in Bagley wood, Oxfordshire) seems also inclined to suspect. The fructification was found by Mr. Menzies in Scotland, and by Mr. D. Turner upon Snowdon. Neither we nor Dillenius could ever discover it.

In form this resembles the preceding, but differs a little in colour, being of a glaucous brown. The chief difference consists in the surface being destitute of rough granulated warts, and on the contrary quite smooth and polished, except towards the margin, which is profusely covered with grey or pale lead-coloured mealiness, produced from cracks in the cuticle, and not at all of the nature of a parasitical *Byffus*, as Dillenius supposes; neither can this be the male, or "powder-bearing plant" of the former, for it has proper shields of its own, though rarely produced, which differ from those of *L. fuliginosus* in having a broad base, or rather being imbedded in the frond, which rising around them forms a slightly elevated border, that slopes off into the common level of the surface, and is not contracted into any thing like a footstalk. The under side of the frond is like the last.



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LICHEN *crocatu*s,  
*Yellow-veined Lichen.*

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CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Somewhat coriaceous and depressed, sinuated, roundly lobed, cellular, glaucous brown; the margin and veins bearing lemon-coloured powder; the dorsal pits lemon-coloured. Shields brownish-black, with a border like the leaf.

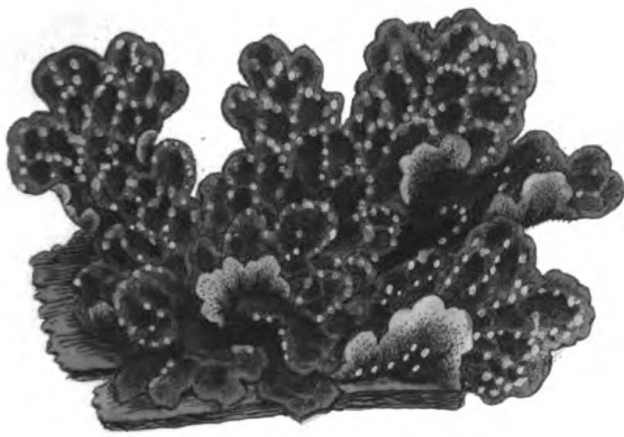
SYN. *Lichen crocatus.* *Linn. Mant.* 310. *Ach. Prod.* 158. *Dicks. Crypt. fasc.* 2. 22. *H. Sicc. fasc.* 4. 24. *With. v.* 4. 52. *Hull.* 296.

*Sticta crocata.* *Ach. Meth.* 277.

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FOUND first by Mr. Dickson on the Highland rocks of Scotland. Mr. Borrer and Mr. Hooker gathered the specimen in our plate on trees at Inverary.

The fronds spread in a loosely imbricated manner, forming roundish patches, and are rather leathery, sinuated, with rounded notched lobes. The upper surface is of a dull glaucous or greenish brown, full of numerous little smooth hollows, separated from each other by a rude network of elevated veins, which are rough and scurfy, producing a fine lemon-coloured powder. The under side is of a reddish brown, downy, with little smooth lemon-coloured pits interspersed. We have never been so fortunate as to see shields, either in the Linnæan or any other specimens; but they are described as of a brownish black, with a margin like the substance of the frond. No doubt, they are much like those of *L. fuliginosus*, t. 1103.—With this was originally confounded the *Sticta aurata*, *Ach. Meth.* 277, which, on our representation, the learned author has distinguished from it, and which is figured by Dillenius and Hoffman. Finding this last in Mr. Hudson's British herbarium, we have suspected he might have gathered it in Devonshire; which merits further inquiry.



*Engraved by J. Bowyer London*

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## LICHEN auratus.

*Golden-edged Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Somewhat coriaceous, ascending, sinuated, roundly lobed, nearly even, of a shining reddish glaucous light brown; the margin wavy, bearing golden-coloured powder; the dorsal pits bright yellow. Shields . . . .

SYN. *Sticta aurata*. *Ach. Meth.* 277.

*Platisma crocatum*. *Hoffm. Pl. Lich.* v. 2. 52. t. 38. f. 1—3.

*Lichenoides lacunosum rutilum*, *marginibus flavis*.  
*Dill. Musc.* 549. t. 84. f. 12.

**P**ART of a specimen communicated by Mr. Lambert from the remains of Mr. Hudson's herbarium, to which we have alluded in v. 30. p. 2110. If British, of which we have no positive evidence, it was probably gathered in the woody part of Devonshire, which its collector often visited; and as Professor Acharius has mentioned this in his *Methodus*, where, on our authority, he first separated the present magnificent species from *crocatum*, t. 2110, we would not leave our work imperfect by omitting it. Some bits of *Neckera pumila*, t. 1443, attached to the specimen, indicate its growing on trees. The plant is known to be a native of St. Helena and the West Indies; nor dare we deny the possibility of Mr. Hudson's having put into his collection foreign specimens, as an exhibition of *crocatum*, known in his time to have been found in Scotland. Some Devonshire botanist must clear up these uncertainties.

The fronds are larger than in *crocatum*, and less pitted, smooth, destitute of powdery veins, of a bright glaucous reddish brown; the under side downy, blackish towards the middle, with small golden pits. The lobes are sinuated, rounded, crenate and wavy, with tumid, powdery, bright yellow or golden edges. No shields have been observed.



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L I C H E N venosus.  
*Green Veiny Lichen.*

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CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leathery, roundish; green and even above; marked beneath with longitudinal branching brown prominent veins. Shields anterior, marginal, horizontal, round, dark-brown, with an entire brown margin.

SYN. *Lichen venosus.* Linn. *Sp. Pl.* 1615. *Achar. Prod.* 159. *Huds.* 546. *With.* v. 4. 69. *Hull.* 299. *Lightf.* 844. *Dicks.* *H. Sicc. fasc.* 10. 25.

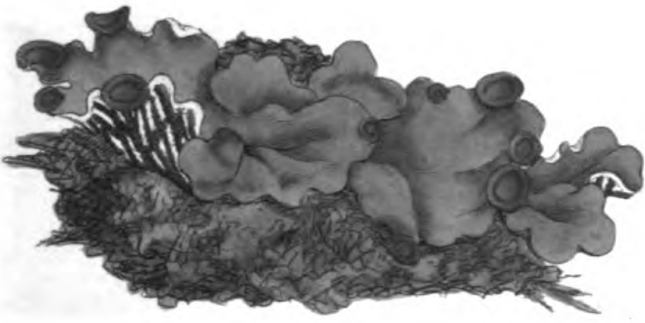
*Lichenoides parvum virescens, peltis nigricantibus planis.* Dill. *Musc.* 208. t. 28. f. 109.

*Peltigera venosa.* Hoffm. *Pl. Lich.* t. 6. f. 2.

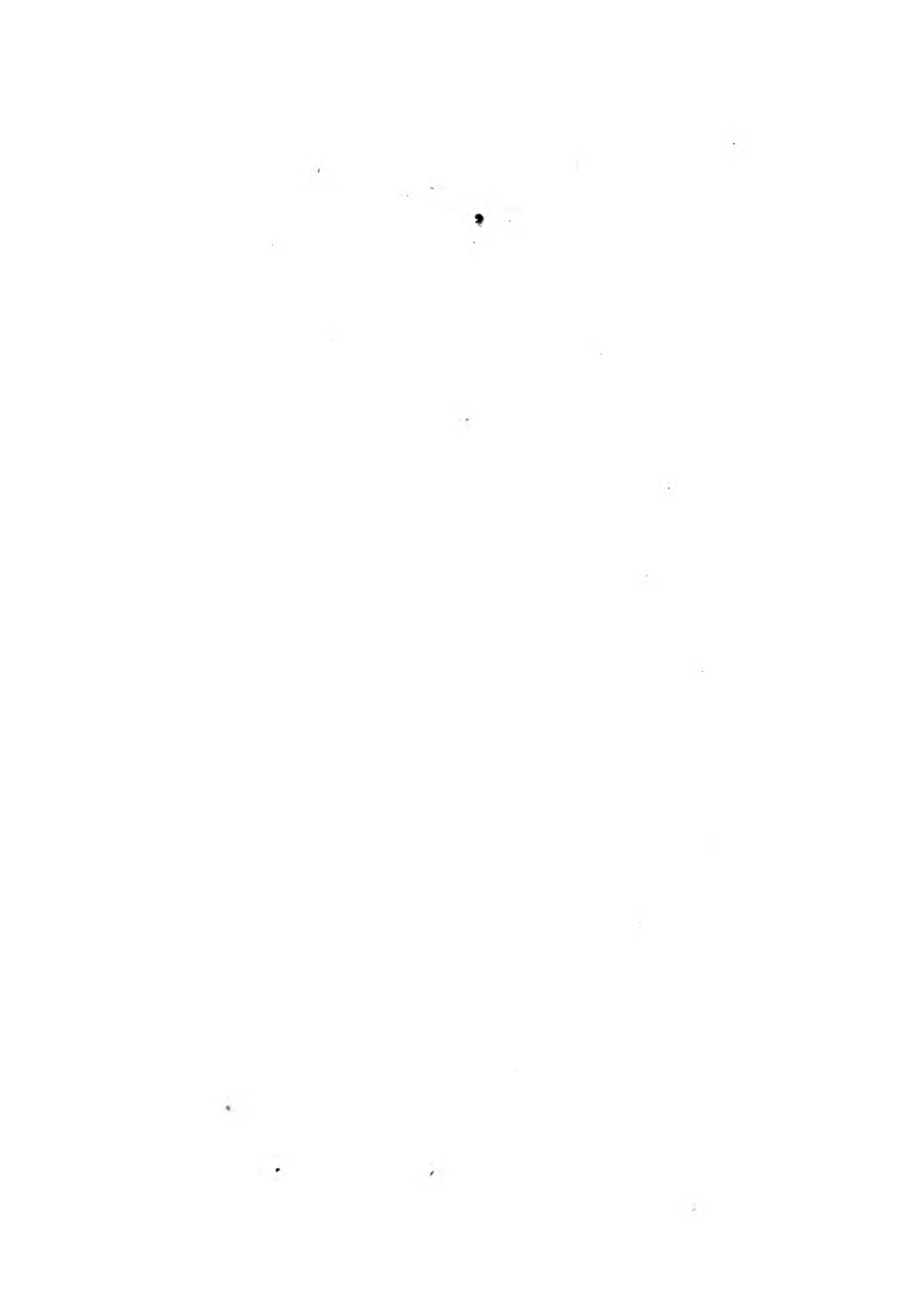
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THIS curious little *Lichen* has been found, though rarely, in some parts of Scotland, from whence Mr. Mackay favoured us with specimens; but those in the annexed plate are the first known to be of English growth, having been gathered by Dr. J. Babington close to the town of Ludlow, and they are among the finest we have ever seen. Dillenius appears to have found the *L. venosus* but once in his life, in a wood near Giesen in Hesse. It grows in moist shady spots, on the ground.

The fronds are small, leathery, ascending, rooted at their base only, dilated upward into a wedge-like or roundish form, scarcely more than half an inch (rarely an inch) long, slightly waved and lobed. Their upper surface is perfectly even and smooth, of a fine green when fresh, brown or grayish when dry; the under side downy, white, marked with numerous, longitudinal, prominent (though flat), branching, brownish veins. Shields several, marginal, but most connected with the upper surface, sessile, round, dark, reddish brown, flat, surrounded with an even margin of the same hue, which disappears as they grow old.



✓



[ 1542 ]

LICHEN spurius.  
*Imperfectly-veined Lichen.*

---

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leathery; ash-coloured and even above; whitish, smooth, with indistinct pale veins beneath. Shields anterior, ascending, roundish, dark reddish brown.

SYN. Lichen spurius. *Ach. Prod.* 159.

Peltidea spuria. *Ach. Meth.* 283. t. 5. f. 2.

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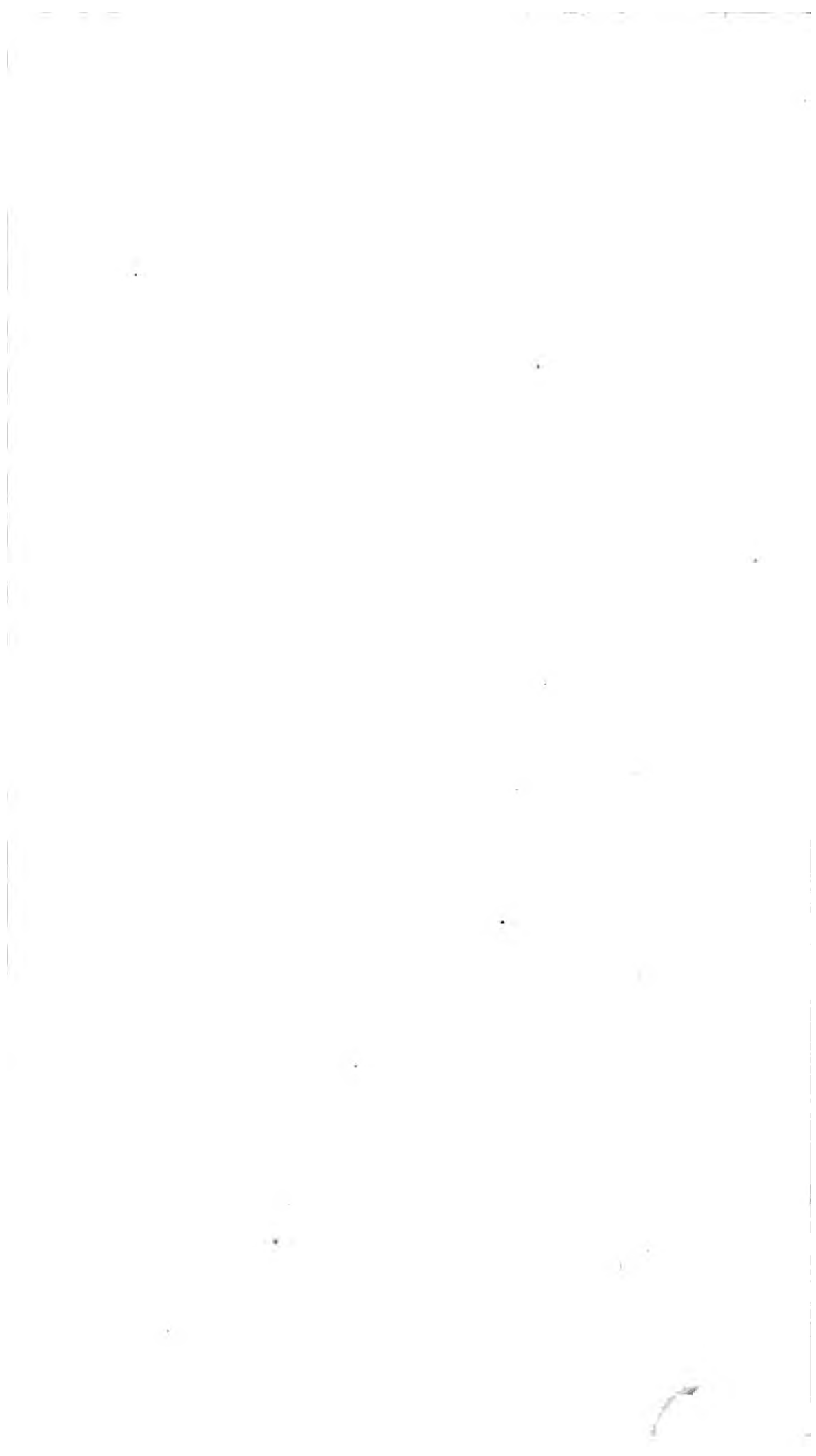
MR. BORRER found this Lichen on thatch at Hurst-pierrepont, Sussex, in July last, and communicated specimens to us, which agree with those of Dr. Acharius. Mr. Turner met with it the preceding year on hedge banks at Gorleston, Suffolk.

It is most nearly related to *L. venosus*, t. 887, but differs in several particulars from that species. The fronds are more oblong than round; their upper surface greyish or ash-coloured, when young and moist assuming more or less of a glaucous green hue, but never a grass green. Beneath they are of a pale brownish white, destitute of fibres or radicles, but marked with longitudinal veins almost of the same colour, and projecting very little from the surface. The shields are sessile on the surface of elongated portions of the frond, roundish, elliptical, or kidney-shaped, of a dark reddish brown, more red when young.



*Dec. 1. 1865. Published by Jas. Sowerby, London*

✓





L I C H E N horizontalis.  
*Brown Horizontal Lichen.*

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CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leathery, spreading, lobed, polished, glaucous greenish brown; beneath covered with a network of brown veins. Shields standing on small lobes, sessile, anterior, horizontal, round, reddish, with a pale notched border.

SYN. Lichen horizontalis. *Linn. Mant.* 132. *Achar. Prod.* 160. *Huds.* 548. *With.* v. 4. 72. *Hull.* 300. *Lightf.* 849. *Abbot.* 267. *Dicks. H. Sicc. fasc.* 16. 24.

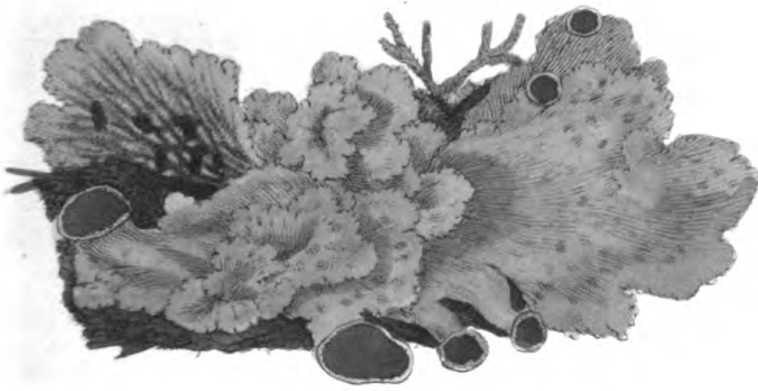
*Lichenoides subfuscum, peltis horizontalibus planis.*  
*Dill. Musc.* 205. t. 28. f. 104.

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**F**OUND on moist mossy rocks in woods in the mountainous parts of Great Britain not unfrequently. We received it from the Rev. H. Davies of Aber, North Wales.

It may seem wonderful that Linnæus should ever have confounded this with *L. venosus*, which nevertheless appears by his herbarium to have been the case, nor did he describe the *horizontalis* till the publication of his *Mantissa* in 1767.

The fronds creep on the moist earth among mosses and grass, and are of no determinate form, but variously lobed. Their upper surface is a little pitted, but otherwise smooth and polished, of a glaucous or greenish brown, sometimes sprinkled with a few mealy warts; the under downy, covered almost to the edge with a tolerably regular network of brown broad veins, leaving white oblong spaces in their interstices, and producing here and there a black tufted radicle which fixes itself to the ground. Shields generally solitarily placed on little elongations of the frond, horizontal, flat, roundish, red-brown, surrounded with a crenate border of the colour of the leaf on which they grow.



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LICHEN caninus.  
*Ash-coloured Ground Lichen.*

---

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Frond coriaceous, dilated, ascending, furrowed, grey; white, with brown veins and fibres, beneath; lobes very broad, with marginal, fruit-bearing processes. Shields in front, vertical, revolute, roundish, red-brown, with a pale border.

SYN. Lichen caninus. *Linn. Sp. Pl.* 1616. *Achar. Prod.* 160. *Huds.* 546. *With. v.* 4. 69. *Hull.* 299. *Relh.* 465. *Sibth.* 331. *Abbot.* 267. *Woodv. Med. Bot. Suppl. t.* 273.

*Lichenoides digitatum cinereum, lactucæ foliis sinuosis. Dill. Musc.* 200. *t.* 27. *f.* 102.

*L. peltatum terrestre cinereum majus, foliis divisis. Raii Syn.* 76.

*Peltidea canina. Achar. Meth.* 283. *Winch. v.* 2. 61.

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EVERY where abundant on heaths, banks, and about the roots of trees in shady woods. It is known by its larger size, more ash-coloured, and furrowed as if veiny, upper surface, and copious, distant, large, bright bay shields, from all of the same tribe; several of which are nearly related to, and have been considered as varieties of, the present plant. The leathery fronds form great patches, and when young especially are of a fine light grey, without polish, above; by age and repeated wet they grow darker. Warts are often found about the edges. The whitish under side has copious brown elevated veins, and often blackish, evenly scattered, radicles. At the margin are solitary, simple, broadish, convex lobes, each bearing only one large, perpendicular, orbicular, at length recurved, shield. This is the "Ash-coloured Ground Liverwort," once celebrated as a cure for the bite of a mad dog; but we believe it never acted, even on the *imagination* of the patient, though it might on that of the learned Dr. Mead. See *Dill. Musc.* 202.

2299



✓





LICHEN rufescens.  
*Dark-coloured Ground Lichen.*

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CRYPTOGAMIA Algæ.

- GEN. CHAR. Male, scattered warts.  
 Female, smooth shields or tubercles, in which the seeds are imbedded.
- SPEC. CHAR. Frond coriaceous, rigid, concave, even, dark reddish-brown; pale, downy, with obsolete veins, beneath; lobes rounded, with numerous fruit-bearing processes. Shields in front, vertical, roundish, dark brown, with a pale border.
- SYN. Lichen rufescens. *Necker Musc.* 79. *Achar. Prod.* 166. *With. v.* 4. 70. *Hull.* 299.  
*L. caninus*  $\beta$ . *Huds.* 546. *Sibth.* 331. *Lightf.* 846.  
*Lichenoides digitatum rufescens, foliis lactucæ crispis.* *Dill. Musc.* 203. *t.* 27. *f.* 103.  
*L. peltatum terrestre rufescens.* *Raii Syn.* 77.  
*Peltidea rufescens.* *Ach. Meth.* 285; excluding the variety  $\beta$ . *Winch. v.* 2. 61.

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**E**VEN more common than *L. caninus*, *t.* 2299, with which it is frequently confounded, but from which it differs sufficiently, as Dillenius well remarks, in the fronds being smaller, thicker and more rigid; their upper side concave in consequence of the inflexed margins, very smooth and even, except when cracked so as to look as if veined, of a darker sooty hue; turning reddish, or deep chesnut, in drying. The under side is more downy, with broader, more obsolete or superficial, veins. Shields numerous, smaller, and of a much darker brown.

Our learned friend Acharius, in his *Methodus*, makes *L. scutatus*, *t.* 1834, a variety of this; but in a letter dated Nov. 12, 1803, he, with his accustomed candour, acknowledges that he may be mistaken, and confesses himself not well acquainted with our true *rufescens*. Wulfen's figure, in *Jacq. Coll. v.* 4. *t.* 15, which seems to us *horizontalis*, may have misled Acharius respecting the *rufescens*.

2300.



*Illustrated by J. S. Sowerby*

✓

1875

1875

1875

LICHEN scutatus.

*Target-fruited Leathery Lichen.*

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CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Frond coriaceous, spreading, brownish grey; pale, reddish, and veiny beneath; lobes oblong, their margin crisped and powdery. Shields in front, somewhat stalked, round, dark brown, with an inflexed, pale, crenate border.

SYN. Lichen scutatus. *Dicks. Crypt. fasc. 3. 18, without the synonym. With. v. 4. 71. Hull. 300. Ach. Prod. 166.*

*L. collinus. Ach. Prod. 162.*

*Peltidea scutata. Ach. Meth. 285.*

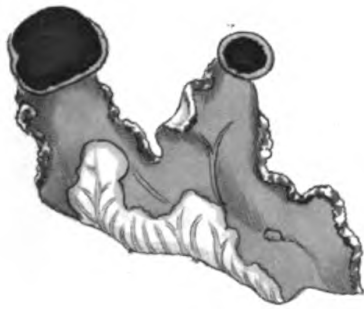
*P. rufescens β. Ach. Meth. 285.*

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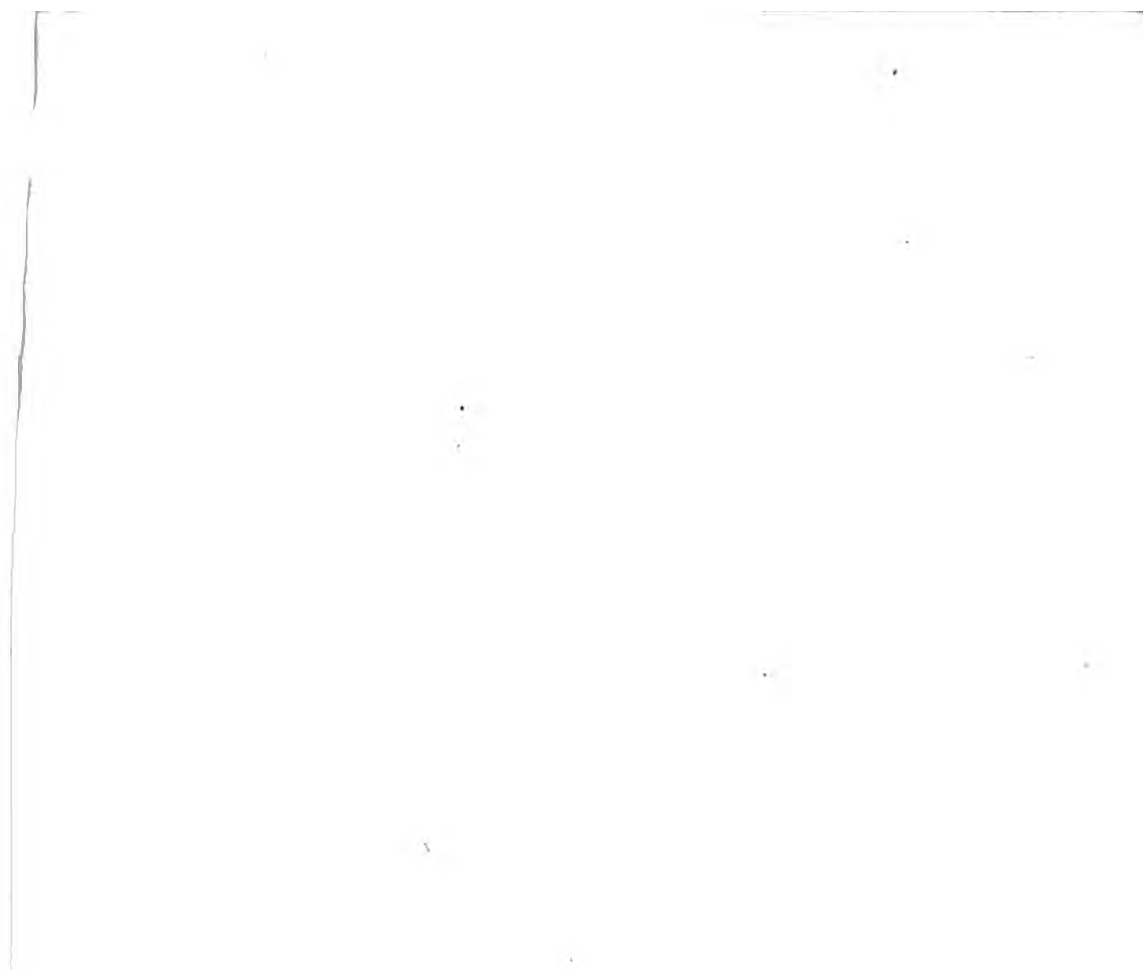
I FOUND this on trees in Westmoreland in 1782, (when, for want of fruit, no one would dare to determine it,) and in fine perfection at Hafod many years after. It proves to be Mr. Dickson's *L. scutatus*, as he himself informs me; consequently what Professor Acharius has adopted from him under that name. That it is the *collinus* also of the last author, is determined by his own examination of my specimens. How far he is now right in making it a variety of *rufescens*, must be left for future consideration. As to the *scutatus* of Wulfen, it is most evidently the *sepincola*, and surely not even a variety.

Our present specimen was gathered on trees at Inverary by Mr. Turner and Mr. W. J. Hooker. The fronds spread in broad loose patches, like the imbricated Lichens, over the trunks of old trees, among *L. pulmonarius*, &c. They are leathery, smooth and of a brownish or greenish grey above; pale with reddish as well as black veins beneath, though naked of fibres except the actual roots. The lobes are singularly elongated, and as remarkably crisped and powdery at their edges. Their extremities form a kind of stalk to the flat, round, dark-brown shields, each of which has a narrow, inflexed, crenate, pale border.—Our English translators make Mr. Dickson describe this as “veinless” beneath, though he only says *nudus*.

1834



✓





LICHEN *aphthofus*,  
*Thrush Lichen.*

---

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leathery, spreading, roundly lobed, smooth, green, sprinkled with brown warts; beneath fibrous, slightly veined. Shields on narrow ascending lobes, anterior, roundish, reddish.

SYN. *Lichen aphthofus.* *Linn. Sp. Pl.* 1616. *Huds.* 547. *Witb. v. 4.* 70. *Hull.* 299. *Lightf.* 847.

*Lichenoides digitatum lætè virens, verrucis nigris notatum.* *Dill. Musc.* 207. t. 28. f. 106.

*Peltigera aphtosa.* *Hoffm. Pl. Lich. t. 6. f. 1.*

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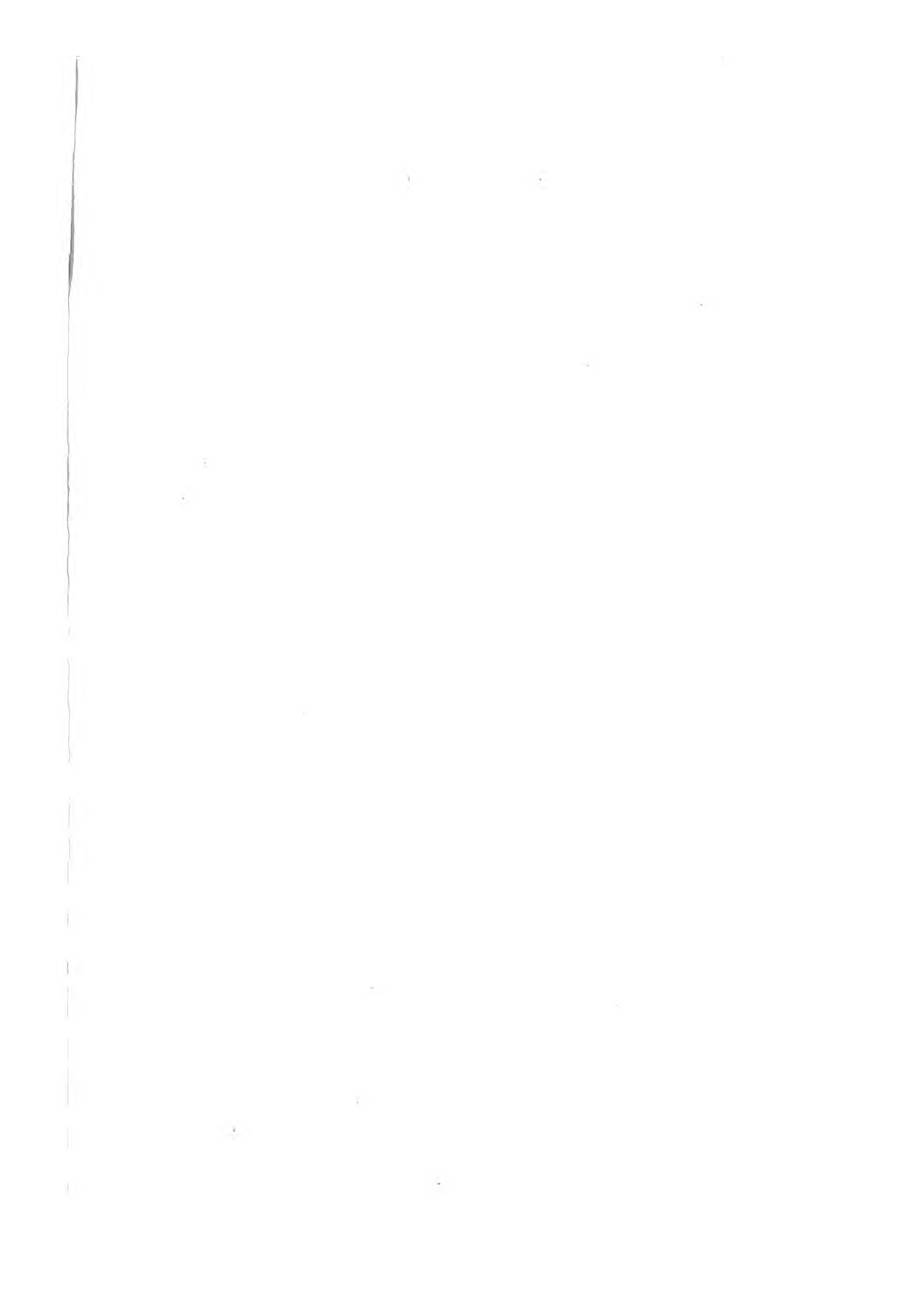
WE have received this from our often-mentioned friends Mr. Relhan, Mr. Harriman, and Mr. D. Turner. It is found only in alpine rocky shady places, growing on the ground under firs or juniper bushes. Having never seen a British specimen in fruit, we have been obliged to delineate a shield gathered in Savoy, where the plant is more luxuriant than in this country.

The fronds spread circularly from 3 to 6 inches in diameter, cut into several round lobes. Their upper side is of a most beautiful shining grass green, (which turns brown in drying,) sprinkled with small dark-brown warts, having something of the appearance of shields or tubercles. The true shields grow on oblong upright narrow lobes, springing from the frond near the margin, and are large, concave, of a bright chestnut-colour, encircled with a downy inflexed jagged border. The under side of the frond is clothed with dense black woolly roots, except towards the margin, where it is light brown and beset with little tufted brown radicles. It is absurd to suppose this, as some have done, a variety of *L. caninus*.

Linnaeus says the Swedish peasants boil this Lichen in milk as a cure for the *aphtæ* or thrush in children.



✓



## LICHEN resupinatus.

*Reversed Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Coriaceous, creeping, lobed, brown. Shields marginal, on the under side of the frond.

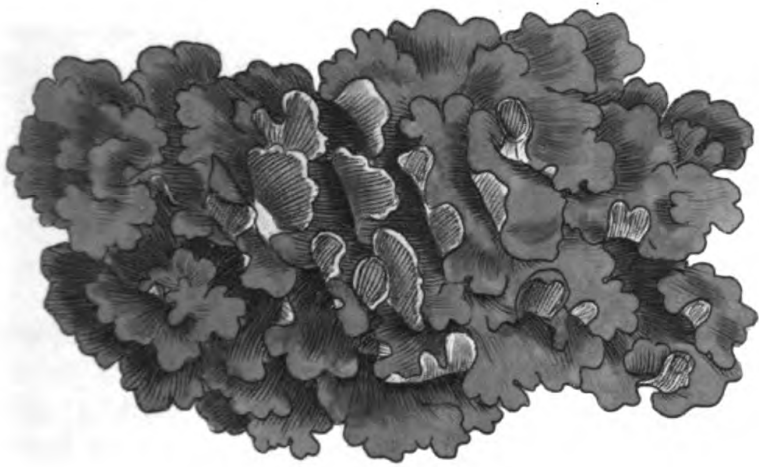
SYN. Lichen resupinatus. *Linn. Sp. Pl.* 1615. *Huds. Fl. An.* 545. *Lightf. Scot.* 843. *With. Bot. Arr.* v. 3. 205.

Lichenoides saxatile fuscum, peltis in aversa foliorum superficie locatis. *Raii Syn.* 77.

L. fuscum, peltis posticis ferrugineis. *Dill. Musc.* 206. t. 28. f. 105.

IN woods, clinging close to the mossy stems and roots of trees, and also on rocks, in the mountainous parts of Great Britain. Dillenius found it growing upon pebbles on the Sussex coast, and Dr. Smith on the rock of Dumbarton Castle, Scotland, in moist and shady parts.

The fronds are scarcely coriaceous, only its affinity with *L. caninus*, &c. justifies its being placed in that section. They are brown, smooth, somewhat imbricated, horizontal, obtusely lobed, their extremities dilated, bearing the shields on their under side completely concealed from view till the plant is dried up by any means, and then those shield-bearing lobes are reflexed. The disk of the shield is roundish, irregular in shape and various in size, concave, tawny or brick-coloured; they become darker in drying, though the colour of the frond is scarcely changed.



*Fig. 1. ... ..*

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[ 2360 ]

## LICHEN parilis.

*Chocolate Reversed Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Somewhat coriaceous, creeping, lobed, jagged, crenate and wavy, greenish or purplish brown, besprinkled with superficial or marginal, dark, powdery warts. Shields red brown, broader than long, on the under side of the shorter lobes at their ends.

SYN. Lichen parilis. *Ach. Prodr.* 164.Peltidea parilis. *Ach. Meth.* 289.

SENT by the Rev. E. Williams from an old stone-quarry in Shropshire in 1800. We discovered the same on the alps of Switzerland in 1787, but have never seen the shields. Having transmitted a specimen to Professor Acharius, to inquire whether it were his *L. parilis*, he answers, "it is undoubtedly so, and certainly a totally distinct species," though mentioned as doubtful in his works. "It dies wool blue, which is not the case with *resupinatus*, nor do their modes of growth, nor habits, agree."

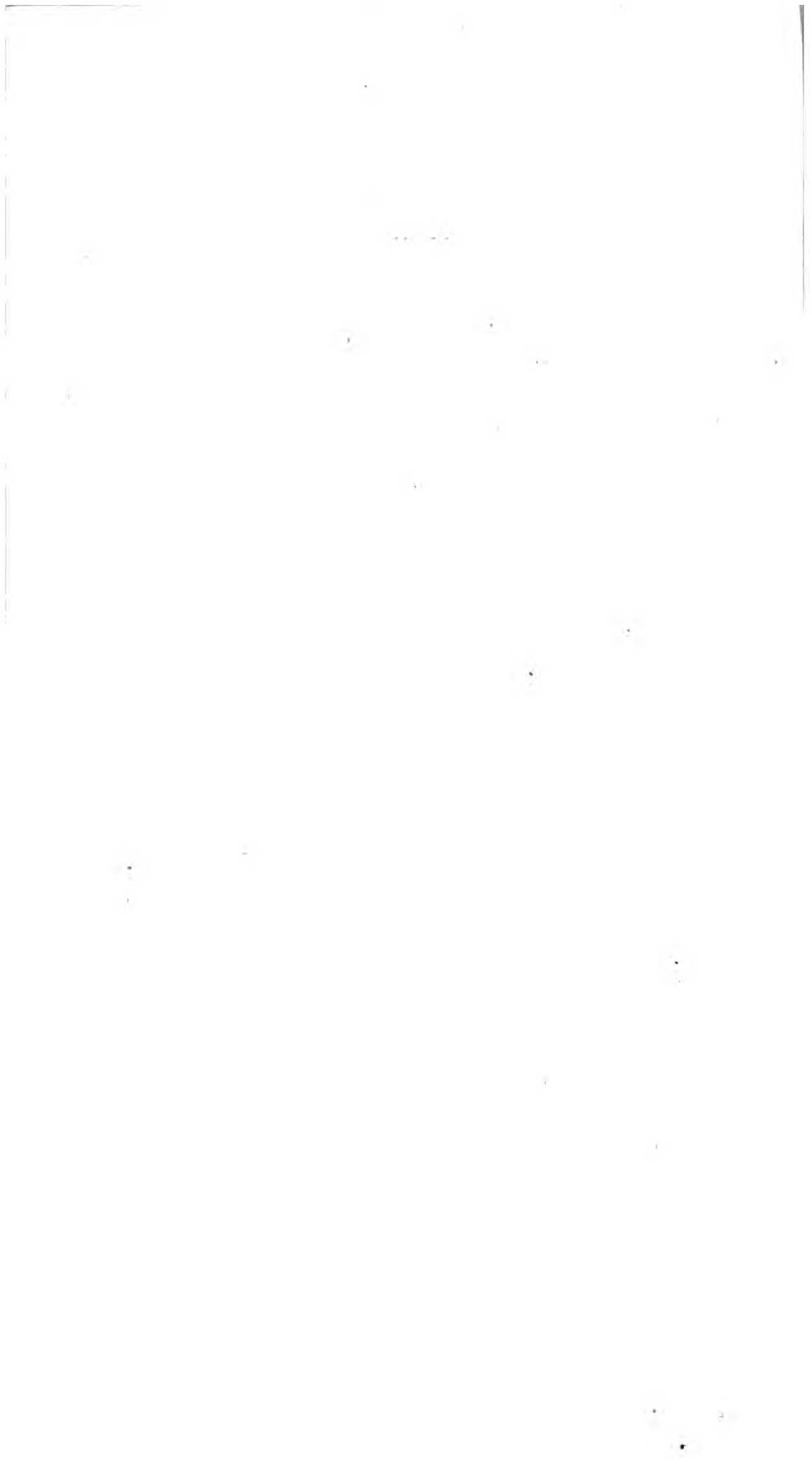
The fronds spread on the ground, or on stones, in dank shady places, among moss, in a somewhat stellated form, and are of a dull brown, inclining to a chocolate colour when fresh. They are rather membranous than coriaceous, variously lobed sinuated and wavy, veinless and smooth, except where their surface, and especially their curly edges, are rough with abundant dark granulations. The under side is often wrinkled, scarcely downy. The shields are described by Acharius as "red brown, placed at the back of very short lobes, and transversely oblong," that is short and broad, not round as in *resupinatus*, t. 305.—Some of Mr. Williams's specimens were overrun with *L. brunneus*, t. 1246, which looked as if it were their proper fructification, so well did its granulated crust assimilate with the warts of our *parilis*.

2360



*Illustration of the specimen.*

V



## L I C H E N croceus.

*Saffron-coloured Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Coriaceous, creeping, roundish, flat; beneath veiny, downy and saffron-coloured. Shields scattered, flat, closely attached to the frond.

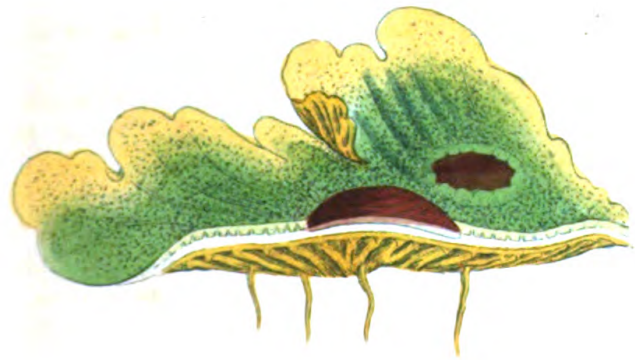
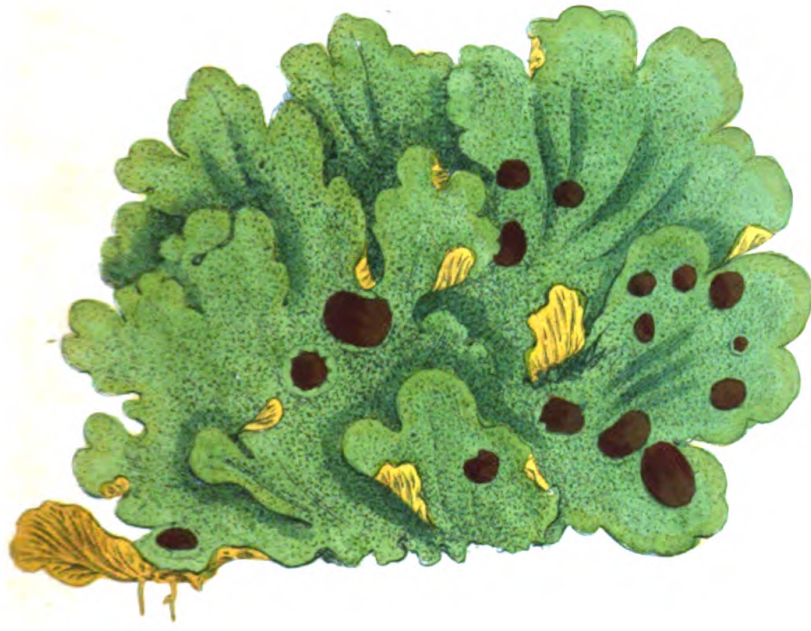
SYN. Lichen croceus. *Linn. Sp. Pl.* 1616. *Huds.* 548. *With. V.* 4. 68. *Jacq. Coll. V.* 4. 255. *t.* 11. *f.* 2, 3.*Lichenoides subtus croceum, peltis appressis. Dill. Musc.* 221. *t.* 30. *f.* 120.*Peltigera crocea. Hoffm. Pl. Lich. t.* 41. *f.* 2-4. *t.* 42. *f.* 4, 5.

ONE of the most beautiful, as well as the most rare, of our alpine Lichens, for fresh specimens of which we are indebted to Mr. Don of Forfar, and Mr. Mackay of Edinburgh; and these are the more acceptable, as Dillenius and Hoffmann knew the plant in a bad dried state only, the latter having condescended to copy the, not very excellent, drawing by Wulfen in Jacquin's *Collectanea*, for want of better materials.

This species grows flat on the ground, particularly in sandy barren spots on alpine heaths. It forms circular patches of leathery fronds, a little imbricated, obtusely lobed. Their upper surface is granulated, of a fine green, turning brown when dry; the under side is of a most vivid saffron or orange colour, which retains its beauty a long time, and is marked with many prominent veins, throwing out roots. Shields scattered, plentiful, flat, and closely attached to the frond, with whose external cuticle they are at first covered; they are roundish, smooth, chestnut-coloured.

*L. saccatus*, figured in *t.* 288, has most affinity with this, but they are sufficiently distinct.

795A



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## LICHEN saccatus.

*Socket Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Coriaceous, creeping in a somewhat circular form. Shields sunk into deep pits in the leaf, projecting on the under side.

SYN. Lichen saccatus. *Linn. Sp. Pl.* 1616. *Huds. Fl. An.* 548. *With. Bot. Arr. v.* 3. 205. *Lightf. Scot.* 855.Lichenoides Lichenis facie, peltis acetabulis immersis. *Dill. Musc.* 221. *t.* 30. *f.* 121.

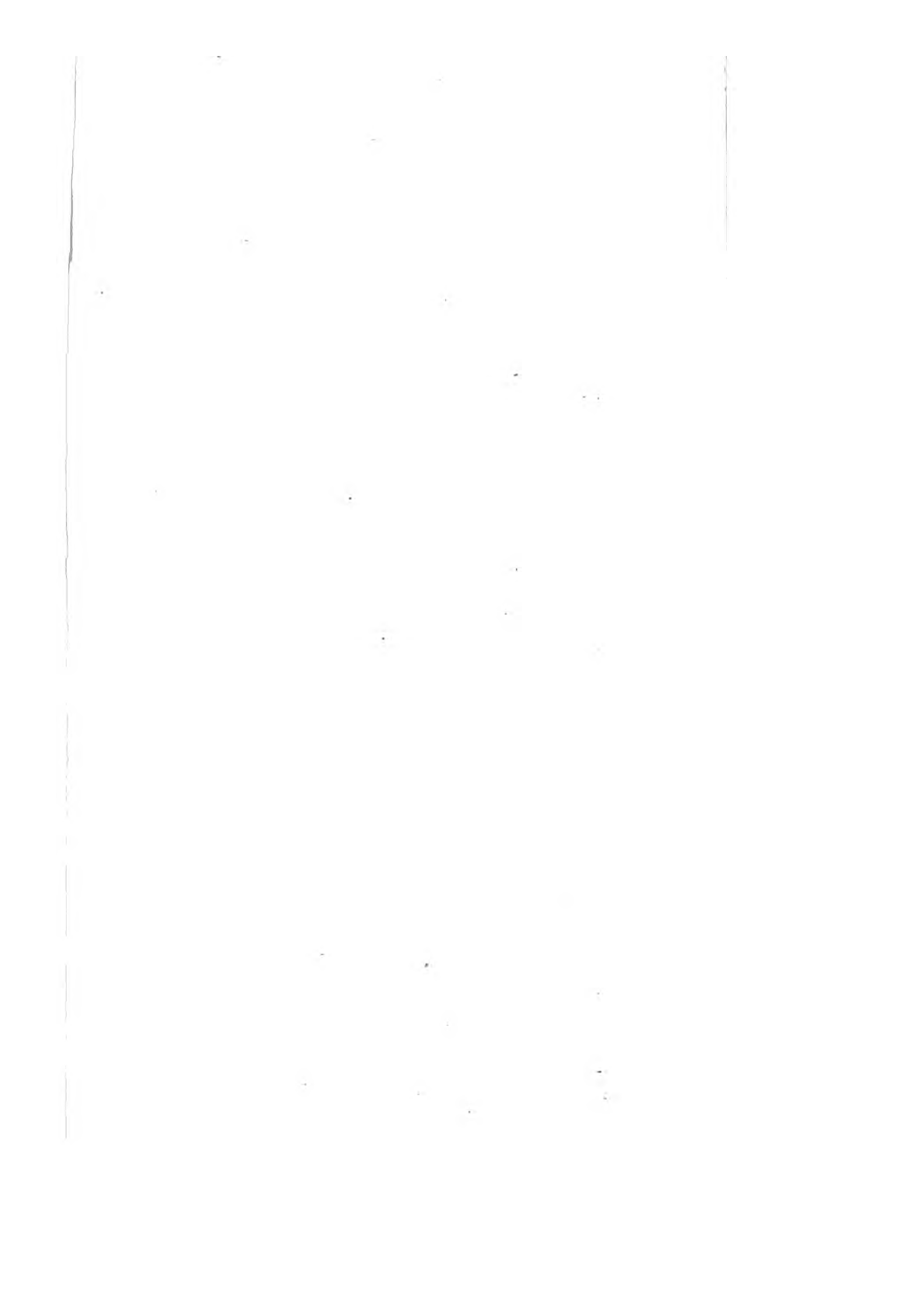
THE native place of growth of this Lichen is (as Mr. Lightfoot well expresses it) "upon the earth in the chasms of rocks that are damp and shady." In such situations Dr. Smith found it in the north west part of Yorkshire, and near Matlock just above the road from the old bath-house to the temple. We have also received it from the Rev. Mr. Davies and the Rev. Mr. Relhan, two most accurate investigators of Cryptogamous plants.

The fronds spread circularly, a little imbricated; their texture is leathery, but tender when wet; upper surface smooth, of a fine grass green turning brown in decay, the under side white and downy. Shields deeply immersed in sockets or pouches of the frond in a very peculiar manner, for which this curious species is remarkable; they are a little concave, blackish, without any margin, but covered when young with a fine skin which cracks in the centre.



*Handwritten text, likely a species name or description.*

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[ 1606 ]

LICHEN glaucus.  
*Glaucous Leafy Lichen.*

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CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Membranaceous, smooth, polished on both sides, lobed, jagged and curled; glaucous above; black beneath. Shields marginal, slightly bordered, red brown; at length flat, smooth.

SYN. Lichen glaucus. *Linn. Sp. Pl.* 1615. *Achar. Prod.* 167. *Huds.* 543. *With. v.* 4. 53. *Hull.* 296. *Lightf.* 838. *Sm. Tour, v.* 1. 336.

*Lichenoides endiviæ foliis crispis et splendentibus, subtùs nigricantibus.* *Dill. Musc.* 192. *t.* 25. *f.* 96.  
*Cetraria glauca.* *Ach. Meth.* 296.

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THIS Lichen is found in mountainous countries on rocky moors or heaths, as well as on the trunks of old trees. The late Rev. H. Bryant first observed it in Norfolk on old pales at Sall. The Rev. G. R. Leathes sent us specimens from damp parts of the heath near the place of growth of *Buxbaumia aphylla*, *t.* 1596. We subjoin a figure of the only British specimen we have ever seen in fructification, communicated by Mr. Dickson from Scotland, which is the more valuable, as Acharius himself never saw the shields, and it is not clear that Dillenius really knew them.

The fronds form loose straggling tufts, and are thin and membranous, very pliable when wet, smooth and shining on both sides when dry, variously lobed, sinuated and curled; glaucous variegated with brown above; black, but pale at the edges, underneath. The shields grow on or near the margin, almost sessile; when young they are convex, with a jagged inflexed border of the substance of the frond; when old they are flat; at all times smooth, of a red brown, or bay colour.

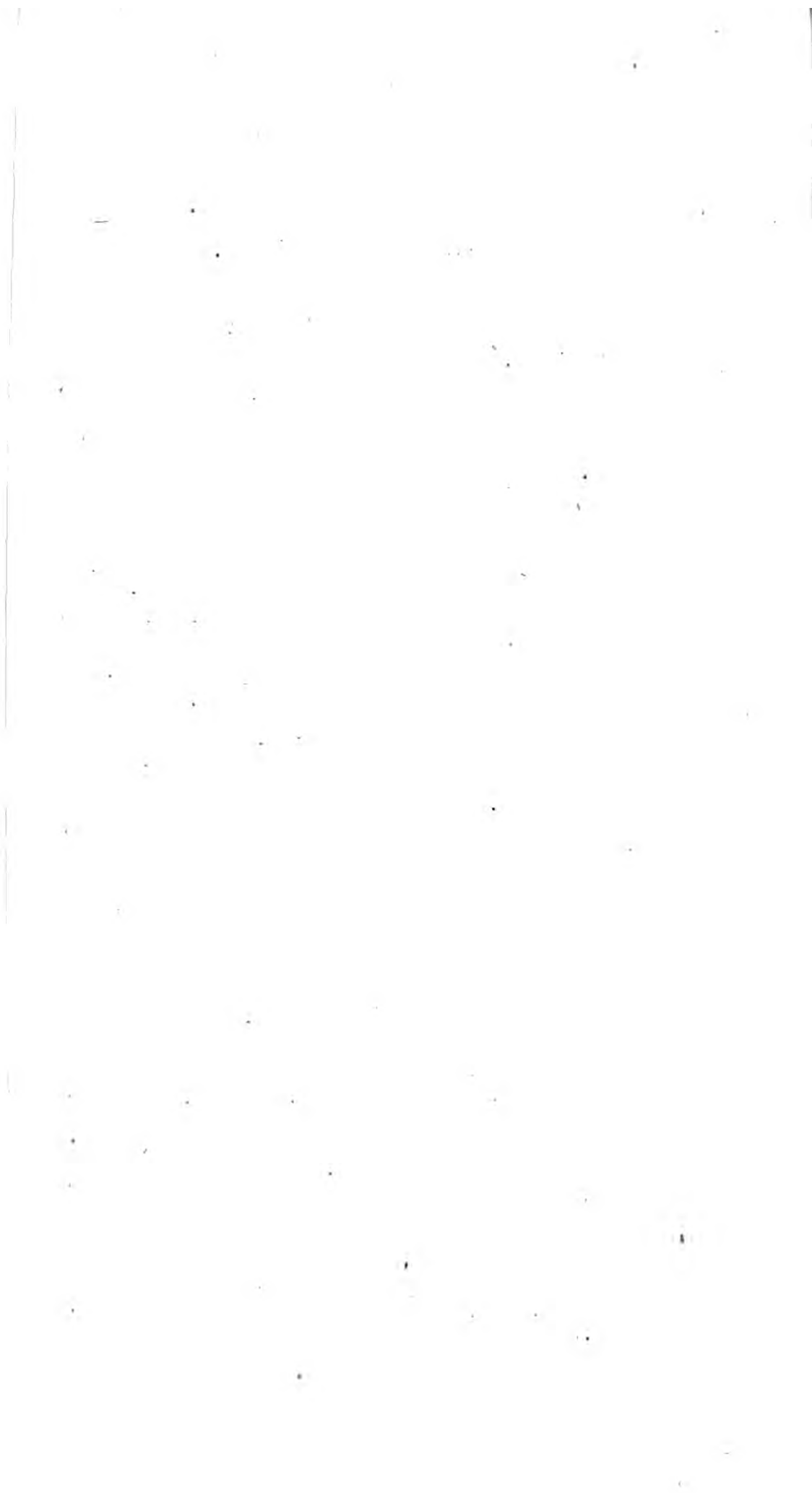
When the frond is morbidly inflated it becomes the *L. ampullaceus* of Linnæus, as I have verified by specimens belonging to Mr. Menzies. See *Trans. of L. Soc. v.* 7. 112, and *Ach. Meth.* 297.

1600



June 7 1866 Published by T. J. Seward, London.

J





LICHEN pinastri.

Golden Pine Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Membranous, depressed, smooth, and of a pale glaucous brown, on both sides; the margin elevated, curled, roundly lobed, bearing copious bright-yellow powder. Shields bright bay, with a yellow crenate border.

SYN. Lichen pinastri. Scop. Carn. v. 2. 382. Ach. Prod. 168. Dicks. Crypt. fasc. 3. 18. With. v. 4. 51. Hull. 296.

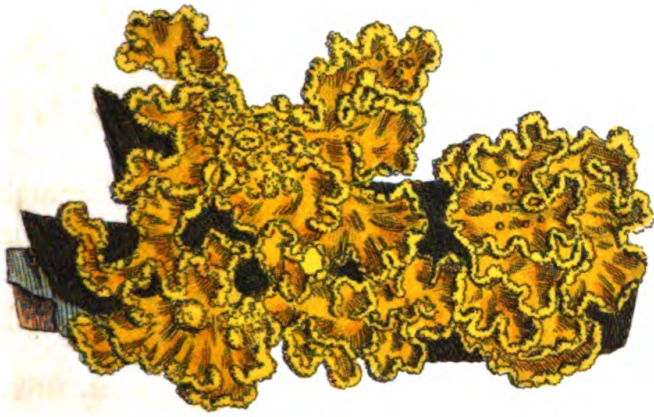
Squamaria pinastri. Hoffm. Pl. Lich. t. 7. f. 1.

Cetraria juniperina β. Ach. Meth. 298.

MR. DICKSON first noticed this species on the trunks of Scotch firs in the Highlands. Mr. Turner very unexpectedly detected a few small plants of the same on Mr. Rigby's pales at Framingham near Norwich, the most elevated spot in Norfolk, one of which is drawn at fig. 1.

This is truly a beautiful as well as very rare Lichen. The fronds spread loosely in irregular tufts, and are of a soft membranous texture when moist, smooth on both sides, and of a pale glaucous brown, with a strong tinge of yellow; but the latter hue is overpowered by the bright lemon-colour of the copious powder, borne by the numerous rounded and curled marginal lobes, which grow upright, though the leaf itself is depressed. When Dr. Acharius published his *Prodromus* he had never seen the shields. We have drawn them, fig. 2, from a specimen in the Linnæan herbarium, they being no where figured. The disk is bright chesnut; the border thin, somewhat notched, yellow.

Our learned friend has, in his *Methodus*, reduced this to a variety of *L. juniperinus*, which last has never been found in Britain. We have gathered both, with no small pleasure and attention, in Savoy, and can hardly be persuaded to unite them. Hoffmann's t. 7 is sufficiently expressive of their differences, though we own *juniperinus* often produces yellow powder.



• *Tot. 1827 published by J. Sowerby London.*

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## LICHEN Sepincola.

*Fence Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Membranaceous, smooth, glaucous-brown; paler and somewhat pitted beneath; segments flattish, ascending, sinuated, crenate, powdery at the edge. Shields nearly marginal, elevated, flattish, chesnut-coloured, with a thin notched border.

SYN. Lichen Sepincola. *Ehrh. Phytoph.* 90. *Ach. Prodr.* 169. *Hedw. Crypt.* v. 2. 8. t. 2. *Dicks. Crypt. fasc.* 3. 18. *With.* v. 4. 73. *Hull.* 300.

*Platisma Sepincola.* *Hoffm. Pl. Lich.* v. 1. 71. t. 14. f. 1.

*Cetraria Sepincola.* *Ach. Meth.* 297.

MR. DICKSON mentions this as growing on stones upon the Scottish mountains. We have seen no authentic British specimens, except a few, without fructification, shown us by Mr. Turner, growing on old posts and rails by the sea near Yarmouth. One of these is exhibited at *fig. 1*. That in fructification, *fig. 2*, on a branch of birch, came from Germany\*. It is usually found on old wooden fences, aged thorns, or other bushes, sometimes on stones, and is akin to *L. glaucus*, t. 1606, but not so thin, dilated, nor polished, neither is it so glaucous, but rather of a chesnut hue verging towards a lead-colour; the under side is paler, and whitish, not black, in the central part; the edges crenate, jagged and powdery. Shields copious when the plant attains its full growth, chiefly about the margin; at first sessile and concave, but soon elevated, flattish, of a shining chesnut hue, with an uneven thin border.

\* *Fig. 3* was gathered in Scotland by Mr. W. Borrer.



2.



3.



1.



*Mus. 1. 1812. published by J. G. Fisher, London*







[ 2373 ]

## LICHEN fallax.

*Fallacious Leafy Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Membranaceous, smooth, glaucous-white on both sides, polished, lobed and finely jagged. Shields terminal, slightly bordered, brown; at length dilated and convex.

SYN. Lichen fallax. *Web. Goett.* 244. *Ach. Prodr.* 169. *Dicks. Crypt. fasc.* 1. 13. *With. v.* 4. 53. *Hull.* 296.*L. alpinus membranaceus elegans, &c. Mich. Gen.* 75. t. 37.*Lichenoides membranaceum, tubæ fallopiantæ æmulum. Dill. Musc.* 165. t. 22. f. 58.*Platisma fallax. Hoffm. Pl. Lich. v.* 2. 71. t. 46.*Cetraria fallax. Ach. Meth.* 296.

**S**PECIMENS of this very fine and rare Lichen were sent to Mr. Dickson, many years ago, by Mr. Slater, who found them on rocks in the mountainous part of Devonshire. Not having been able to procure or even to see any of British growth, we are obliged to rely, as we safely may, on such authority, and to figure one given us by Prof. Gouan of Montpellier.

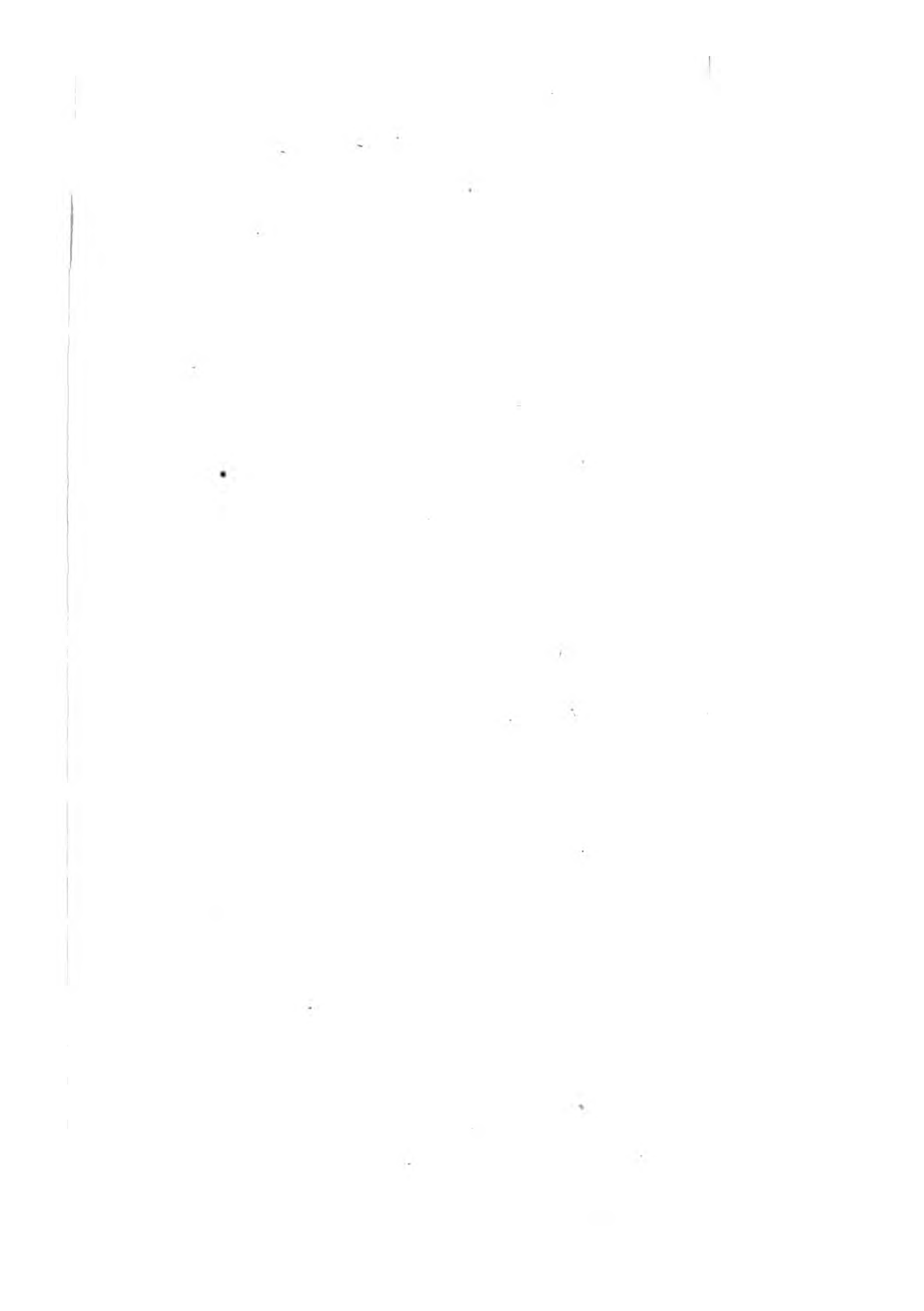
The present species is most allied to *glaucus*, t. 1606, from which it differs in its more ample and diffuse form of growth, more elegant and fringed divisions, large terminal dark-brown shields, growing on elongated dilated segments of the frond, and especially in its paler colour, which is, on the under side, almost white, not brown or black.

2373.



*Jan 1 1872, published by J. & W. G. & Co. London.*

J



[ 1930 ]

## L I C H E N islandicus.

*Iceland Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, membranous, ascending, laciniated, channelled and fringed, greenish chesnut-coloured. Shields sessile, flat, of the same colour.

SYN. *Lichen islandicus.* *Linn. Sp. Pl.* 1611. *Achar. Prod.* 170. *Huds.* 539. *With. v.* 4. 54. *Hull.* 296. *Lightf.* 829. *Woodv. Med. Bot. t.* 205. *Jacq. Coll. v.* 4. 253. *t.* 8. *f.* 1.

*Lichenoides rigidum, eryngii folia referens.* *Raii Syn.* 77. *Dill. Musc.* 209. *t.* 28. *f.* 111.

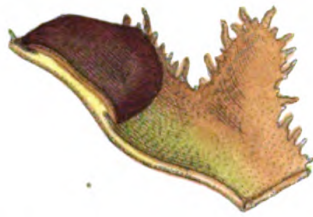
*L. islandicum.* *Hoffm. Pl. Lich. t.* 9. *f.* 1.

*Cetraria islandica.* *Achar. Meth.* 293.

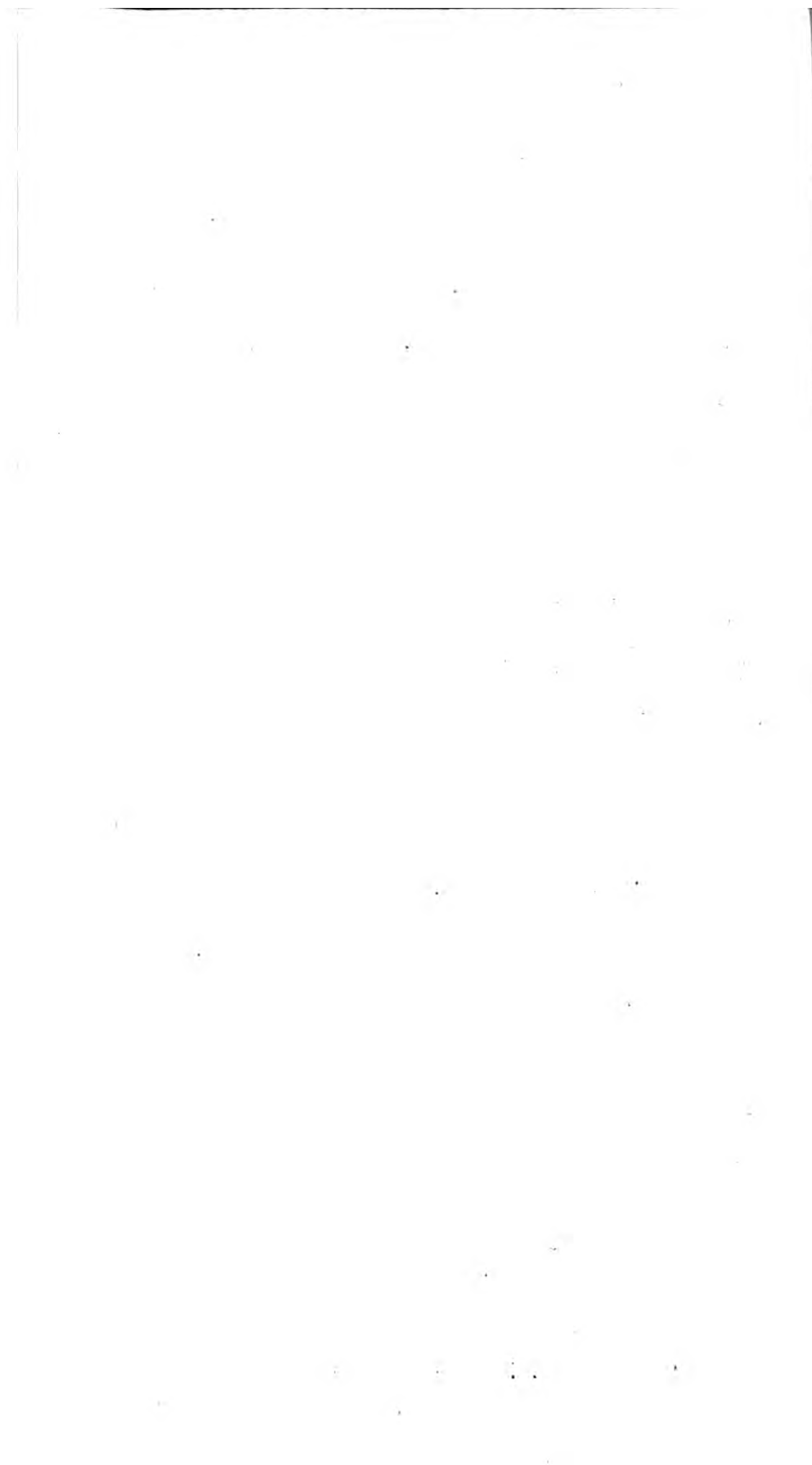
A NATIVE of mountainous heaths and woods in the alpine parts of Britain. We have gathered it on the Pentland hills near Edinburgh, Ben Lomond, &c. and have received it from Durham, but have been obliged to draw the fructification from foreign specimens. On the Alps the shields more frequently occur, and the whole plant is more luxuriant, than with us.

The fronds form loose elastic tufts, often intermixed with moss and other plants. They are channelled in the lower part, dilated and elegantly divided and lobed above; the margin regularly fringed. Colour a rich chesnut brown, rather shining, with a green tinge when wet: the under side paler, and the whole plant pale in the shade. The bottom sometimes turns very red; perhaps from some alkaline substance falling on it. The shields are dark chesnut, polished, flat, without any border, growing close to the upper surface of the frond near the summit.

This Lichen abounds with nutritious mucilage, and is become a fashionable medicine in coughs and consumptions. It is previously infused in water to extract its purgative bitter quality. See Woodville for a full account of its use.



✓





[ 1994 ]

## LICHEN nivalis.

*Snow Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, membranous, ascending, lacinated, pitted, of a sulphureous white, yellow at the base; its segments flattish, repeatedly divided, divaricated, notched, warty. Shields in front towards the margin, flesh-coloured, with a crenate border.

SYN. Lichen nivalis. *Linn. Sp. Pl.* 1612. *Fl. Lapp.* ed. 2. 355. t. 11. f. 1. *Ach. Prod.* 171. *Dicks. Crypt. fasc.* 3. 17. *With. v.* 4. 60. *Hull.* 298. *Villars Dauph. v.* 3. 955. var. 1. t. 55. *Fl. Dan.* t. 227.Lichenoides lacunosum candidum glabrum, endiviæ crispæ facie. *Dill. Musc.* 162. t. 21. f. 56 A.  
Cetraria nivalis. *Ach. Meth.* 294.

THE specimen in our plate was brought from the Highlands of Scotland by Mr. Turner and Mr. Hooker in 1807, but our first knowledge of this Lichen as a native of that country was derived from Dr. R. Townson in 1790, as mentioned in the 2d edition of *Linn. Fl. Lapp.* It always prefers the highest or coldest, dry and rocky, places.

The fronds are of the palest sulphur-colour, almost white, tufted, entangled amongst other Lichens or mosses, membranous, brittle when dry, repeatedly cut into narrow, divaricated, notched segments, all over pitted or cellular; not unaptly resembling in form and colour small leaves of curled endive. Little blackish warts occur here and there on the edges, but what share they have in the fructification is unknown.

The real shields of this Lichen are one of our chief desiderata. We have in vain searched the herbarium of Linnæus for his Dalecarlian specimen, figured in *Fl. Lapp.* t. 11. f. 1; but as his description agrees with that of Villars, we have profited of both in our above specific character. We hope some future traveller in Scotland may find our *L. cucullatus*, *Tr. of L. Soc.* v. 1. 84. t. 4. f. 7, whose shields grow on the back of the leaf, under hoods, and whose fronds are channelled, scarcely pitted or wrinkled.

1994



*Mar. 1. 1869. Published by J. A. Jewell, London.*

V



[ 1351 ]

## LICHEN tenellus.

*Little Ciliated Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, membranous, procumbent, smooth, greyish : segments linear ; their extremities ascending, dilated, obtuse, vaulted, fringed. Shields sessile, blueish-black.

SYN. Lichen tenellus. *Weber. 235. Achar. Prod. 172. With. v. 4. 56. Hull. 297. Relh. 466. Sibth. 329. Abbot. 266. Ehrh. Crypt. 217.*

*L. ciliaris*  $\beta$ . *Huds. 538.*

*Lichenoides hispidum minus et tenerius, scutellis nigris. Dill. Musc. 152. t. 20. f. 46.*

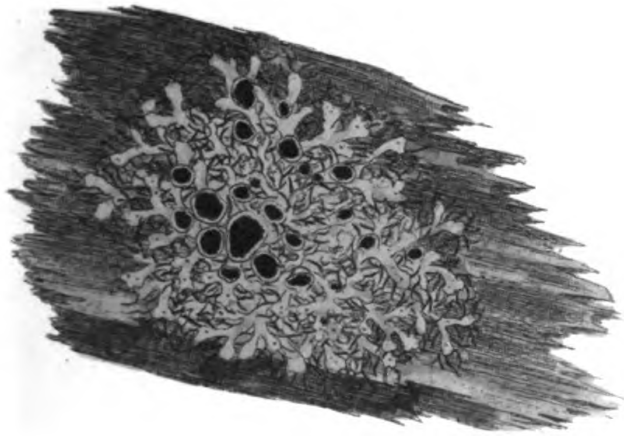
*L. saxatile et arboreum tenerius, foliis pilosis, scutellis in aversa foliorum superficie apparentibus. Dill. in Raii Syn. 74.*

*L. hispidum. Hoffm. Pl. Lich. t. 3. f. 2, 3.*

*Parmelia tenella. Achar. Meth. 250.*

COMMON on the bark of trees, or rather on the branches of shrubs, as well as on pales and stones. The sloe and other bushes in our hedges generally abound with this species at all seasons of the year.

The fronds are depressed, much branched, and somewhat imbricated, of a brilliant greyish white, forming creeping patches scarcely an inch broad ; their segments linear, zigzag, rather convex ; dilated, obtuse, and vaulted, or somewhat inflated, at their extremities, often powdery, and fringed at that part with long, blackish or white, undulating bristles. The shields are sessile on the upper surface of the frond, of a blueish or greyish black, flat ; their border of the substance and colour of the leaf, inflexed, externally very smooth, internally crenate.



2

10





[ 1352 ]

LICHEN ciliaris.  
*Great Ciliated Lichen.*

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CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, membranous, ascending, minutely pubescent, of a greenish glaucous grey: segments linear, lacinated, fringed. Shields elevated, brownish black.

SYN. Lichen ciliaris. *Linn. Sp. Pl.* 1611. *Achar. Prod.* 173. *Huds.* 538. *With. v. 4.* 55. *Hull.* 297. *Relh.* 466. *Sibth.* 328. *Abbot.* 265. *Dicks. H. Sicc. fasc.* 7. 24. *Ehrh. Crypt.* 227.

*Lichenoides hispidum majus et rigidius, scutellis nigris. Dill. Musc.* 150. *t.* 20. *f.* 45.

*L. arboreum foliosum cinereum, scutellis nigris, foliorum extremitatibus hispidis et pilosis. Raii Syn.* 73.

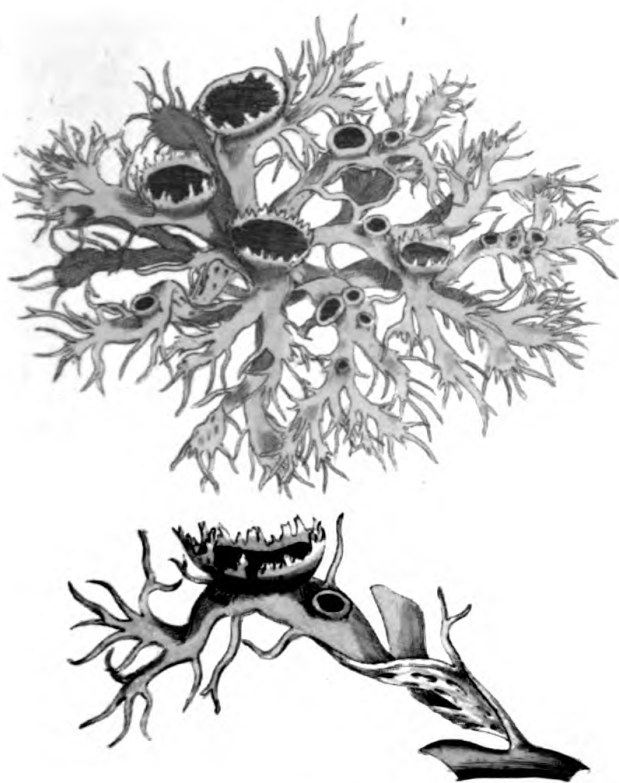
*L. ciliare. Hoffm. Pl. Lich. t.* 3. *f.* 4.

*Parmelia ciliaris. Achar. Meth.* 255.

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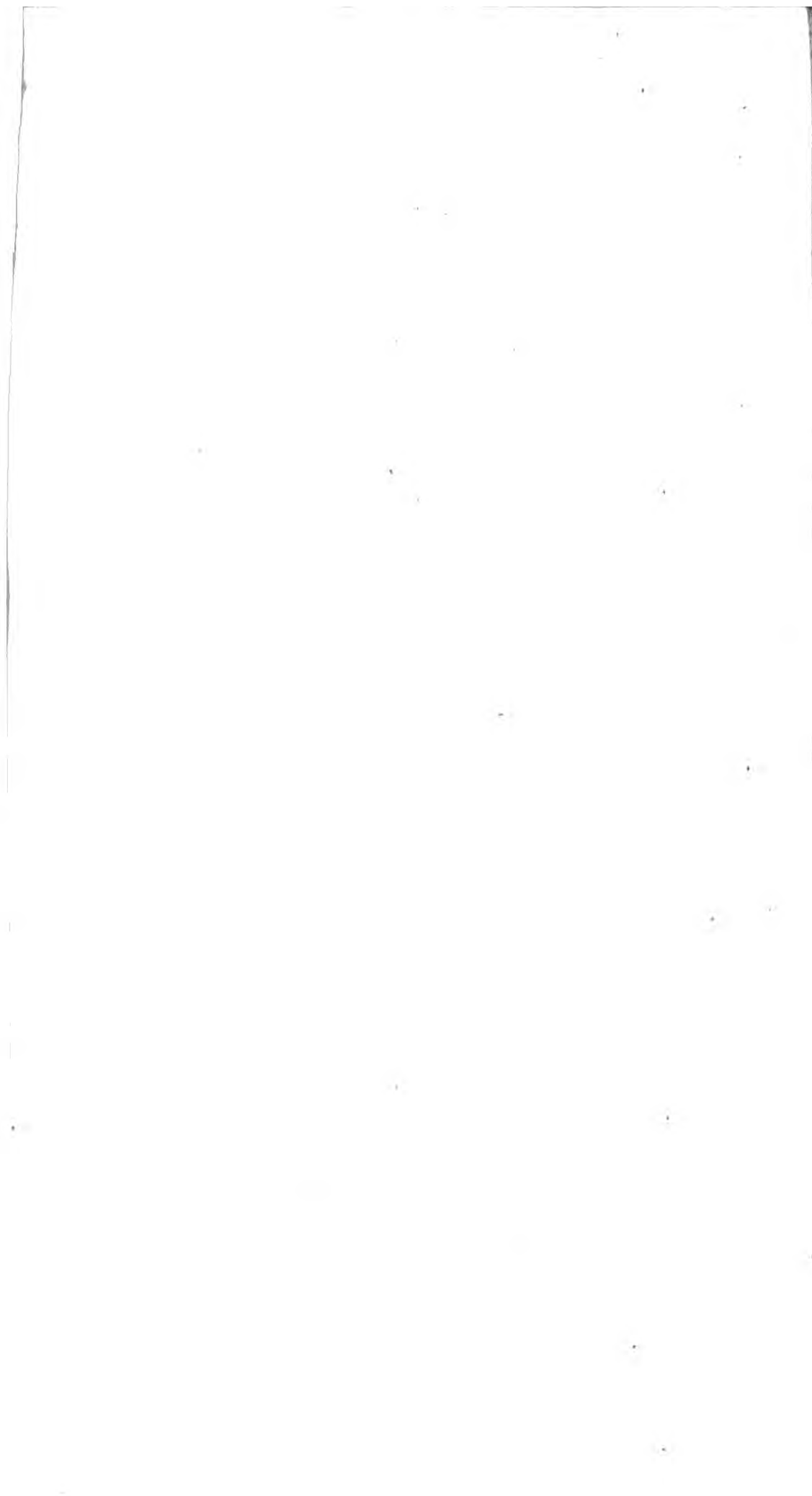
NO less abundant than the last in its appropriate situations, which are the trunks and branches of large trees, sometimes stones, where it is found at all seasons bearing copious shields.

It is much larger than the preceding, with which Linnæus confounded it, and differs in many essential characters. The colour is more dull and greenish, especially when wet, the surface minutely downy, the fronds less depressed, and much more copiously fringed. The whole plant is very much branched, its segments dilated upwards, rather convex throughout, but not inflated or vaulted at the end. The under side is white and concave. Shields on thick stalks, flattish, large, brownish black, glaucous when young, their border inflexed and crenate. Sometimes the border is greatly dilated, variously lacinated, and grows erect.



Sept. 1864. Published by J. S. Lovell, London.

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## L I C H E N leucomelos.

*Black-haired Lichen.*

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*CRYPTOGAMIA Algæ.*

**GEN. CHAR.** Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

**SPEC. CHAR.** Leafy, membranous, spreading, smooth, white on both sides; channelled and powdery beneath: segments linear, fringed with long, black, very slender hairs. Shields stalked, blueish-black, with a white radiating border.

**SYN.** Lichen leucomelos. *Linn. Sp. Pl.* 1613. *Ach. Prodr.* 181. *Swartz. Obs.* 407. *t.* 11. *f.* 3.

*Lichenoides angustifolium planum, crinibus nigris.*  
*Dill. Musc.* 156. *t.* 21. *f.* 50.

*Parmelia leucomela.* *Ach. Meth.* 256.

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**DISCOVERED** by Mr. W. J. Hooker at Babbicombe in Devonshire last February. This species had never before been met with in Britain, but is a native of the West Indies, and of St. Helena. The fronds grow in dense lax tufts, spreading amongst thyme, &c. in heathy places, and are known by their generally very pure white colour and great smoothness above, contrasted with their remarkably long, slender, coal-black, simple or branched, marginal hairs. Sometimes there is a grey or smoky tinge. The breadth of the segments varies much. The under side is channelled and mealy, always snow-white. The elegant shields were not found by Mr. Hooker. We have them on specimens gathered by Mr. Menzies in St. Helena. They are lateral, scattered, on short stalks; the disk flat, greyish, surrounded with a white, leafy, radiating margin, sometimes bearing black hairs like those of the frond.

2548



May, 1852 published by J. Van der Linde

✓





[ 1715 ]

LICHEN atlanticus.

*Downy Shrubby Lichen.*

CRYPTOGAMIA Algae.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, branched, tufted and entangled, grey, downy, linear, channelled underneath; branches rigid, divaricated. Shields lateral, flattish, black, with a smooth, entire, grey border.

SYN. *Lichen intricatus*. Desfont. *Atlant.* 420. t. 258. f. 3.

*Lichenoides subhirsutum* teres, scutellis parvis nigris.

*Thal. Junc.* 177. t. 21. f. 51. *Herb. Dill.*

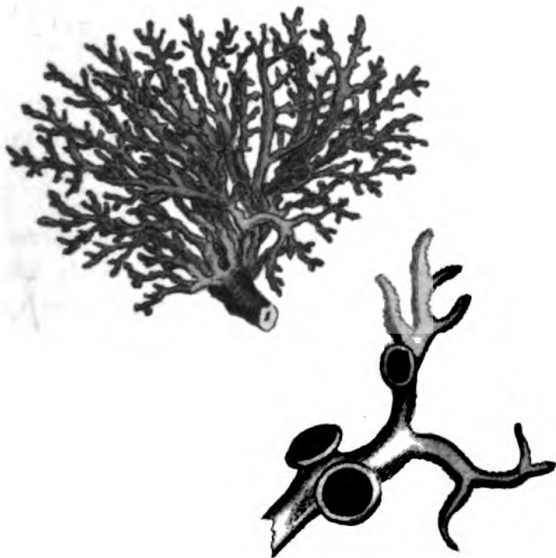
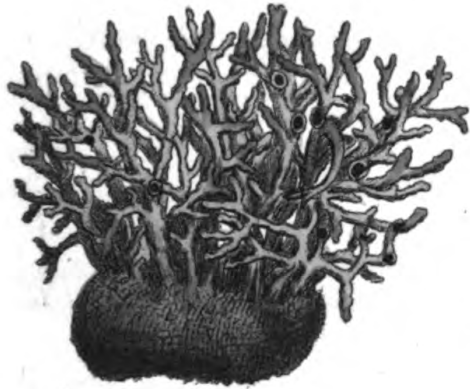
*Parmelia atlantica*. *Ar. Mein. Suppl.* 50.

FIRST found in Britain by Mr. W. Borrer, on elms at Bracklesham in Sussex island, in April 1804, and by the same gentleman at Oving near Hastings, bearing shields in August 1808. We should gladly have called it *L. Borreri* after its discoverer, who is so regularly conversant with Lichens, the name otherwise being preoccupied, and that which alludes to its growing on mount Atlas being contrary to the soundest rules of nomenclature. The synonym of Dillenius, which no one has suspected, we have ascertained by a specimen compared at Oxford. Dillenius's figure and description are instantly recognised.

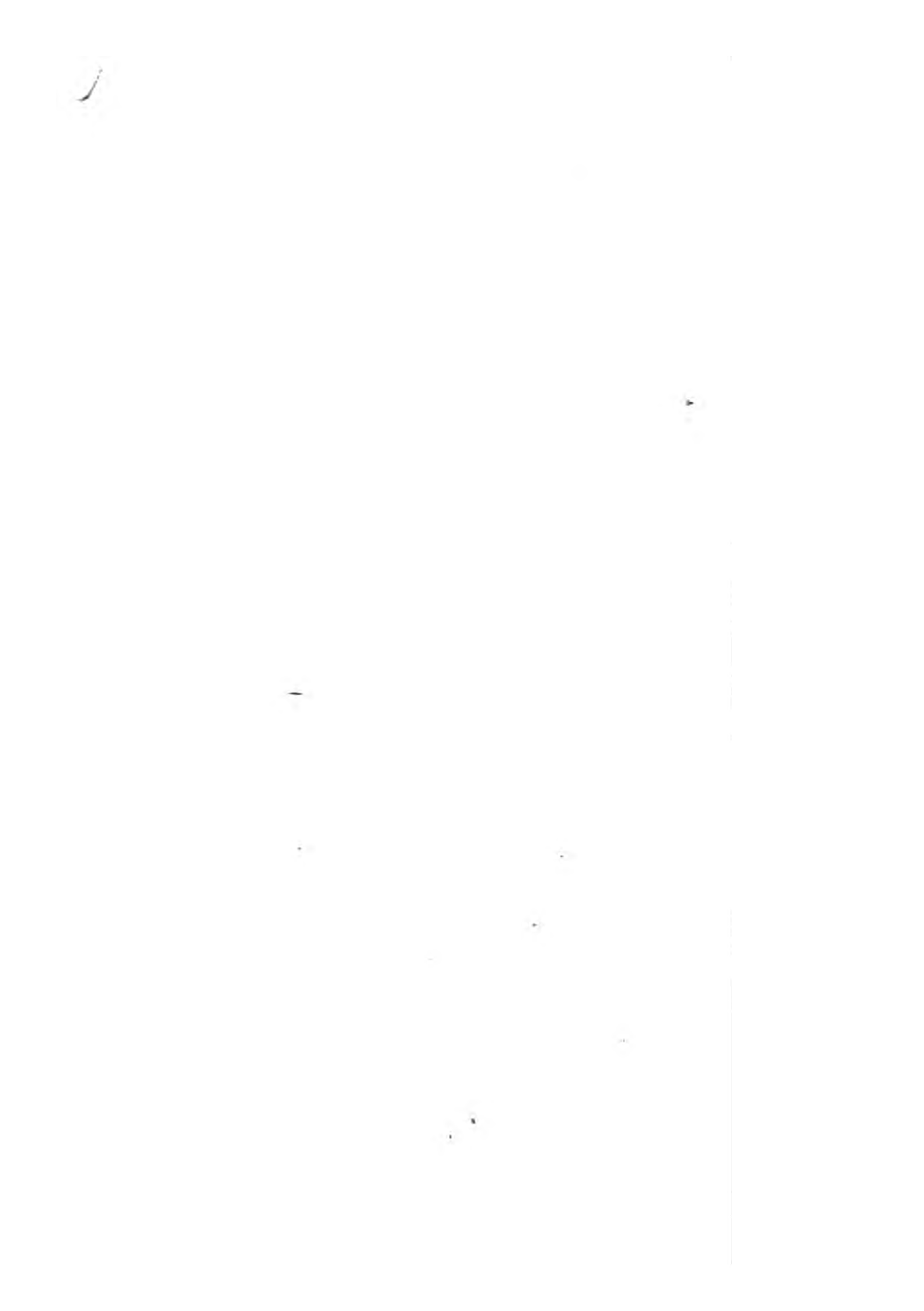
The thallus with dense entangled tufts on the branches of trees or on rocks, and are of a grey or whitish colour, clothed with fine short down. Their subdivisions are numerous, divaricated, rigid, channelled beneath. Shields lateral, sessile, shield-shaped, black, with a black disk, at length becoming convex, and all clothed downy beneath, of the colour and substance of the thallus.

It belongs to the same natural tribe as *L. prunastri*, *fari-nosus*, &c. &c. Michel is its original discoverer, who sent it to Borrer, and whose indifferent figure (*Gen. Pl. t. 30. f. 3*) Dillenius, as usual, takes delight in criticising.

1715



*Mr. 1807. Published by Jas. Sowerby London.*



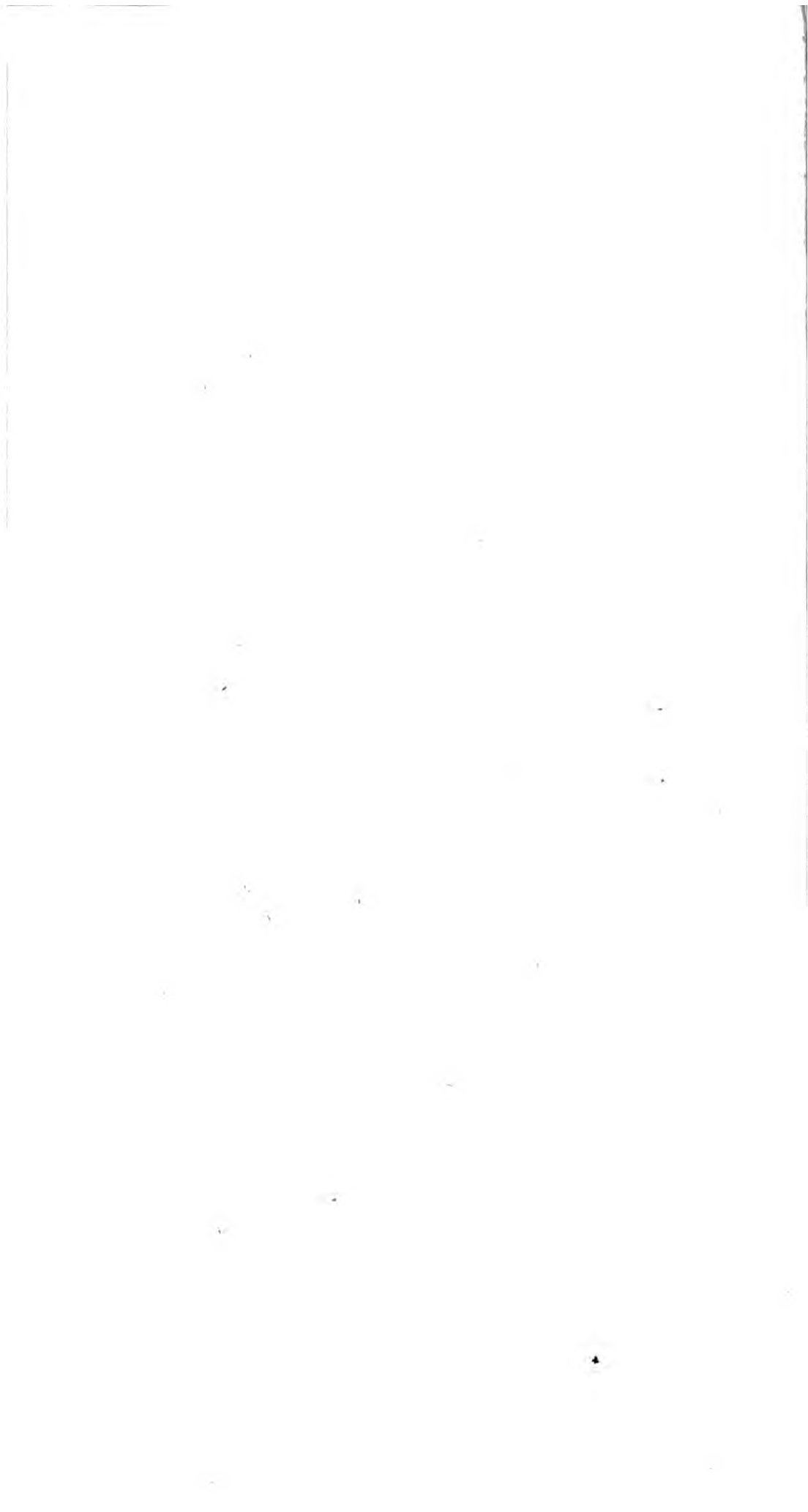






*Asplenium platyneuron*

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## LICHEN furfuraceus.

*Branny Lichen.*CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, leathery, decumbent, lacinated and forked; convex, greenish-grey and powdery above; concave, rugged and black beneath. Shields scattered, inflated, reddish-brown, with a thin inflexed edge.

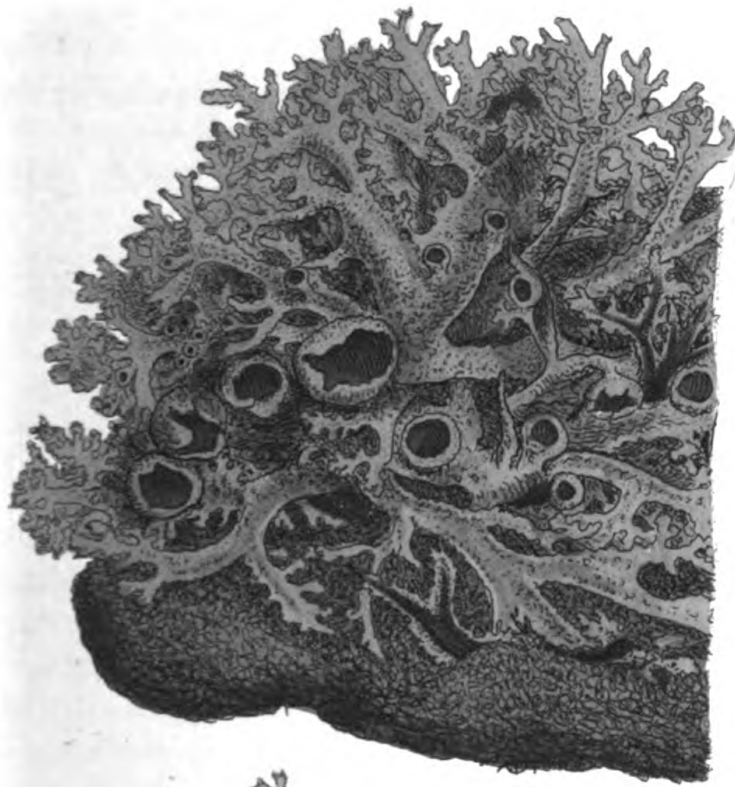
SYN. Lichen furfuraceus. *Linn. Sp. Pl.* 1612. *Huds.* 539. *With.* v. 4. 56. *Hull.* 297. *Lightf.* 832. *Achar. Prod.* 173.

Lichenoides cornutum amarum, supernè c inereum infernè nigrum. *Dill. Musc.* 157. t. 21. f. 52.

*LICHEN furfuraceus* is to be found in the most mountainous counties only, and there not frequently. It grows on the trunks of trees, old pales, &c., but seems to prefer rocks of granite or sandy grit, as in the specimens now before us sent by the Rev. Mr. Harriman. The fructification is extremely rare, and several authors confess they have never seen it.

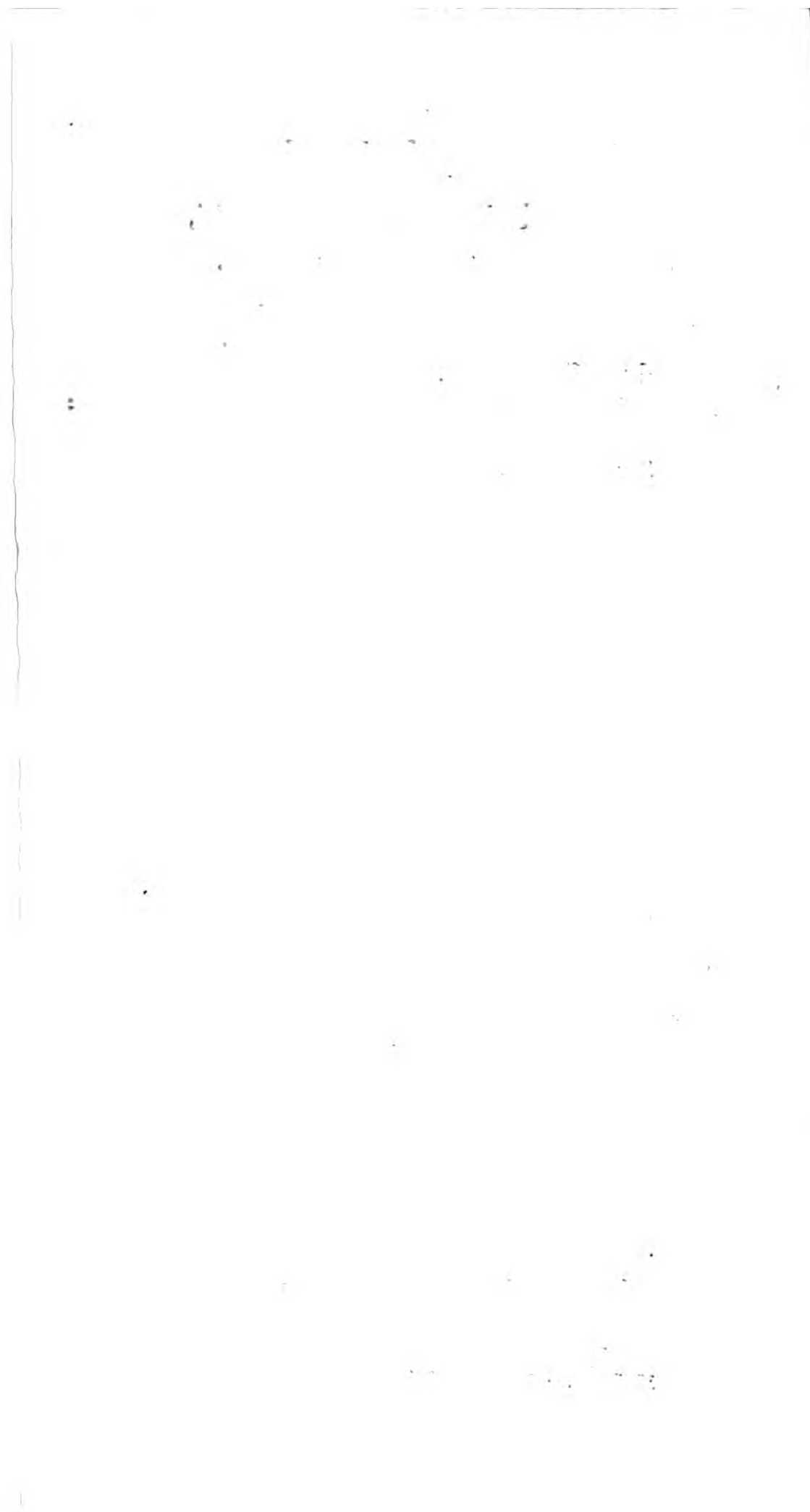
The fronds grow loosely spreading or decumbent in large roundish tufts, and are much branched and repeatedly forked, various in breadth, ending in sharp reddish points. The upper surface is convex, greenish-grey, all over powdery; the under concave, rugged or plaited, not powdery, black, having in many parts a blue or purplish tinge. Shields attached to the upper surface, elevated, concave or inflated, with a thin inflexed edge; their disk is brown; their outside grey and mealy like the fronds.

Professor Hoffmann in his *Plantæ Lichenosæ* t. 9. f. 2. gives an excellent representation of the plant in a dry state.



*Fig. 1. 1800. Published by T. Agnew, London.*





L I C H E N *prunastri*,  
*Ragged hoary Lichen.*

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CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, much-branched, upright, leathery, soft, greenish-white, pitted and rugged; very white beneath; the segments linear, flat, acute. Shields lateral, concave, bright-brown.

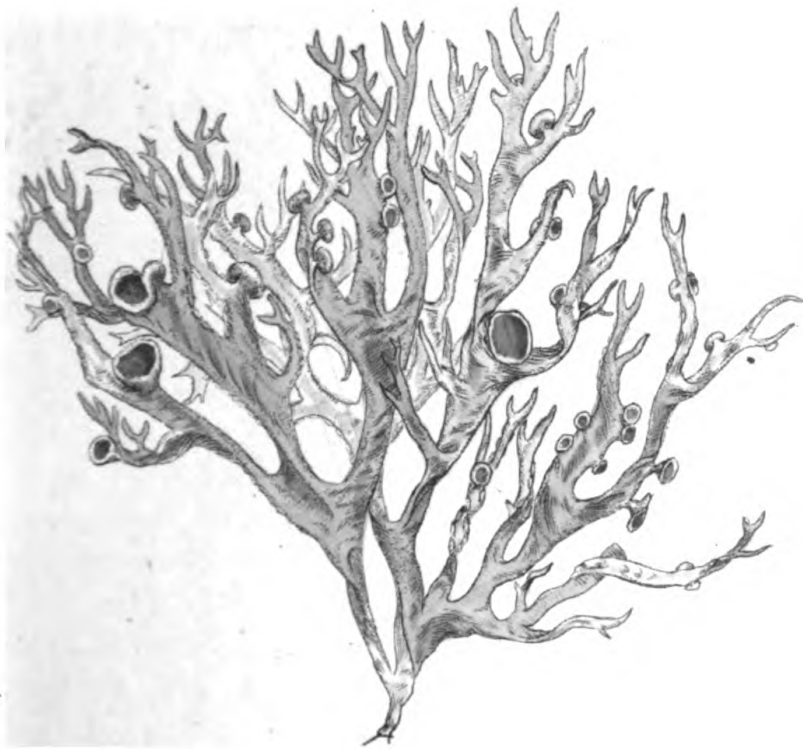
SYN. *Lichen prunastri.* *Linn. Sp. Pl.* 1614. *Achar. Prodr.* 174. *Huds.* 541 β? *With.* v. 4. 52. *Hull.* 296.

*L. corniculatus.* *Relb.* 433.

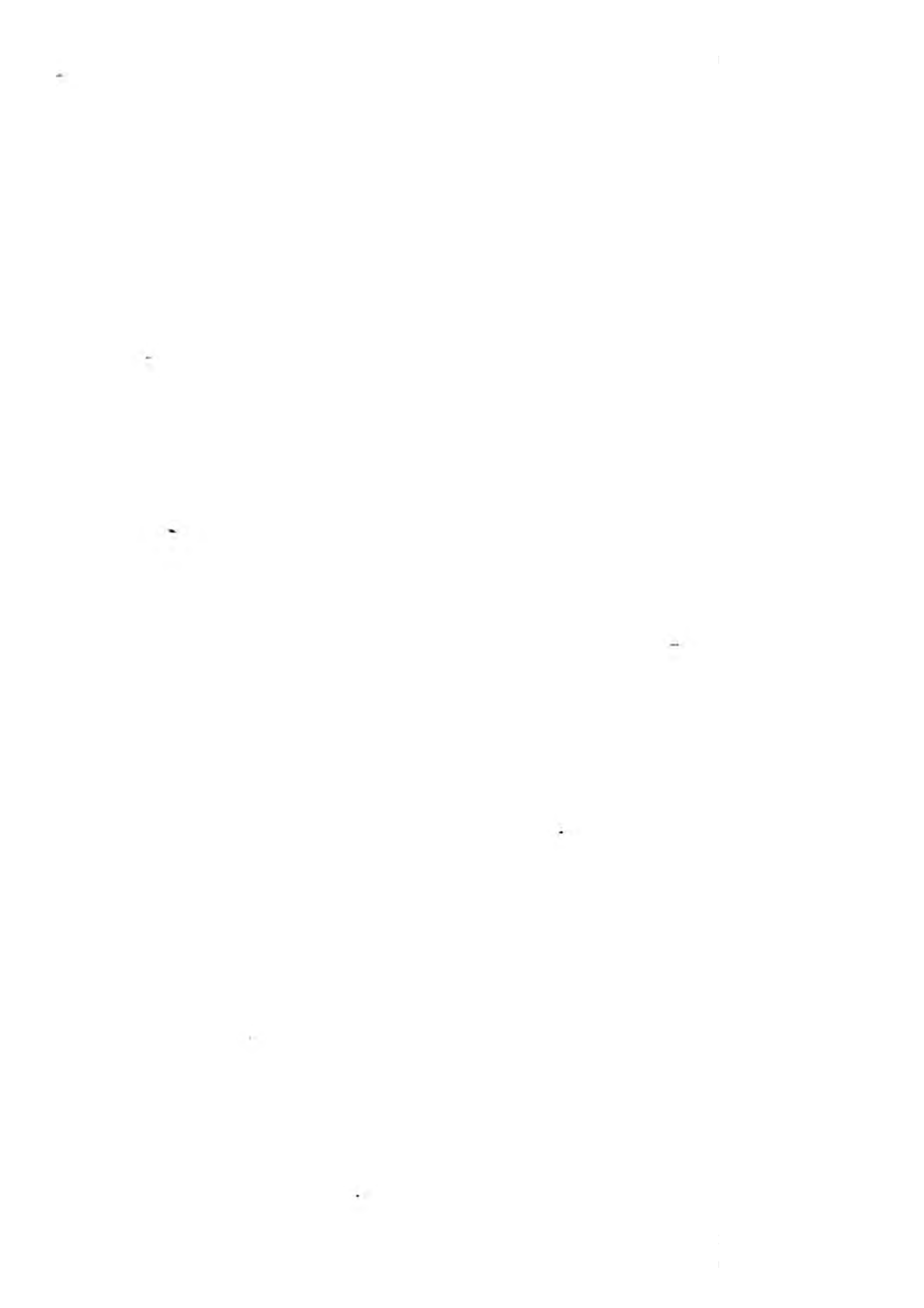
*Lichenoides cornutum bronchiale molle, subtus incanum.* *Dill. Musc.* 160. t. 21. f. 55 A.

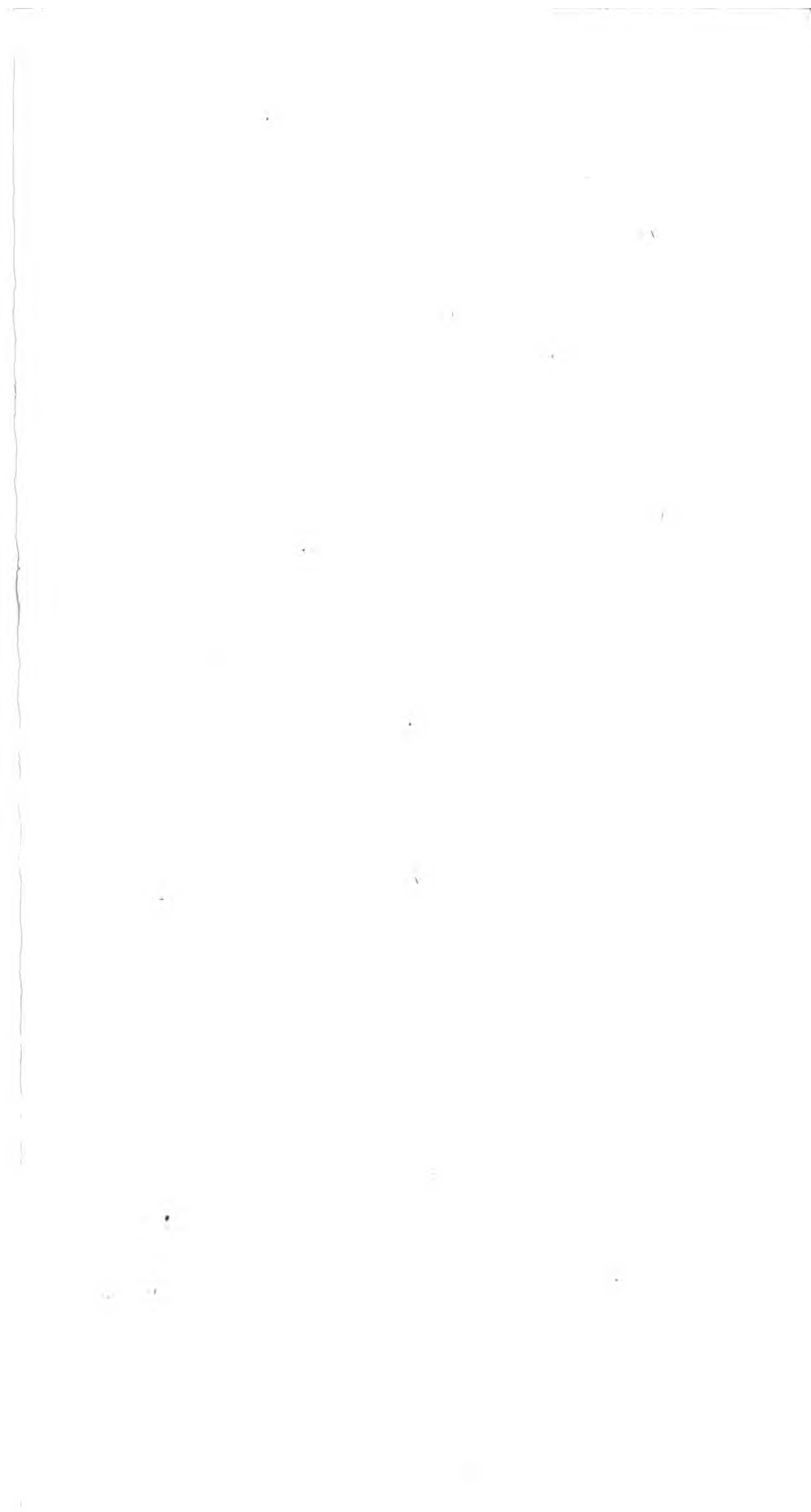
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FEW botanists have well understood the tribe of leafy or flat branched Lichens to which the present species belongs; indeed Dr. Acharius, in his *Prodromus* and in the Stockholm Transactions, is the first who has clearly illustrated their Proteus-like forms. We agree with him that this is the real *prunastri*, with which almost all writers have confounded some others that are distinct from it, apparently from being ignorant of the fructification, which even Dillenius never knew. It was first found in England by the late Rev. Mr. Bryant, and consists of large chestnut shields with an entire white edge, entirely different from the shields of the common Lichens that have been confounded with this, and which we shall take an opportunity of illustrating when we have settled them all by communication of original specimens with Dr. Acharius. In the mean time the *prunastri*, which is common on the branches of old trees, may easily be known without its fructification, (which is very rare, and which we received from Mr. Templeton and Mr. Salt), by its soft and pliable texture, and diffuse much-branched form. Mr. Relhan rightly distinguished it from what he then thought *prunastri*, by the name of *corniculatus*.



*April 1 1861. Published by J. Sowerby, London.*







[ 1353 ]

## LICHEN stictoceros.

*Dotted-horned Lichen.*

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*CRYPTOGAMIA Algæ.***GEN. CHAR.** Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

**SPEC. CHAR.** Shrubby, spreading, much branched, compressed, wrinkled, pale sulphur-coloured; solid and spongy within. Tubercles terminal, solitary, minute, convex, black.

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**W**E know no synonym or account of this Lichen, which was found by our worthy friend and patron James Brodie, Esq., growing on the ground upon broken sand-banks, in the warren opposite Exmouth, Devonshire, not above 300 yards from the ferry, early in the spring of 1803.

At first sight it might be taken for *L. prunastri*, but nothing can prove more distinct when the fructification, and indeed the true nature of the fronds, are attended to. The latter grow in spreading tufts or clusters, of a pale greenish sulphur-colour, and are repeatedly branched, divaricated, compressed, wrinkled and pitted, scattered here and there with white powdery warts: being alike on both sides, they are easily distinguished from *L. prunastri*. The internal substance is light and spongy, of the purest white, not tubular, nor are the *axillæ* perforated. The terminal branches are acute and more cylindrical, often dotted with little dark specks, and each tipped with fructification in the form of minute black convex solitary smooth tubercles, such as are proper to the tribe *Cladonia* in Acharius's *Prodromus*, evincing the affinity of this new species to *L. uncialis* and its allies.



J



## L I C H E N fraxineus.

*Leafy Ash Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, tufted, somewhat cartilaginous, pitted, smooth, greyish white; its segments linear-lanceolate, acute, jagged. Shields pale, scattered, stalked.

SYN. Lichen fraxineus. *Linn. Sp. Pl.* 1614. *Ach. Prod.* 175. *Huds.* 541. *With. v. 4.* 56. *Hull.* 297. *Relh.* 467. *Sibth.* 330. *Abbot.* 266.

Lichenoides longifolium rugosum rigidum. *Dill. Musc.* 165. *t. 22. f. 59.*

L. arboreum ramosum scutellatum majus et rigidius, colore virescente. *Raii Syn.* 75.

Parmelia fraxinea. *Ach. Meth.* 258.

Platismia fraxineum. *Hoffm. Pl. Lich. v. 1.* 85. *t. 18. f. 1, 2.*

VERY common on the large branches of old trees, particularly the Ash and Oak, bearing shields copiously at all seasons.

The fronds grow in large tufts of a pale greenish hue, white when dry, from 2 to 6 inches in length, composed of numerous, flattish, pliable, linear-lanceolate, acute, jagged or compound segments; even when young, but soon becoming pitted and wrinkled; destitute at all times of every kind of pubescence or roughness. Shields numerous, from both sides as well as edges of the leaves, on short stalks, various in size, concave, pale buff, sometimes flesh-coloured, at length rugged and blackish: their border small and thin.

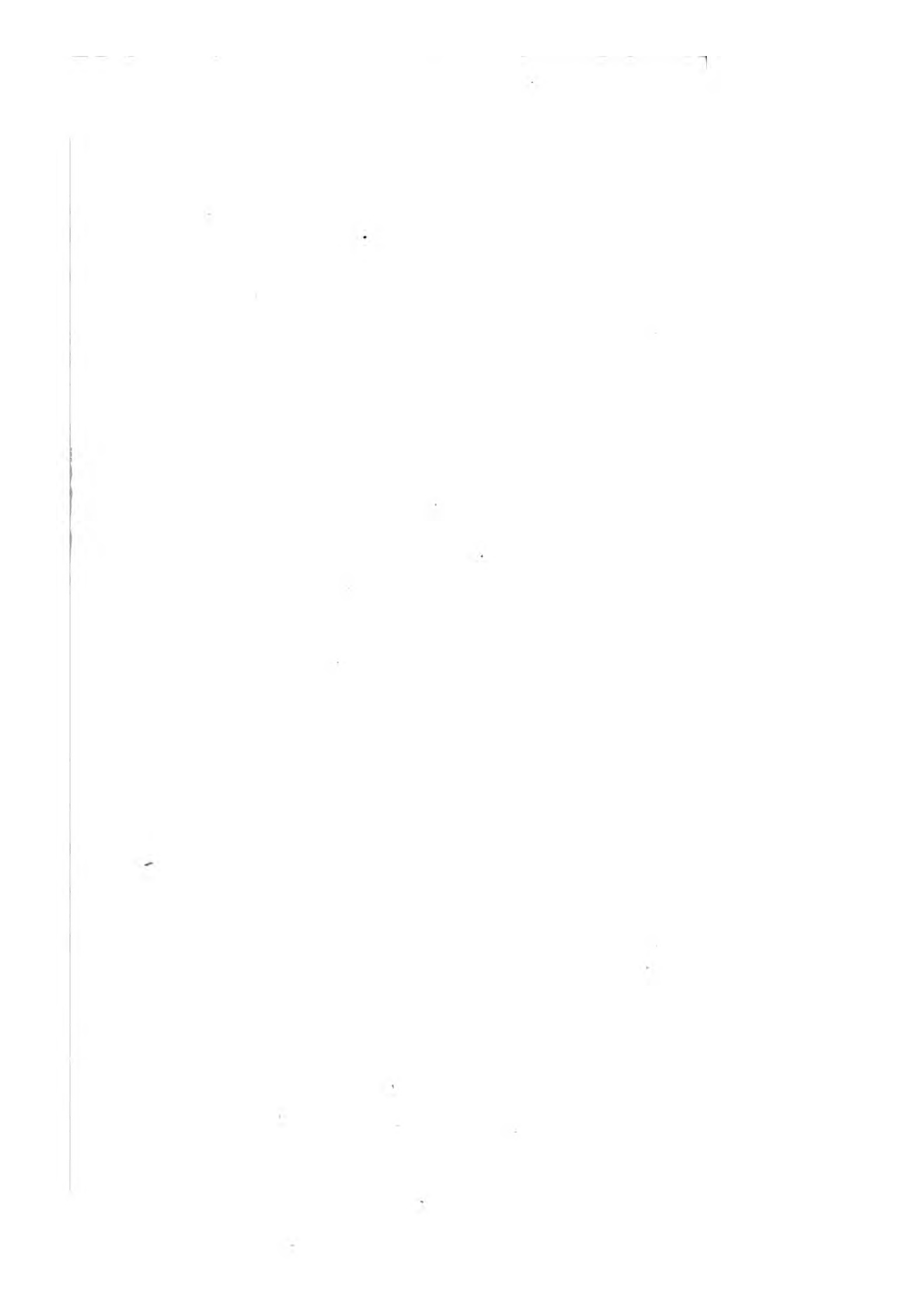
It is the largest British Lichen of its tribe, and sufficiently distinguishable from all others.

1781



*Aug. 1. 1864, Published by J. A. Sowerby, London.*

v





## LICHEN fastigiatus.

*Ragged Beaked Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, much-branched, upright, leathery, glaucous-buff, smooth, pitted, without warts; the branches terminating in a curved beak. Shields numerous, scattered, nearly sessile, pale whitish buff.

SYN. Lichen fastigiatus. *Achar. Prod.* 175.

*L. calicaris.* *Huds.* 540. *Witb.* v. 4. 51. *Hull.* 296.

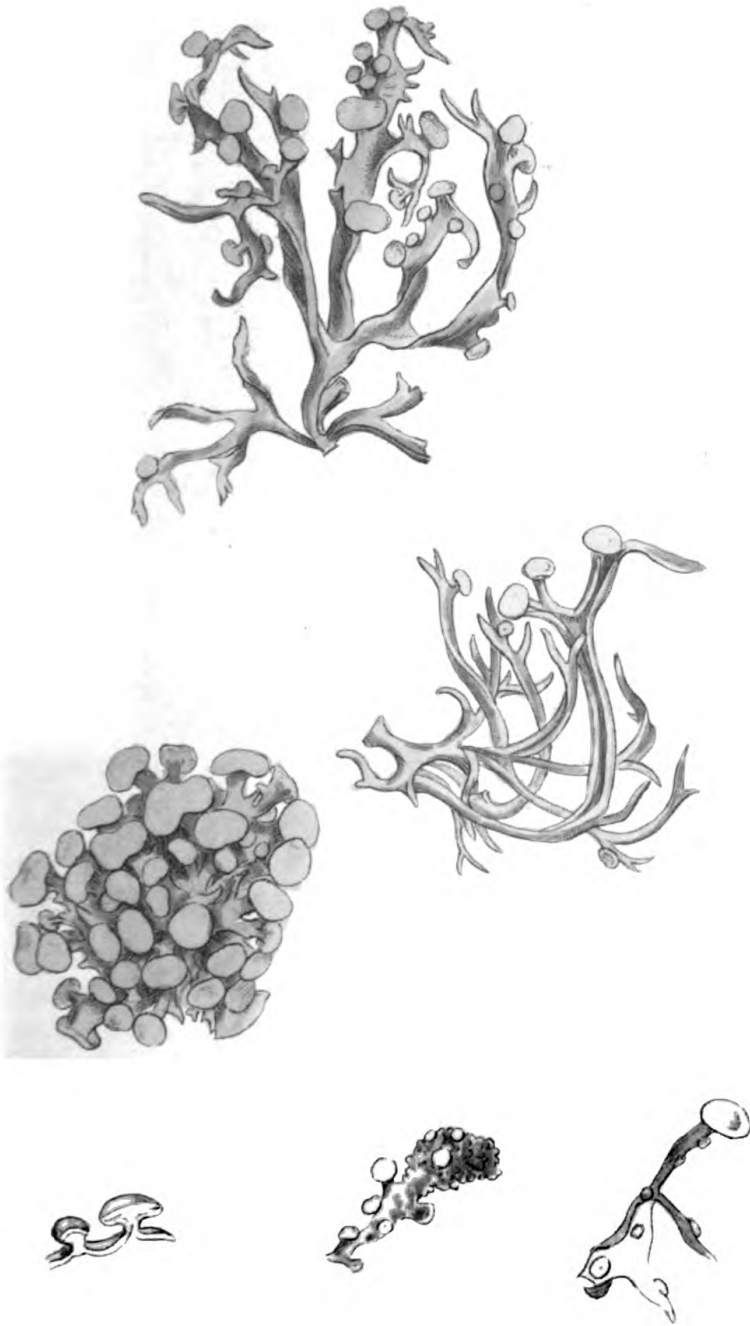
*Lightf.* 834. *Relb.* 432. *Abbot.* 264.

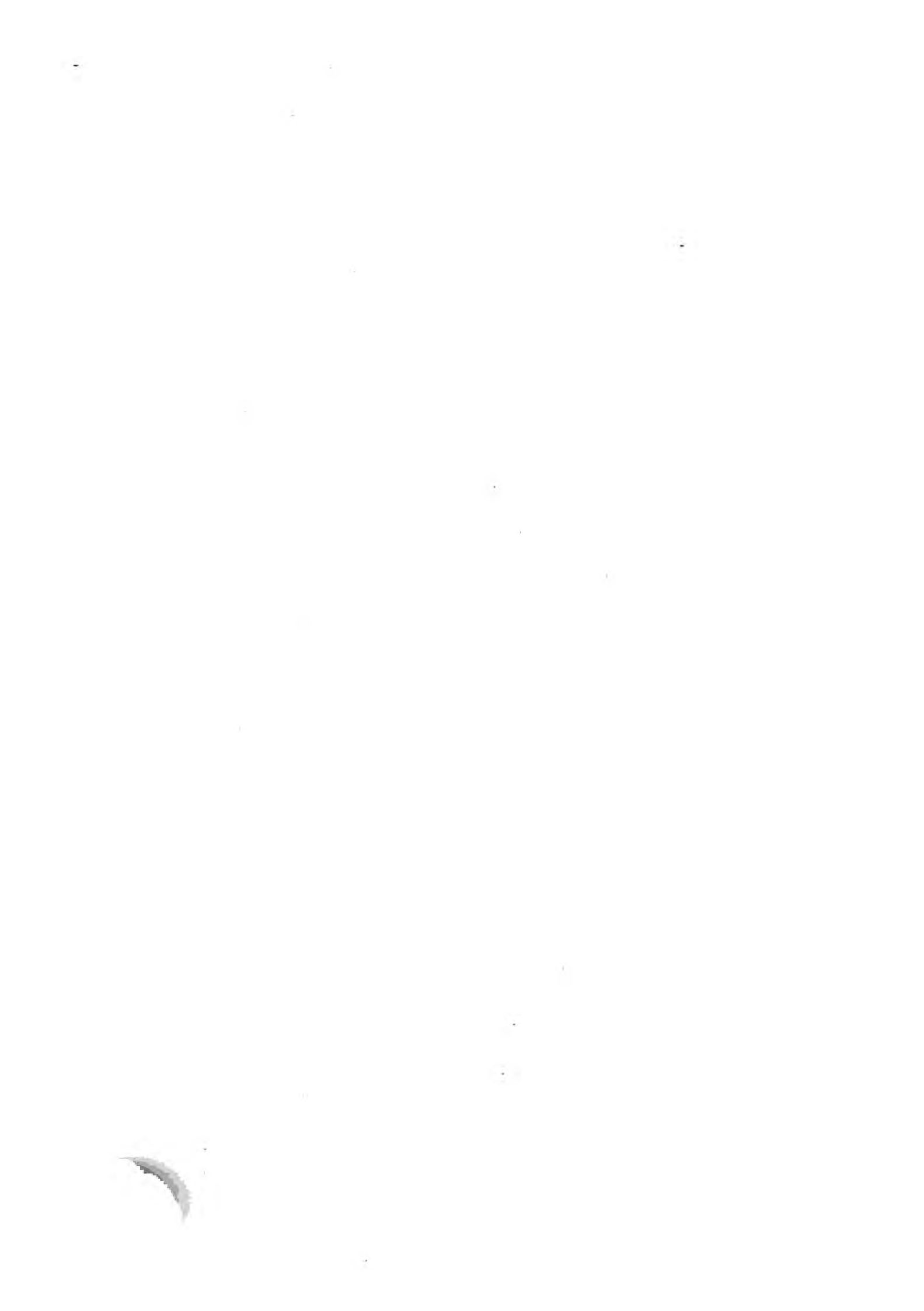
*Lichenoides coralliforme, rostratum et canaliculatum.*

*Dill. Musc.* 170. t. 23. f. 62.

THIS, though by far less common than the preceding, is found on trees, chiefly in the most woody and rather mountainous parts of our island. Its near affinity to *L. farinaceus* has already been mentioned, but we shall proceed to show their differences. *L. fastigiatus* is equally tufted and branched, but generally shorter, less soft and flexible; its colour rather more yellowish, verging towards an ivory hue, though sometimes (as Dr. Acharius mentions in the Stockholm Transactions) it becomes ashcoloured; its branches are also broader, and, though pitted, their surface smooth, almost shining, and always destitute of the powdery warts or cracks, so conspicuous in *L. farinaceus*. The shields are copiously produced, each on a broad base, lateral, or most frequently nearly terminal, the pointed summit of the branch beyond them being more or less reflexed: when young they are concave, glaucous-white, with a smooth acute margin; when older they become flat or convex, and of a pale buff.

We take this opportunity of correcting an oversight in *vol. 10. t. 688*, of this work. Dr. Acharius rightly observes that *L. scopulorum* is the real *calicaris* of Linnæus, a fact which escaped us before, but to which we now fully assent. The *calicaris* of British authors is that now before us.





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LICHEN farinaceus.  
*Ragged Mealy Lichen.*

---

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, much-branched, upright, leathery, glaucous-ashcoloured, smooth, pitted; the branches tapering, studded with lateral, convex, pale, mealy warts. Shields scattered, stalked, flat, pale-buff.

SYN. Lichen farinaceus. *Linn. Sp. Pl.* 1613. *Achar. Prod.* 177. *Huds.* 540. *With. v. 4.* 50. *Hull.* 295. *Lightf.* 833. *Sibth.* 329. *Abbot.* 265. *Dicks. H. Sicc. fasc.* 17. 23. *Relb.* 432. *sub n.* 872.

Lichenoides segmentis argutioribus, ad margines verrucosis et pulverulentis. *Dill. Musc.* 172. *t.* 23. *f.* 63.

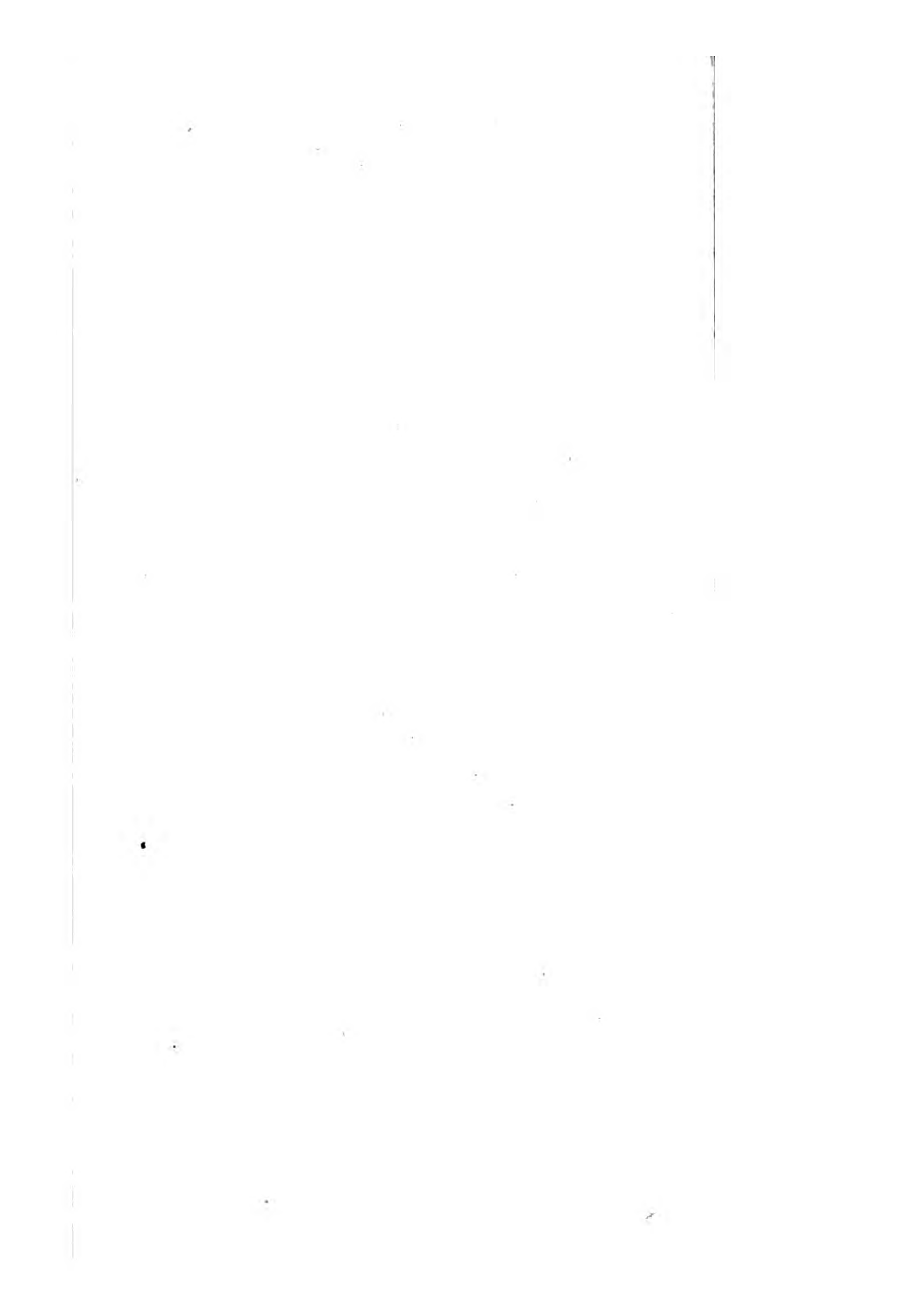
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A VERY common *Lichen* on the branches of most kinds of trees, but the shields are so rarely found, that Dr. Acharius supposes himself the first who has described or even observed them. The former claim cannot be disputed; but, with respect to the latter, we have fine specimens in full fructification gathered in Norfolk at least 20 years ago by the Rev. H. Bryant. That in our plate was found in 1799 by the Rev. C. Abbot in Clapham Park Wood, Bedfordshire. Mr. Bryant conceived his discovery only confirmed the supposition of Dillenius, Scopoli and others, that this *Lichen* was the other sex of *L. calicaris* of Hudson (*fastigiatus* of Acharius), and that he had merely met by accident with both sexes on one plant. We nevertheless are rather of the opinion of Dr. Acharius, who keeps them separate, and we shall endeavour in this and the following plate to distinguish them.

*L. farinaceus* forms spreading much-branched tufts; its segments vary in breadth, but are generally very narrow, acute, flattish, pitted, of a pale glaucous gray, smooth, except for the numerous irregular powdery cracks or warts on their edges or sides, which constitute the essential distinction of this species, and which in drying become almost white. The shields are flat, of a very pale buff, surrounded when young with an entire border of the colour of the leaf.



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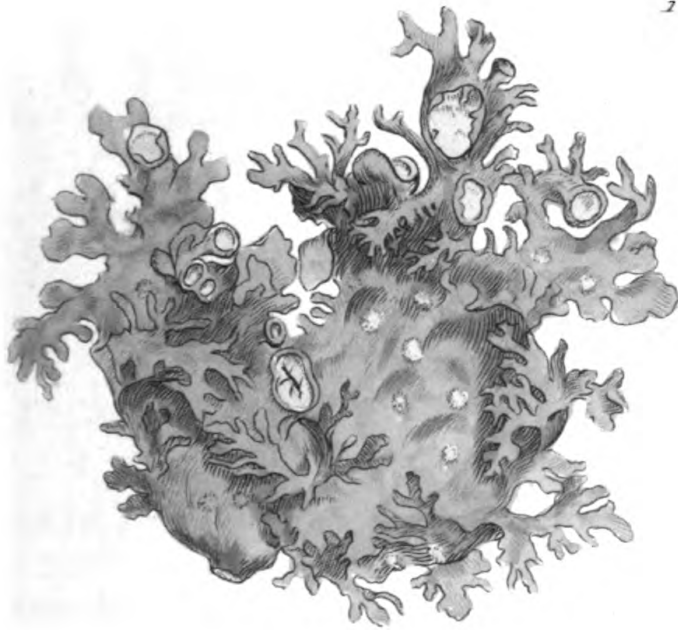
LICHENES

- Gen. Lichen. *Lichen* scattered with  
*Frondes* small, round or irregular, in which the  
*Stipulae* are small.
- Gen. Lichen. *Lichen* scattered, spreading, smooth, pitted,  
*Frondes* small, irregular with numerous cracks: the  
*Stipulae* small, in their centres. Shields nearly  
*terminal*, slightly elevated, buff-colored, with a  
*peripheral* inflexed smooth border.
- Gen. Lichen. *Lichen* *Scand.* *Scand.* *Scand.* *Scand.* *Scand.*  
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For the fine specimens of this Lichen here represented we are indebted to Charles Druce, Esq., who gathered them on an old oak at Testwood Park, New Forest, Hants. They precisely accord with every part of DeCandolle's description, though that author never saw the shields. They also agree with specimens from Acharius, though he has chiefly gathered and described the more common state of the plant, as it grows on old oak bark, and seems not to have recognised the synonym of DeCandolle.

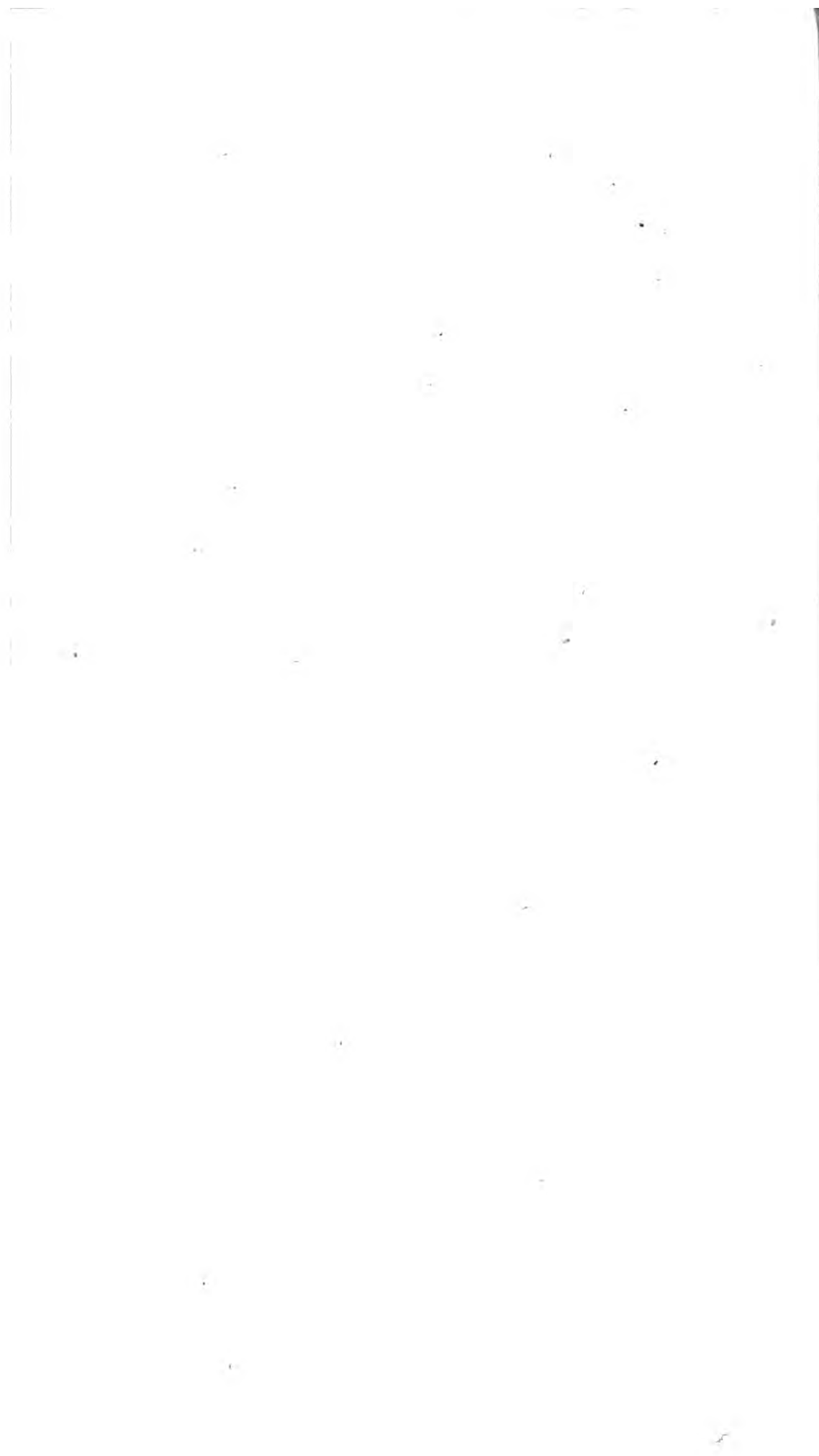
The fronds grow in a tufted and spreading manner, varying greatly in size and in breadth. The white mealy cracks which appear on them when old or dry are characteristic. Their *primary* greenish grey hue turns to a yellowish buff with age, as DeCandolle also observes. The shields stand very near, or upon, the margin, and are slightly elevated on a thick wrinkled stalk, which runs into a broad, inflexed, smooth border of the same colour and texture as the frond. The disk is flattish, mostly cracked by age, pale buff. Acharius mentions this Lichen as very good for dyeing wool or silk pale red or dark brown.

1507



*June 1. 1806. Published by J. Sowerby, London*

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## LICHEN chryfophthalmus.

*Golden-eyed Lichen.*

---

*CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts. Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, branched, upright, yellowish-grey, linear, toothed and fringed. Shields orange-coloured, radiated.

SYN. Lichen chryfophthalmus. *Linn. Mant.* 311. *Achar. Prod.* 181. *Dickf. Dr. Pl.* 21.

*L. pulmonarius, minimus, subluteus, receptaculis florum coronatis, mali aurantii coloris. Mich. Gen.*

*75. t. 36. f. 4. Dill. Musc. 74. t. 13. f. 17.*

*Platisma armatum. Hoffm. Pl. Lich. t. 36. f. 1.*

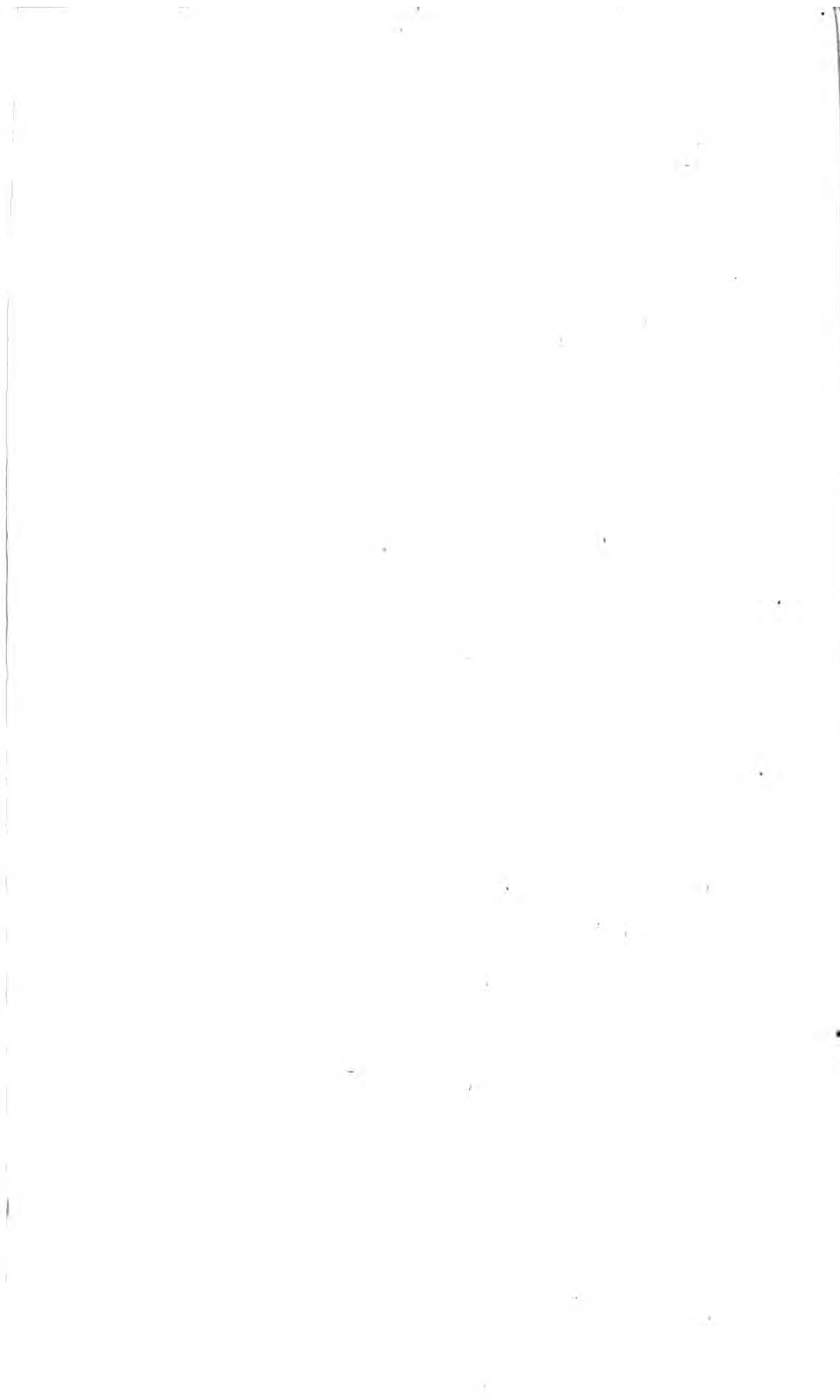
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A POOR fisherman from whom Mr. Sowerby has often received shells and other natural productions from the West of England, last year brought him specimens of this Lichen from the branches of apple-trees in Devonshire. No person has before observed it in Britain; but we make no scruple to admit it on this authority, as it may have been overlooked among the varieties of *L. parietinus* growing on trees; to which however it has no other affinity than the colour of its shields, being of the same natural tribe as *L. Prunastri*, &c. Its singular beauty when examined cannot fail to attract admiration. The linear, branched fronds are seldom an inch high, elegantly lacinated and fringed, pale grey, more or less tinged with yellow. Shields numerous, terminal, rather concave, of a rich orange-colour, surrounded with a fringed border of the colour of the leaf. Hoffmann's *P. denudatum*, *t. 31. f. 1.* is only a variety without the fringe. Micheli first found this Lichen on pear-trees at Florence, and Dillenius merely copies his name and figure. It grows in the South of France, and at the Cape of Good Hope.



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[ 2113 ]

## LICHEN flavicans.

*Brass-wire Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, branched, tufted and entangled, tawny, warty, linear, compressed, angular, wavy; branches divaricated, taper-pointed. Shields lateral, nearly sessile, flat, orange, with a narrow, entire, pale border.

SYN. Lichen flavicans. Swartz. *Prod.* 147. Ach. *Prod.* 182.

L. vulpinus. Huds. 559. With. v. 4. 49. Hull. 307.

Usnea capillacea citrina, fructiculi specie. Dill. *Musc.* 73. t. 13. f. 16.Muscus aureus tenuissimus. Dill. in Raii *Syn.* 65.Parmelia flavicans. Ach. *Meth.* 268.

COMMUNICATED by Mr. W. Borrer from Sussex. It grows on trees and shrubs, more commonly in Devonshire than any other county. For the shields we are obliged to Dr. Acharius. We have received this species also from South America and the West Indies.

The fronds compose dense entangled tufts, an inch or two high, of a rich tawny or orange hue, paler and even grey where least exposed to light. They are slender, linear, very much branched, compressed and angular, smooth, except where numerous powdery warts break out; their ultimate ramifications are numerous, very fine, and acute. Shields, never yet found in England, lateral, nearly or quite sessile, small, with a flat orange disk, and a pale entire inflexed border, of the substance of the frond. Of all the British species this is most allied to *chrysophthalmus*, t. 1088, and *atlanticus*, t. 1715, however different from the latter in colour.

Linnæus, having misquoted Dillenius, has led our British botanists to take this for *L. vulpinus*, a beautiful lemon-coloured alpine kind, with brown shields, which has never yet been found in Britain.



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LICHEN sarmentosus.  
*Trailing Filamentous Lichen.*

---

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Filamentous, hollow, pitted, whitish, repeatedly branched, somewhat forked and divaricated; ultimate branches capillary. Shields scattered, lateral, sessile, concave, greenish flesh-colour, with a pale entire border.

SYN. Lichen sarmentosus. *Ach. Prod.* 180.

L. longissimus, ex cinereo candicans, rugosus et mollior, receptaculis florum rufescentibus. *Mich. Gen.* 77. t. 39. f. 2.

Usnea loris longis dichotomis, extremitatibus tenuioribus. *Dill. Musc.* 59. t. 11. f. 2; copied from Micheli.

U. dichotoma. *Hoffm. Pl. Lich.* t. 72.

Parmelia sarmentosa. *Ach. Meth.* 271.

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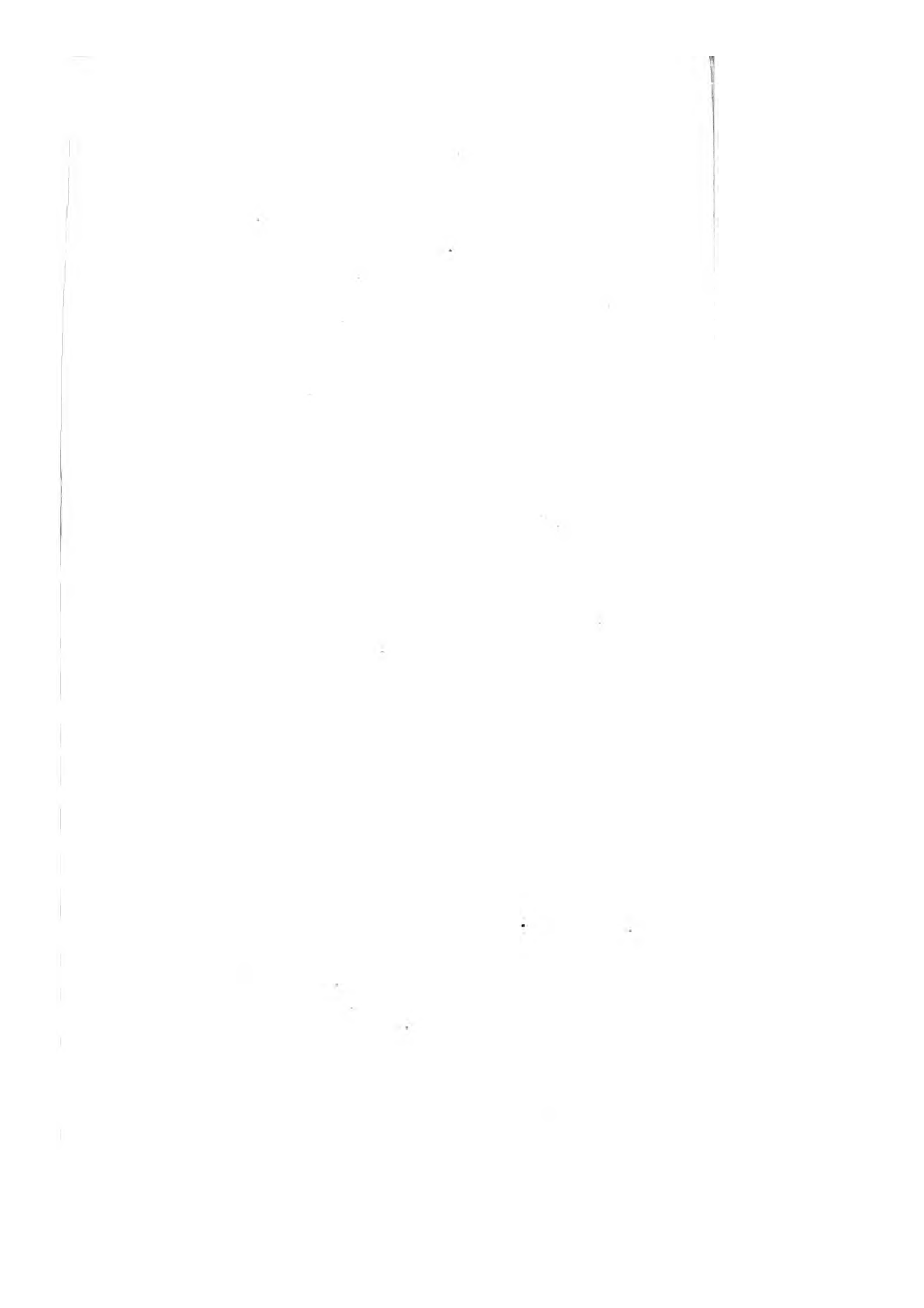
**FOUND**, for the first time in Britain, by Messrs. Hooker and Borrer in 1808, on the Scottish mountains of Ben Luyhal, Sutherland, and Cairn-gorm, Inverness-shire.

It grows sometimes on old trunks of trees, more rarely on rocks, and is a very distinct species from all the filamentous Lichens we have hitherto described. The fronds are of an ivory white, creeping, much branched and divaricated, irregularly pitted, and sometimes powdery, on the surface, hollow, without any central thread; their ultimate branches very fine and numerous. Shields, which we have received from Dr. Acharius only, small, lateral, sessile, with a hollow, greenish, somewhat flesh-coloured, disk, and a smooth elevated border, of the substance of the frond.



*Jalgines, published by J. Sowerby London.*

V



[ 2374 ]

## LICHEN ochroleucus.

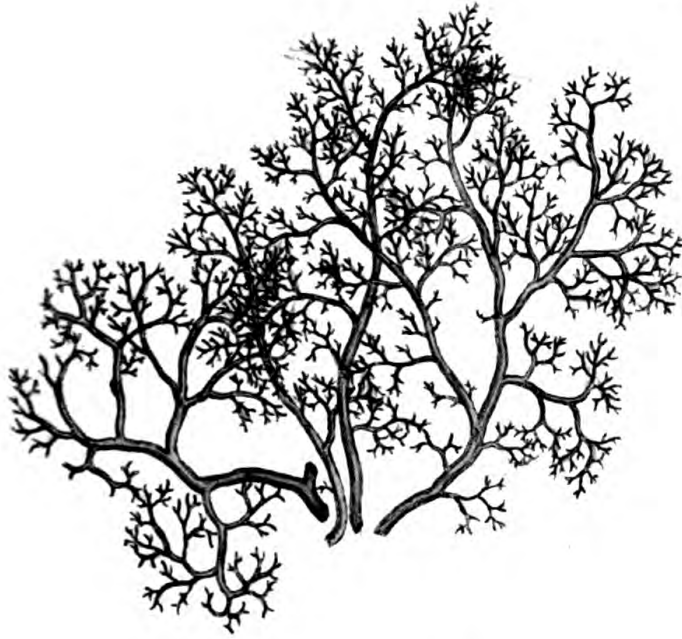
*Shrubby Sulphureous Lichen.**CRYPTOGAMIA Algæ.***GEN. CHAR.** Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

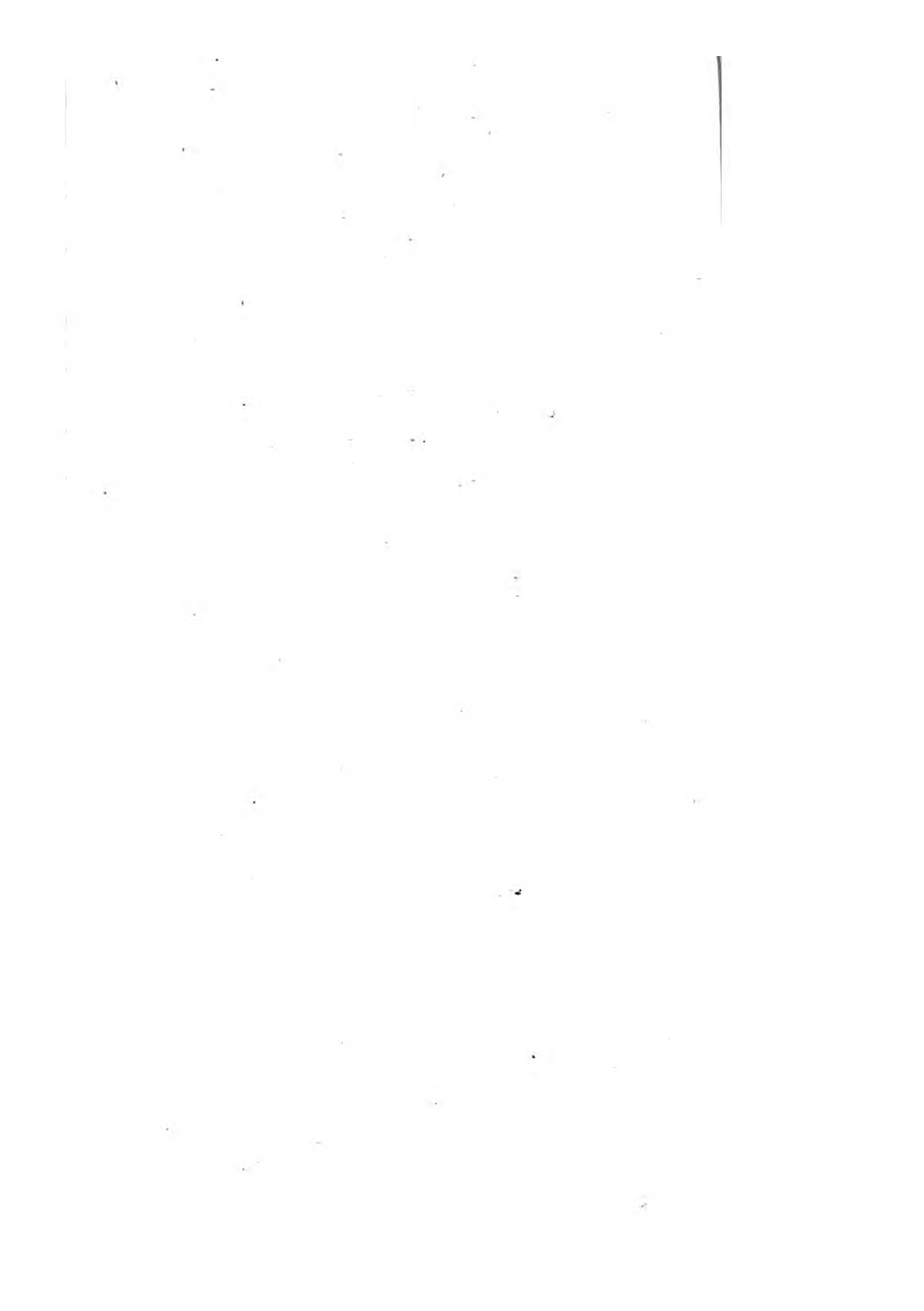
**SPEC. CHAR.** Cartilaginous, bushy, repeatedly branched, somewhat tubular, pitted, sulphur-coloured; ultimate branches divaricated, zigzag, entangled, with forked points. Shields nearly sessile, brown, with a pale wavy border.**SYN.** Lichen ochroleucus. *Ehrh. Beitr. fasc. 3. 82.*  
*Ach. Prodr. 215. Dicks. Crypt. fasc. 3. 19. With.*  
*v. 4. 46. Hull. 306.**Usnea ochroleuca. Hoffm. Pl. Lich. v. 2. 7. t. 26.*  
*f. 2.**Parmelia ochroleuca. Ach. Meth. 271.*

**G**ATHERED by Mr. Dickson on the highland mountains of Scotland, where, as well as in similar situations on the continent, it is said to be abundant. We have sought in vain for the shields on the Alps of Savoy and Switzerland, nor have we ever seen a specimen or figure of them.

Tufts of this Lichen at first sight resemble *rangiferinus*, *t. 173*, except in being sulphur-coloured, not white, but it is most akin to *sarmentosus*, *t. 2040*. The stems are rigid and hard when dry, softer when moist, always sulphur-coloured, but their little forked spinous tips are black. The surface is somewhat pitted, occasionally warty or mealy; the inside hollow, but the coat is very thick. This species always grows on the ground, on exposed mountainous heaths.





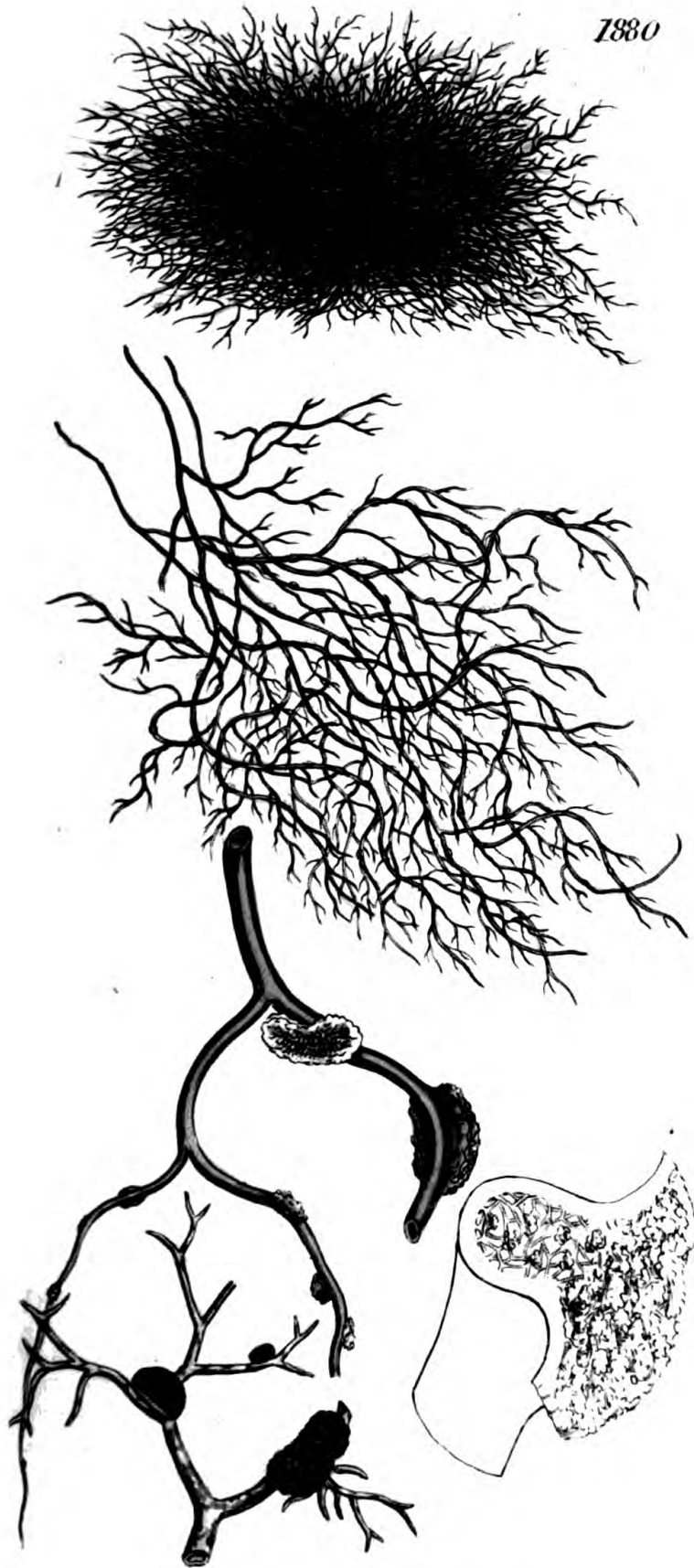




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1880



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## LICHEN Roccella.

*Dyer's Lichen, or Orchall.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Shrubby, solid, cylindrical, without leaves, but little branched. Tubercles alternate, powdery.

SYN. Lichen Roccella. *Lin. Sp. Pl.* 1622. *Dicks. Crypt. fasc.* 3. 19. *Smith's Tour*, v. 1. 198.Coralloides corniculatum fasciculare tinctorium, Fuciteretis facie. *Dill. Musc.* 120. t. 17. f. 39.

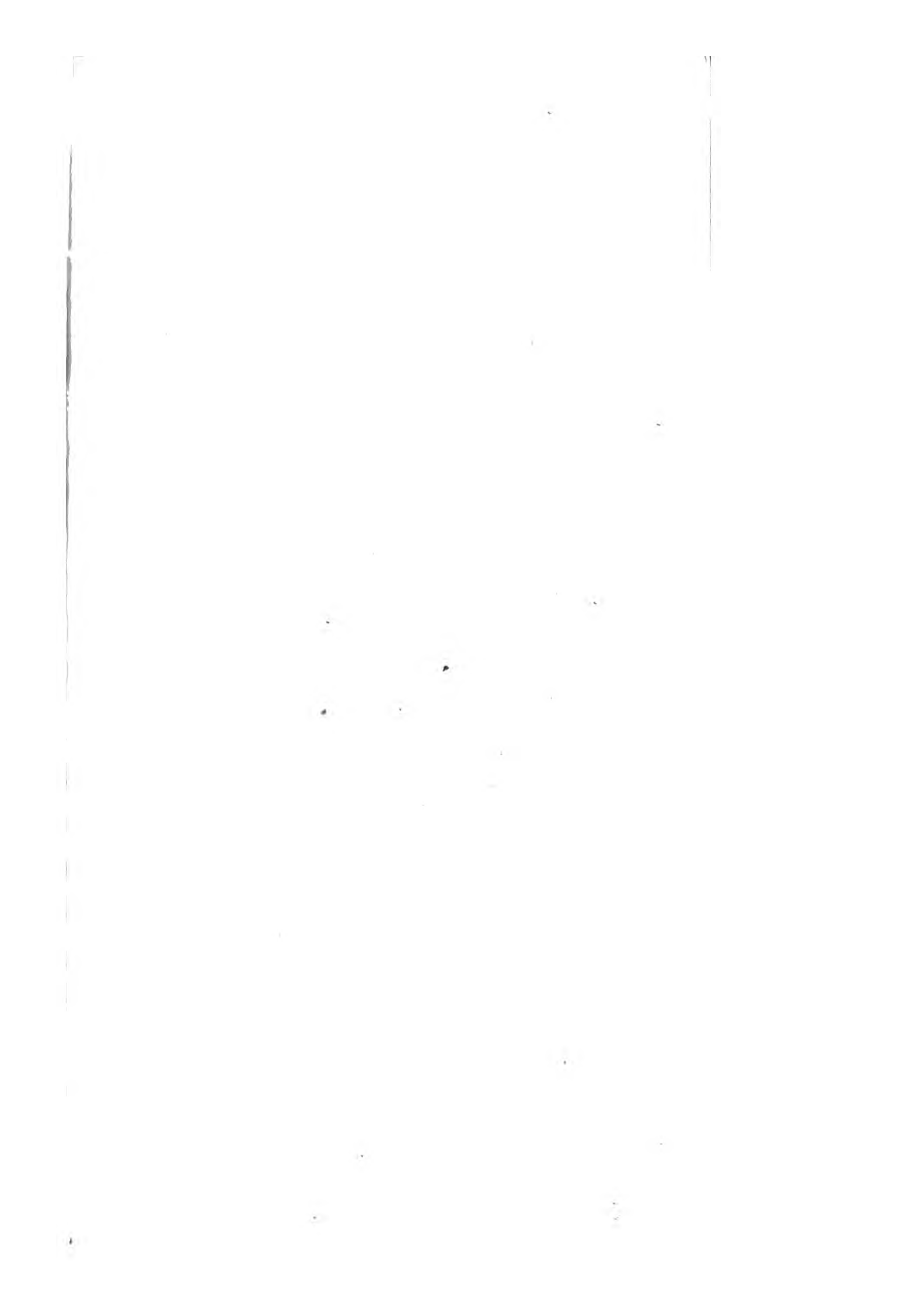
MR. DICKSON has lately admitted this Lichen as a British native, on the authority of Mr. Goffelin, who found it in Guernsey. Our specimen was gathered by Lord Viscount Lewisham on Portland Island. It grows on maritime rocks, very common in the Mediterranean and the Levant. Linnæus had it too from China.

Its solid base is firmly fixed to the rocks, and produces a thick tuft of worm-like stems, round, acutely pointed, often curved, more or less branched, smooth, of a white, gray or brownish hue, and studded about their upper part with scattered tubercles, replete with white powder, which some have thought the seeds. Dillenius seems to think these tubercles may be only the spots where scutellæ have stood; in fact, the fructification of this species is not well known.

As an article of commerce it is of very great importance, being extremely valuable for dyeing wool or silk any shade of purple or crimson. For this purpose it is steeped in volatile alkali, commonly distilled from urine. Dillenius mentions 80l. sterling per ton as a great price for Orchall, being almost as much again as it cost in the Archipelago, so much better a judge was he of Lichens than of the comfortable emoluments of trade! It has since been sold at 1000l. in times of scarcity.



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## LICHEN articulatus.

*Jointed Lichen.*CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Filamentous, pendulous, cracked and tumid. Tubercles flesh-coloured, rugged.

SYN. Lichen articulatus. *Linn. Sp. Pl.* 1623. *Huds. Fl. An.* 561. *With. Bot. Arr.* v. 3. 219. *Sibth. Oxon.* 335.

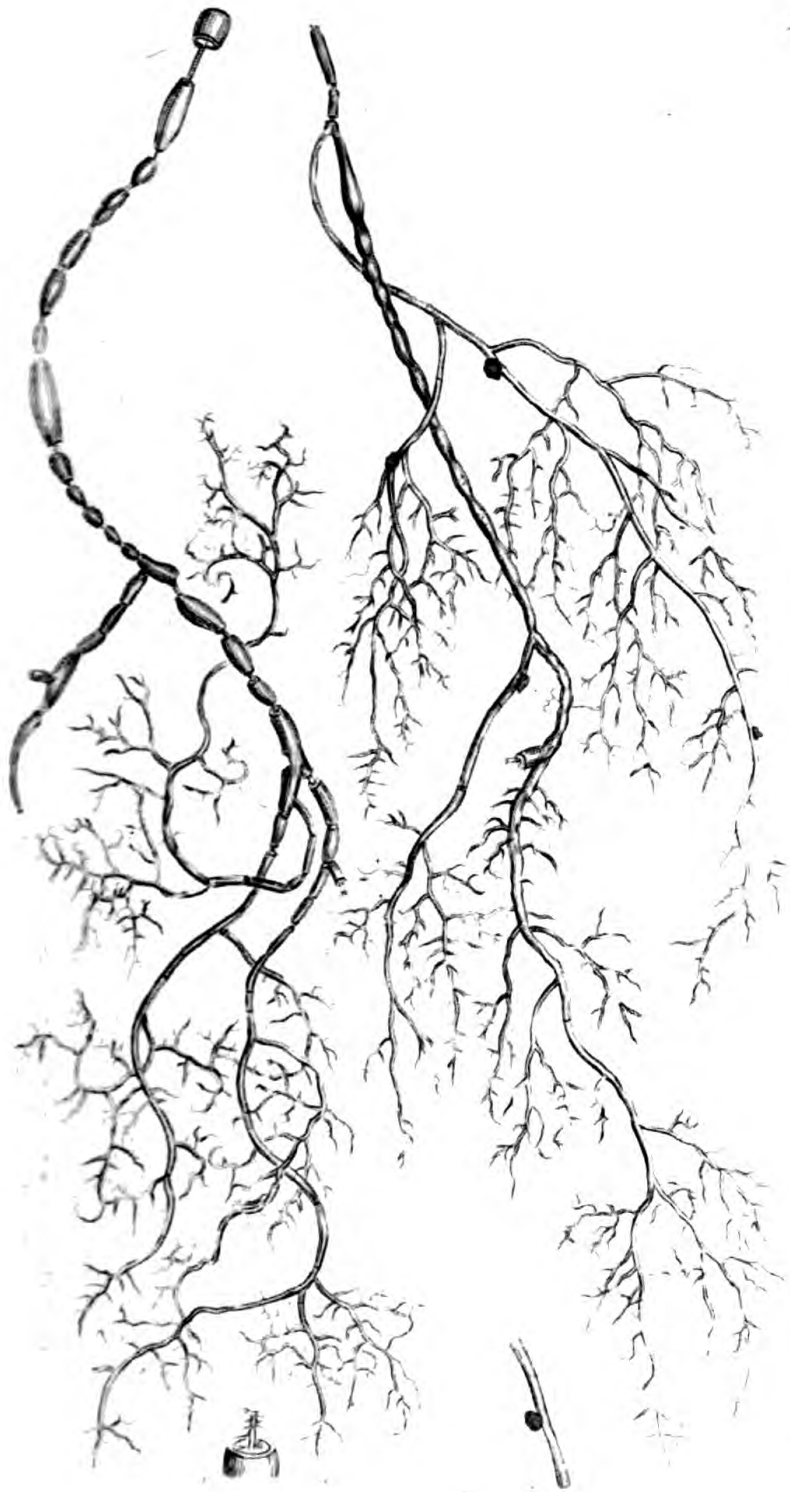
Muscus arboreus nodosus. *Raii Syn.* 65.

Usnea capillacea et nodosa. *Dill. Musc.* 60. t. 11. f. 4.

β Lichen barbatus. *Linn. Sp. Pl.* 1622. *Huds. Fl. An.* 561. *With. Bot. Arr.* v. 3. 220. *Lightf. Scot.* 890.

Usnea barbata, loris tenuibus fibrosis. *Dill. Musc.* 63. t. 12. f. 6.

SENT by Dr. Pulteney from Dorsetshire with the last. We do not hesitate to make the *L. articulatus* fig. 1, and *barbatus* fig. 2, one species, the propriety of which was first hinted by Mr. Lightfoot in *Flo. Scot.*, and we have adopted the same opinion from having also examined the specimens of Dillenius, which in this case are the original authority. Both are found hanging upon trees in old woods in England and Scotland. The *barbatus*, which is the least uncommon of the two, is less tumid, and not always so full of transverse cracks as the *articulatus*. The latter has never yet been found in fructification with us, but in the south of Europe it bears precisely the same tubercles as *barbatus*, (see *Smith's Tour*, v. 1. 312 and 336.) which are small, very convex, rugged, and of a pale flesh-colour. By these tubercles, and the swellings of the stem, (the interstices of which are most generally cracked, and discover the central fibre, as in *L. plicatus*) the species before us, and its variety, may be easily known from all others of the same tribe.







## LICHEN floridus.

*Flowery Lichen.*CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Filamentous, furnished with a central thread, much branched, erect, greenish gray; branches spreading, round, fibrous, warty, bearing broad flat shield-like radiated dilatations, of their own colour. Tubercles on the branches, lateral, flesh-coloured, rugged.

SYN. Lichen floridus. *Linn. Sp. Pl.* 1624. *Huds.* 560.

*With. v.* 4. 50. *Hull.* 307. *Relb.* 440. *Dicks.*

*H. Sicc. fasc.* 11. 25. *Achar. Prod.* 224.

*Usnea vulgatissima tenuior et brevior, cum orbiculis.*

*Dill. Musc.* 69. t. 13. f. 13.

*Muscus arboreus cum orbiculis. Raii Syn.* 65.

**G**ATHERED at Hafod, Cardiganshire. It chiefly grows on dead branches, but the radiated disks are seldom found, except on the higher trees in old woods; and the tubercles, or real fructification, having never before been even suspected to exist, are here first presented to the curious botanist.

The stems form upright bushy pale greenish tufts, rising from a hard black base, and are round, composed of a crustaceous bark, enclosing a tough white fibre. They divide into innumerable compound spreading taper branches, polished, but minutely warty, which, when perfect, bear large flattish thin dilatations, of nearly their own colour, at first lateral, but soon appearing terminal, the branch above them becoming reflexed and confounded with the numerous radiating spines with which their irregular border is fringed. Tubercles on the younger branches lateral, small, prominent, flesh-coloured, rugged, very rarely surrounded with a few spines.

May these radiated disks be abortive flowers? The tubercles are surely the real ones. Many botanists, even Dr. Acharius, suppose the common *L. birtus* to be this plant without fructification. Ray thought otherwise, and we suspect him to be right; for we have some American specimens of *birtus* with flesh-coloured tubercles growing on the main stem, not on the branches, which may afford a specific difference. Perhaps some fortunate observer may detect these in England. *L. comosus* of Acharius seems still distinct from both these species.



*Wrightia sp. (L.) Merr.*

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[ 1354 ]

LICHEN hirtus.  
Common Rough Lichen.

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CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Filamentous, with a central thread, much branched, erect, greenish grey; branches sprcading, round, fibrous, warty. Tubercles mostly on the stem, lateral, flesh-coloured, rugged.

SYN. Lichen hirtus. *Linn. Sp. Pl.* 1623. *Lightf.* 895. *With. v. 4.* 46. *Hull.* 306. *Sibth.* 335. *Abbot.* 270. *Ehrh. Crypt.* 138.

*L. floridus*  $\beta$ . *Huds.* 560. *Achar. Prod.* 224. *Relh.* 474.

*Usnea vulgatissima tenuior et brevior, sine orbiculis.* *Dill. Musc.* 67. *t.* 13. *f.* 12.

*U. hirta.* *Hoffm. Pl. Lich. t.* 30. *f.* 1. *Achar. Meth.* 309.

*Muscus ramosus.* *Raii Syn.* 65.

---

THIS is extremely common upon park pales and old trees, but the fructification has hardly ever been noticed. Mr. Borrer has fortunately discovered it near Lewes in Sussex, and Mr. Brodie on birch trees near Avemore in Strathspey, Scotland. Mr. Menzies had previously favoured us with American specimens in that state, which agree with the British ones.

Botanists have ever been divided in opinion whether to consider this as different from *L. floridus* or not. See our figure and description of the latter, *v.* 13. *t.* 872, where the proper tubercles are for the first time delineated. We did not then know that they had already been described by Hoffmann, Persoon and Schrader. The tubercles of *L. hirtus* exactly agree with them, except in being situated for the most part on the main stem or larger branches, which generally are continued straight beyond them, not suddenly bent back like the small fruit-bearing branches of *L. floridus*. Whether this circumstance, and the want of the radiating disks, may establish it as a species or not, botanists must form their own opinions. The whole habit, colour and surface of the two plants scarcely afford any distinctions.



Sept 2. 1804. Published by J. J. Sowerby, London.

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## LICHEN plicatus.

*Stringy Lichen.*

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CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Filamentous, pendulous; the branches entangled. Shields radiated,

SYN. Lichen plicatus. *Lim. Sp. Pl.* 1622. *Hudf. Fl. An.* 560. *With. Bot. Arr.* v. 3. 222. *Relb. Cant.* 441. *Lightf. Scot.* 889.Muscus arboreus, *Usnea* Offic. *Raii Syn.* 64.*Usnea vulgaris, loris longis implexis.* *Dill. Musc.* 56. t. II. f. I.

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**R**ARELY found hanging from the branches of old trees in dark shady woods, in Scotland as well as England. Dr. Pulteney communicated it from Dorsetshire.

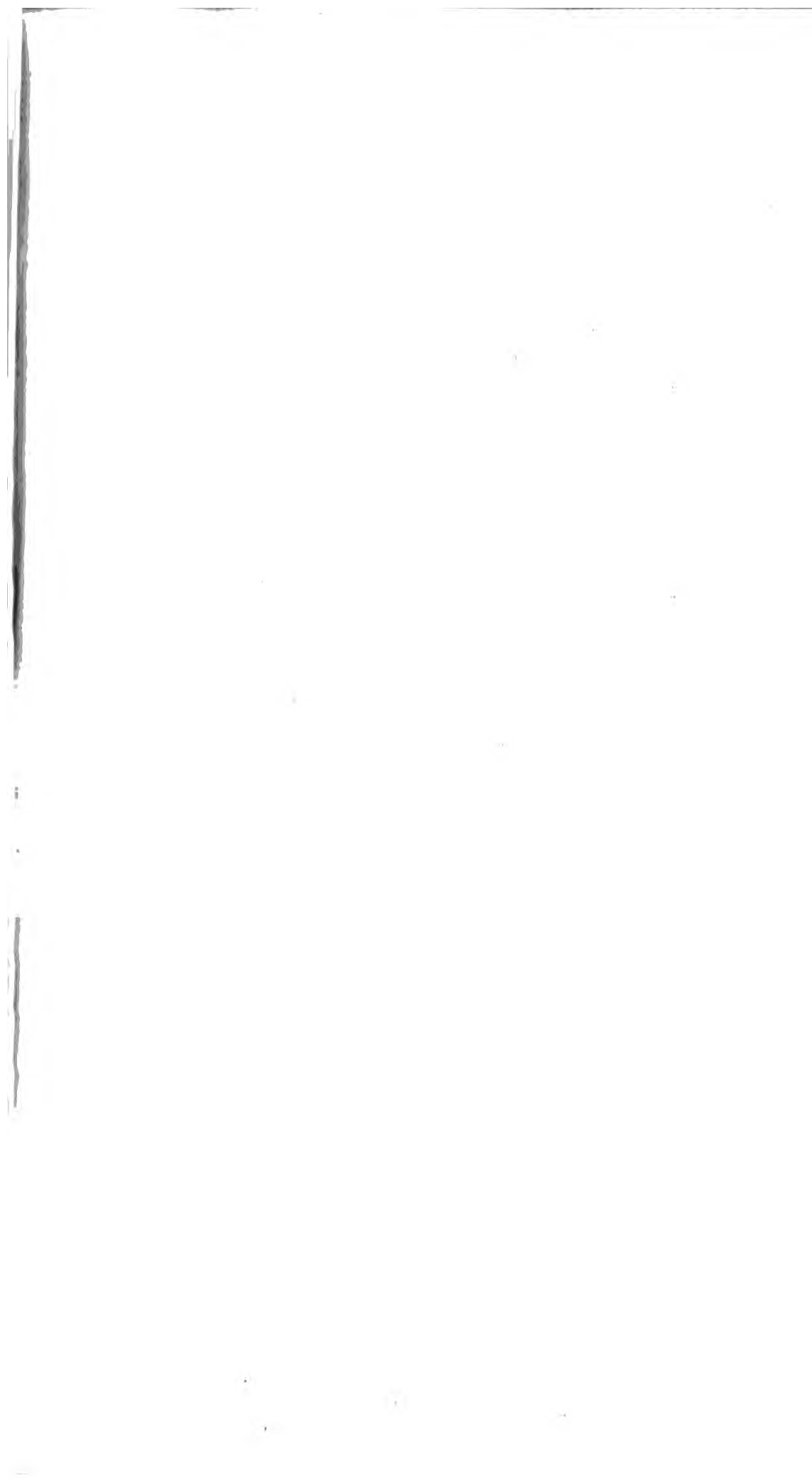
The whole plant is from one to two feet, or even more, in length, forming a thick entangled mass of branching fibres, which are cylindrical, all more or less divaricated and undulated, none of them straight. They are of an uniform greenish free-stone colour; the surface very smooth at first, but in the older parts rough with minute warts, supposed to be the male flowers. The main stems often crack here and there, discovering in the interstices a very tough white central fibre which pervades the whole plant. The shields are now and then to be found about the divarications of the principal branches, and nearly of the same colour; their margins radiated with rigid pointed fibres.

This moss, formerly used as a styptic, has long since given way to more active medicines.



*Urtica dioica* L. var. *horridula* L.

✓





( 720 )

## LICHEN triftis.

*Dark radiated Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

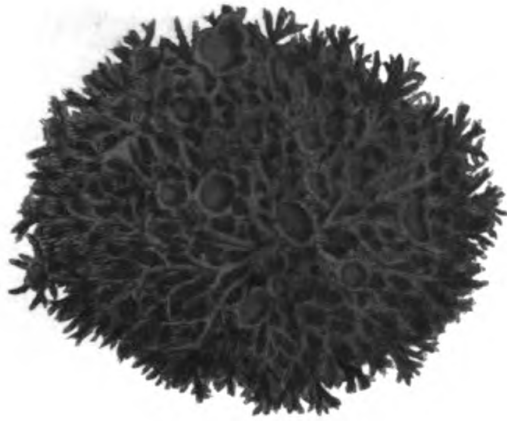
SPEC. CHAR. Shrubby, branched, somewhat compressed, solid, blackish; the branches acute. Shields of the same colour, flattish, radiated.

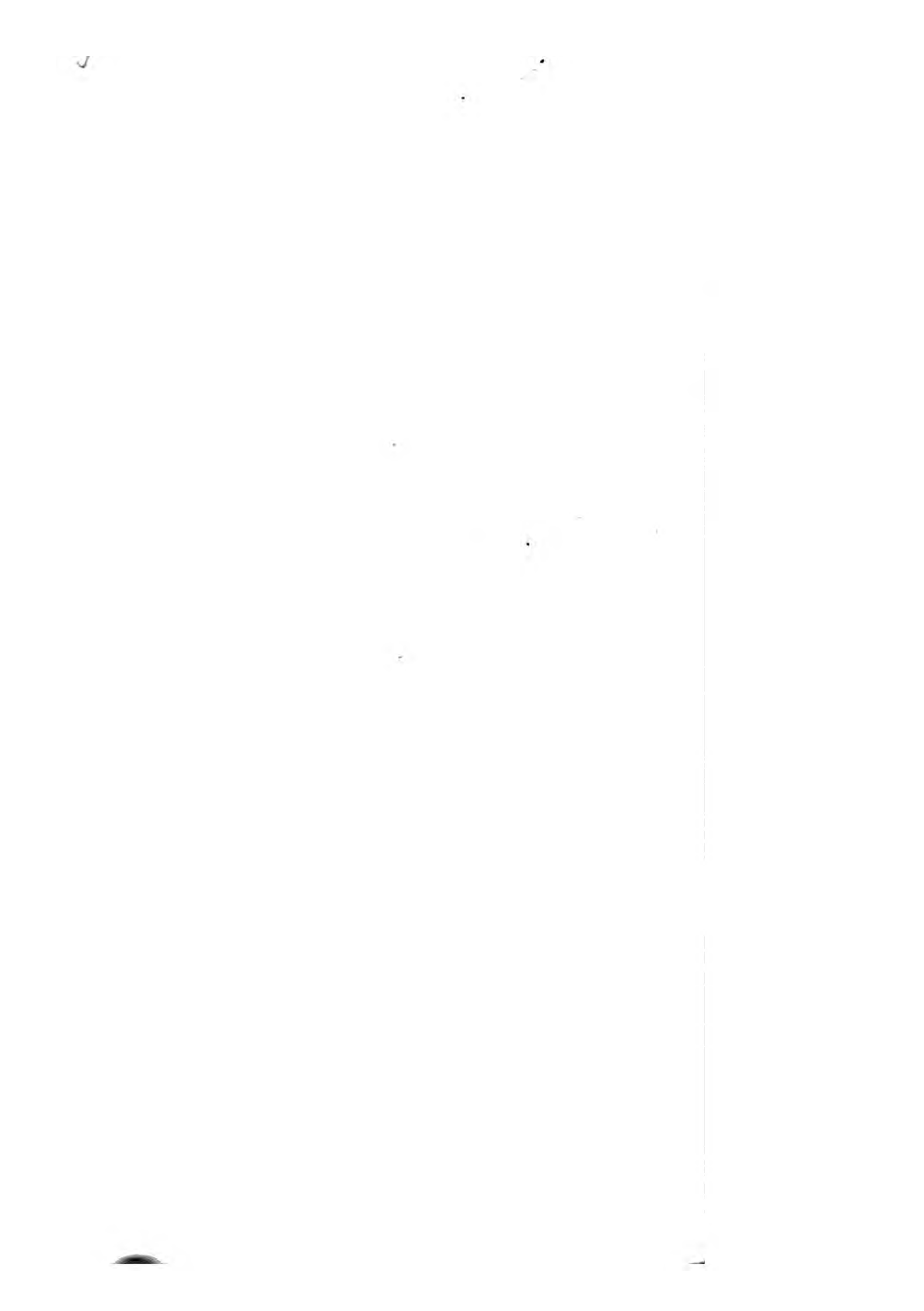
SYN. Lichen triftis. *Weber. Gotting. 209. t. 5. Wiltb. 43. Hull. 305.*L. radiatus. *Huds. 559. Dickf. H. Sicc. fasc. 9. 25.*L. corniculatus. *Lightf. 885.*Cornicularia triftis. *Hoffm. Pl. Lich. t. 34. f. 1.*Coralloides corniculatum, Fuci tenuioris facie. *Dill. Musc. 118. t. 17. f. 37.*

A NATIVE of alpine micaceous rocks in Scotland, Wales, Westmoreland, and Devonshire. It grows in dense tufts, consisting of numerous, upright, branched or forked stems, of a blackish brown, inclining to olive when wet, paler in the lower part or where sheltered from light. All the branches are solid, a little compressed, pointed, sometimes warty. The shields terminate the original stem, and are not only surmounted by numerous branches, but their margin itself is also radiated with sharp irregular points. Their disk is flattish, smooth, of the same colour as the rest of the plant, or if any thing rather blacker and more polished.

Professor Hoffman's figure is taken from a smaller and younger specimen than ours, and does not so well express the usual colour and habit as most of his admirable plates. We follow him in retaining the original specific name *triftis*, first given by Weber.

722.







## L I C H E N hispidus.

*Prickly Lichen.*

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*C R Y P T O G A M I A Algæ.***GEN. CHAR.** Male, scattered warts.

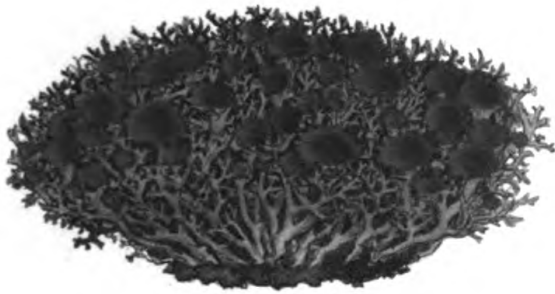
Female, smooth shields or tubercles, in which the seeds are imbedded.

**SPEC. CHAR.** Shrubby, solid, much branched, smooth, dark brown; branches divaricated, rather compressed, terminating in numerous spines. Shields with a jagged prickly margin.**SYN.** Lichen hispidus. *Lightf.* 883. *With.* v. 4. 43. *Sibth.* 335.L. islandicus  $\gamma$ . *Huds.* 539.Lichenoides non tubulosum ramosissimum, fruticuli specie, rufo-nigrescens. *Raii Syn.* 66.Coralloides fruticuli specie fuscum, spinosum. *Dill. Musc.* 112. t. 17. f. 31.

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**A** NATIVE of heaths, chiefly in mountainous places, not very uncommon, but the shields are very rarely indeed to be met with. Our specimen was gathered near Beverley, by R. Teesdale, Esq. F. L. S.

Mr. Lightfoot has admirably described this plant in his *Flora Scotica*, and we think with him it ought not to be confounded with *L. islandicus*. However similar they may be in hue and general appearance, they are different in structure and fructification, not to mention size, which is variable. *L. hispidus* is truly shrubby, round, filled with white spongy pith, not flat nor leafy. Its numerous branches form obtuse angles, and are a little compressed at their divarications, terminating in many little bristly spines. The shields are terminal, horizontal, concave, polished, surrounded with an erect margin of little unequal prickles, sometimes branched and lengthened out. The whole plant is polished and smooth, of a brown or chocolate colour, paler towards the root, the shields and spines darker than the other parts.



*Jan. 1790 published by J. Smokey London*







[ 1853 ]

LICHEN bicolor.  
*Black and grey Shrubby Lichen.*

---

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Shrubby, solid, erect, rigid, round, black, with numerous, spreading, compound, capillary, tapering branches, whose upper parts are grey.

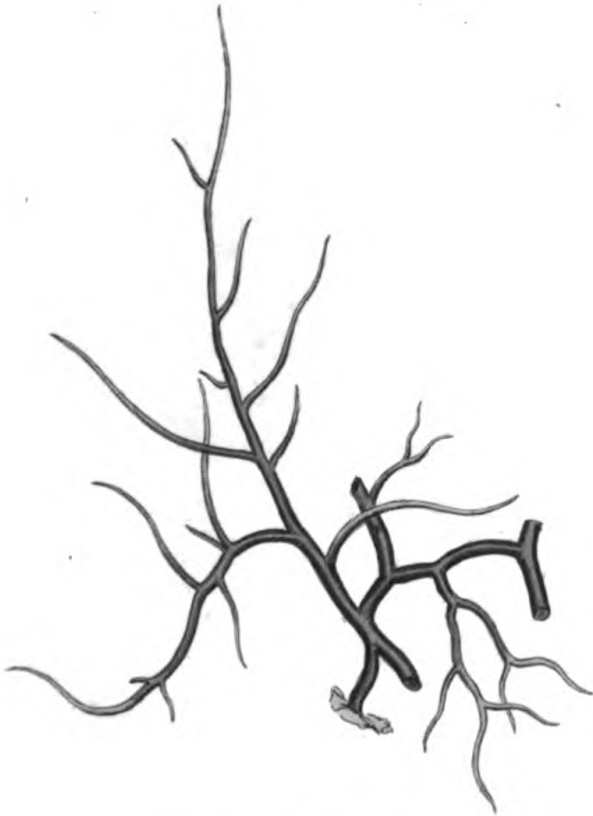
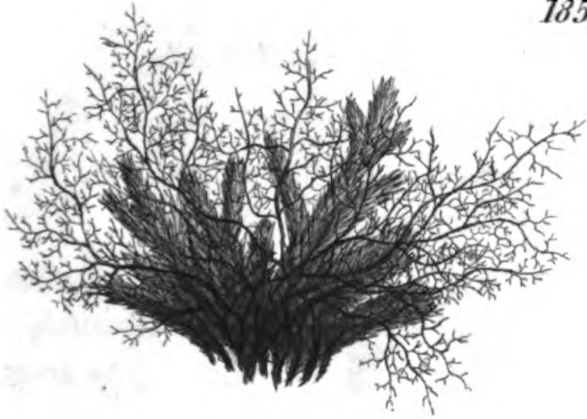
SYN. Lichen bicolor. *Ehrh. Crypt.* 40. *Ach. Prod.* 215.  
 Cornicularia bicolor. *Ach. Meth.* 304.

---

MR. DICKSON first favoured me with a British specimen of this from Ben y Glow, Scotland, in 1802. Mess<sup>rs</sup> Turner and Hooker gathered the same last summer on rocks near Taymouth; but the former assures me, with his accustomed candour, that the Rev. Hugh Davies sent him specimens long ago from Wales, which he had laid by undetermined.

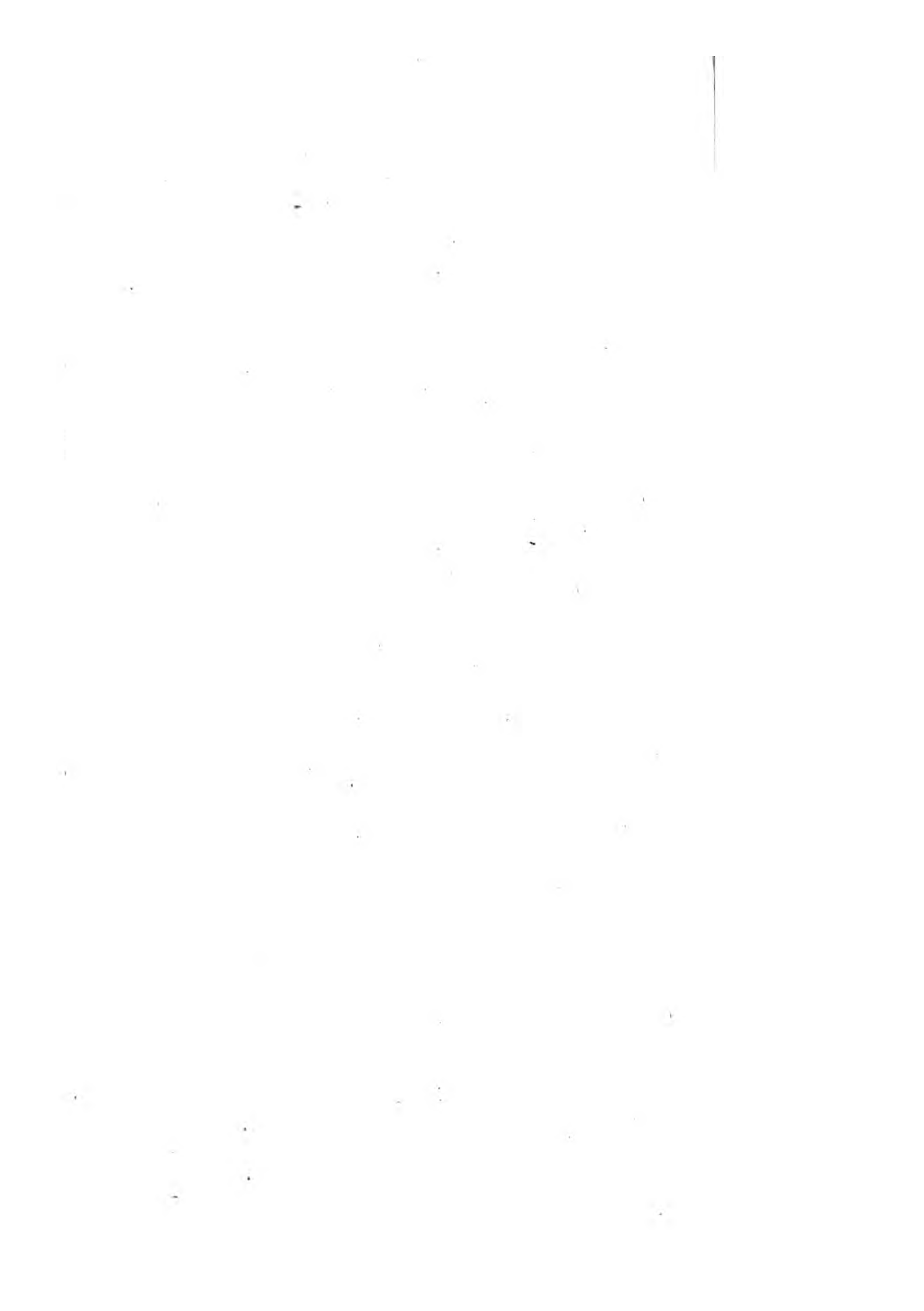
The fronds grow in loose upright tufts among moss, and are capillary, rigid, much branched, spreading, round and smooth; black below, but more or less of their upper parts are of a dull whitish grey. The extremities are tapering, acute, often curved. No fructification has yet been found. Our specimens accord precisely with those of Ehrhart and Acharius.

1853.



*Folia 1208, Published by J. Sowerby, London.*





## LICHEN lanatus.

*Black Woolly Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

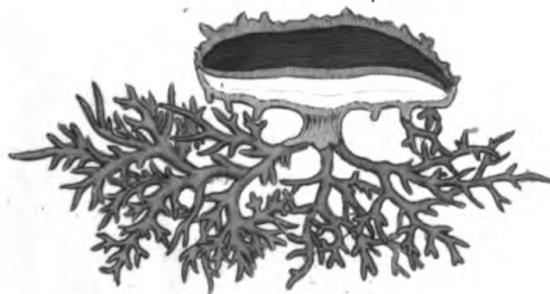
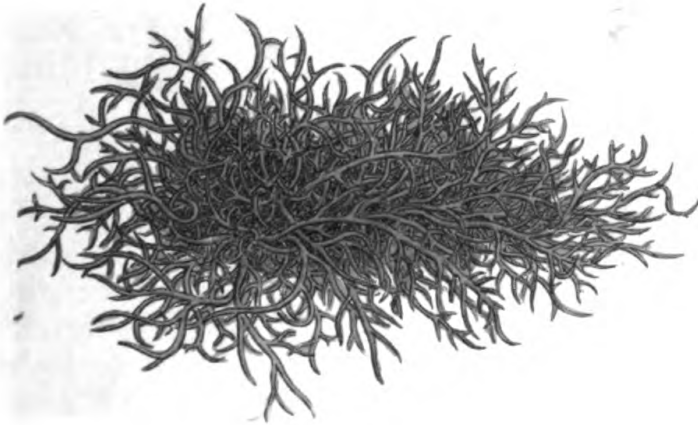
SPEC. CHAR. Shrubby, filamentous, much branched, intricate, round, solid, smoothish, brownish black. Shields of the same colour, flat, with an irregularly toothed margin.

SYN. Lichen lanatus. *Lim. Sp. Pl.* 1623. *Huds.* 562. *Lightf.* 892. *Achar. Prod.* 216. *Schrad. Spicil.* 100. t. 1. f. 6.L. pubescens. *Huds.* 562. *Lightf.* 893.Ufnea lanæ nigræ instar faxis adhærens. *Dill. Musc.* 66. t. 13. f. 8. et U. cæspitosa exilis capillacea atra. *ib.* f. 9. etiam Coralloides tenuissimum nigricans, mundi muliebris instar textum. *Fjused.* 113. t. 17. f. 32.Muscus coralloides, lanæ nigræ instar faxis adhærens. *Dill. in Raii Syn.* 65.

A NATIVE of the high micaceous mountains of Scotland and the north of England. It grows in dense elastic patches creeping over the rocks. The stem and branches are very intricate, repeatedly subdivided, unequal, roundish, solid, more or less polished, of a dark olive brown, almost black, especially when dry. Shields rarely produced, (sent us by Mr. J. Mackay,) a little elevated, irregular, flattish, polished, rather blacker than the frond, surrounded with an unequally toothed or spinous margin.

It is quite distinct from the *L. chalybeiformis*, and belongs indeed to a different family of the genus. When destitute of fructification it is larger, more luxuriant, and somewhat paler, and is then the *lanatus* of most authors; when in a fruit-bearing state, as in our figure, it is smaller, and generally taken for *pubescens*; but we readily agree with Dr. Acharius that the real *pubescens* (of *Fl. Suecica* at least) is Lightfoot's *exilis*, and, we beg leave to add, the *scaber* of Hudson.

846.



*Porolithothamnion*

✓





## LICHEN pubescens.

*Black Tufted Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Filamentous, much branched, decumbent, entangled, round, rough, olive black. Shields concave, reddish brown, or blackish, with a margin of their own substance and colour.

SYN. *Lichen pubescens.* Linn. *Sp. Pl.* 1623. *Fl. Succ.* ed. 2. 426. *Ach. Prodr.* 217.

*L. scaber.* *Huds.* 562, 661.

*L. exilis.* *Lightf.* 894. *With.* v. 4. 47. *Hull.* 306.

*L. intricatus.* *Ehrh. Crypt.* 80.

*Cornicularia pubescens.* *Ach. Meth.* 305.

*Conferva atro-virens.* *Dillw. Conf. t.* 25. & *t. D. Syn.* 60. *Præf.* 5.

WE have gathered this on Ben Lomond, as well as in Cardiganshire. It always grows, as Acharius well observes, on wet or dripping rocks, not, like most of its tribe, in dry open spots. The shields, a very great botanical rarity, have obligingly been lent us by the Rev. H. Davies, who gathered them in company with Mr. Hudson, and who confirms the synonym of that author, as the Linnæan herbarium establishes that of Linnæus. Dillenius seems to have been unacquainted with this *Lichen*, according to Mr. Davies, whose paper on this, and several species near it, will appear in the 11th vol. of the Linn. Soc. Transactions, and who has examined his herbarium.

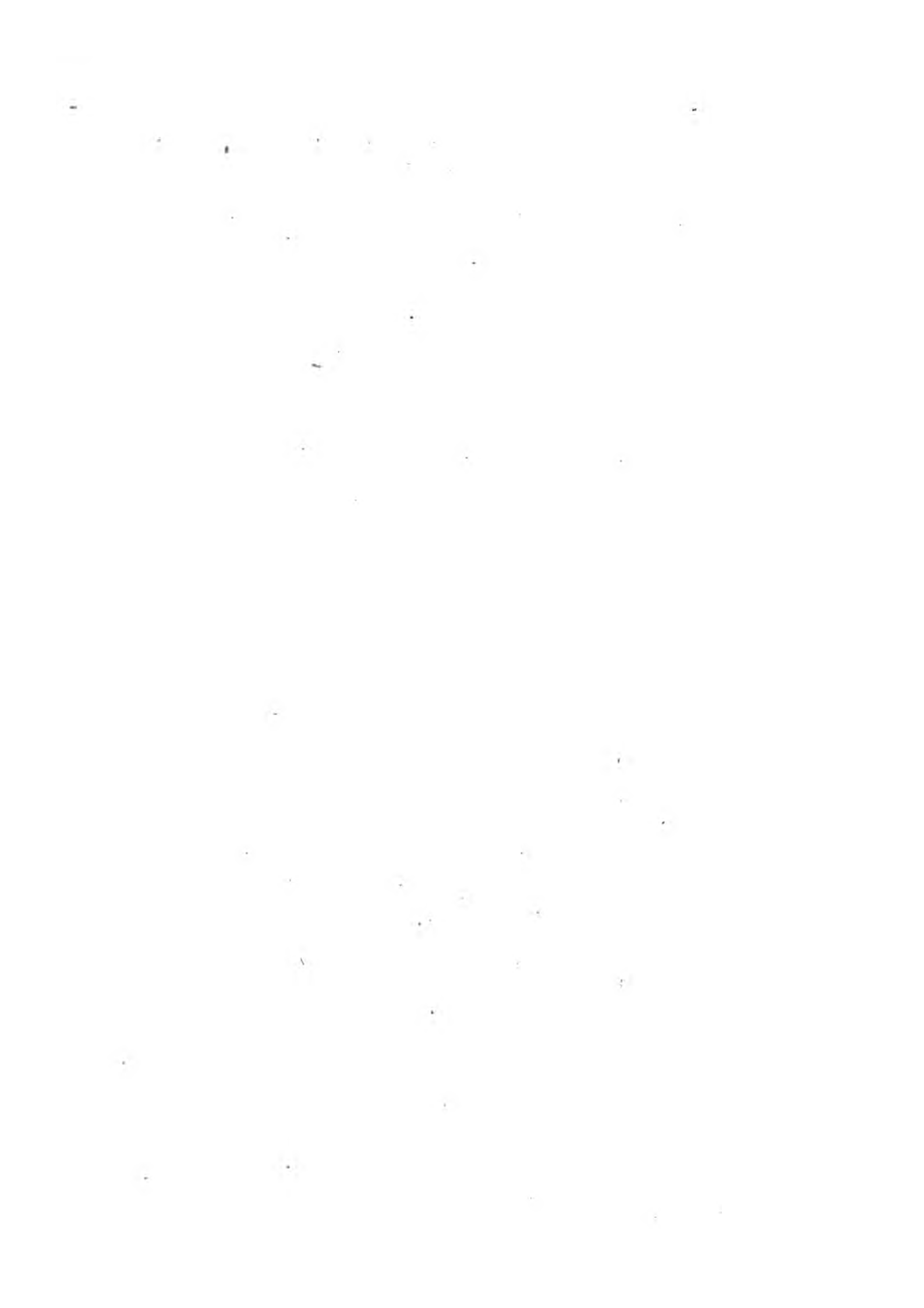
This is much smaller than any British *Lichen* of the same sort, and grows decumbent, in dense entangled patches, of an olive black with some polish. Its numerous branches are rough with minute points, their ends acute. Shields lateral, sessile, scattered, small; when young concave, bright reddish brown, semitransparent, with a smooth margin of their own substance and colour; by age they become darker and flatter, and the margin rather uneven.

2318.



*July 1, 1911, published by J. S. Kewley, London.*





## L I C H E N heteromallus.

*Black Plush Lichen.**CRYPTOGAMIA Algæ.*

**GEN. CHAR.** Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

**SPEC. CHAR.** Minutely shrubby, densely tufted, erect, entangled, cylindrical, corymbose, black, with palish notched tips.

**GATHERED** by Mr. Sowerby, 10 or 12 years ago, in the autumn, growing in cracks of the bark of old elms in Hainault forest. We cannot find any characters suitable to it in Acharius, to whose genus of *Cornicularia* it undoubtedly belongs.

The fronds form wide dense black patches, from a quarter to half an inch thick, harsh and rigid, but not brittle, when dry; soft, elastic, and spongy when wet. Each is repeatedly branched, from a slender base, in a corymbose manner, upwards, so as to make a level surface at the top. The colour is a deep olive black, rather shining, paler here and there, especially at the tips, which however are often quite black, and the whole, standing upright, are entangled laterally by their branches, so as to compose something like coarse velvet or plush. No shields are discoverable.

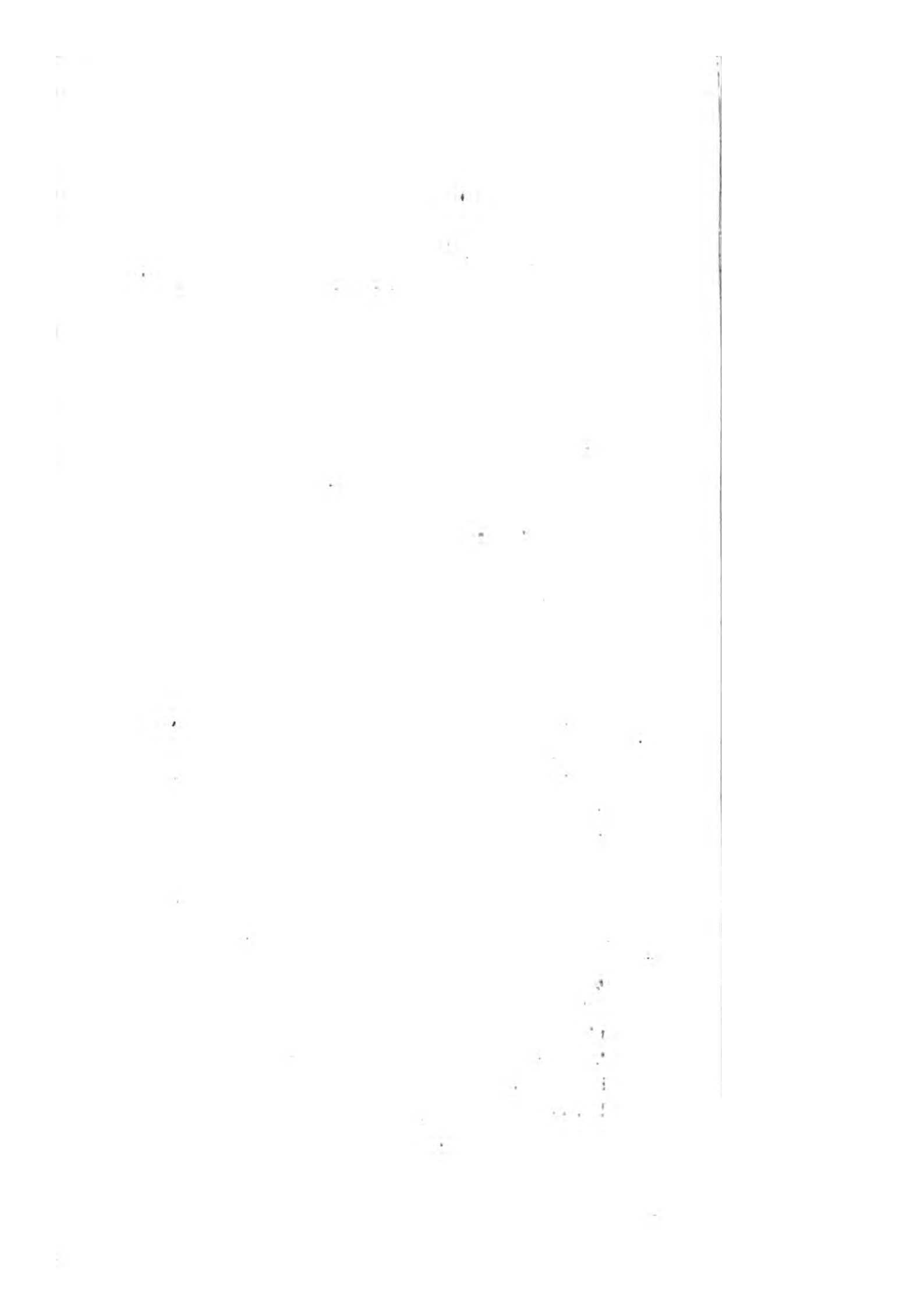
At first sight this plant resembles *L. muscicola*, Ach. Prod. 215, but under a magnifier its position and ramifications are found totally different.

2240



*Fels 23211 published by J. A. Smalley London*

✓





## LICHEN uncialis.

*Short perforated Lichen,*

---

*CRYPTOGAMIA Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Shrubby, tubular, perforated; the little branches very short and pointed.

SYN. Lichen uncialis. *Lim. Sp. Pl.* 1621. *Huds. Fl. Am.* 555. *Witb. Bot. Arr.* v. 3, 218. *Relb. Cant.* 439.Lichenoides tubulosum, cauliculis mollioribus & crassioribus, majus & minus. *Raii Syn.* 67.Coralloides perforatum majus, molle & crassum. *Dill. Musc.* 98. t. 16. f. 21.—& minus, molle & tenue. *Ibid.* 99. f. 22.

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**L**ICHEN uncialis is found on heaths nearly as common as *rangiferinus*, from which it differs in being much less branched, and not tufted; the branches are shorter and awl-shaped, the terminal ones brown, and forming a sort of radiated crown, of sometimes 6 or 8 points. The perforations at the divarications of the stem are very wide, and seldom wanting; whereas in *rangiferinus* they are scarcely (if at all) to be found. The fructifications are very minute tubercles at the tips of the little brown terminal branches.

This plant varies in height from 1 to 2 inches, as well as in thickness; hence the different species and varieties of authors. Sometimes it has a few scaly leaves on the stem, and is much branched, see Mr. Hudson's variety  $\gamma$ —perhaps the last may be a distinct species.



*L. Swartz Del.* 11794





LICHEN pungens.

*Pointed shrubby Lichen.*

---

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Shrubby, tubular, grey, forked, much branched, without axillary perforations; branches twisted and entangled, taper-pointed. Tubercles minute, terminal, solitary, brownish-black.

SYN. Lichen pungens. *Ach. Prod.* 202.

Bæomyces pungens. *Ach. Meth.* 354.

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GATHERED upon Esher Common, in Surry, by Mr. W. Borrer, and on that gentleman's authority, so great in this tribe, we publish this Lichen under the above name, having ourselves no materials for forming a decisive judgement. For this an original specimen from Dr. Acharius would be necessary.

It comes very near *L. uncialis*, t. 174, but is said to want the axillary perforations. We find however, not very unfrequently, lateral fissures below the origin of the clustered branches, but these are indeed different from the round central openings of *uncialis*. The branches too are more twisted and zigzag; Acharius says they are more brittle. The colour is a greenish grey. The numerous, sharp, tapering, ultimate branches are tipped with a brownish black; of which colour also are the small, solitary, round tubercles found at the extremities of some of them.

2444.



*By request of Mr. J. B. Smith, Linn.*







## LICHEN rangiferinus.

*Rein-deer Lichen.*CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts.

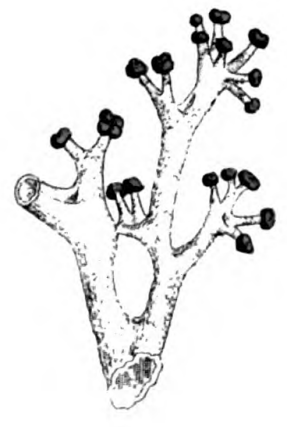
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Shrubby, tubular, very much branched, and hoary; the little branches divaricated and nodding.

SYN. Lichen rangiferinus. *Linn. Sp. Pl.* 1620. *Huds. Fl. An.* 557. *With. Bot. Arr.* v. 3. 216. *Relb. Cant.* 438.Lichenoides tubulosum ramosissimum, fruticuli specie, candicans. *Raji Syn.* 66.Coralloides montanum fruticuli specie ubique candicans, *Dill. Musc.* 107. t. 16. f. 29.—& C. frutic. specie candicans, corniculis rufescentibus, *ibid.* 110. t. 16. f. 30.

THIS moss, the chief clothing of the northern alpine tracts of Lapland, is found every where on our heaths, but in a less luxuriant state than farther north. The numerous herds of rein-deer, in which consists the only riches of the simple sequestered Laplander, are entirely dependent on it for their winter food. It there grows at least a foot high, covering the ground like snow. With us it seldom attains the height of 6 inches, and is generally much less.

The species is easily known by its branched and tufted figure. Its surface is hoary, or rough with minute warts. It is tubular within, and the stem thin and brittle when very dry or very wet. Dillenius justly says, it is not perforated at the divarications. Hagen (quoted by Mr. Relhan) mentions the contrary. The variety  $\beta$  of Hudson, called *sylvaticus* (fig. 30 of Dillenius), is a trifling one, having reddish or brownish tips, which colour sometimes occurs in other parts of the plant. The fructification is not common. It consists of brown tubercles.



✓



## LICHEN vermicularis.

*Vermicelli Lichen.*

## CRYPTOGAMIA Alga.

GEN. CHAR. Nihil scattered warts.

FEMAL. smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Cartilaginous, leafless, snow-white. Stalks hollow, threads shaped, tapering at each end, acute, praeinmen, subdivided.

SYN. Lichen vermicularis. Swartz in Linn. fil. Meth. Musc. 5. Ach. Prodr. 205. Dicks. Crypt. fasc. 2. 25. t. 6. f. 20. Willd. t. 4. 41. Hull. 304.

L. subuliformis. Dicks. Crypt. 30.

L. tauricus. Wulfen Jacq. Coll. v. 2. 177. t. 12. f. 2.

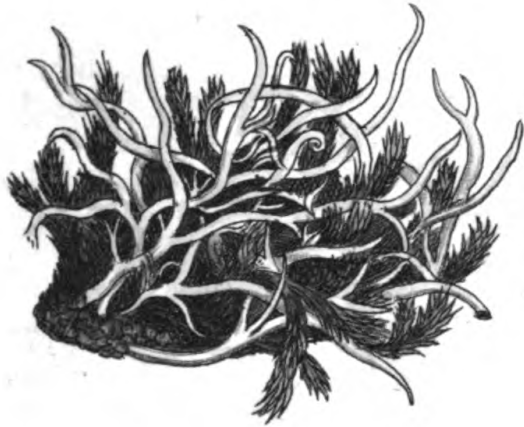
L. tubulatus. nivei ferè candoris, ramosus, apicibus recurvis acutis. Schreb. in Alp. v. 1. 137. Dill. Musc. 41. t. 15. f. 14. E. (not F, as erroneously printed near the bottom of p. 1886.)

Baeromyces vermicularis. Ach. Meth. 359.

Cladonia subuliformis. Hoffm. Pl. Lich. v. 2. 15. t. 29. f. 1—5.

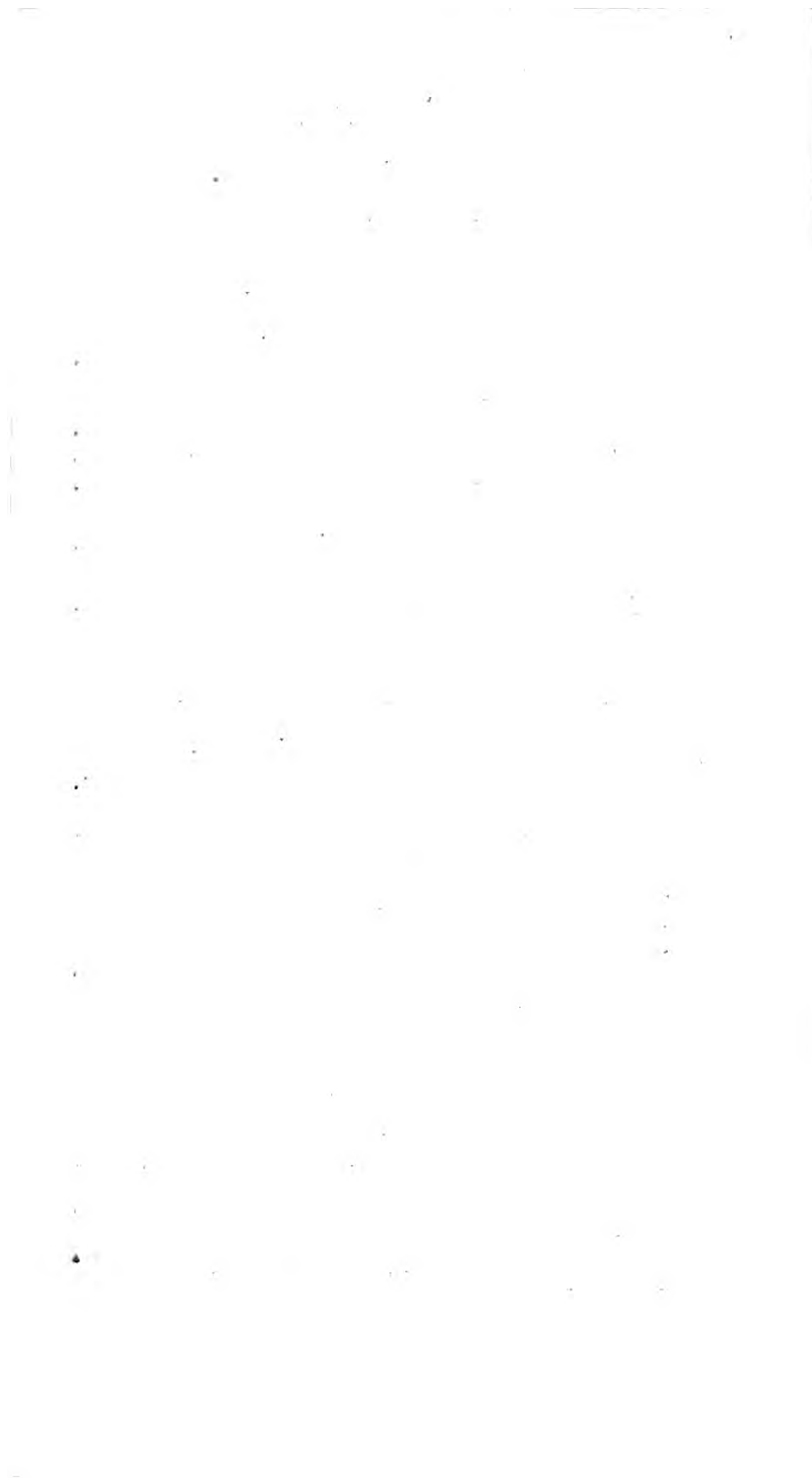
**FIRST** observed on the Scottish mountains by Mr. Dickson. Our specimens were gathered by Mr. Turner on the top of Ben Lawers, and we have received others found on Skiddaw, Cumberland, by W. Pilkington, Esq., F.L.S. It grows on dry turf alpine heaths among mosses. Several stems often spring from one common small root, and spread horizontally in every direction. They are snow-white, without any polish, simple or branched, tubular, round, tapering towards each extremity, so as to be often very sharp-pointed. They are somewhat zigzag, and the surface is a little pitted. Dr. Acharius thinks the fructification is unknown. Mr. Dickson represents globose lateral tubercles, and we find a similar appearance on one of Mr. Menzies's American specimens, rather resembling the young thick-edged shields of an Acharian *Parmelia*. Indeed we cannot but consider this plant as a very doubtful *Baeromyces*, for the leaves drawn by Dillenius are surely a mistake.

2029.



*June 1709 published by J. Koenig, London*







LICHEN Papillaria.  
*Papillary Lichen.*

---

CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Cartilaginous; leaflets minute, rounded, imbricated. Stems mostly simple, erect, short, tubular, inflated, whitish. Tubercles terminal, solitary, globose, brown.

SYN. Lichen Papillaria. *Achar. Prod.* 88. *Dickf. Crypt. fasc.* 1. 13. *With. v.* 4. 45. *Hull.* 305.

*L. madreporæformis*, *Wulf. in Jacq. Coll. v.* 3. 105. *t.* 3. *f.* 2.

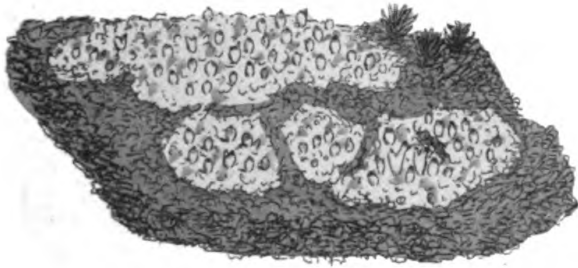
*Coralloides minimum fragile*, *Madreporæ instar nascens.* *Dill. Musc.* 107. *t.* 16. *f.* 28.

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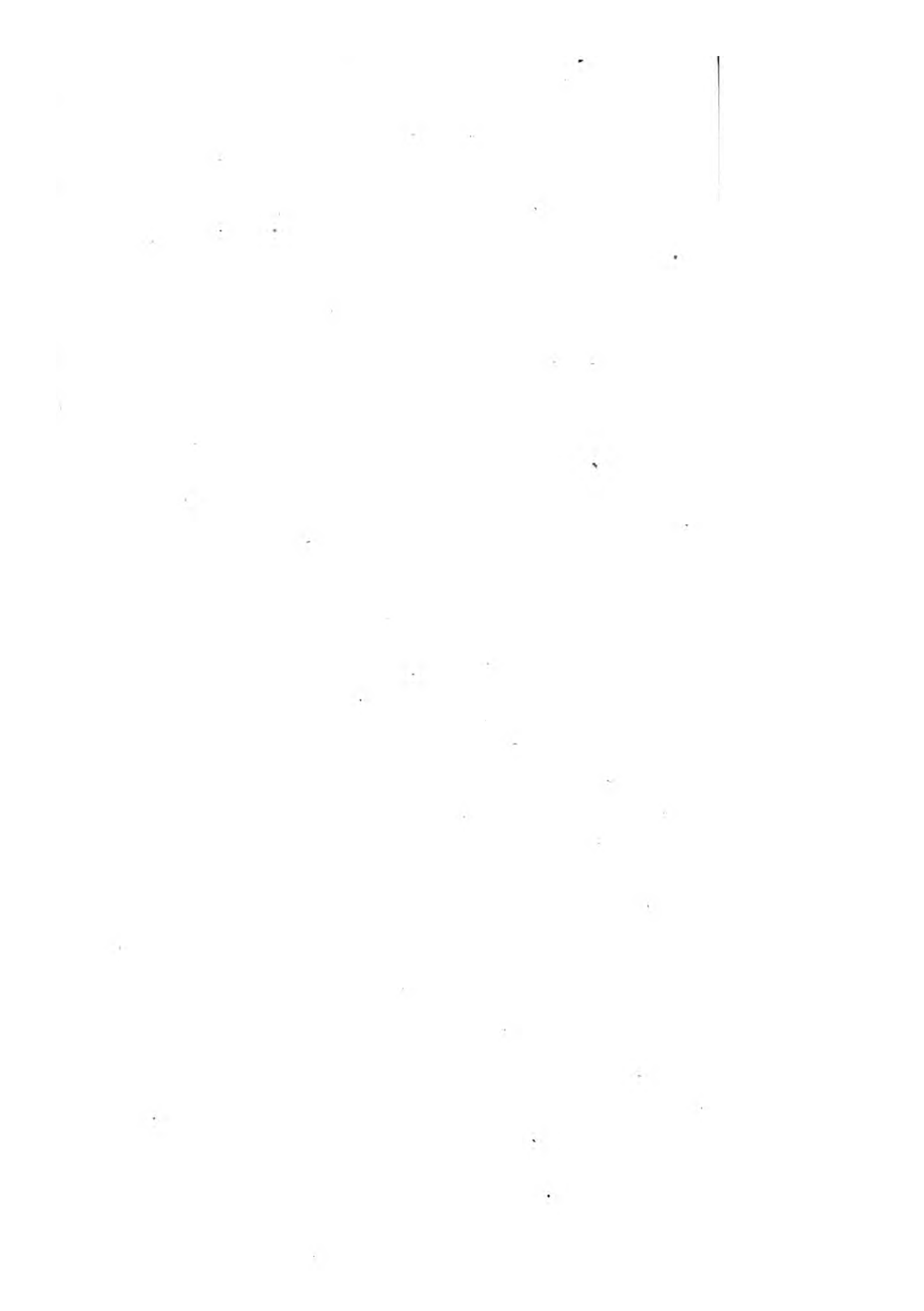
**F**OUND on dry exposed heaths in the winter season. Dillenius mentions it as growing near Farnham. Mr. D. Turner sent it from Yarmouth, and we have gathered it on Mousehold heath, Norwich, towards Rackheath.

Surely Mr. Dickson and others, who have placed this Lichen in the Linnæan division of *fruticulosi*, have come nearer the truth than Dr. Acharius, who has removed it to the same tribe with *L. corallinus*. We venture in this instance therefore to dissent from his opinion, and to refer the plant in question to his 23d tribe, *Cladonia*, consisting of *L. uncialis*, *rangiferinus*, and others, whose basis is formed of imbricated leaves, which bear tubular stalks, fructifying at the summit. The crust of *L. Papillaria* is decidedly such, though minute. The stalks or stems stand more or less closely, upright, and are very short, generally simple, hollow and inflated. Dillenius and Wulfen represent a more slender and branched variety, which more nearly approaches the other *Cladoniæ*. Round brown solitary little tubercles terminate each stem.

We can by no means consider Weber's *L. fragilis a* as having any thing to do with the above, but rather presume he intended our *fragilis t.* 114. *f.* 1, and has misquoted Dillenius and Haller.



✓



[ 2052 ]

## LICHEN delicatus.

*Delicate Spurious Cup Lichen.**CRYPTOGAMIA Algæ.***GEN. CHAR.** Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

**SPEC. CHAR.** Leaves very minute, stalked, many-cleft, crisped, jagged, mealy, glaucous-grey. Fruit-stalks compressed, simple or divided. Tubercles clustered, tumid, pale brown; at length black.**SYN.** Lichen delicatus. *Ehrh. Crypt. 247. Ach. Prod. 199.*L. parasiticus. *Hoffm. Enum. 39. t. 8. f. 5.*Bæomyces delicatus. *Ach. Meth. 327.*

**COMMUNICATED** to us by Mr. W. Borrer, who observed it on rotten rails in St. Leonard's forest, Sussex, for the first time in Britain. His specimens agree with the original one of Ehrhart in our possession, and with Hoffmann's description and figure.

It grows in broad dense patches of a glaucous grey hue. Each plant is small, erect, shrubby, branched, bearing numerous, crowded, stalked, minute leaves, finely lobed, jagged, and crisped, with mealy tips and edges. The fruit-stalks are terminal and solitary, simple or divided, naked or scaly, more or less compressed, each bearing a head of tumid, uneven tubercles, of a pale flesh-coloured brown, turning (according to Acharius and Hoffmann) black with age.

2052.



*(This is 1814, published by Sir James Esdaile.)*

1.





[ 1782 ]

LICHEN microphyllus.  
*Small-leaved Spurious Cup Lichen.*

---

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leaves minute, somewhat imbricated, rounded, nearly entire. Fruit-stalks simple, tubular, smooth. Tubercles solitary, capitate, convex, brown, somewhat lobed.

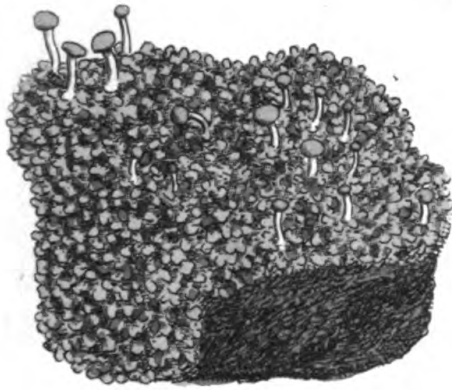
SYN. *Bæomyces microphyllus.* *Achar. MSS.*

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GATHERED by Mr. W. Borrer, on wet heathy places in Tilgate and St. Leonard's forests, Sussex, in the winter, but not frequently. It was at first thought the *Bæomyces cariosus* of Acharius, but, on being sent to that able botanist, was determined by him to be a new species, and named as above. We retain his specific name, though there has been a *Lichen microphyllus* already, our *carnosus*, t. 1684; for, as it is probable the genus of *Bæomyces* may be established, there will then be no ambiguity.

The crust or ground of the plant before us consists of numerous, crowded or imbricated, little green round concave leaves, scarcely lobed or cut, white beneath. Fruit-stalks scattered, ascending, scarcely above a quarter of an inch high, simple, white and shining, tubular, swelling upwards, each bearing a round, capitate, reddish brown, undivided tubercle, often lobed, but not perforated, much exceeding the stalk in diameter.

1782



*Fig. 1387. Published by J. & S. Sowerby, London.*





[ 1796 ]

LICHEN *cæspititius*.  
*Green Turfy Lichen.*

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CRYPTOGAMIA *Algæ*.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

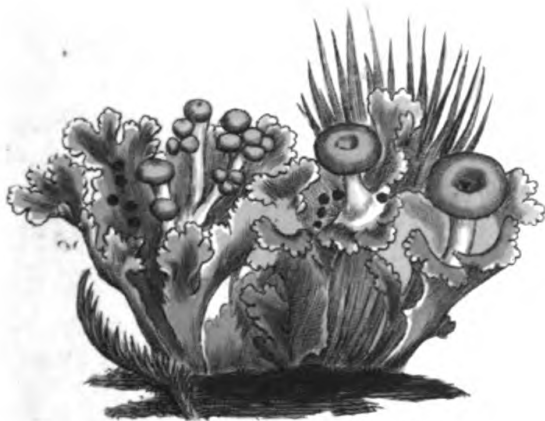
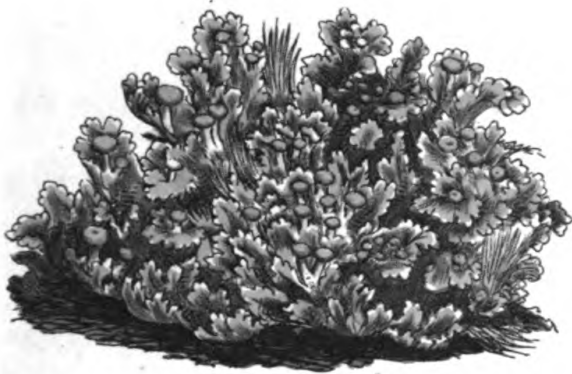
SPEC. CHAR. Fronds clustered, ascending, leafy, pinnatifid, cut and crisped; bright green above; white beneath. Tubercles from the disk of the leaf, convex, reddish brown, on tubular stalks.

SYN. *Bæomyces cæspititius*. *Persoon in Ust. Annal. fasc. 7. 155. Ach. Meth. 325.*

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THE only knowledge we have of this elegant plant is from specimens gathered on the mossy trunk of an aged oak in the New Forest, Hants, by C. Lyell, Esq., last October. We have no specimen from Professor Acharius, nor from the original discoverer and describer of the species, the celebrated Persoon; but their descriptions leave no doubt upon our minds.

The fronds form broad patches among moss, upon the ground or decayed trunks of trees, and are upright or ascending, clustered, but not very closely crowded, a quarter or half an inch high, each spreading from a tapering tubular base into a sort of cornucopiæ form, dilated upwards, pinnatifid, jagged, crisped and spreading at the extremities; the upper surface concave, of a bright pea-green; the under convex, and, as well as the crisped edges, white. Tubercles one or more from the central upper part of each leaf, convex, often umbilicated, of a light red brown, on shortish, tubular, pale stalks, one of which sometimes bears several tubercles. Small dark brown sessile warts also occur on the disk of the leaves. This species is one of those nearly allied to the Cup Lichens both in the fronds and tubercles, but which do not bear cups.



*Det. L. 1807. Publish'd by Jas. Sowerby London.*

✓





[ 2361 ]

## LICHEN endivifolius.

*Endive-leaved Cup Lichen.*

## CRYPTOGAMIA Algæ.

**GEN. CHAR.** Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

**SPEC. CHAR.** Fronds spreading, leafy, cartilaginous, deeply lobed; segments forked and pinnatifid, flattish, slightly twisted; yellowish green above; white beneath. Cups from the upper side, small, turbinate, mostly simple. Tubercles marginal, reddish brown.**SYN.** *Lichen endivifolius.* *Dicks. Crypt. fasc. 3. 17.*  
*H. Sicc. fasc. 9. 24.* *Ach. Prodr. 195.* *With.*  
*v. 4. 60.* *Hull. 298.**L. pyxidatus terrestris, endiviæ crispæ folio, superne ex flavo et glauco subvirescens, inferne albidus, pyxidulis plerumque simplicibus, receptaculis florum rufescentibus.* *Mich. Gen. 82. t. 42. f. 3.**Bæomyces endivifolius.* *Ach. Meth. 351.*

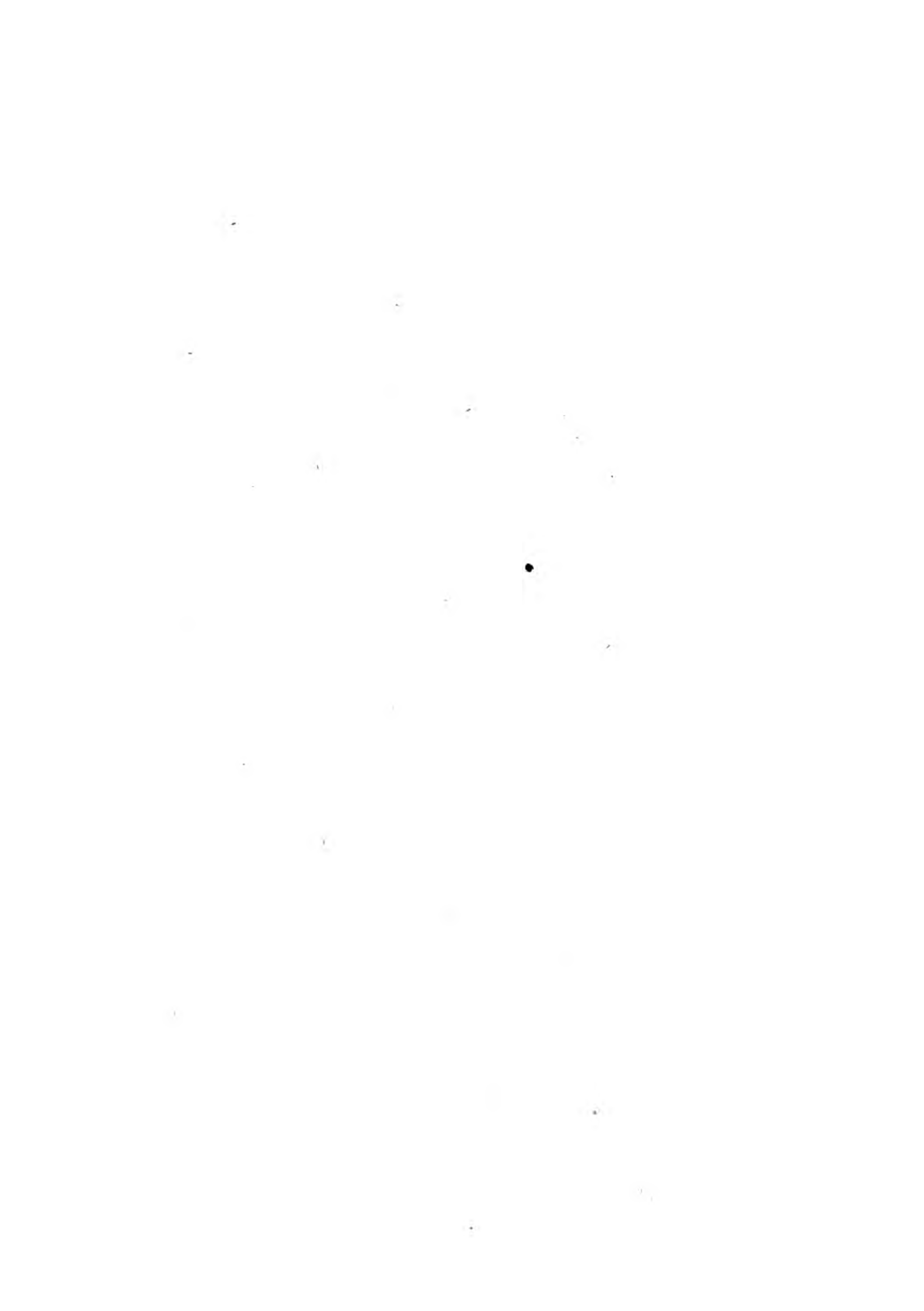
**MICHEL**I records his having received this from London; yet it escaped the mention of British writers, till Mr. Dickson noticed it, growing on the ground, in heathy barren places in Surry and Scotland. We are obliged to him for specimens.

No other of this cup-bearing tribe has such ample foliage, not even *cæspitius*, *t. 1796*, whose synonyms Acharius in his *Prodromus* confounds with this; but he corrects himself in his *Methodus*. The fronds spread in broad patches, and are rendered conspicuous on black turfy soil by the bright yellowish green of their upper side, and the pure white of the back, which in dry weather is turned upwards; otherwise the segments are flat, or slightly twisted. Their form is nearly linear, deeply forked and pinnatifid, with wavy edges. From the upper surface spring the cups, very minute when young; but such as attain the greatest perfection are near an inch high, turbinate, with a more or less leafy margin, bearing small, reddish, almost sessile tubercles.



*Des. & colored by J. S. Keck*

J



[ 1867 ]

## LICHEN anomæus.

*Confused Brown-headed Cup Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Cartilaginous, brittle, ash-coloured. Stems cylindrical, rough and leafy. Cups turbinate, closed; at length dilated and radiated. Tubercles marginal, sessile or stalked, brownish-black. Leaves imbricated, crenate, minute.

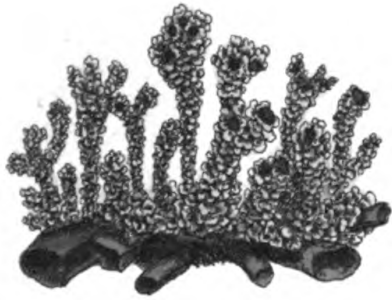
SYN. Lichen pyxidatus o. *Huds.* 554.*Bæomyces anomæus.* *Ach. Meth.* 549.*Córalloides parùm ramosum, tuberculis fuscis.* *Dill. Musc.* 97. t. 15. f. 20.

**DILLENIIUS** gathered this on Woolwich heath. We found it on the Pentland hills near Edinburgh in 1782, and determined his synonym, but it is not to be found in Lightfoot. Mr. D. Turner took the specimens in our plate from the old thatch of Mr. Crowe's barn at Lakenham, in March 1805.

This is one of the most inelegant and disorderly of the cup Lichens, as well as the most brittle. Its predominant hue is ash-colour variegated with brown. The leafy crust is finely divided and crenate, white beneath; and not only the base, but mostly the stems and cups are clothed with similar foliage. Sometimes the stems are more naked, but always rough. They are generally simple, occasionally divided, terminating in rather imperfect cups, which are closed when young, then dilated and radiant, more or less overgrown with leaves. The tubercles are dark brown, almost black, either sessile among leaves on the edge of the cup, as in our figure, or raised on short irregular stalks, as in that of Dillenius.

This species is most nearly related to *L. alcicornis*, t. 1399, and but for the great authorities of Dillenius and Acharius, we should scarcely have thought it more than a variety.

1867



*Apr 1868. Published by J. A. Sowerby London.*

v





LICHEN bellidiflorus.  
*Daisy-flowered Cup Lichen.*

CRYPTOGAMA *Algae.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Cartilaginous, pale green. Stems cylindrical, rough and leafy. Cups clubshaped, closed. Tubercles marginal, globose, minute, crowded, scarlet. Leaves imbricated, angular, crenate, minute.

SYN. Lichen bellidiflorus. *Ach. Prod.* 194.

*Bezomyces bellidiflorus.* *Ach. Meth.* 335.

THIS most elegant species was discovered last summer on the high mountain of Ben Nevis in Scotland, by Mr. Turner and Mr. W. J. Hooker. We had long ago received the same from the coast of Labradore, and from Professor Acharius, the only writer who has described it.

The crust is composed of numerous, small, lax, angular leaves, crenate and acutely lobed, of a light bright green, not grey or glaucous. Stems numerous, upright, various in height, cylindrical, unbranched except at the summit, clothed with small scaly foliage; the base slender, and more or less orange or tawny. Cups swelling from a taper base upwards, shallow or closed, their borders and segments crowded with innumerable, small, globular tubercles, of a rich deep scarlet, often not unaptly resembling the flower of a double red daisy. It differs from the, not uncommon, *L. cocciferus*, in its greater size and roughness, green not grey hue, smaller, more clustered, and rather deeper-coloured tubercles, besides (according to Acharius) affording different and far less valuable colours in dyeing.—This is an instance, among many others, of the greater beauty and vigour of this tribe of plants, whether species or individuals, in proportion to the cold and severity of the climate to which they are exposed.

1894



June 1868. Published by J. S. Sowerby, London.

v



LICHEN *filiformis*.  
*Tiret-shaped Cup Lichen.*

CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Obscurely cup-shaped, cartilaginous, greenish white. Leaves imbricated, sinuated and crenate. Stalks cylindrical, simple, scaly. Cups cylindrical, bordered with minute scarlet tubercles.

SYN. *Lichen filiformis*. *Ach. Prod.* 193. *With.* v. 4. 38. *Hall.* 303. *Relh.* 470. *Sibth.* 333. *Abbot.* 268.

*L. pyxidatus* ζ, *filiformis*. *Huds.* 552.

*L. tubiformis*. *Lightf.* 871.

*Lichenoides tubulosum pyxidatum exiguum fusco-virens*. *Raii Syn.* 70.

*Coralloides scyphis gracilibus tubiformibus, pedicularis folio*. *Dill. Musc.* 85. t. 14. f. 10.

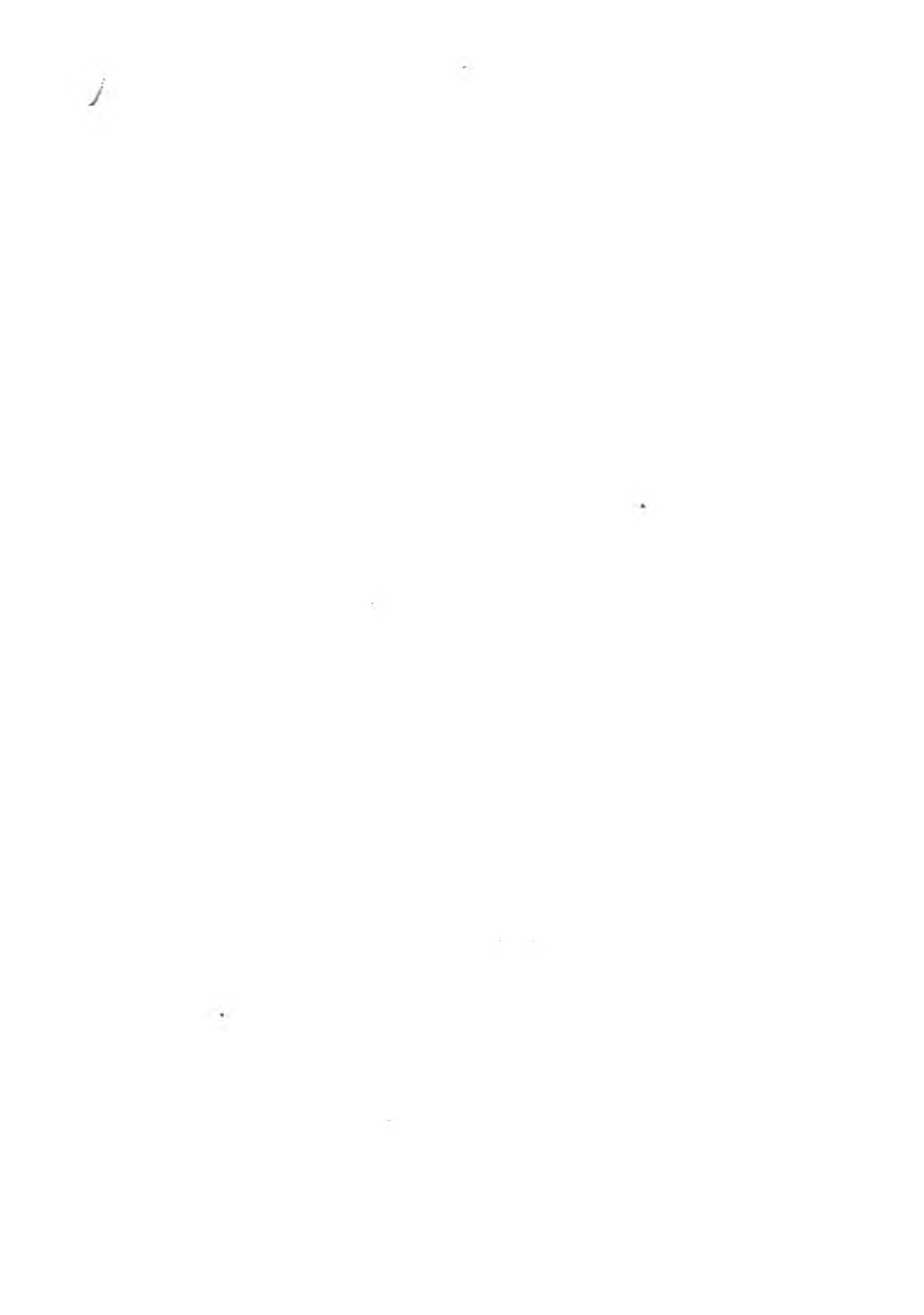
*Bæomyces bacillaris*. *Ach. Meth.* 329.

A NATIVE of mountainous turfy heaths. We have gathered it on the Pentland hills, Edinburgh, as well as on Cromford moor near Matlock, and are obliged to Mr. Lyell for these specimens from the New Forest, Hants. It bears fruit at various seasons, but not frequently.

The leaves are more dilated and sinuated than in some of its allies, greenish above, white underneath. Stalks about an inch high at most, unbranched, cylindrical, hollow, scaly or mealy, terminating in very slender cups of scarcely their own diameter, whose rims are generally simple and entire, occasionally divided or toothed, bordered with a series of beautiful little uniform bright-scarlet tubercles, which turn brown with age.



*Junia 1809, published by J. Koenig, London.*







[ 1836 ]

LICHEN cornutus.  
*Horned Cup Lichen.*

---

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Obscurely cup-shaped, cartilaginous, greyish greenish white, with numerous awl-shaped barren branches. Cups cylindrical, bearing scarlet tubercles.

SYN. Lichen cornutus. *Linn. Sp. Pl.* 1620. *Ach. Prod.* 192. *Witt. t. 4.* 39. *Hull.* 304. *Relh.* 470. *Sibth.* 333. *Albia.* 269. *Lightf.* 875.

*L. pyxidatus*  $\lambda$ . *Huds.* 553.

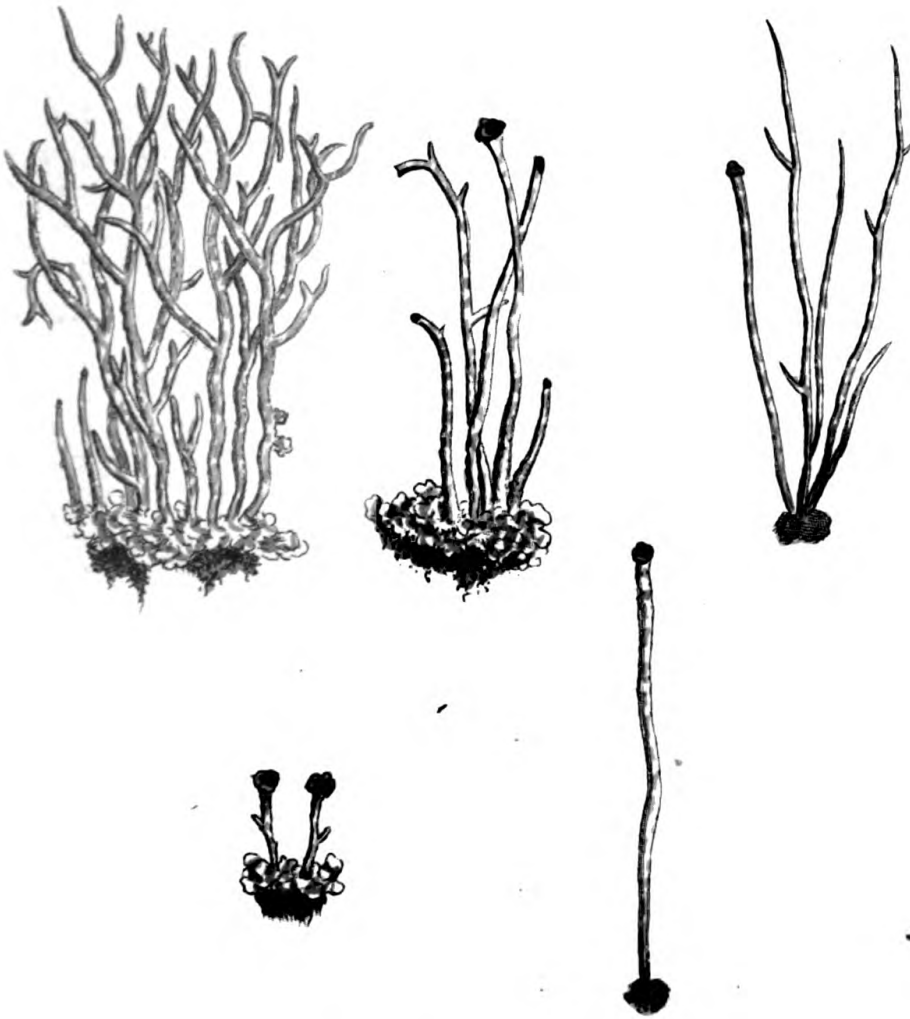
*Bæomyces cornutus.* *Ach. Meth.* 343.

*Coralloides vix ramosum, scyphis obscuris.* *Dill. Musc.* 90. t. 15. f. 14, A, C, F.

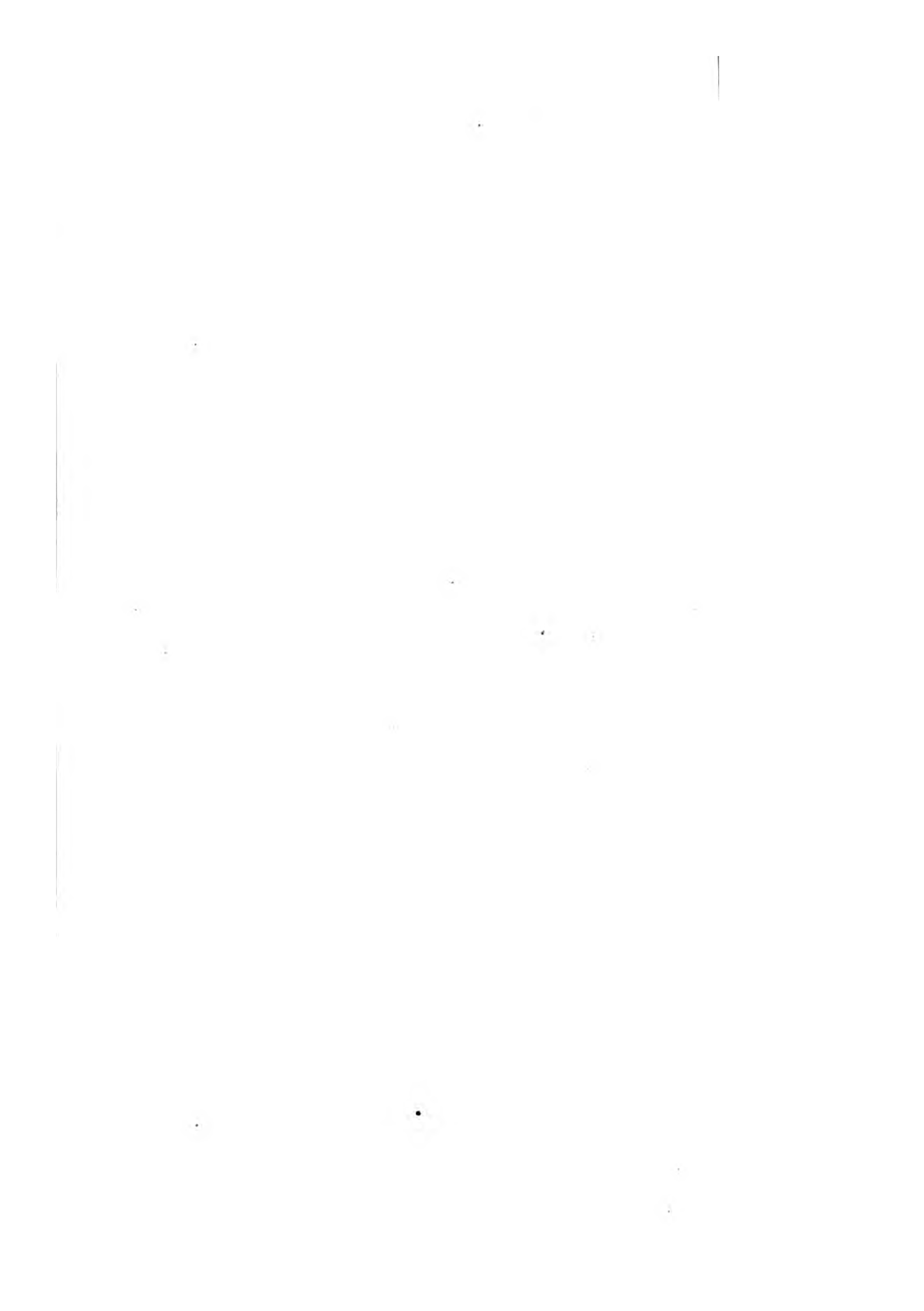
*Lichenoides tubulosum cinereum non ramosum.* *Raii Syn.* 68.

---

FOUND in woody or heathy, rather mountainous, places. The crust consists of little round lobed leaves, like those of *L. radiatus*, but somewhat of a more grey hue, as indeed is the whole plant. The stalks are from one to two inches, or more, in height, mealy, cylindrical, slender, simple or branched; the branches awl-shaped, acute, more or less curved. The cups are scarcely more than a slight dilatation of the top of the stalk, bordered with a series of small tubercles, which are sometimes stalked, but more frequently sessile and confluent, or even forming one continued tubercle, rendered annular by a small central perforation. We find the tubercles always scarlet, though inclined to turn brown with age. The varieties C and F of Dillenius are very scaly. These are of extremely unfrequent occurrence. B, D and F of Dillenius, are different species from this; the latter possibly *L. vermicularis*, but if so the leaves are misapplied.



✓



LICHEN gracilis.  
*Slender Cup Lichen.*

---

CRYPTOGAMIA Algæ.

GEN. CHAR. Male scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Cup-shaped, long, slender, smooth, cartilaginous, greenish brown, at length somewhat branched. Cups conical, sharply toothed. Tubercles brown. Leaves minute.

SYN. Lichen gracilis. *Linn. Sp. Pl.* 1619. *Ach. Prod.* 191. *With. v. 4.* 37. *Hull.* 303. *Lightf.* 873.

*L. pyxidatus*  $\omega$ . *Huds.* 555.

*Bæomyces gracilis.* *Ach. Meth.* 344.

*Coralloides scyphiforme serratum elatius, caulibus gracilibus glabris.* *Dill. Musc.* 88. *t. 14. f. 13.*

---

TO determine the species among the Cup-bearing Lichens is one of the most difficult problems in botany. Mr. Hudson cuts the Gordian knot by uniting them all into one, but surely nothing can be more rash. On the other hand, it may perhaps be allowed that other botanists have subdivided them beyond the limits of Nature. If any of them be distinct species, that in our plate is one. It grows in mountainous heathy or dry woody places, nor is it in the northern counties unfrequent, bearing fruit at all seasons.

The leaves, which form a kind of crust, are minute, lobed and crenate. Stems round, hollow, long and slender, mostly very smooth, olive-coloured, brown upwards, when barren sharp-pointed, but generally terminating in small, conical, brown cups, sharply and irregularly toothed at their edges, and there studded with little, round, smooth, chesnut-coloured tubercles. The margins of these cups are at length prolific, and sometimes the main stem itself is divided.



*Fig. 1. 1874. [Faint text]*

✓





[ 1335 ]

LICHEN radiatus.  
*Emulatei Cup Lichen.*

---

CRYPTOGAMA Algae.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Cup-shaped, somewhat cartilaginous, greenish white. Stalks elongated, slender, powdery. Cups irregularly radiated, their points tipped with small acute reddish tubercles.

SYN. Lichen radiatus. *Schreb. Lips.* 122. *Ach. Prod.* 190. *Wich. v. 4.* 38. *Hull.* 303. *Sibth.* 333.

*L. pyxidatus* *p.* *Huds.* 555.

*Bæomyces radiatus.* *Ach. Meth.* 342.

*Coralloides scyphiforme cornutum.* *Dill. Musc.* 92. *t.* 15. *f.* 16.

---

COMMUNICATED from Norfolk by Mr. Turner. It grows in shady woods, on the ground. The crust consists of little greenish leaves, which are sometimes scattered about the lower part of the stalks, like small scales. Stalks about two inches high, slender, cylindrical, hollow, simple or slightly branched, of a substance rather cartilaginous than leathery, most brittle when wet, of a greenish, rather than greyish, white; their surface always powdery. Cups tapering, rude and irregular, composed of nearly upright radiating sharp points, each of which is tipped with a minute reddish acute tubercle, approaching in our specimens to scarlet, but turning to a red brown by age. Some branches of the plant are simple, bearing only one tubercle.

1835



1835. Published by J. Sowerby London.

✓



[ 2362 ]

## LICHEN sparassus.

*Torn-coated Cup Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

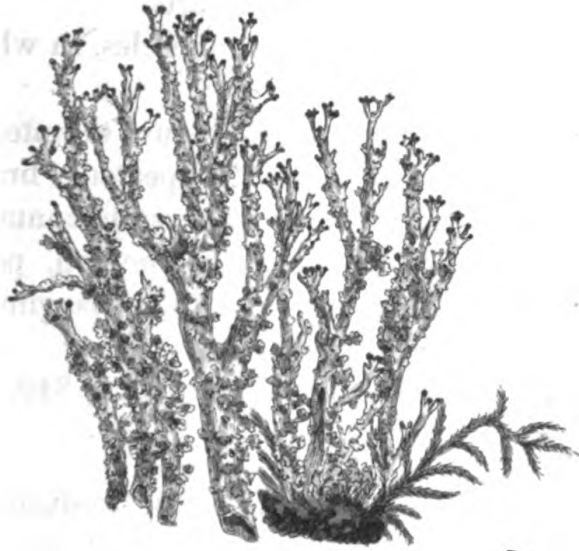
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Fronds cartilaginous, minute, lobed and cut. Stems cylindrical, repeatedly branched, rigid, ash-coloured, rough with innumerable scaly leaflets. Cups minute, toothed, pervious, repeatedly proliferous from their margins. Tubercles clustered, brown.

SYN. *Bæomyces sparassus.* *Ach. Meth.* 346.

**GATHERED** in mossy woods-at Hafod, Cardiganshire, in 1797. It is perhaps not uncommon in such places. Our specimens agree with some from Acharius.

The original foliage is minute and evanescent, lobed and cut, green above, white beneath, but the whole surface of the stems is nearly clothed with similar leaflets, having a scurfy or scaly appearance, and where naked seeming as if it had been plucked bare. The stems form large tufts, adhering to each other and to the surrounding moss or grass, so as to break when gathered, especially if tender from wet. They are about two inches high, tubular, thin, erect, repeatedly branched, rigid though brittle, cracked or perforated above the origin of every branch, and ending in very small, compound, irregular, toothed or forked cups, whose centre is also pervious. Innumerable little brown crowded tubercles terminate the points or teeth of the cups.—Acharius considers the *L. ventricosus* of Hudson, and of his own *Prodromus*, p. 189, Dill. t. 15. f. 17, as a variety of this. Indeed there seems to be but a shade of difference between them.



*See also, published by J. G. Smith, London.*

✓





[ 1394 ]

LICHEN deformis.

*Clumsy Indented Cup Lichen.*

---

CRYPTOGAMIA *Algae.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leathery, pale yellowish grey. Stems tubular, thick, mostly simple. Cups small, irregular, sharply toothed. Tubercles scarlet, minute. Leaves roundly lobed.

SYN. *Lichen deformis.* Linn. *Sp. Pl.* 1620. *Fl. Lapp.* n. 433. t. 11. f. 5. *Achar. Prod.* 189. *With.* v. 4. 38. *Hull.* 303. *Lightf.* 876. *Relh.* 470.

*L. pyxidatus*  $\mu$ . *Huds.* 554.

*Lichenoides tubulosum minus ramosum, cauliculis crassioribus difformibus.* *Raii Syn.* 68.

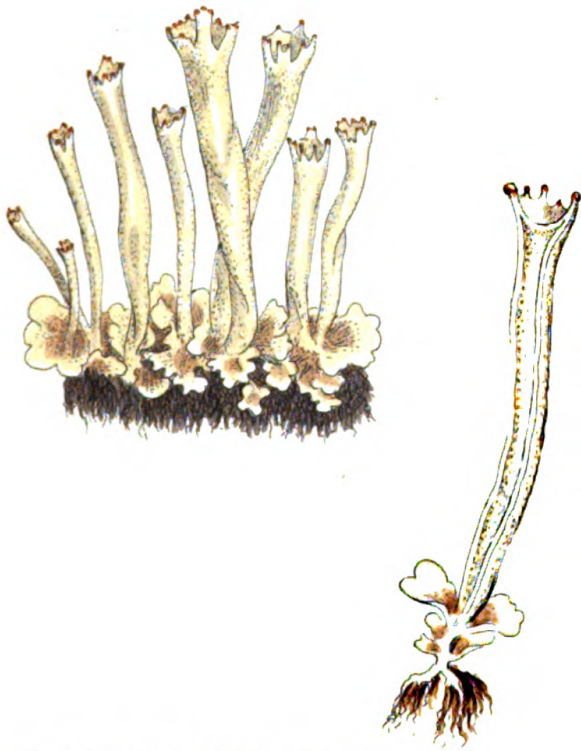
*Bæomyces deformis.* *Achar. Meth.* 334.

*Coralloides crassius subincanum, calicibus dentatis.* *Dill. Musc.* 95. t. 15. f. 18.

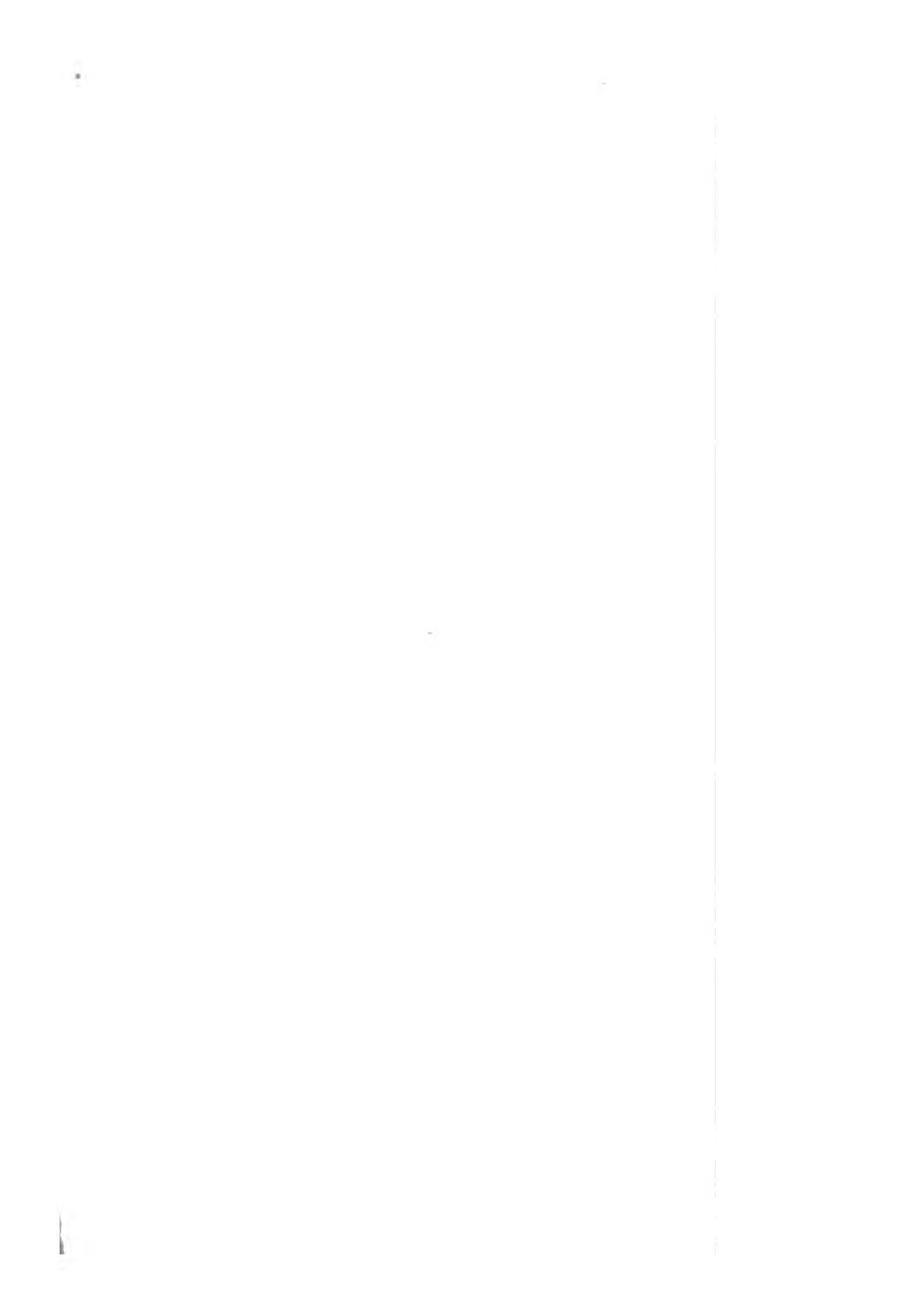
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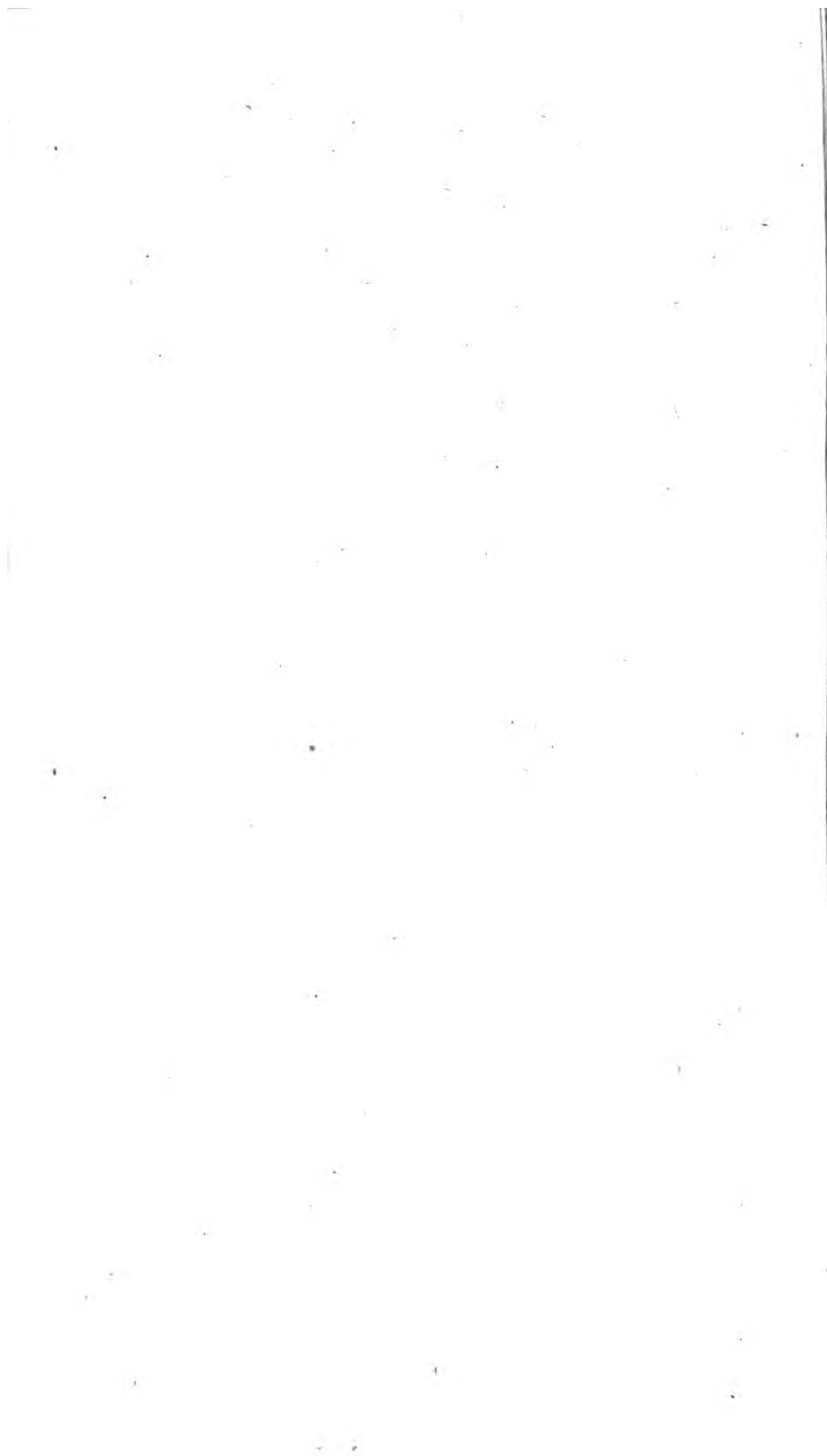
LIGHTFOOT, like many other botanists, thought this among the doubtful species of the Cup Lichens, and most probably a variety of *L. cocciferus*, commonly called Scarlet Cup Moss. We think it as likely to be distinct as any of its tribe; and being one of the rarest kinds, we hope it will not be thought superfluous in our work. Very few coloured figures of any of this difficult tribe having been published, it is surely desirable to have them perpetuated somewhere. Theorists may dispute for ever which of them are species and which varieties, for we know of no experimental mode of deciding the question.

*L. deformis* is found in shady dry woods. Its general colour is more inclined to yellow than that of the preceding. The leaves are all radical, dilated, roundly lobed. Stems almost always simple, tubular, thick, inflated or wrinkled, smoothish, each terminating in a small shallow cup, very irregularly but sharply toothed at the edge, each tooth bearing a little bright scarlet tubercle.



*Dec. 1 1804. Published by J. Sowerby, London.*





## LICHEN digitatus.

*Fingered Cup Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded,

SPEC. CHAR. Obscurely cup-shaped, pale grey, mealy. Stalks subdivided, digitate and radiating. Tubercles terminal, deep scarlet. Leaves minute, lobed and crenate.

SYN. Lichen digitatus. *Linn. Sp. Pl.* 1620. *Ach. Prod.* 188. *With. v. 4.* 39. *Hull* 304. *Lightf.* 874. *Relh.* 469.

*L. pyxidatus*  $\xi$ . *Huds.* 554.

*Lichenoides coralliforme*, *apicibus coccineis.* *Raii Syn.* 68.

*Bæomyces digitatus.* *Ach. Meth.* 333.

*Coralloides ramulosum*, *tuberculis coccineis.* *Dill. Musc.* 96, *t. 15. f. 19.*

ONE of the most beautiful of its family, found on rotten trees, or on the ground, in mountainous places, but not frequently. The late Mr. J. Burgess Mac-Garroch gathered our specimens near Kirkmichael, Dumfries-shire. The present plant is considered as nearly related to *L. cocciferus*, *t. 2051*, but differs in having scarcely any form of a cup, but in its stead numerous branches spring from one centre, each being either simple or divided, and tipped with a tubercle of a rich deep scarlet, that elegantly contrasts with the grey mealiness of the stalks and finely divided foliage.

2439



*Polyporus squamosus* var. *fulvipes* L. Fr.

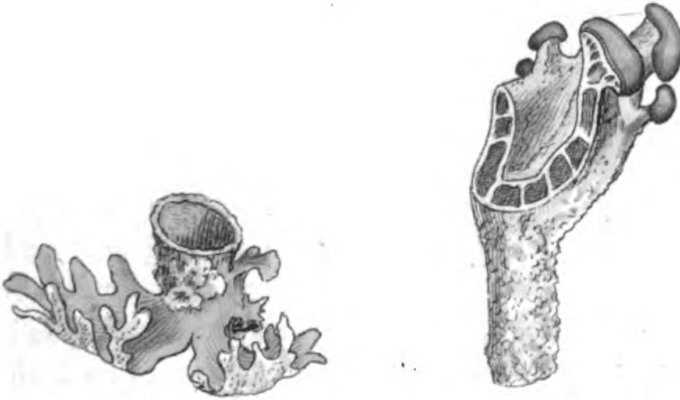
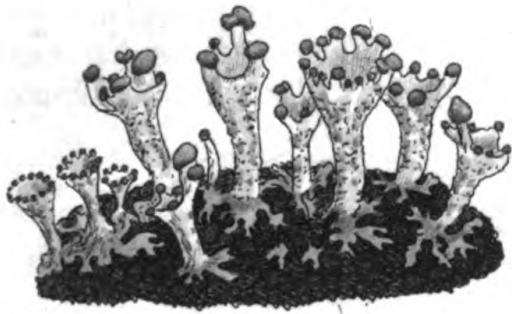
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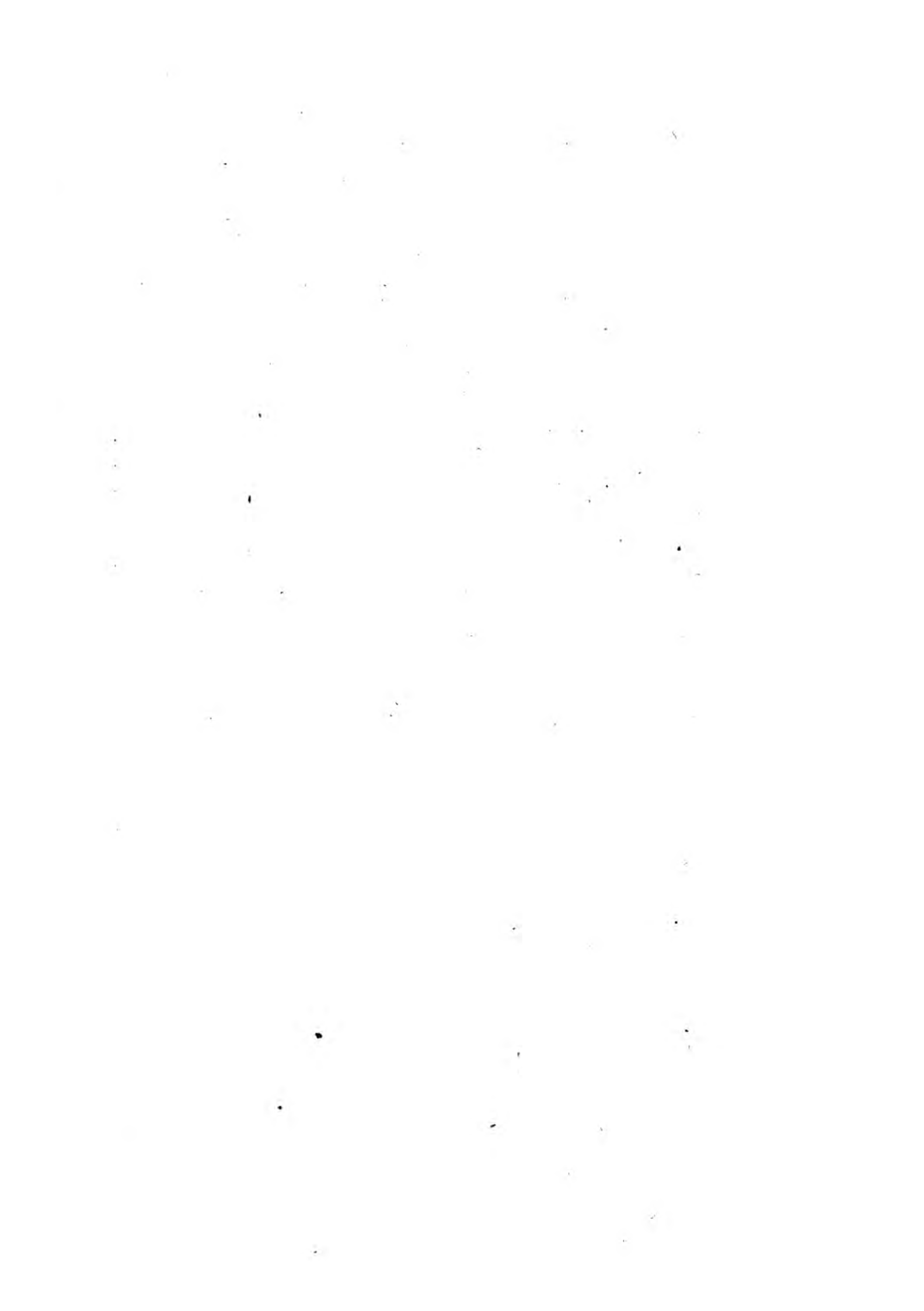
2051.



*(Laysan) published by J. S. Sowerby London.*

✓





## LICHEN fimbriatus.

*Fringed Cup Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Cup-shaped. Leaves cartilaginous, lobed and crenate. Stalks cylindrical, white, dilated at the summit into an impervious cup, fringed with acute teeth, tipped with small brown tubercles.

SYN. Lichen fimbriatus. *Linn. Sp. Pl.* 1619. *Ach. Prod.* 187. *With. v. 4.* 37. *Hull* 303. *Lightf.* 870. *Relh.* 469. *Sibth.* 332. *Abbot.* 268.

*L. pyxidatus*  $\delta$ . *Huds.* 552.

*Lichenoides tubulosum pyxidatum, marginibus serratis.* *Dill. in Raii Syn.* 69.

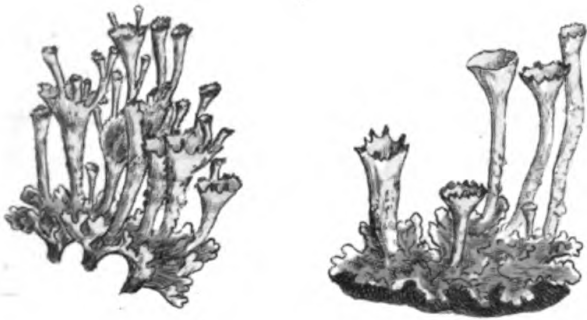
*Bæomyces fimbriatus.* *Ach. Meth.* 341.

*Coralloides scyphiforme gracile, marginibus serratis.* *Dill. Musc.* 84. t. 14. f. 8.

**T**HIS grows on the ground in heathy mountainous places. We have gathered it near Edinburgh, bearing tubercles, which Dillenius says are rarely seen.

It is considered by Acharius as so near the common *L. pyxidatus*, t. 1393, that he doubts whether it be more than a variety. The same question may arise concerning many of this tribe, but this appears to us as distinct from *pyxidatus* as most others. The neat elegant slenderness, and white colour, of the stalks, are characteristic, and the sharp triangular teeth, which border the cups, are peculiar. The tubercles also are very different, being always minute, reddish brown, at the end of each tooth. The margin is occasionally proliferous, and in some of the younger cups the tubercles are almost confluent and sessile, but each seems to become subsequently elevated.

2438.



*fig. 102 published by J. S. Sowerby, London.*

✓





## LICHEN pyxidatus.

*Common Cup Lichen.*CRYPTOGAMIA *Agg.*

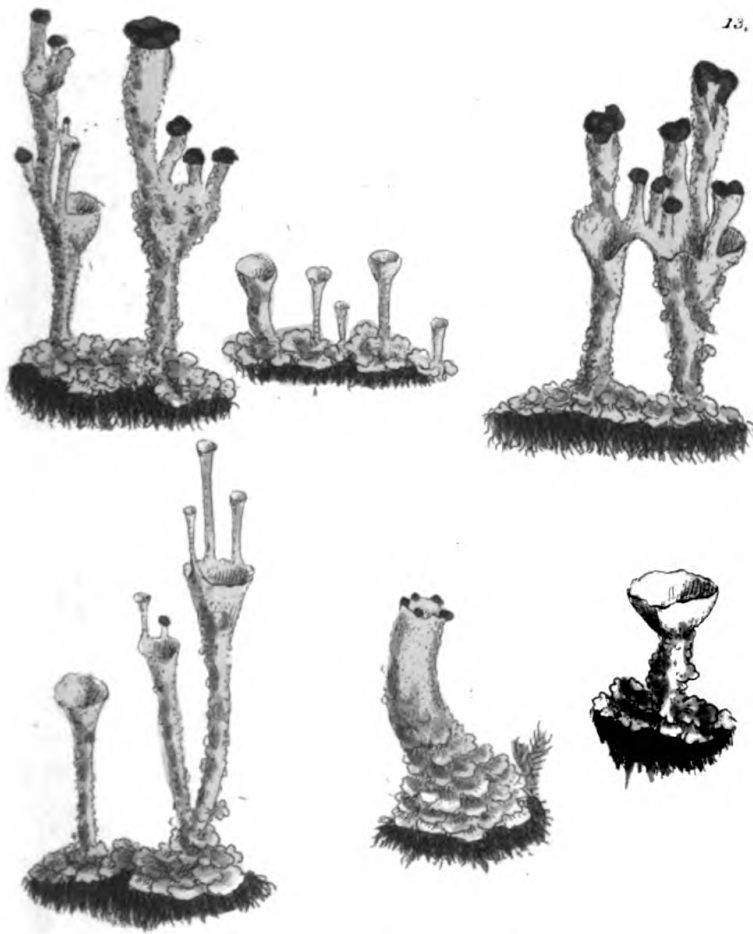
GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Cup-shaped, leathery, greyish-green, scaly, often proliferous. Cups dilated, nearly entire. Tubercles brown. Leaves minutes, imbricated, crenate.

SYN. Lichen pyxidatus. *Linna. Sp. Pl.* 1619. *Achar. Prod.* 186. *Huds.* 551.  $\alpha$ — $\gamma$ . *With.* v. 4. 36. *Hall.* 303. *Reh.* 469. *Sibth.* 332. *Abbot.* 268, n. 900 and 901.*Lichenoides tubulosum pyxidatum cinereum.* *Raii Syn.* 68.*Baeomyces pyxidatus.* *Achar. Meth.* 337.*Coralicoides scyphiforme, tuberculis fuscis.* *Dill. Musc.* 79. t. 14. f. 6.

THIS most common kind of cup-bearing Lichen is generally called Cup-Moss, under which name it is famous as a cure for the hooping cough. Nothing can be more easily procured in heathy somewhat shady places, where it commonly forms broad hoary perennial patches of minute imbricated lobed leaves, of a greyish green when wet, almost white when dry. Copious thick tubular stems arise from among the leaves, various in height, each dilated at the summit into a pretty regular and entire cup, all of the same colour, whose margin in due time bears numerous brown tubercles on short stalks. Very often these marginal stalks become as long and thick as the parent stem, and bear tubercles in proportion; more rarely they bear other cups, whose edges are again and again proliferous: still more unfrequently it happens that the centres of all the cups are repeatedly proliferous.



*Des. & Ill. a. Published by J. Sowerby, London*





## LICHEN rubiformis.

*Raspberry-fruited Lichen.*CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

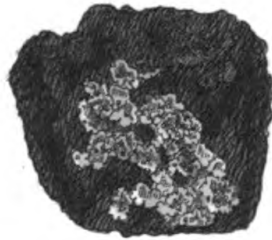
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Fronds depressed, somewhat crustaceous, rounded, lobed, crenate, light green; thickened and pale at the margin; white beneath. Tubercles on the disk, clustered, sessile, minute, globose, hollow, red.

SYN. *Bæomyces rubiformis.* *Ach. Meth.* 324. t. 7. f. 5.

WELL might even the experienced Dr. Acharius hesitate how to dispose of this singular production, which his friend Wahlenberg brought him from the north of Norway, and of which I received a solitary specimen long ago from my lamented correspondent Mr. W. Brunton, who found it near Rippon, Yorkshire. We can hardly render a more acceptable service to the curious cryptogamist, than to give an accurate figure and dissection of it, which Mr. J. D. Sowerby has carefully made, under my inspection, and which seems more perfect than what Acharius has drawn. Of the identity of the two plants we presume no doubt can arise.

The fronds grow on turfy earth, and exactly resemble those of the generality of *Bæomyces*, or Cup Lichens. They make a patch about an inch wide. Each is rounded, bluntly lobed, thick-edged, and crenate, of a pale rather glaucous green above; white beneath. The fructification, as we presume it to be, consists of numerous little globose or ovate hodies, of a fine red, generally clustered, sometimes dispersed, certainly originating from the disk of the leaf. They are hollow and seem spongy or powdery within, with an open thick-edged mouth at the summit. They are surely not parasitical *fungi*, but can they be of the nature of galls? If the latter, it is remarkable that no sign of the proper cup-shaped fructification of a *Bæomyces* should be present, as the fronds of this tribe seldom occur without some.



v





[ 2574 ]

## L I C H E N cervicornis.

*Buck's-horn Cup Lichen.**CRYPTOGAMIA Algæ.***GEN. CHAR.** Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

**SPEC. CHAR.** Cup-shaped, cartilaginous, branched.

Leaves nearly upright, glaucous, in oblong segments. Cups from the disk of the leaves, turbinate, at length proliferous, on slender stalks. Tubercles numerous, marginal, sessile, blackish.

**SYN.** Lichen cervicornis. *Achar. Prod.* 184.*Bæomyces cervicornis.* *Achar. Meth.* 336. *Winch.* v. 2. 65.

**WE** gathered fine specimens of this elegant Lichen on the Pentland hills, near Edinburgh, in 1782. The plant was then confounded with the *alcicornis*, t. 1392, from which Acharius justly distinguished it. The base is sometimes absolutely shrubby; the whole plant rigid, though the leaves are brittle when dry; the oblong form of their crenate segments, and their glaucous hue, are peculiar, and they very generally assume a brown tinge. The cups grow abundantly, on slender cylindrical stalks, from the disks of the leaves, and are distinctly formed, slightly leafy, more or less proliferous, bordered with numerous, small, sessile, uniform tubercles, of a dark blackish brown.

This species has been observed by Mr. W. Borrer in various mountainous parts of England, Scotland, and Ireland, and we are indebted to him for our specimen here represented, which agrees with some from Acharius.

2574.



*L. v. 1. 1811, published by J. G. Sowerby, London.*





[ 1392 ]

LICHEN *alcicornis*.*Elk's-horn Cup Lichen.*CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

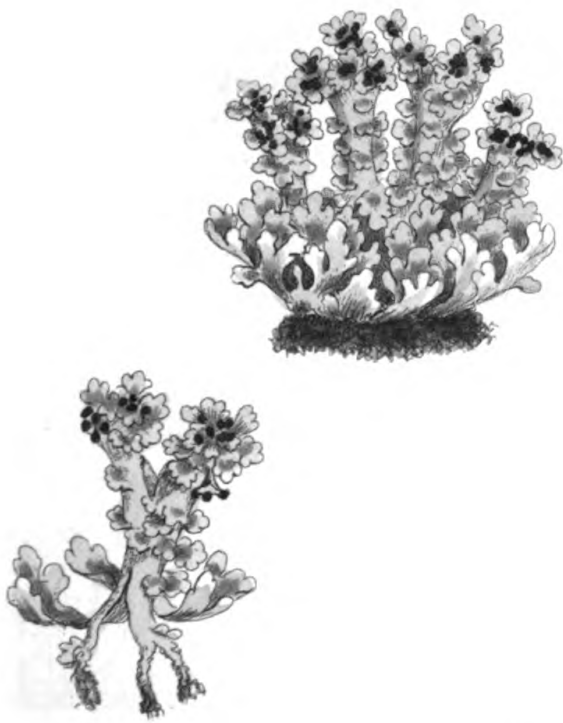
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Obscurely cup-shaped, green, cartilaginous, at length branched, all over leafy. Lower leaves erect, dilated, lobed. Tubercles numerous, terminal, minute, brown.

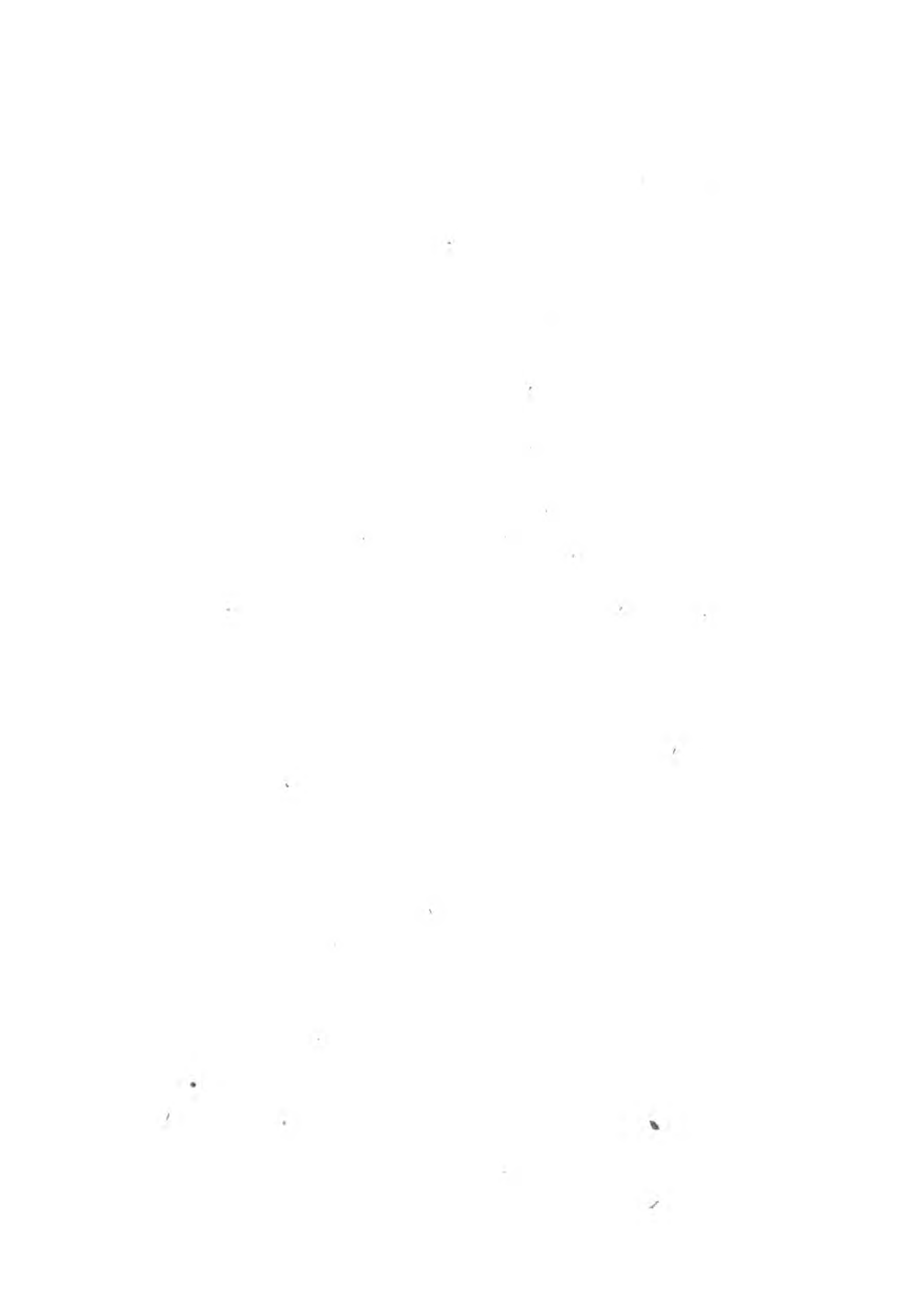
SYN. *Lichen alcicornis*. *Achar. Prod.* 184. *Lightf.* 872. *Relh.* 468. *Abbot.* 269.*L. foliaceus*. *With. v. 4.* 35. *Hull.* 302.*L. pyxidatus* *θ.* *Huds.* 552.*Bæomyces alcicornis*. *Achar. Meth.* 349.*Coralloides scyphiforme*, *foliis alcicorniformibus cartilaginosis*. *Dill. Musc.* 87. *t.* 14. *f.* 12.

FOUND frequently on mountainous barren heathy dry places, being in the greatest perfection in the moist weather of the winter or early spring. By drought it becomes dry, with its leaves curled inward, and its whole substance very brittle.

The stems form tufts, and are at first more or less cup-shaped, but they soon become branched or proliferous, and are clothed with leaves, at least till stripped by time. The leaves are flat, cartilaginous, variously lobed and cut, sometimes pinnatifid; green above, white beneath: the radical ones upright. Indeed the young plants at first are mere leaves, bearing small cups with tubercles all over their upper surface; but the perfect state is as above described, in which the imperfectly formed cups branch out into short stalks tipped with small round dark-brown tubercles, accompanied by small leaves.









## L I C H E N Bæomyces.

*Pink Mushroom Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust leprous, granulated, greenish white. Tubercles on footstalks, tumid, lobed, flesh-coloured.

SYN. Lichen Bæomyces. *Linn. Suppl.* 450. *Retz. Scand.* 273. *Sibth. Ox.* 321.

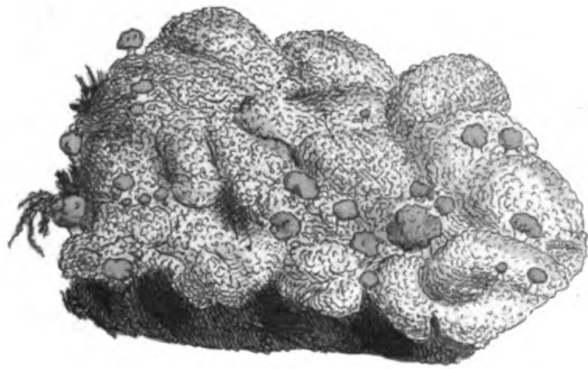
*L. ericetorum.* *Web. Gott.* 195.  $\alpha$  *Lightf. Scot.* 809. *With. Bot. Arr. v.* 3. 167.

*L. fungoides.* *Swartz. Ind. Occ.* 146. *Gmel. Syst. Nat.* 1357.

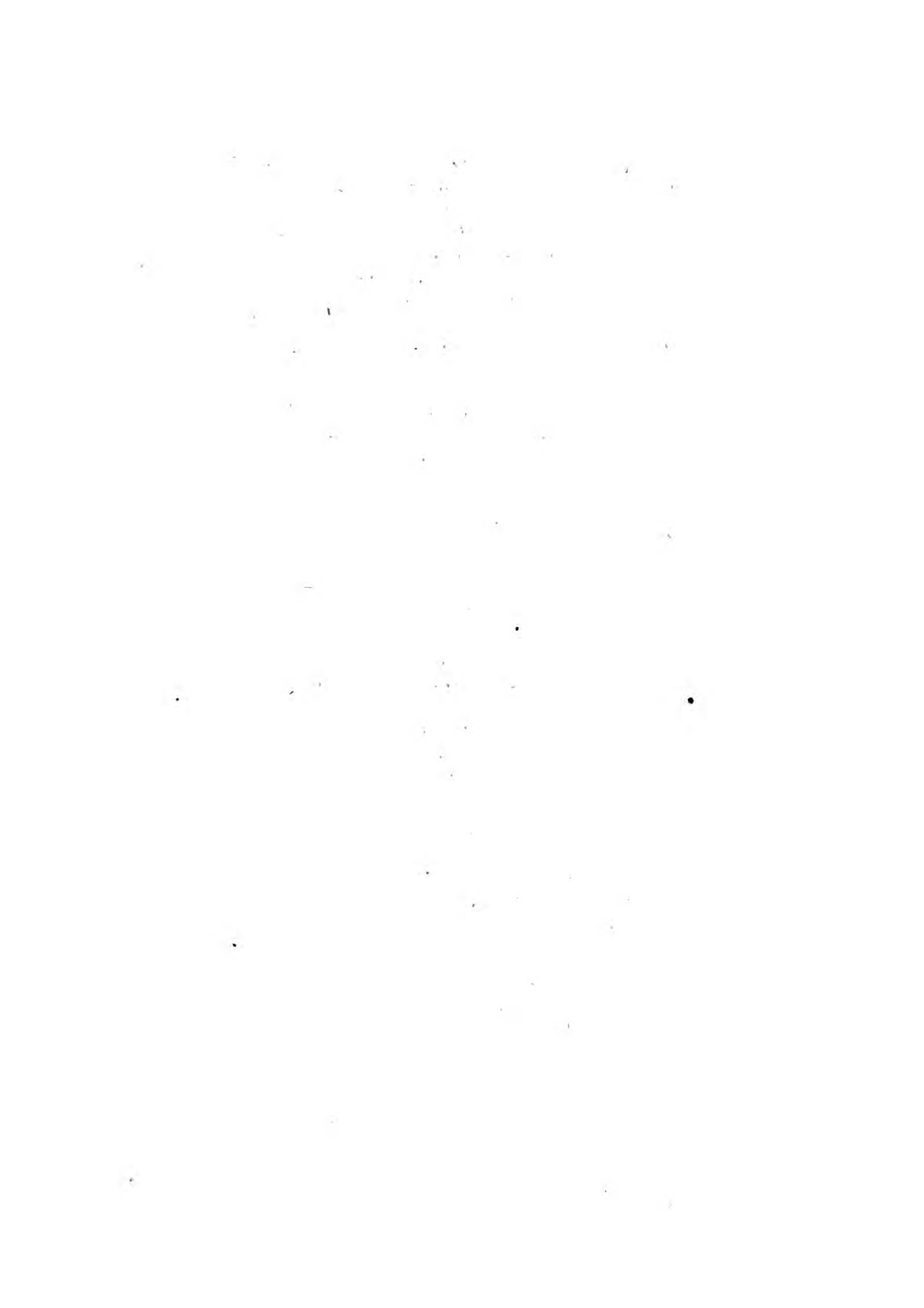
*Lichenoides fungiforme, crusta leprosa candida, capitulis & pediculis incarnatis.* *Raii Syn.* 70.

*Coralloides fungiforme carneum, basi leprosa.* *Dill. Musc.* 76. t. 14, f. 1.

THIS very elegant species is much more rare than the two last described. Dr. Smith found it on a mountainous heath in Montgomeryshire, and it is said to grow in Scotland and the north of England. Dillenius says, no one had found this Lichen in England except Dr. Richardson. Mr. Lightfoot was evidently acquainted with it; but whether any other British writer has seen it, or merely copied it from Dillenius, may be doubted. It is certainly distinct enough from the original *ericetorum* of Linnæus, see our *tab.* 372, indeed much more so, as Lightfoot observes, than from the *byssoides*, t. 373. The crusts of all these are nearly alike; green or greyish when young, and in moist weather; white when old and dry. Their surface granulated and tuberculated, not powdery. But the beautiful pink-coloured fructification of *L. Bæomyces* clearly distinguishes it, being so different in hue from that of the *byssoides*, and also much larger, more lobed, and variously formed. The colour of its tubercles is similar to the flat shields of the *ericetorum*, but more vivid, of a wax-like hue, not scarlet as in *L. cocciferus*. These tubercles are spongy within. Their stalks whitish, compressed and furrowed, so that they might easily be taken for a little species of *Helwella*, were it not for the crust out of which they grow, their firm and durable texture, and want of a fungous smell.







[ 573 ]  
LICHEN byssoides.  
Ecum Musivum Lichen.

CRYPTOGAMA Alga.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPERM. CHAR. Crust leprous, granulated, greenish white. Tubercles on foot-stalks, nearly globular, reddish brown.

SYN. Lichen byssoides. Linn. Mant. 133. Lightf. Scot. 309. Huds. Fl. An. 527. ? With. Bot. Arr. v. 3, 65. Raii. Cant. Suppl. 1. 22.

LICHEN. Huds. Fl. An. 527. With. Bot. Arr. v. 3, 71. Retz. Scand. 274.

L. fungiformis. Web. Gott. 196. Sibth. Ox. 322.

Lichenoides fungiforme terrestre, capitulis fuscis. Raii. Syn. 73.

Coalloides fungiforme saxatile, pallide fuscum. Dill. Musc. 78. t. 14. f. 4.

β ungi parvi globosi, ex ungue equino putrescente nati. Raii Syn. 13. t. 1. f. 4.

Coalloides fungiforme ex ungula equina livide rubescens. Dill. Musc. 78. t. 14. f. 5.

THE crust is much like that of the preceding, thinner when it grows on stones than when on the ground, which last is its most general situation. Our specimens came from Epping forest, Ironsey wood, and a moor near Glasgow. The tubercles are brown, more or less reddish, convex, and sometimes quite globular, elevated on whitish, cylindrical or compressed (sometimes furrowed), footstalks, so that they resemble a minute Agaric or Boletus. Sometimes 2 or more stand on the same footstalk.

We have been at some pains to investigate the synonyms of this species, and think there can be no doubt of those above quoted. There seems to be no difference between the *rufus* and *byssoides* of Mr. Hudson, except a greater or less convexity of the tubercles which is no essential distinction. The *rufus* stands right in his 1st edition, with the proper synonym of Dillenius; but in the 2d edition he has quoted *tab. 14. f. 2*, of the same author, which is one of the *Lichenes pyxidati*, as appears by its leafy base referring *fig. 4* and *5*, properly enough indeed, to the *L. byssoides* of Linnæus, which he thought it necessary to admit in this 2d edition. We are not without a suspicion that Hudson might consider as *L. byssoides* the *Mucor lichenoides* of Linnæus, which he has under that name in his 1st edition, but not in the 2d. If so, he should have quoted *Dill. f. 3*. This is a true Lichen, of which we hope one day to give a representation,









## LICHEN paschalis.

*Crisp Lichen.*CETROGAMIA *Age.*

GEN. CHAR. Mlie, scattered warts.

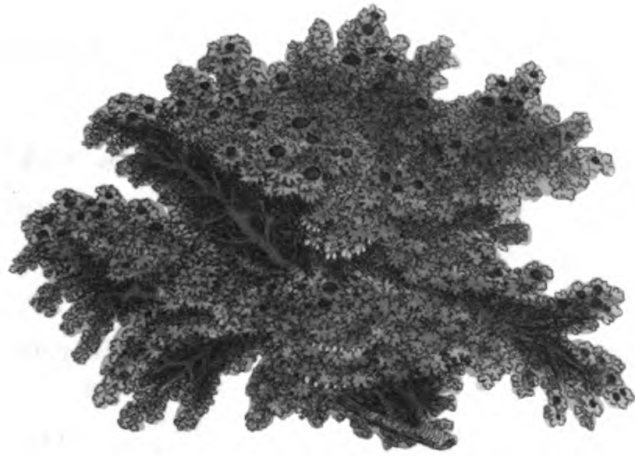
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Shrubby, solid, clothed with minute crustaceous leaves. Tubercles terminal, prominent.

SYN. Lichen paschalis. *Linn. Sp. Pl.* 1621. *Huds. Fl. An.* 558. *Wick. Bot. Arr.* v. 3. 216.Lichenoides non tubulosum cinereum ramosum, totum crustaceum. *Raii Syn.* 66.Coralloides crispum & botryforme Alpinum. *Dill. Musc.* 114. t. 17. f. 33.

THIS rare and elegant Lichen grows on the highest mountains of Wales, Westmoreland, and Scotland, chiefly on micaeous rocks. Dr. Smith in his *Tour*, vol. 2, 113, has shown this species to be the first beginning of vegetation on lava, and, from its being generally if not always found with us in mica, presumes it to be peculiarly attached to a volcanic soil. We have been favoured with a recent specimen from which this figure was taken, by the friendship of Mr. Edward Robson of Darlington.

The root and stems are very strong and woody, the latter growing, either erect or decumbent, in thick tufts; they are very much branched, naked at the base, roundish and solid, clothed in their upper part with small, lobed, crisped leaves, of a greenish grey when wet, whitish and very fragile when dry. The tubercles are terminal, either solitary or clustered, globose, solid, entire or lobed, on short foot-stalks, brown or olive-coloured. We have represented a separate branch magnified.



*Pl. Fung. P. 2. 1830. Plate by J. S. 2011*

J



## LICHEN confinis.

*Sea-weed Lichen.*

## CRYPTOGAMIA Algæ.

**GEN. CHAR.** Male, scattered warts.

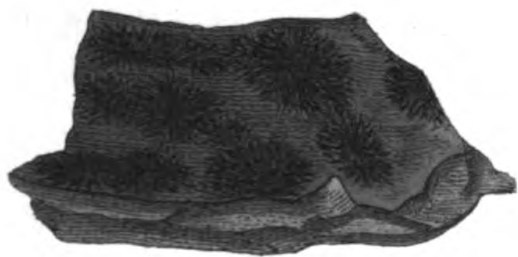
Female, smooth shields or tubercles, in which the seeds are imbedded.

**SPEC. CHAR.** Shrubby, solid, erect, tufted, branched, olive-black; branches nearly cylindrical, swelling upwards, pitted at the top.**SYN.** Lichen confinis. *Achar. Prod.* 208. *Fl. Dan.* t. 879. f. 2.Stereocaulon? confine. *Achar. Meth.* 317.*Fucus pygmæus*  $\beta$ . *Turn. Hist. Fucor.* v. 4. 17.

**SIR THOMAS GAGE**, Bart., to whom we are obliged for this remarkable plant, informs us he first received it from Miss Hutchins, but afterwards gathered the same on the inundated rocks of the Kenmare river, Ireland.

It is one of those ambiguous cryptogamic productions whose genus, if not its natural order, remains in uncertainty. Mr. Turner, "that exquisite cryptogamist," as he has been happily called, ranks this production as a variety of *Fucus pygmæus*, t. 1332. We never dissent from our friend, on any subject to which he has given his attention, without great scruples, nor are we led by superior confidence in Acharius to do so here; but, on a careful investigation, we clearly perceive more of the hue, texture, and flavour of a *Lichen*, than of a *Fucus*, in the present minute plant, and the tumid pale extremities of some branches indicate a near approach to *Collema*, to which genus it might perhaps without violence be referred; whereas every thing in the texture and habit of the *pygmæus*, points out a *Fucus*.

2575.



*This was published by J. G. Smith, London.*

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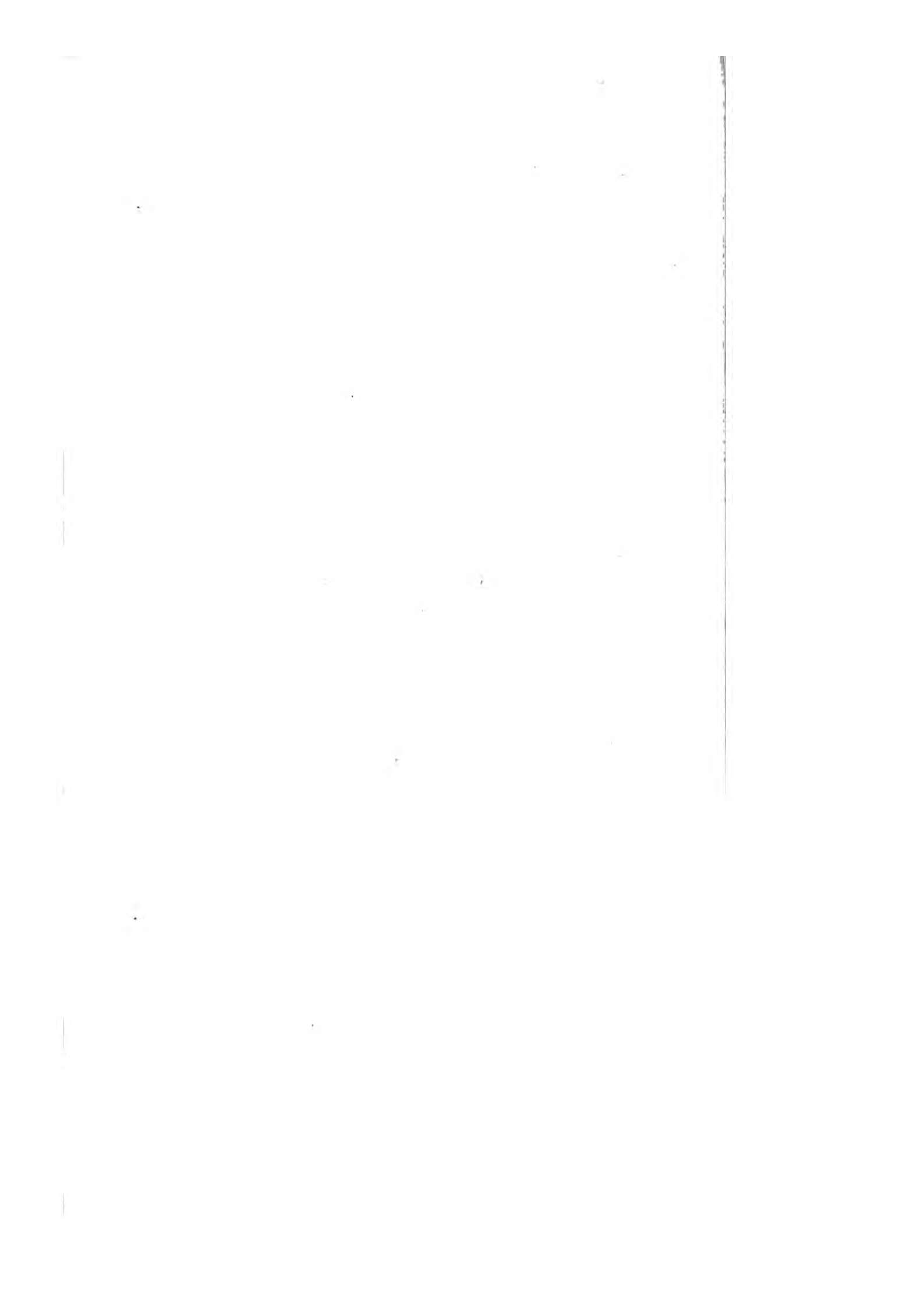
3

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LICHEN fuscellus.  
*Little Grey Wart Lichen.*

---

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust thick, smooth, cracked, grey; black within. Tubercles minute, flat, not prominent, black.

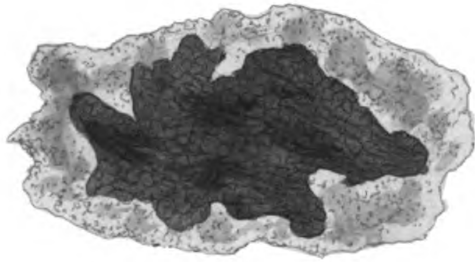
SYN. Lichen fuscellus. *Turn. Tr. of Linn. Soc. v. 7. 90. t. 8. f. 2.*

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SENT by Mr. James Turner from Gorlestone church, where it was originally discovered by his brother, whose description may be found in the 7th volume of the Linnean Society's Transactions.

The crust is irregular and indeterminate, a line or more in thickness, growing on calcareous stones, to whose inequalities it conforms, but is otherwise level and smooth, of a pale grey externally, black, or variegated with green, within. It is all over deeply cracked into angular portions of various sizes, between which the black colour is conspicuous, at least in a dry state. A black tubercle of a very small size, flat, and level with the surface, commonly occupies the centre of each portion of the crust. No perforation is to be discovered. When young the tubercles are depressed and of a pale brown, exactly as in the *Endocarpon* tribe, to which we should rather refer this plant than to *Verrucaria*. If rubbed when moist the crust remains green, and the surface when cut is permanently of that colour.

1500



*Sept. 1. 1805 Published by J. Sowerby, London.*

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LICHEN *Smaragdulus*.  
*Little Emerald Lichen*.

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CRYPTOGAMIA *Algæ*.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles in which the seeds are imbedded.

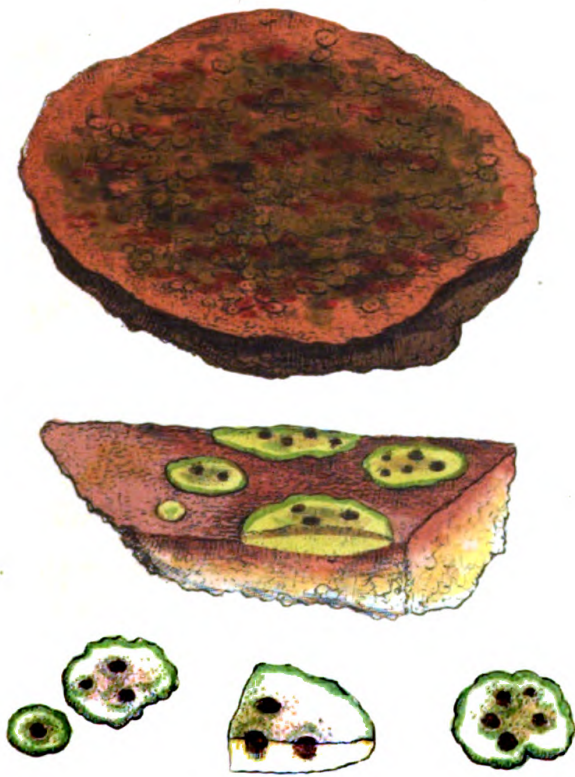
SPEC. CHAR. Frond simple, depressed, cartilaginous, peltate, roundish, smooth, greenish-yellow, with one root. Tubercles in immersed brown dots.

SYN. *Endocarpon smaragdulum*. *Ach. Meth. Suppl.* 29.

---

LONG ago sent us from the county of Durham by our worthy friend the Rev. Mr. Harriman, from whom we learn that having sent it to Professor Acharius, he has lately been informed of the above synonym, and that Mr. Wahlenberg had found the same in Norway.

This minute plant is of that tribe of Lichens called by recent botanists *Endocarpon*, which probably will be established in future as a genus. We have described one of the family *v. 9. t. 595*, which is now *Endocarpon Hedwigii* of Acharius. The present is very distinct, being even more minute than that, closely pressed to the exposed sand-stone on which it grows, and fixed by a central root. The frond is cartilaginous, roundish, sometimes obscurely crenate, smooth, of a yellowish green, occupied by numerous little brown dots, each of which contains an immersed concave tubercle or shield.



*Oct. 1. 1806 Published by J. Sowerby, London.*

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[ 1776 ]

## LICHEN sinopicus.

*Sinoper Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust rounded, tumid, smooth, tessellated, of a rusty red. Shields minute, sunk, black, depressed in the centre, with an imperfect crenate border of the substance of the crust.

SYN. *Endocarpon sinopicum.* *Ach. Meth. Suppl.* 30.

FOR this new Lichen we are obliged to Mr. Turner. That gentleman received it from the Rev. Hugh Davies, by whom it was gathered in Anglesea, growing on a piece of yellowish hone schist.

Though small, it is a conspicuous as well as elegant species, forming little rounded tumid smooth patches, a line or more in diameter, and often associated into wider tessellated masses, of a rusty red hue varying in brightness. A few strongly depressed minute dots are situated in each portion of the crust, becoming at length small black shields, hollow in the middle, with a spurious sort of crenate border of the substance and colour of the crust.

Our specimens agree with those communicated by Mr. Wahlenberg, the original discoverer of this species in Lapland.

The specific name alludes to a red kind of stone, called *Sinoper*, which this Lichen resembles in colour.—Mr. Turner suggests that *Urceolaria diamarta* of Acharius is probably no other than this plant.

1776



*Sup. tab. 7. Published by Jo<sup>h</sup> Sowerby London.*

v



[ 2013 ]

L I C H E N tephroides.  
*Ash-coloured Dot Lichen.*

---

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Frond crustaceous, depressed, glaucous-ashcoloured, smooth; the circumference wavy and somewhat lobed. Tubercles in immersed coal-black dots, with prominent margins.

SYN. Lichen tephroides. *Ach. Prod.* 18.

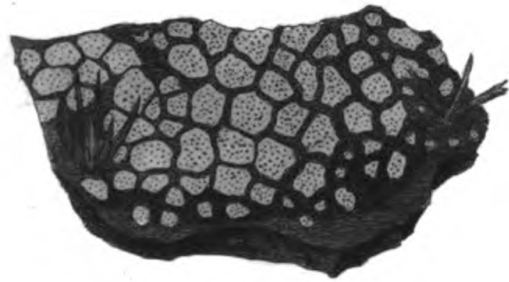
Endocarpon tephroides. *Ach. Meth.* 129.

---

ONE of the new acquisitions of our friends Messrs Borrer and Hooker in their Scottish tour of last summer. It was found on the ground at Burgh Head, in the island of Stronsa, one of the Orkneys.

The fronds grow many together on the black turfy soil to which they are closely attached, assuming a tessellated appearance. Each is a quarter of an inch, or more, in breadth, of a glaucous pale ashcolour throughout; the margin wavy, rounded or lobed; the surface smooth and even, besprinkled with numerous very black dots, each of which lodges a minute black immersed concave tubercle, as in other species of *Endocarpon*.

The learned Professor Acharius originally made this one of his *Verrucariæ*, and it confirms an idea we have long had, that *Verrucaria* and *Endocarpon* are by their fructification one genus; nor is the habit of their most extreme species so different as that of the various Acharian *Parmeliæ*.



May 1869 Published by J. Sowerby London.







## LICHEN trapeziformis.

*Quadrangular Lichen.*

---

*CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Frond simple, flat, bluntly angular, thickish, smooth, of a dull glaucous green, with many roots. Tubercles in immersed black dots.

SYN. Lichen trapeziformis. *Dicks. Crypt. fasc. 2. 22.*  
*With. ed. 2. v. 3. 201. Hull. Brit. Fl. 296.*

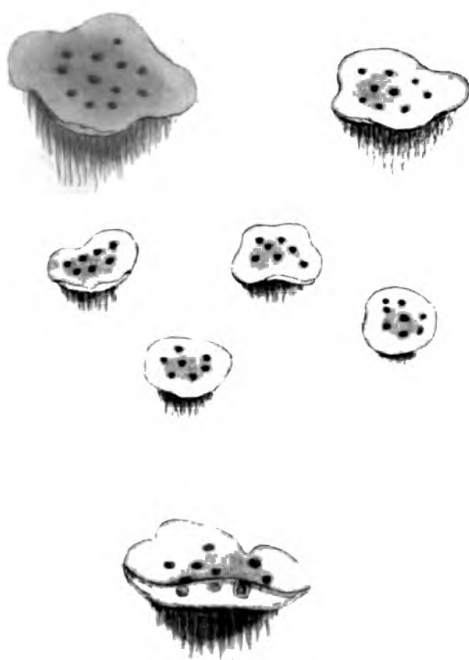
L. Endocarpon. *With. v. 4. 52.*

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**F**OUND by Mr. Dickson on barren heaths near Croydon, and by Mr. D. Turner in Norfolk. It is scarcely discernible but in wet weather.

The frond is hardly so broad as a shield of the common *L. parietinus*, and grows, attached by numerous long downy roots, quite flat upon the earth. Its form is irregularly quadrangular, with obsolete blunt lobes; its substance rather fleshy; its colour a dull glaucous green. The centre is sprinkled with minute black dots, under each of which, immersed in the substance of the frond, is a small tubercle, at length protruded upwards. It seems to be an annual plant.

On account of the strict affinity in the fructification of this and the Lichens in our *t.* 593 and 594, we have placed them near each other. It is probable they might form a genus together, which should be called *Endocarpon*, the generic name of this species in the celebrated Hedwig's great work. For this reason we have rather preferred another specific appellation.



*Faint, illegible text, possibly a caption or reference.*





[ 1698 ]

## LICHEN lachneus.

*Woolly-rooted Angular Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

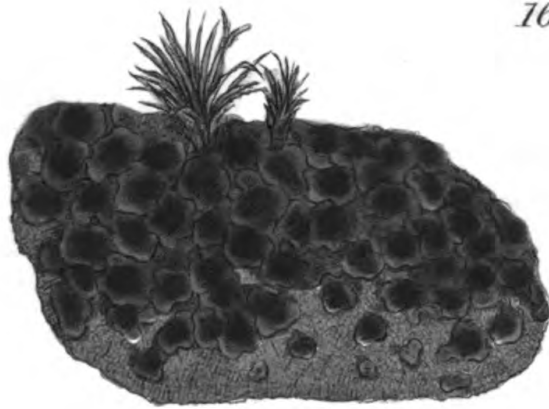
SPEC. CHAR. Fronds simple, crowded and somewhat imbricated, thickish, rounded, waved and lobed; olive green and smooth above; black and spongy beneath. Tubercles in immersed black dots.

SYN. Lichen lachneus. *Ach. Prod.* 140.Endocarpon lachneum. *Ach. Meth.* 127.

COMMON on the Sussex downs, as well as on the rocks at Chedder and Bristol hot-wells, according to Mr. W. Borrer, from whom we received specimens which agree with what Dr. Acharius has sent. I gathered this species plentifully at Bristol in 1799, but was not satisfied of its being distinct from *L. trapeziformis*, v. 9. t. 595. It differs however from that species in having more oblong and dilated fronds, crowding, and lying over, each other, more irregularly sinuated and waved, and of a dull olive hue, which turns yellowish and pale with age. Their base is thick and spongy, very firmly rooted to the clods of earth from whence the plant derives nourishment. A few scattered dots are each the station of a little immersed tubercle or shield.

Whether Dillenius's *tab.* 30. *f.* 135. be intended for this plant, is a botanical enigma far beyond our power to solve. It has always been taken for Mr. Dickson's *squamatus*, a small variety of his and our *luridus*, v. 19. t. 1329. Mr. Turner found no specimen of this *f.* 135. in the Dillenian herbarium.

1698



*Jan. 1867. Published by J. & S. Sons & Co. London.*





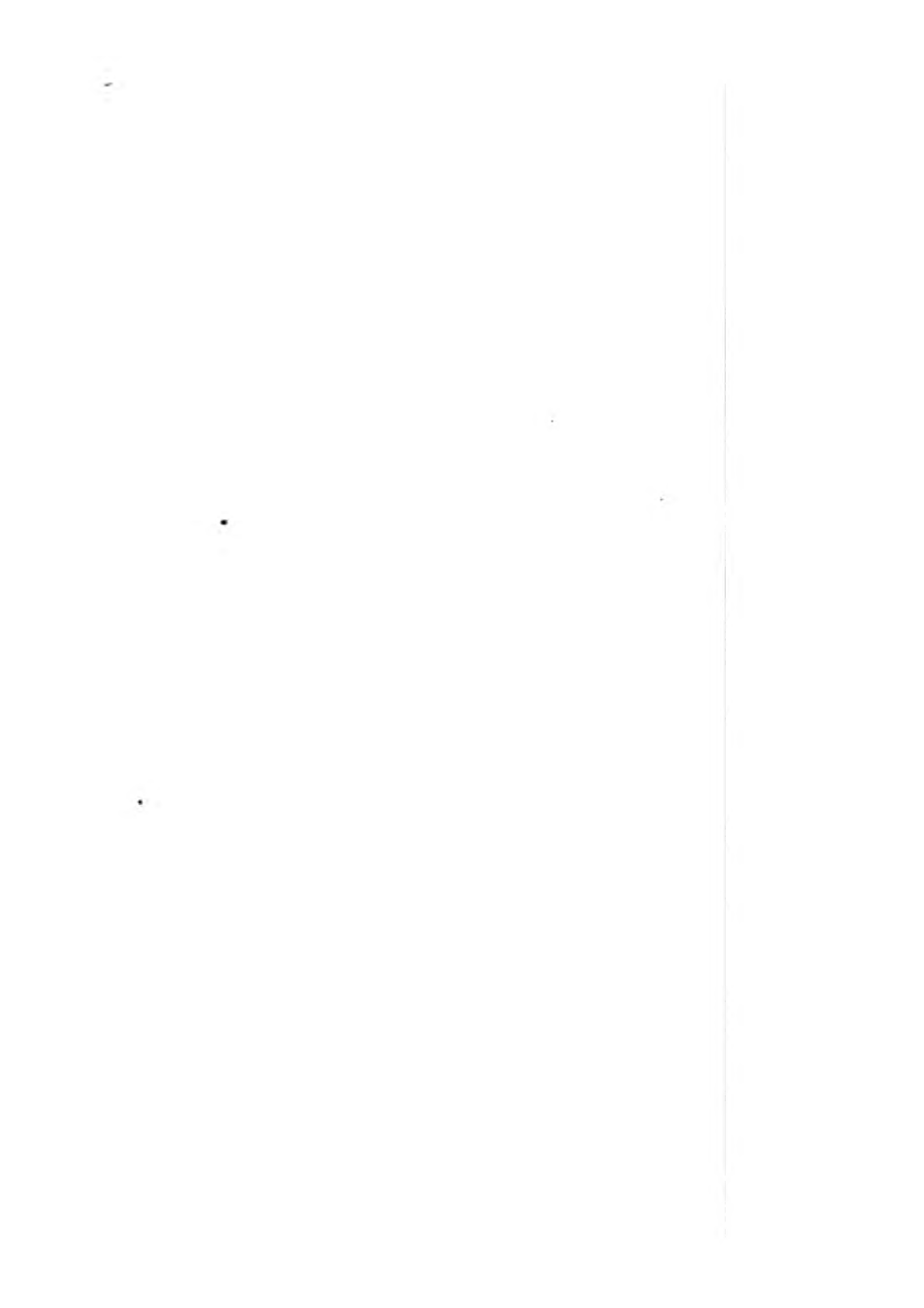




1866



Marshall's Published by J. S. Sonnerby London.





LICHEN palidus.  
*Palidus* Lichen.

LICHEN palidus.

*Form.* Mass. scattered warts.

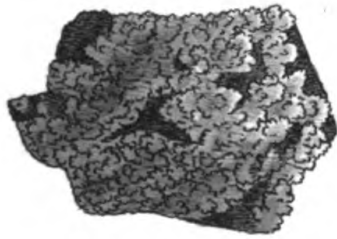
*Frondes.* smooth shields or tubercles, in which the  
 seeds are immersed.

*Spore.* Frond leafy, somewhat imbricated, lobed,  
 marked, pale greenish grey; slightly spongy and  
 black beneath, the outermost lobes naked and  
 pale on the under side. Tubercles immersed,  
 black.

*Spore.* *Entocarpium pallidum.* *Act. Lichenogr. Univ.*  
 1. 2. 512.

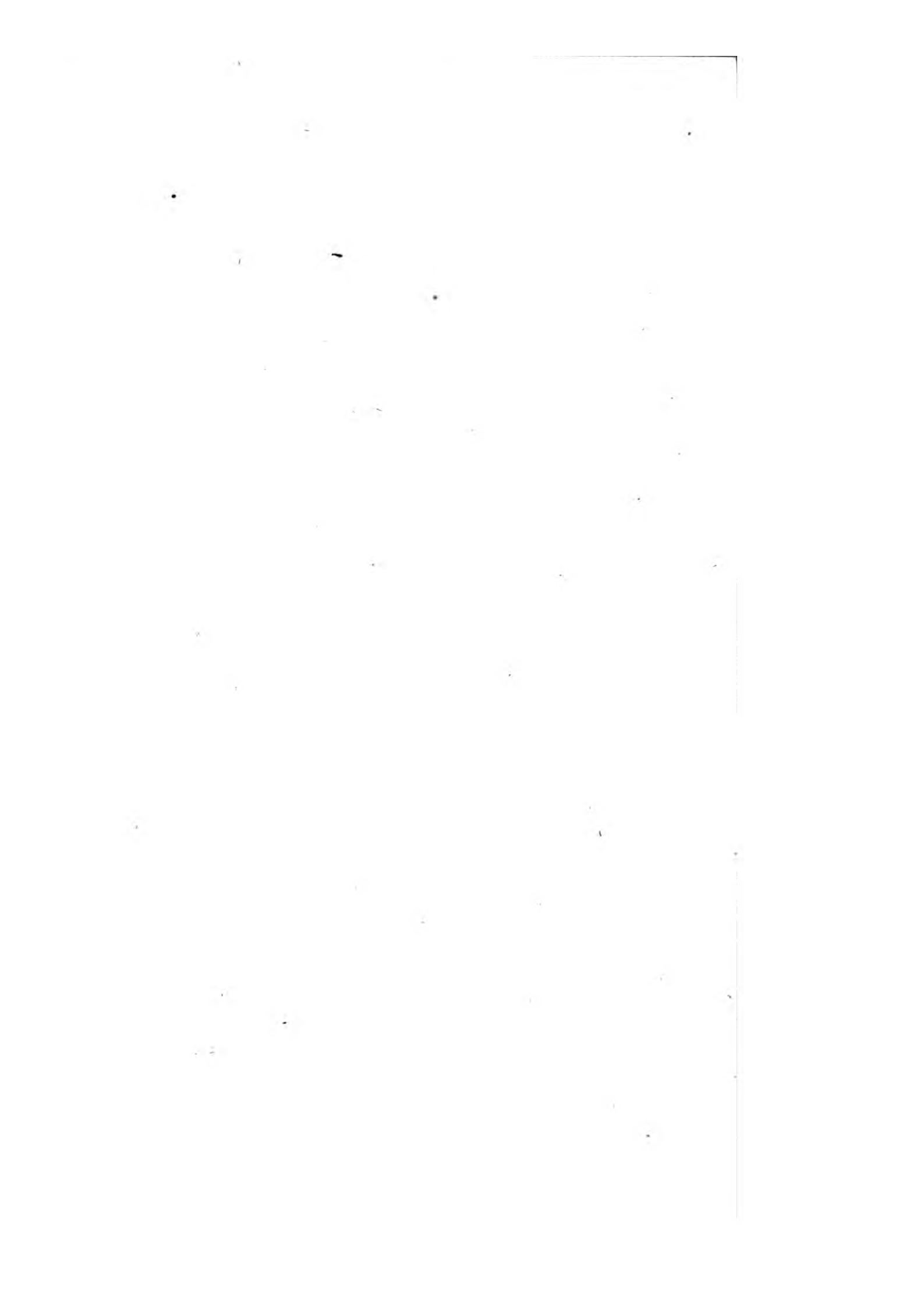
**R**ICHARDSON found this Lichen by Sir Thomas Gage, Bart. It grows  
 on moss covered with a thin coat of earth, and composes rather  
 broad, irregular, but not much interrupted, patches of small leafy  
 fronds, whose small, crenate, wavy lobes lie over each  
 other, spreading gradually from the centre. Their under side is  
 at first smooth and whitish, but the black spongy substance, by  
 which the middle of the frond is attached underneath, gradually  
 spreads, though Dr. Acharius observes it to be free from fibrous  
 radices. That author appears to have been but imperfectly  
 acquainted with the tubercles. We find them black, nearly  
 globular, though a little depressed at the top, which is nearly on  
 a level with the surface of the frond into whose substance they are  
 sunk. The colour of the frond itself is a light greenish grey, prone  
 to assume a tawny hue, like other neighbouring species.

2541.



*Mosses, published by J. Sowerby London*







[ 2012 ]

LICHEN leptophyllus.

*Small-leaved Dot Lichen.*

---

CRYPTOGAMIA Algae.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Frond leafy, small, somewhat cartilaginous, peltate, blackish brown, smooth on both sides, often black beneath; the circumference rounded, lobed and wavy. Tubercles in minute immersed dots.

SYN. Lichen leptophyllus. *Ach. Prod.* 141.

Endocarpon leptophyllum. *Ach. Meth.* 127.

---

GATHERED by Mr. Hooker and Mr. Borrer on the hill of Kinnoul near Perth, a famous spot for beautiful agate pebbles. The smaller and blacker specimens, *f.* 2, grew on rocks by the shore of Loch Lomond.

This little plant is much allied to *L. miniatus*, *t.* 593, both belonging to the very natural genus *Endocarpon*, which will be adopted when we undertake the arrangement of the whole tribe. It grows in patches, each plant is peltated or umbilicated, fixed by a strong central root, and from a quarter to half an inch broad, leathery or somewhat cartilaginous, smooth on both sides, rounded and bluntly lobed, when young and healthy of a blackish or greenish brown all over, the under side being, as Mr. Borrer remarks, black only when exposed to light. By great exposure the whole turns black. The tubercles are minute, concave, scattered about the centre of the upper side, in which they are so completely immersed as to have scarcely any projecting border round the orifices of each.

2012



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2



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*Myr. 1.1869 Published by J. Sowerby London.*

✓



LICHEN *miniatus*.*Grey cloudy Lichen.*CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

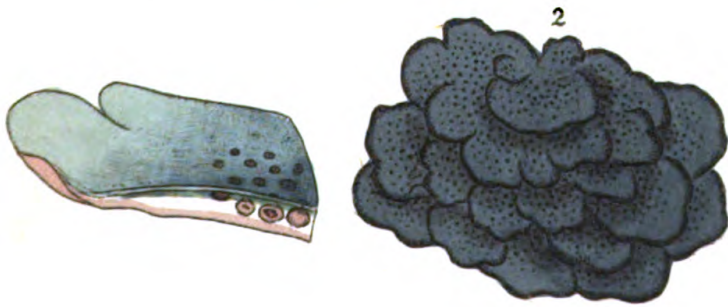
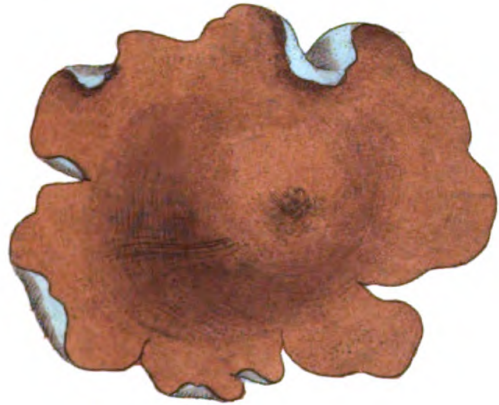
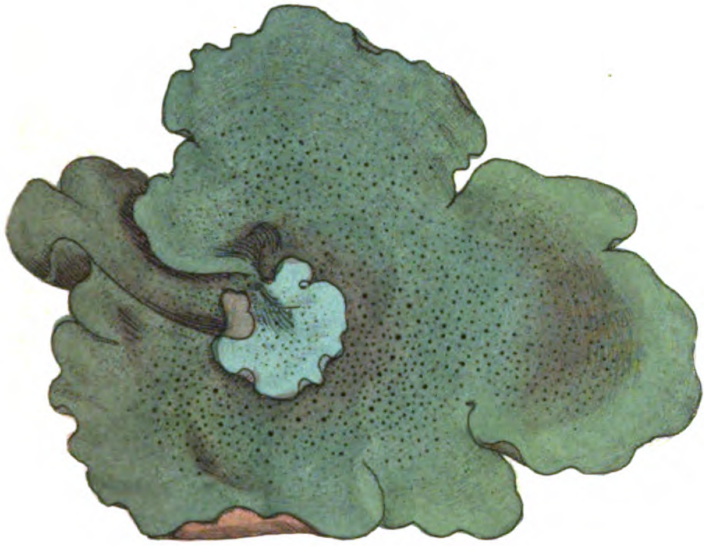
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Umbilicated, lobed, bulging, smooth on both sides, tawny beneath. Tubercles in numerous minute immersed dots.

SYN. *Lichen miniatus*. *Linn. Sp. Pl.* 1617. *Huds.* 549. *With.* v. 4. 66.*Lichenoides coriaceum nebulosum cinereum punctatum, subtus fulvum.* *Dill. Musc.* 223. t. 30. f. 127. B. compared at Oxford.β *Lichen amphibius.* *With.* v. 4. 66.

COMMUNICATED by several of our friends from the North. It grows on shady, generally perpendicular, rocks, in the highlands and lowlands of Scotland, and in all the mountainous counties of England. It is plentiful under hanging rocks above Saxton's bath, Matlock, and found at all seasons.

Its general form is umbilicated, or fixed by a strong central root, being at first of one simple roundly-lobed leaf, smooth on both sides, pale grey above, of a dull green when wet, underneath of a reddish or tawny brown, but scarcely red enough to justify the name *miniatus*; hence the plant is often mistaken. This leaf soon becomes more compound. When old, the upper surface is copiously sprinkled with minute reddish dots, which soon become projecting points, and are undoubtedly the female fructification. On dissection, they are found to be immersed in the frond. We have specimens from Sweden, in which they seem here and there protruded into black warty excrescences, but they are still widely different from the proper concentric-lined tubercles of most umbilicated Lichens, see our t. 522, so that in a more natural arrangement by the fructification they would hardly come together. Indeed *L. miniatus* varies much from the real umbilicated form. Wherever water trickles down the rock it becomes complicated, lobed, and imbricated, as in *fig. 2.* sent by Mr. Salt from Yorkshire; sometimes inflated, and variously clustered together; sometimes cylindrical with erect edges. I have so often watched its growth, as to have no doubt of these being mere varieties.



*Handwritten text, possibly a species name or description.*







## LICHEN aquaticus.

*Clustered water Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

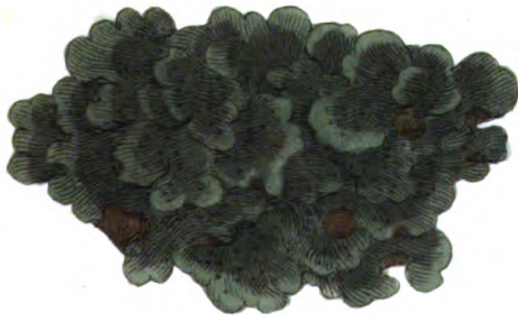
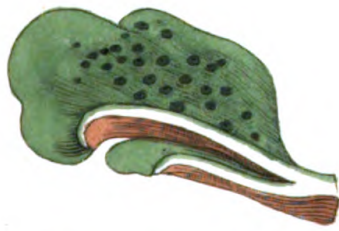
SPEC. CHAR. Obsoletely umbilicated, aggregate, lobed, creeping, smooth on both sides, greenish above. Tubercles in immersed dots.

SYN. Lichen aquaticus (by error of the press fluviatilis).

*With. v. 4. 67. Weis Crypt. 77.**L. fluviatilis. Web. Gott. 265. t. 4.**Platisma aquaticum. Hoffm. Pl. Lich. t. 45.*

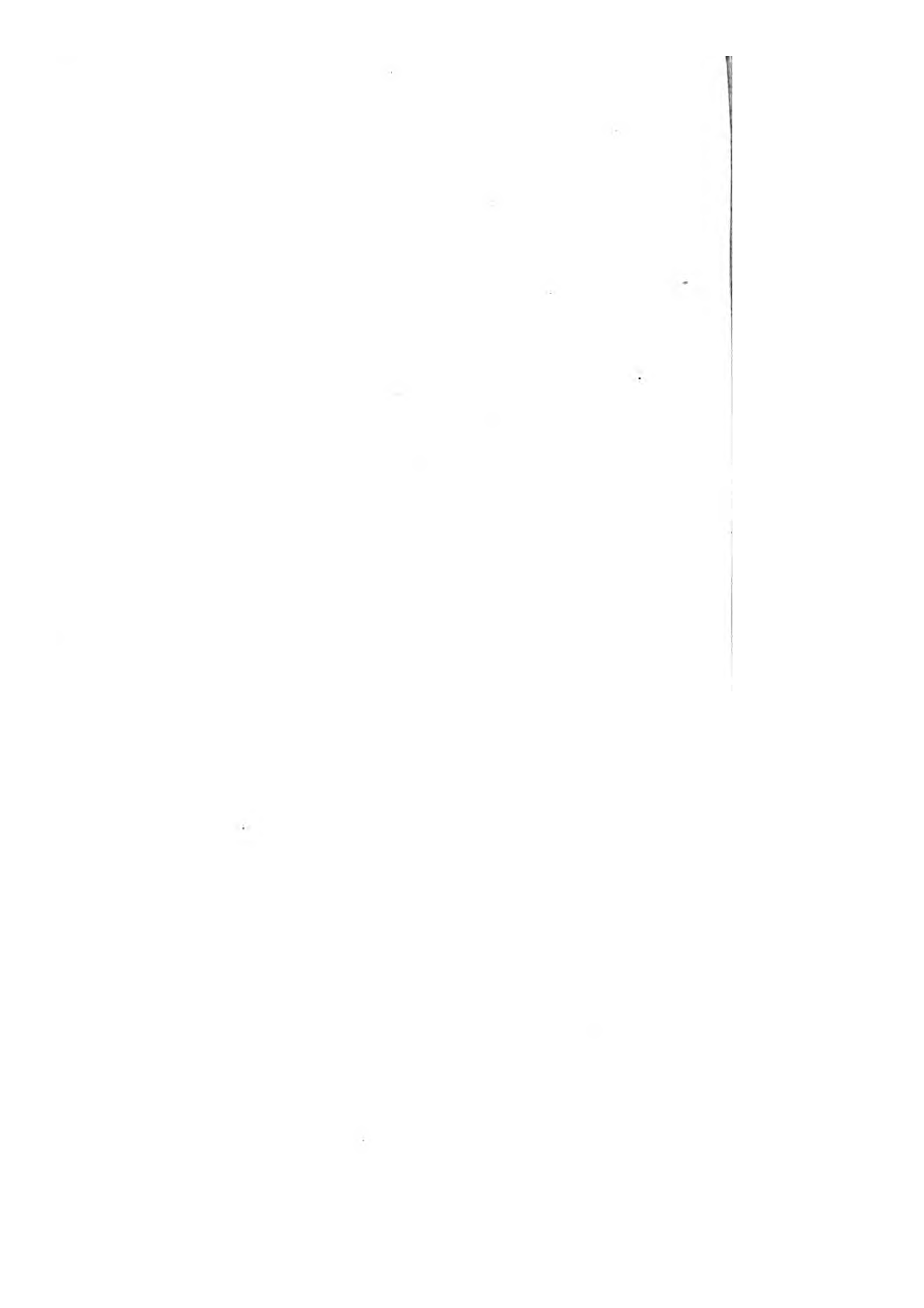
**G**ATHERED in the bed of an alpine river at Hafod, Cardiganhire. It grows on large stones, or on small pebbles under water, in very large patches, consisting of numerous clustered leaves, which even at first are hardly to be called umbilicated, though about as much so as in *L. polyphyllus* of Linnæus. These leaves or fronds are roundly lobed, tumid, smooth on both sides, veinless, olive-green above, at least when moist, reddish-brown beneath. The tubercles are much like those of *L. miniatus*, but rather more dilated, and surrounded by a tumid margin from the substance of the frond. Hence Professor Hoffmann calls them *scutellæ*. It is remarkable that the fronds take root here and there by small solitary protuberances, to each of which a little pebble is commonly attached. This serves merely to fix the plant, not to nourish it, and is what is expressed in Dillenius's *t. 30, f. 127 A*; hence I conceive that figure to belong to this species rather than to *miniatus*, and his *f. 128* to be the variety of *miniatus*, though I cannot speak positively, not having examined his collection at Oxford with this particular view.

It is after all very doubtful whether *L. aquaticus* be any thing more than a variety of *miniatus* occasioned by its growing altogether in the water, and we rather publish it as distinct from a deference to the great authority of Hoffmann, than from a thorough conviction. Our *593 f. 2* appears to be the intermediate state between the two extremes,



*Nov. 1791. Discovered by J. Sowerby London.*





## LICHEN polyphyllus.

*Many-leaved Smooth Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Umbilicated, membranous, many-lobed, olive-black; naked and very smooth on both sides. Tubercles convex, irregularly plaited.

SYN. Lichen polyphyllus. *Linn. Sp. Pl.* 1618. *Huds.* 551. *Willd. t.* 4. 65. *Hull.* 302. *Lightf.* 863. *Ehrh. Crypt.* 99.L. glaber. *Ach. Prod.* 144.Umbilicaria polyphylla. *Schrad. Spicil.* 102. *Hoffm. Fl. Lich. t.* 59. *f.* 2.Gyrophora glabra. *Ach. Meth.* 101.Lichenoides tenuis pallium, foliis utrinque glabris. *Dill. Musc. 225. t.* 30. *f.* 129.

No specimens of this Lichen in fructification had ever been found in Britain, till it was observed in that state near Newcastle by Mr. Thornhill, and obligingly communicated to us, in great perfection, by Mr. Winch. We cannot but expect much from a place capable of producing so great a curiosity. The plant itself occurs chiefly on the granite mountains of Scotland and Wales, and is not common.

The root is strong and central. Frond many-lobed, often so deep as to seem formed of many leaves, membranous, rigid, quite smooth all over, black beneath, somewhat lighter, with an olive tint, above. Tubercles nearly sessile, convex, black (as in all this tribe), their surface formed of angular plates, or of several separate rolls, or rather folds, not one regular concentric roll.

We lament the necessity of retaining the old Linnæan name of this species, which indeed seems to us a very good one, because we are sorry not to follow in every thing so great a boomer and so worthy a man as Dr. Acharius; but we rely on his character for the present, and posterity must decide between us in the end.

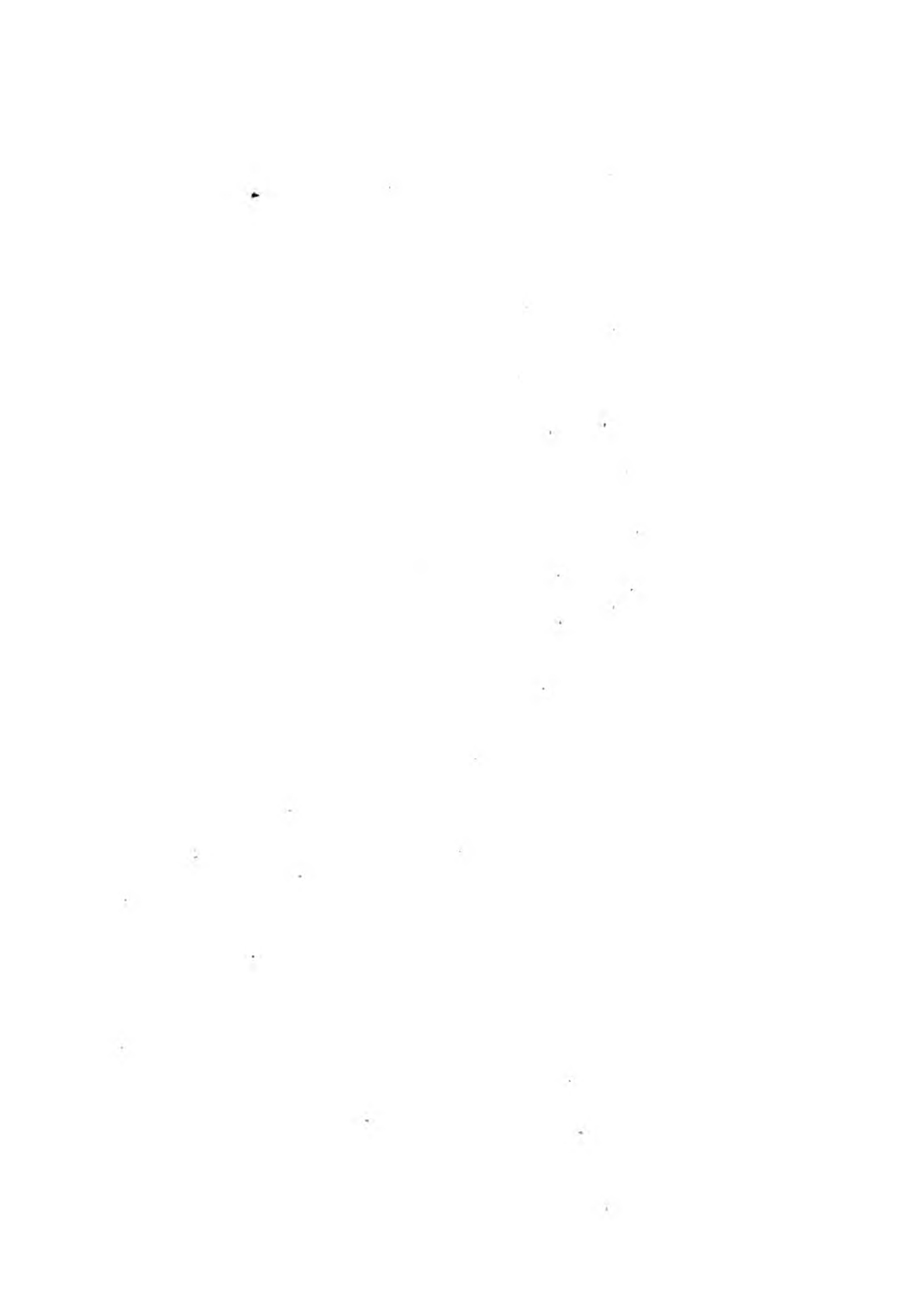
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## GYROPHORA deusta.

*Burnt Gyrophora.*

## CRYPTOGAMIA Algæ.

**GEN. CHAR.** *Tubercles* sessile on a peltate frond, black, with a plaited contorted disk, in whose clefts the seeds are lodged.

**SPEC. CHAR.** Frond membranous, roundly lobed, brown; upper side more or less granulated; under cellular and reticulated, smooth and naked. Tubercles with circular plaits, at length convex.

**SYN.** *Gyrophora deusta.* *Ach. Meth.* 102.

*Lichen deustus.* *Linn. Sp. Pl.* 1618. *Fl. Suec.* 419.  
*Ach. Prod.* 145. *With.* 63 ?

*L. flocculosus.* *Wulf. in Jacq. Coll. v. 3.* 98. *t. 1.*  
*f. 3.*

*L. pustulati varietas singularis.* *Linn. Fl. Suec.* 420.  
*It. W. Goth.* 217 !

*Umbilicaria flocculosa.* *Hoffm. Pl. Lich. t. 68.*  
*f. 1—4.*

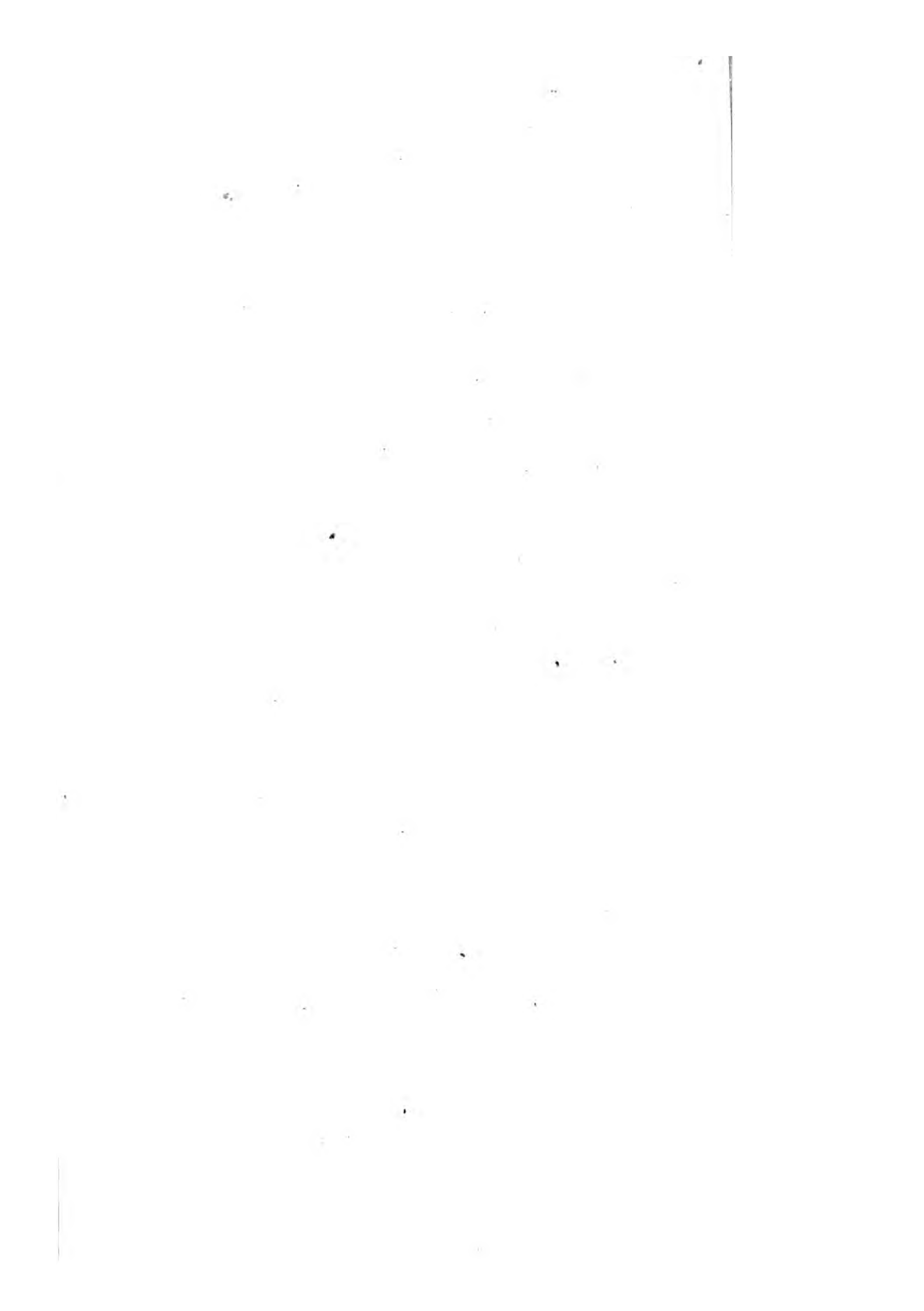
**FOUND** on rocks in the Highlands of Scotland, many years ago, by Mr. Dickson. Our specimen was gathered on Ben Cruachan by Mr. W. Borrer; that in fructification came from Dr. Swartz. The plant is very common in Sweden, and appears, by an authentic specimen, to be what Linnæus intended. When it grows on perpendicular moist rocks, it most frequently becomes covered on the upper side with minute scales or leaflets, as Linnæus found it in West Gothland; but these are only dilatations of the granulations which it usually bears. The under surface is naked and smooth, but not even, being more or less distinctly marked with veiny reticulations, with pits between. Both sides are of a lurid blackish brown, somewhat rusty, but not olive. The frond is often a little compound; its circumference roundly lobed or crenate. Tubercles quite sessile, very black and opaque, a little convex, with several convolutions of the disk, partly concentric, partly folded, but there is usually a regular circular outline, or rim.

2483



*Prepared by J. S. Hensley, London*

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GYROPHORA *erosa*.*Corroded Gyrophora.*CRYPTOGAMIA *Algæ.*

GEN. CHAR. *Tubercles* sessile on a peltate frond, black, with a plaited contorted disk, in whose clefts the *seeds* are lodged.

SPEC. CHAR. Frond membranous, rugged, blueish-black; its circumference perforated, reticulated and jagged; under side brownish-grey, somewhat granulated and fibrous. Tubercles rather convex.

SYN. *Gyrophora erosa*. *Ach. Meth.* 103.

*Lichen erosus*. *Ach. Prod.* 145. *Weber. Goett.* 259.

*L. corrosus*. *Ehrh. Crypt.* 306.

*L. torrefactus*. *Lightf.* 862. *With. v. 4.* 62. *Hull.* 301. *Winch. Guide. v. 2.* 43.

*L. polyrrhizos*. *Huds.* 550.

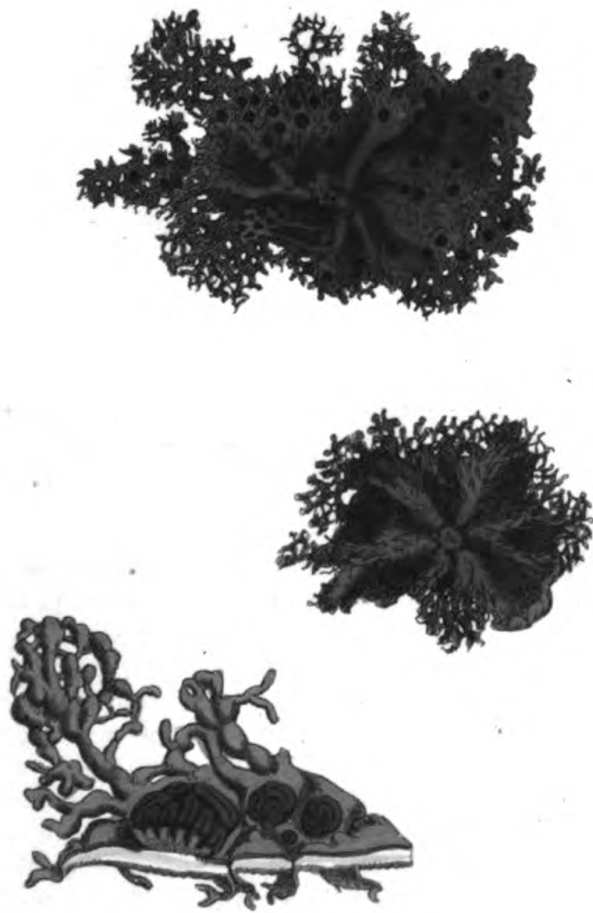
*Lichenoides rugosum durum pullum, peltis atris verrucosis*. *Dill. Musc.* 220. *t. 30. f.* 118.

*Umbilicaria erosa*. *Hoffm. Pl. Lich. v. 3. t.* 70.

FREQUENT on the highest granite hills of Wales and Scotland, as well as in the mountainous parts of Durham and Yorkshire. Accompanying the vitrified forts in the Highlands, it looks as if it had, like them, undergone the action of fire, which seems to have suggested Lightfoot's specific name. This, though certain and expressive, we resign to one still more so, of nearly the same date, which has been more generally adopted. To such reasons a trifling difference in priority ought to give way. We have long and repeatedly hinted the propriety of establishing these umbilicated Lichens as a genus, and in so doing we, at the earnest desire of our learned friend Acharius, adopt his name *Gyrophora*, which expresses the generic character, in preference to Hoffmann's older one *Umbilicaria*.—To this genus belong our *t.* 522, 931, 1282 and 1283.

The present species differs from all the rest in the curious lace-work of its circumference, and in the peculiar compressed fibres, like shavings, of the under side. The upper side is of an inky black, lobed, jagged and curled, bearing frequent convex coal-black tubercles, which are very much plaited or compounded.

2068



*Rep. 13209 published by J. Sowerby London.*

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[ 1283 ]

## LICHEN pustulatus.

*Blistered Lichen.*

## CRYPTOGAMIA Algæ.

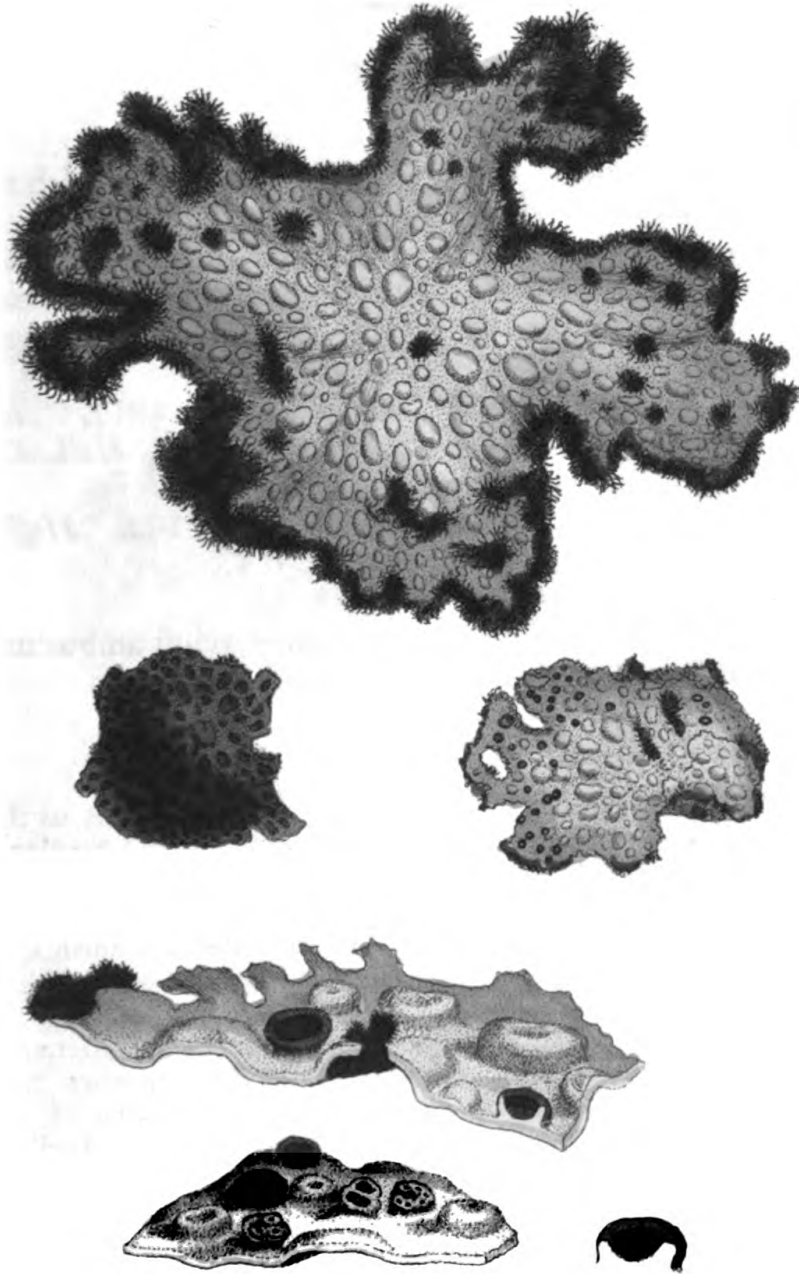
**GEN. CHAR.** Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

**SPEC. CHAR.** Umbilicated, membranous, lobed, blistered and warty, greenish ash-coloured; beneath dark-olive, deeply pitted. Shields flat, at length plaited.**SYN.** Lichen pustulatus. *Linn. Sp. Pl.* 1617. *Ach. Prod.* 146. *Huds.* 549. *With. v.* 4. 64. *Hull.* 302. *Lightf.* 858. *Ehrh. Crypt.* 79.*Umbilicaria pustulata.* *Schrader. Spicil.* 102. *Hoffm. Pl. Lich. t.* 28. *f.* 1, 2. *t.* 29. *f.* 4.*Lecidea pustulata.* *Ach. Meth.* 85.*Lichenoides pustulatum cinereum et veluti ambustum.* *Dill. Musc.* 226. *t.* 30. *f.* 131.

**V**ARIOUS of our often-mentioned friends have sent us this beautiful and remarkable Lichen from Wales and Scotland, where, as well as in the north of England, it grows on granite rocks; but the fructification is so extremely rare, that, to shew it more perfectly, we have at *fig. 1.* delineated a Spanish specimen sent by Don Simon de Roxas Clemente, an excellent naturalist, now engaged in a hazardous journey among the Moors. At *fig. 2.* is a Scotch specimen found by Mr. Menzies, showing the more advanced state of the shields, when they evidently assume the rugged or plaited configuration of the other umbilicated Lichens, as was suspected by the excellent Schrader. This confirms the genus of *Umbilicaria*, a genus which will probably be one day generally adopted.

This species widely differs from all others of European growth in its curiously blistered appearance. The branched black warts are also remarkable. The fructifications moreover are bordered, being true shields, with a disk, at first flat and even, afterwards either marked with an inner circle and a central perforation, or with angular plaits.



## GYROPHORA proboscidea.

*Proboscis Gyrophora,*

## CRYPTOGAMIA Algæ.

GEN. CHAR. *Tubercles* sessile, on a peltate frond, black, with a plaited contorted disk, in whose clefts the seeds are lodged.

SPEC. CHAR. Frond membranous, notched; upper side rugose, with elevated reticulations, of a smoky ash-colour; under smooth, naked and paler. Tubercles top-shaped, prominent; their disk at length rather convex, variously plaited.

SYN. *Gyrophora proboscidea.* *Ach. Meth.* 105.

*Lichen proboscideus.* *Ach. Prod.* 147.

*L. mesenteriformis.* *Ehrh. Crypt.* 89.

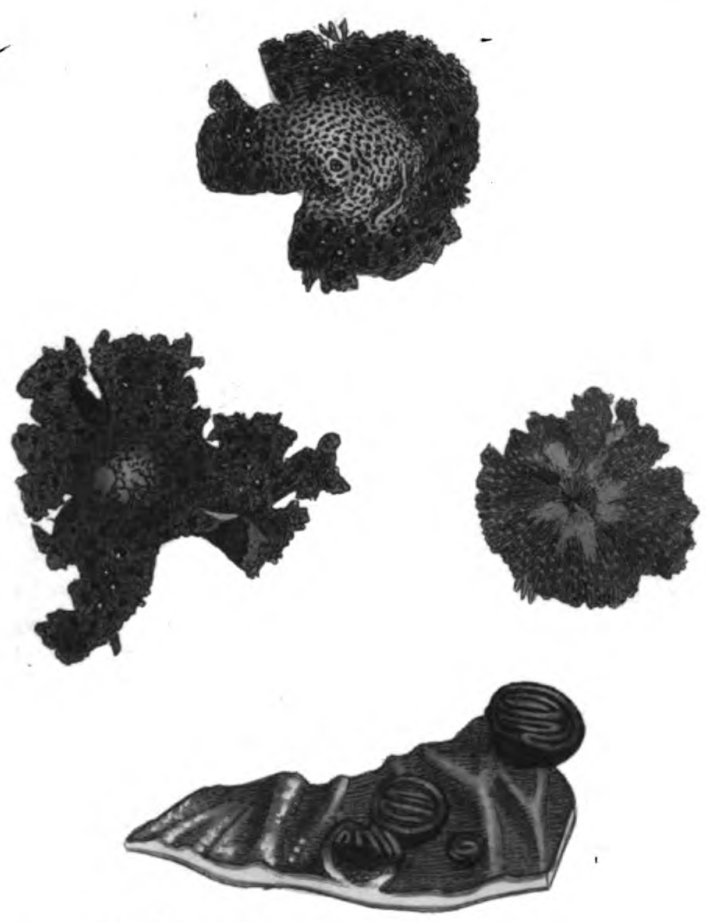
*L. decussatus.* *Villars. Dauph. v. 3.* 964. *t.* 55.

*L. denstus.* *Lightf.* 861.

*Umbilicaria corrugata.* *Hoffm. Pl. Lich. t.* 43.

*f.* 4—7.

NOT rare on the granite rocks of the Highlands, nor in the north of England and Wales, generally accompanying our *t.* 522, which is *G. cylindrica* of Acharius. We can however assure those who are interested in the matter, that the real *Lichen proboscideus* of Linnæus, so fully described in *Sp. Pl.* ed. 1. 1150, is, beyond all doubt, a specimen of our *t.* 522, as nearly destitute of fringe or hairs as the plant in our present plate. We assent nevertheless to the *cylindricus* of Linnæus, *Sp. Pl.* ed. 1. 1144, (to which Montin applied a most erroneous synonym of Dillenius,) being also our *t.* 522. Linnæus has justly noted in his own copy of *Sp. Pl.* that the Lichens in question are one and the same species. The present indeed is more corrugated in its upper surface, the other more furnished with warty pustules, as well as incomparably more fringed. The tubercles vary in degree of elevation, and the names of *proboscideus* and *cylindricus* are nearly equally unsuitable to the general form of both, though well answering to the Linnæan specimen. We publish these remarks, and the annexed plate, for the sake of illustration, as so many botanists have separated these plants, which appear to us varieties only, and for both which we would retain the name of *Gyrophora proboscidea.* See *Winch*, v. 2. 43.



*Published by J. S. Gentry, London*

J



## CRYPTOGAMA arctica.

*Arct. Gyrophora.*

## CRYPTOGAMA Alga.

GEN. CHAR. *Tubercles* sessile, on a peltate frond, black, with a plicated contorted disk, in whose clefts the seeds are lodged.

SPEC. CHAR. Frond coriaceous, rigid, thick, wavy and folded; upper side with tortuous plaits and elevated points, ash-coloured; under very smooth, paler. Tubercles at length globose, copiously plicated.

STX. *Gyrophora arctica.* Ach. Meth. 106. t. 2. f. 6.

THIS is here admitted as a British species, on the authority of a specimen, the uppermost in our plate, obtained by Mr. Turner from the herbarium of the late Mr. Hudson, who probably collected it in Devonshire. The other was sent by Dr. Wahlenberg from Norway, and leaves no doubt as to the identity of the species, though its under side displays none of that yellowish-white hue mentioned by Acharius.

Wahlenberg himself doubts whether this *Gyrophora* be really distinct from *proboscidea*; see t. 2484, though he allows its appearance to be altogether different. The substance of the frond is more thick, rigid, and tenacious; the upper surface more obtusely corrugated, and besprinkled with warts. By age it becomes entirely black above, and still more unequally rugged, with reflexed edges. It varies from an inch and half, to two inches, or more, in diameter. The tubercles become elevated when old. They are abundant, and formed of numerous contorted plaits. We are most inclined to believe this one species with *G. cylindrica* and *proboscidea*, some German specimens of which in our possession seeming to come very near what is above described.

2485.



*Disseminated by*



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## LICHEN proboscideus.

*Fungus Burtii Lichen.*CITRIPEDIA *Ag.*

GEN. CHAR. Muc. scattered warts.

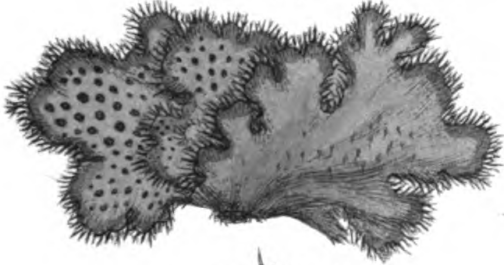
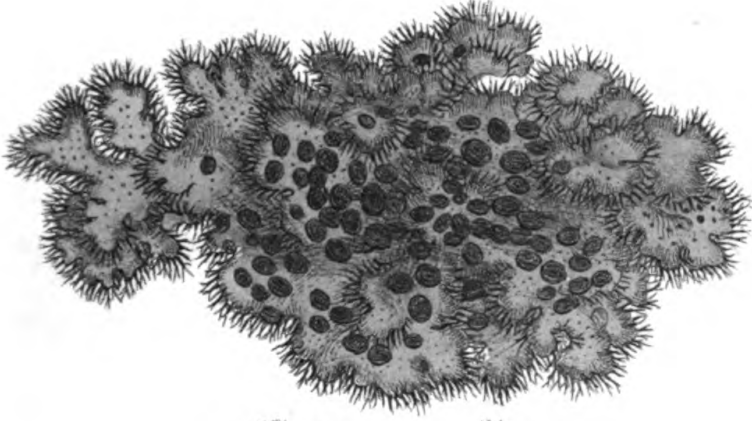
Femina. smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Umbilicated, lobed, fringed. Tubercles on footstalks, their disk marked with concentric lines.

SYN. Lichen proboscideus. *Linn. Sp. Pl.* 1617. *Fl.**Lapp. Isl.* 2. 253 \*. *Hud.* 551. *Witb.* v. 4. 65.*L. crinitus.* *L.g.* 360.*Umbilicaria crinita.* *Hoffm. Pl. Lich.* t. 44.*Lichencides corneum,* marginibus eleganter fimbriatis. *Dill. Myc.* 218. t. 29. f. 116.

**O**N quartz or granite rocks in alpine countries. We have received specimens from several of our correspondents in Scotland, Wales, and the north of England.

This is one of that singular tribe of Lichens called umbilicated, because they grow attached by a central strong root, and are consequently much depressed in the middle of their upper side. This species is more lobed and expanded than some others; its colour is a greenish grey when wet, its surface slightly wrinkled, and its margin thickly fringed with black branched wiry hairs, from whence Mr. Lightfoot named it very aptly *crinitus*, and Professor Hoffmann adopted his name, being doubtful whether the plant in question were the *L. proboscideus* of Linnæus or not: as however the Linnæan herbarium has removed that uncertainty, we retain the original denomination. The doubt arose from Linnæus, as Lightfoot very truly observes, having "quoted a figure of Dillenius that has no resemblance to it, and neglected others of the same author, "which are very good, and exactly tally with it." The tubercles of this *Lichen* are copiously produced, quite black, standing on footstalks; their upper surface formed of irregular concentric lines, and looking much like one end of a piece of coarse black ribband rolled loosely together, so that there is generally a cavity or perforation in the middle among the folds. Smaller sessile tubercles are scattered over the frond, which have a sort of margin, and appear to be in a young state. The real *L. deustus* of Linnæus differs from this in being more simple, and entirely destitute of marginal fringe.





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## LICHEN pellitus.

*Fancy Lichen.*

## CRYPTOGAMIA Alga.

GEN. CHAR. Minute, scattered warts. Female, smooth  
filicils or tubercles, in which the seeds are im-  
bedded.

SPEC. CHAR. Peltate, leafy, lobed, smooth, of a  
greenish copper-brown; beneath coal-black, and  
decorated with branching intricate hairs. Tuberc-  
cles black, convex, plaited, intricate.

SYN. Lichen pellitus. *Achar. Prod.* 149.

*L. velleus. Hug.* 550.

*L. rotundatus. Leg. f.* 864. *Wub. v.* 4. 64.  
*Emul.* 302.

*Lichencides peltam superne et glabrum, inferne  
nigra et carthosum. Dill. Musc.* 226. t. 30.  
*f.* 30.

THE singular tribe of umbilicate or peltate-fronded Lichens is almost entirely alpine, growing on exposed rocks, each plant fixed by a very strong central root or roots, the circumference being loose, and in dry weather often curled inwards. We have *Linnaei*, v. 9. p. 593, that the fructification is peculiar in such as properly constitute this natural tribe; indeed it might almost form a generic character, as will appear presently.

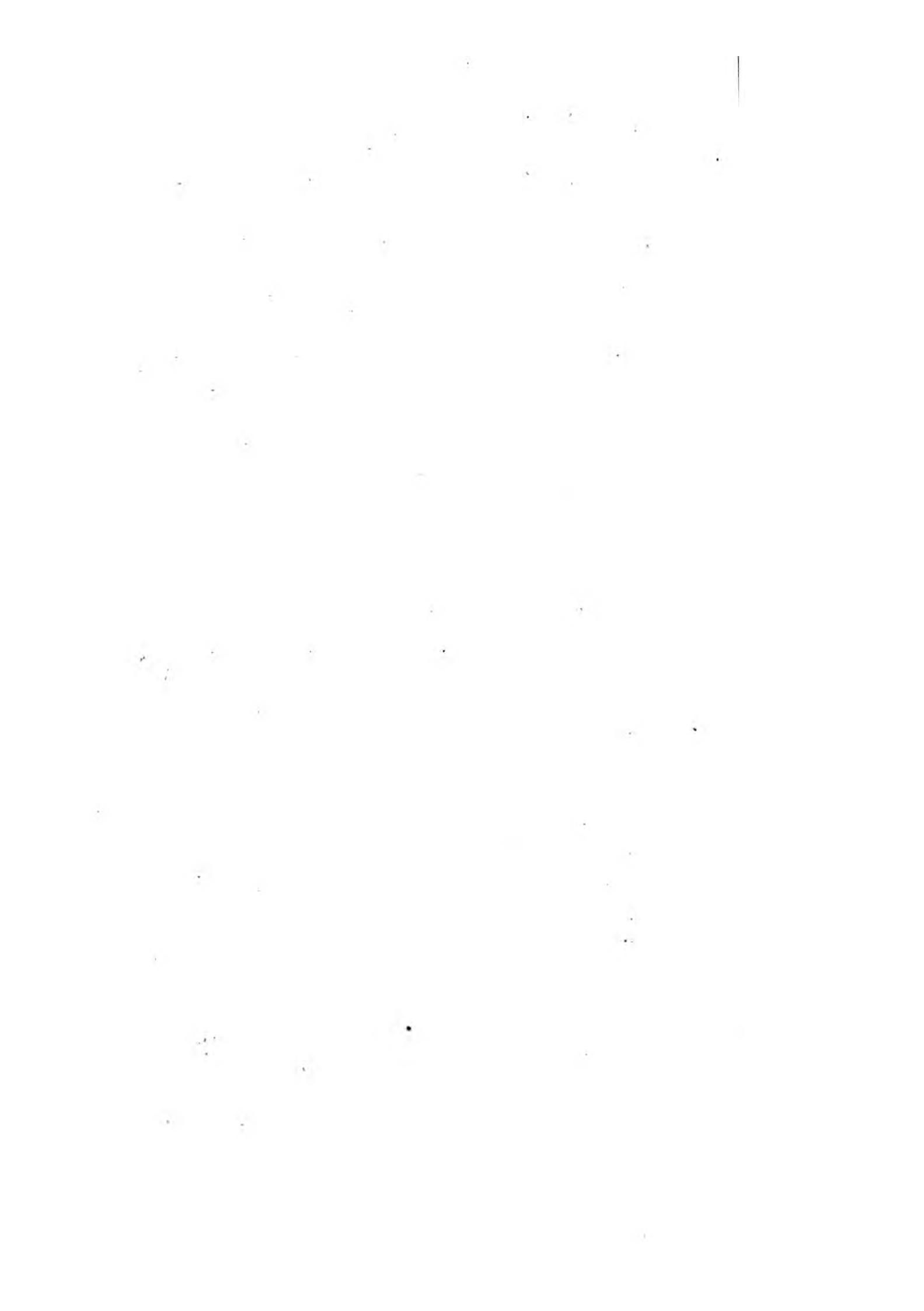
This was sent from Yorkshire by Mr. W. Brunton, and from Durham by the Rev. Mr. Harriman. It grows also on the Weich and Highland mountains—always, we believe, on micaceous rocks. *Linnaeus* confounded it with his *velleus*, which is a very different plant, of which we conceive *his polyrrhizus* to be a variety. *L. pellitus*, first well established as a species by *Dr. Acharius*, is very much lobed, sinuated, and notched; smooth, not wrinkled or veined; of a greenish or gray brown, varying to a copper-colour; often sprinkled with branching black warts. Beneath it is black, entirely and uniformly covered with dense branched coal-black hairs, which also fringe the margin. Tubercles rather rare, convex, black, formed of a multitude of plaited hair-like lines, but much more complicated and intricate than in any other umbilicated species.



*Microscopic illustration of a cell.*







## GYROPHORA murina.

*Mouse-skin Gyrophora.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. *Tubercles* sessile, on a peltate frond, black, with a plaited contorted disk, in whose clefts the seeds are lodged.

SPEC. CHAR. Frond membranous; its margin plaited, wavy and somewhat lobed; minutely granulated on both sides; glaucous grey above; blackish brown beneath. Tubercles scattered, somewhat bordered, much convoluted.

SYN. *Gyrophora murina.* *Ach. Meth.* 110.

*Lichen murinus.* *Ach. Prod.* 143.

*L. griseus.* *Ach. in Act. Holm. ann.* 1794. 91. t. 2. f. 3.

*L. pulmonarius saxatilis, cinereo-fuscus, minimus.* *Vaill. Paris.* 116. t. 21. f. 14. *Sm. Tour, ed. 2.* v. 1. 108.

COMMUNICATED by Mr. Turner, but the specimens are exotic. We know not the precise place of growth of this species in Britain, though we have it from Sweden, Switzerland and France. It may be what Dare found on St. Vincent's rocks, and if so, it is *L. Dillenii*, *With.* v. 4. 63; which we are the more inclined to believe, as Mr. Turner, in *Tr. of L. Soc.* v. 7. 112, asserts it to be t. 30. f. 117, of Dillenius. We indeed, on consulting the herbarium at Oxford, found his f. 117, to be *polyrhizos* of the Linnæan herbarium, *Gyrophora hirsuta* of Acharius, and the true *Lichen spadochrous* of Ehrhart; nor can we account for the assertion of our learned friend, but by supposing, as Dillenius certainly confounded the two, they may both be placed together in his collection.

*G. murina* is a very distinct species, from one to two inches broad; black, without fibres, beneath, finely granulated with pale cartilaginous warts, like shagreen; browner towards the edge. The upper side is grey, very minutely cracked, without veins or plaits; white and mealy in the middle. Tubercles rare, minute, seldom perfectly plaited, though Acharius did ascertain them to be so. We have some from Switzerland, in the state which led him to refer the plant to *Endocarpon*.







LICHEN *granulatus*.  
*Granulatus Gelatinosus Lichen.*

CEPTOGAMMA *Ag.*

GEN. CHAR. Male. warts.

Female. smooth shields or tubercles, in which the seeds are included.

SPEC. CHAR. Leafy, glutinous, fleshy, granulated on both sides, of a blackish olive colour; its lobes crowded, rounded, plaited, crisped and cut. Shields scattered, dark brown.

SYN. Lichen *granulatus*. *Huds.* 536. *With.* v. 4. 73.  
*Hall.* 600. *Keil.* 462. *Sibth.* 327.

*L. furvus*. *Act. Prod.* 132.

Lich. *scabies gelatinosus*, *in a ro-virens*, *auriculatum* et *granosum*. *D. Misc.* 140. t. 19. j. 24.

*Parmelia furva*. *Act. Meth.* 280.

DILLENIUS found this on gravel walks at Oxford, but never saw the shields, which are very rare. Mr. W. Borrer has sent us specimens from Sussex in fructification, which agree with mine from Kirkby Lonsdale, and with the *furvus* sent by Acharius. We feel ourselves obliged to retain the original and most excellent name, given by Hudson, as the younger Linnæus in his *Supplementum* merely adopted it from English writers, and mistook for it, as we learn from Professor Acharius, a variety of *L. crispus*. The Swedish *L. granulatus* therefore falls to the ground, and the *furvus* becomes a synonym of ours.

It is not easy in description to distinguish this from *L. flaccidus*, t. 1653, and yet they are very distinct.

The present is much smaller, and of a more olive, or yellowish, hue when wet, though almost black when dry. It creeps on the ground, and is scarcely visible but in moist weather. The substance is more thick, fleshy and rigid. Lobes crowded, plaited and cut, clothed with regular globular pellucid grains on both sides. Shields scattered, sessile, flat or slightly concave, dark brown, at length black, with an entire margin.

1757



*June 2. 1807. Published by J. & S. Smith, London.*



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[ 1912 ]

LICHEN fragrans.

*Fragrant Gelatinous Lichen.*

*SEPTUGENTA* Agg.

GEN. CHAR. Male, scattered warts.

FEMALE. smooth shields or tubercles, in which the seeds are imbedded.

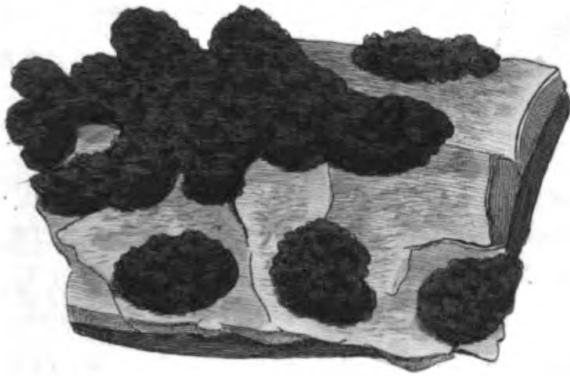
SPEC. CHAR. Gelatinous, fleshy, olive-black; its lobes ascending, crowded, rounded, thick-edged, crenate, smooth. Shields scattered, dull tawny, with a thick olive border.

GATHERED on the trunks of elms and ashes in Kent, Surrey and Sussex, by Mr. W. Borrer, who sent it to us as a new species, and we believe justly. We can refer it to none of the specimens or descriptions of Acharius or Bernhardt. If we err in so difficult a tribe, we must trust to the forgiveness of these authors and of our readers.

The fronds form small tufts, at first sight not unlike *L. fascicularis*, t. 1162, in aspect and colour, but very different when examined. They spread horizontally, but their lobes, which are small, rounded, crenate, thickened at the edge, turn upwards. The surface is smooth. Shields scattered irregularly, minute, sessile; their disk of a dull tawny hue, concave; their border thick, somewhat lighter than the frond, externally tumid and uneven. The plant is remarkable when moistened for a very sweet aromatic scent, not unlike the *spiritus volatilis aromaticus* of the apothecaries, though of course much fainter.

As we are on the subject of gelatinous Lichens, it may be useful to remark that *Parmelia sagenalis*, Ach. Meth. 247, Dill. Musc. t. 19. f. 21, proves by the specimen at Oxford, which we have examined, to be an *Ulva*, allied to *Conferva umbilicata*, Vell. Tr. of L. Soc. v. 5. 169. t. 7, and Mr. Turner, on seeing my correspondent specimen, assures me it is *Ulva stellata* of Wulfen in Jacq. Coll. v. 1. 351.

1912



*Plate 1. 1868. Published by J. S. Lowry by London.*

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## LICHEN crispus.

*Crisped gelatinous Lichen.*

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*CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

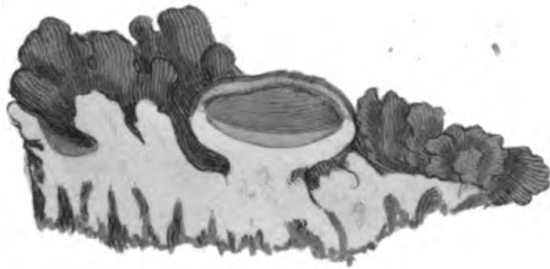
SPEC. CHAR. Gelatinous, olive-green, imbricated, orbicular, lobed and notched, with crisped and granulated leaves in the centre. Shields flat, red-brown, scattered.

SYN. Lichen crispus, *Linn. Syst. Nat. ed. 12. v. 2. 710. Hudf. 535. With. v. 4. 76. Hull. 301. Relb. 427. Sibth. 327. Achar. Prod. 126.*Lichenoides gelatinosum atrovirens, crispum et rugosum. *Dill. Musc. 139. t. 19. f. 23.*

OF all the various and intricate tribe of Lichens, the gelatinous species are the most difficult of determination. They all nearly agree in their greenish olive hue, turning almost black when dry, in which state indeed they all for the most part shrivel up into an undistinguishable mass. When moist they are pulpy, tender, often very thick, in some instances so thin as to be membranous.

The *crispus*, though sometimes with difficulty known from luxuriant plants of the *cristatus*, is in general easily to be recognized. It grows in wet shady places under rocks, stones, or walls, assuming a roundish figure, variously imbricated, wrinkled or lobed, though never in its whole substance elevated from the soil. The surface is crowded with irregular blunt leaflets, which towards the centre become lobed, curled, and frequently granulated. The shields are numerous, scattered, with a flat reddish disk (greener when young), and a blunt irregular elevated margin, of the colour and substance of the leaf.

This plant is scarcely to be detected but after a continuance of moist weather.





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LICHEN *crustaceus*,*Shield Lichen.**HEPTHEMIA* *Ag.*

**GEN. CHAR.** Male, flattened warts. Female, smooth knobs or tubercles, in which the seeds are imbedded.

**SPEC. CHAR.** Crust lobed, flattened, dark-olive. Shield central, solitary, elevated, brownish-flesh-coloured, with a paler elevated entire border.

**W**E believe this curious little Lichen to have hitherto remained undescribed. Though very common on chalk, as well as on the white coating of flint stones, over which it is scattered in the form of minute olive-coloured or blackish stars, it is seldom found in fructification, to which must be attributed its having so long remained in obscurity. Our perfect specimens were gathered on chalk by Dr. Noehden, and Mr. Gotobed of Eton. Few of them exceed the diameter of a large pin's head, and are composed of a spreading lobed prominent crust, in whose centre, when the plant is in perfection, stands a very conspicuous elevated shield, of a pale reddish brown, or rather a brown flesh-colour, somewhat turbinate, smooth; its disk concave, surrounded with a paler, elevated, smooth and entire border.







## LICHEN marginatus.

*Marginal Gelatinous Lichen.*

## SEPTENTRIONAL Alps.

GEN. CHAR. Male, scattered warts.

Femalæ, smooth sinuata or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Gelatinous, intricately, olive-black; its lobes linear, parallel, zigzag, channelled, crisped, crenate, imbricated, smooth. Shields marginal, dark reddish brown, with an entire border.

STY. Lichen marginatus. *Hüb. 534. Ach. Prod. 127.**W. L. 7. 4. 54. Hüb. 295.*Lichenoides reticulosum fuscum, jacobæe maritimæ  
divisuræ. *Dill. Musc. 140. t. 19. f. 25.*Parmelia melæna S. *Ach. Meth. 241.*

WE have this from Mr. Hudson's herbarium, with his authentic name, as well as from Derbyshire and the Highlands of Scotland. The specimen in our plate was gathered on some walls near Settle, Yorkshire. It grows in broad patches on calcareous stones, in rather moist places, often accompanied with mosses.

The fronds spread in a radiating circular manner, and are membranous, gelatinous, but not fleshy, of a dull olive black, darker when dry, their under or lower parts much paler than such as are more prominent. The lobes are crowded, branched, linear, parallel, channelled, zigzag, much cut and crisped, crenate, smooth, not granulated. Shields situated for the most part about the margins of the fronds, slightly elevated, horizontal, flat, dark reddish brown, with a prominent, entire, by age somewhat jagged, border, of the substance of the leaf.

*L. melæna* of Acharius seems scarcely even a variety of this.

1924



*Sept. 2, 1868. Published by J. A. Sowerby, London.*



✓



LICHEN *finuatus*.*Sinuatus Lichen.*CRYPTOGAMIA *Alga.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

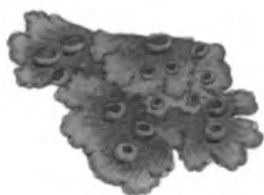
SPEC. CHAR. Imbricated, pellucid, somewhat gelatinous. Leaves roundish, sinuated, crenate, glaucous-green, smooth on both sides. Shields concave, brownish, with an elevated smooth border.

SYN. Lichen *finuatus*. *Huds.* 535. *Witb. v.* 4. 75. *Hull.* 301.

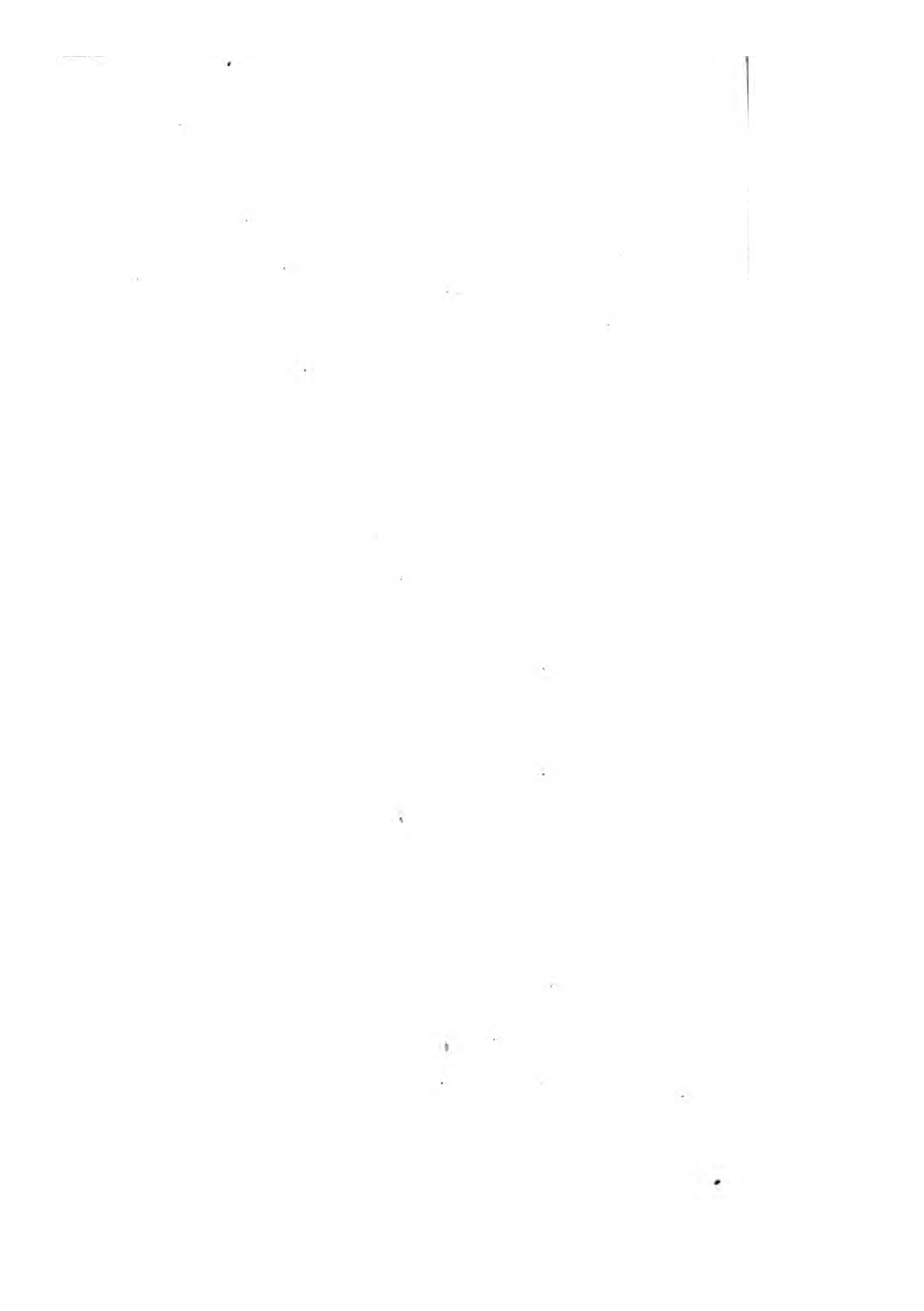
*Lichenoides tenue crispum, foliis parvis depressis.*  
*Dill. Musc.* 145. *t.* 19. *f.* 33.

HEREFORDSHIRE, Devonshire and Wales are the only parts of this island in which Mr. Hudson's *Lichen finuatus* is known to have been found, so that Mr. D. Turner's having discovered it on the ruinous walls of Burgh castle, near Yarmouth, is no small triumph for our Norfolk Flora. It occupies the interstices of rocks or stones in shady places, and being very small, is not easily detected, except in wet weather, when it assumes a bright sea-green tinge. It grows in little dense tufts, consisting of numerous spreading fronds, rounded, lobed and crenate, of a dull brown, verging towards a lead-colour, when dry, but of a glaucous grass-green when moistened, by which also they become somewhat gelatinous. The shields are scattered over the disk, as may be seen in the magnified portion of our figure, and are small, elevated, concave, brownish, especially when dry, with a smooth elevated border of the colour of the frond. Sometimes we have found the outside of the shields, though not their border, scaly with minute leaflets. This betrays some affinity to *L. Burgeffii*, *t.* 300, to which *L. finuatus* is naturally allied in many respects, though so widely different in size, and in being smooth on the under side of the fronds. The Lichen which I am quoted by Dr. Withering as having found at Dumbarton proves to be his *rupestris* rather than this plant, with which we were not then acquainted.

772



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[ 217 ]  
I I I I E M A TENAX.

TENACIOUS CUCULMUS.

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IMPETIGERILLA Algae.

GEN. CHAR. Fronds orbicular, horizontal, nearly sessile, superficial, with a gelatinous accessory border.

SPERM. CHAR. Fronds rather glaucous, fleshy, imbricated. Sides incise, somewhat palmate. Shields depressed, dilated, reddish.

SEX. Lichen tenax. Swartz. Act. Nov. Upsal. v. 4. 243. Arb. Frond. 128. Act. Nov. Holm. v. 16. 9. t. 1. f. 1. Bernh. in Schrad. Journ. for 1799. fasc. 1. 14. t. 2. f. 3.

Parmelia tenax. Arb. Metz. 231.

---

**SENT** from North Wales by the Rev. Hugh Davies. It grows in alpine moist situations, amongst mosses, to which its tenacious, fleshy and juicy fronds closely adhere. The form of the whole is more or less regularly orbicular, the segments spreading in a radiating position, subdivided in a dichotomous palmate manner, being not very densely imbricated. They are flat, and their ultimate lobes blunt. The green inclines to glaucous, and by drying becomes opaque and lead-coloured. Shields numerous, scattered, depressed, of a light red brown; when young slightly sunk in the leaf, and a little concave; afterwards more prominent, rather convex and uneven, dilated, with a narrow border of the substance of the leaf, which sometimes becomes tumid and notched.

2349.



*Non. 1. 1811. published by J. G. Sowerby, London.*







[ 2348 ]

## COLLEMA plicatile.

*Plaited Collema.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. *Shields* orbicular, horizontal, nearly sessile, superficial, with a gelatinous accessory border.

SPEC. CHAR. Frond somewhat fleshy, imbricated; lobes plaited, rounded. Shields reddish brown, concave, crowded.

SYN. Lichen plicatilis. *Ach. Prodr.* 129. *Act. Nov. Holm.* v. 16. 11. t. 1. f. 2. *Bernh. in Schrad. Journ. for 1799. fasc. 1.* 13.

*Parmelia plicatilis.* *Ach. Meth.* 240.

FOR this we are indebted to Mr. Griffith, who sent it from North Wales; and we have also fine specimens named by Dr. Acharius.

Wet or inundated rocks, in alpine situations, produce the present species, whose dark-green frond is of an imbricated, clustered, plaited, orbicular form, with numerous small lobes; its texture between membranous and fleshy; the surface smooth. Shields very plentiful, more or less crowded or clustered, sessile, sometimes elevated, the size of common pins' heads. Their shape is cup-like, or almost globose, with a concave reddish-brown disk, and thick, smooth, inflexed border, of the substance of the leaf. This border often remains long after the disk and its contents are gone, the inside assuming a pale or whitish aspect.

2348



*Specimen published by J. S. Hensley, London*





[ 2582 ]

## COLLEMA multipartitum.

*Many-branched Collema.**CRYPTOGAMIA Algæ.*

GEN. CHAR. *Shields* orbicular, horizontal, nearly sessile, superficial, with a gelatinous accessory border.

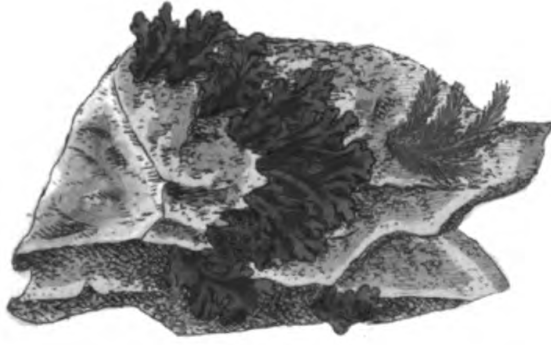
SPEC. CHAR. Frond radiating, fleshy; segments repeatedly forked, fan-shaped, crenate; convex above; concave beneath. Shields prominent, at length blackish and flat.

COMMUNICATED by Sir Thomas Gage from Killarney, in Ireland, where it abounds on walls and rocks.

The fronds are fleshy, but not so very gelatinous as those of some other species, of a dull blackish olive, radiating from a centre, which they soon leave bare; sometimes becoming dispersed in small broken fragments, which lose their concentric disposition. The whole plant is deeply and repeatedly divided into wavy or twisted segments, sometimes rather linear, but dilated, forked, and subdivided towards the extremity, and bluntly but copiously crenate at the broad tips. The upper side is always convex; the under channelled or concave. Shields copiously dispersed over the upper surface; at first sessile, but soon becoming elevated; reddish brown and slightly concave, with a thick even border, when young; but subsequently flattened, blackish, with much less appearance of the border.

We have a most elegant and finely divided specimen of this *Collema*, but without shields, gathered in Westmoreland in 1782, which we could never refer to any described one; and we now readily concur with Sir Thomas Gage's opinion, in establishing it as a new species.

2582



*Jan. 1814 published by J. G. Sowerby London*



J



LICHEN fluviatilis.  
*River Gelatinous Lichen.*

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CRYPTOGAMIA *Algae.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Gelatinous, thick, imbricated, greenish-black; its segments obovate or linear, convex, proliferous, channelled beneath. Shields globose, concave, brown.

SYN. Lichen fluviatilis. *Huds.* 536. *With.* v. 4. 77. *Hull.* 301.

Lichenoides gelatinosum, foliis angustioribus uniformibus. *Dill. Musc.* 142. t. 19. f. 28.

L. gelatinosum opuntioides. *Dill. in Raii Syn.* 72.

Parmelia? fluviatilis. *Ach. Meth.* 249.

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MALHAM-COVE in Yorkshire afforded this rare plant to Dr. Richardson, the friend of Dillenius, and from the same romantic and celebrated spot our specimens were obligingly communicated by Samuel Hailstone, Esq. It grows on calcareous stones in the rivulet which issues from the base of the surrounding rocks. Dillenius relates that he had himself gathered the same in the alpine torrents of Snowdon.

The fronds are of a very dull dark olive, almost black, tufted and crowded, gelatinous, but thick and not membranous. Segments more or less imbricated, oblong, or more frequently obovate, occasionally notched; convex above; channelled underneath. They grow in a proliferous manner, and are sometimes granulated. Shields lateral, small, globular, externally like the frond in colour, with a paler smooth border, and concave reddish-brown disk.

2039.



*July 1859, published by J. & S. Severly, London.*

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LICHEN fascicularis.  
*Clustered Gelatinous Lichen.*

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CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Clustered, gelatinous. Leaves dilated upwards, plaited, lobed and crenate. Shields marginal, shortly stalked, clustered, turbinated, reddish.

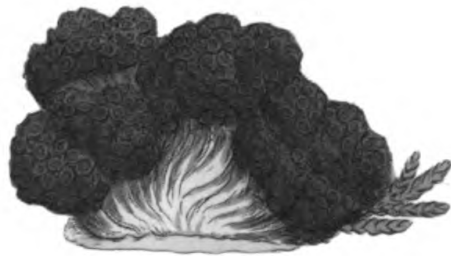
SYN. Lichen fascicularis. *Linn. Mant.* 133. *Achar. Prod.* 129. *Huds.* 536. *Witb. v.* 4. 76. *Hull.* 301. *Relb.* 463.

Lichenoides gelatinosum palmatum, tuberculis conglomeratis. *Dill. Musc.* 141. t. 19. f. 27.

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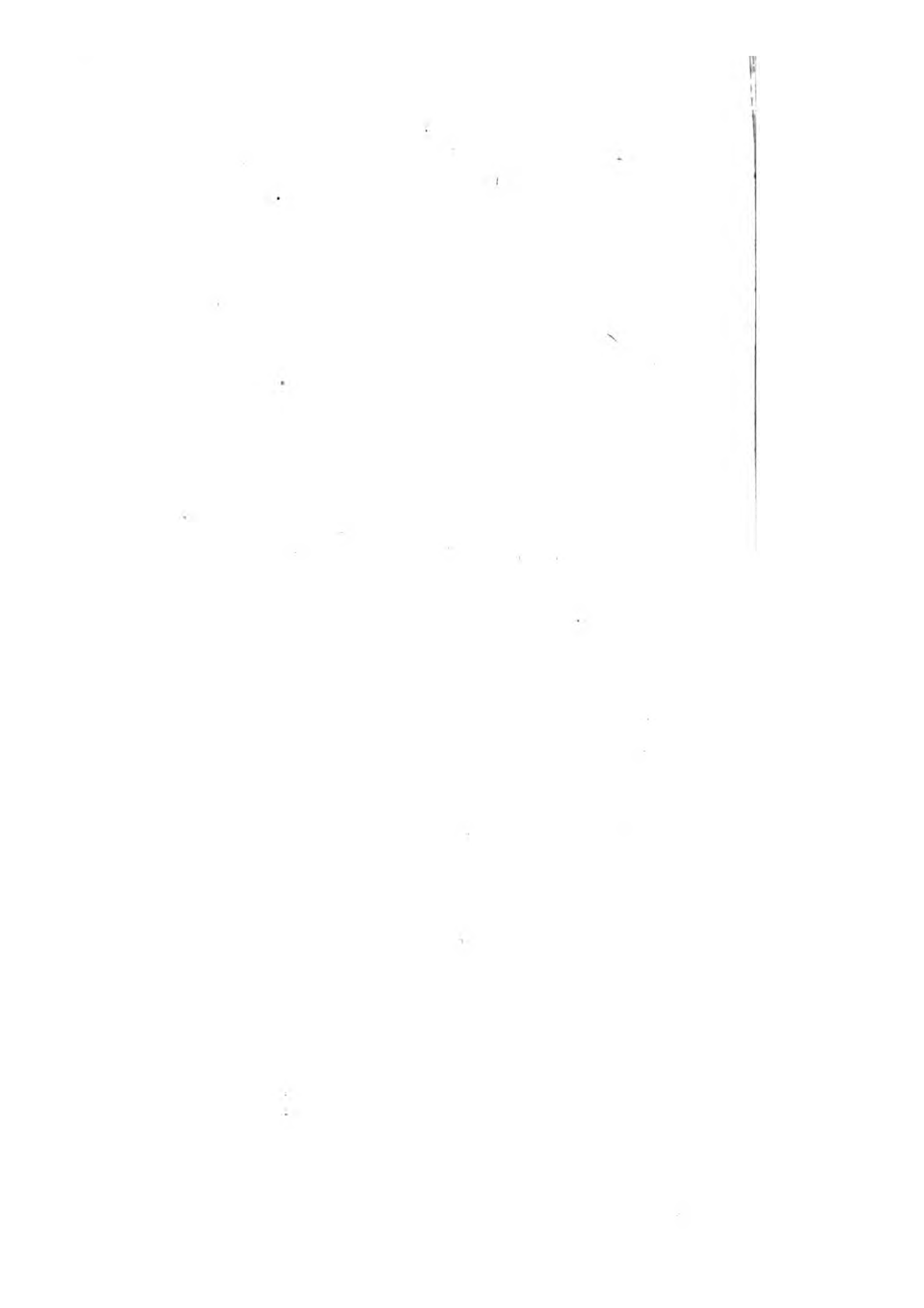
COMMUNICATED by Mr. Oliver and Mr. Harriman from Durham. We have gathered it on mossy trees about Ambleside, Westmoreland. It has been noticed by but few botanists, being dried up and shrunk to nothing in dry weather, so as to have no appearance of a vegetating substance; but during rain it becomes plump and conspicuous. It belongs to the obscure tribe of gelatinous Lichens, the *Collemata* of recent writers, but is one of the best defined of that tribe, though the accounts of authors respecting it are by no means clear. The following, assisted by the annexed plate, will prevent mistakes about it in future.

The fronds grow in dense clusters, and are from a quarter of an inch to nearly an inch high, very gelatinous, of a dull greenish black, paler at the base. They are compressed and narrow at that part, much dilated upwards, longitudinally plaited, terminated by great numbers of upright marginal turbinated shields, each standing on a thick short stalk, of the substance of the leaf, which forms the thick wavy border. The disk is flattish, of a red brown when arrived at maturity.









[ 1635 ]

## LICHEN palmatus.

*Palmate Gelatinous Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Frond gelatinous, imbricated, tufted, greenish-brown; its segments thin, linear, many-lobed, somewhat palmate, revolute. Shields scattered, reddish.

SYN. Lichen palmatus. *Huds.* 536. *Ach. Prod.* 135. *With.* v. 4. 74. *Hull.* 301.*Lichenoides pellucidum fuscum corniculatum.* *Dill. Musc.* 143. t. 19. f. 30.*L. gelatinosum tenerius laciniatum, ex fusco purpurascens.* *Raii Syn.* 72.

WE see no reason to doubt this being the *L. palmatus* of Hudson, notwithstanding the suppositions to the contrary in Acharius and Withering; neither is his description of the shields, which no person before him had detected, inaccurate. Mr. Turner favoured us with specimens in fructification from sandy ground to the north of Yarmouth, near the sea.

This species belongs to the tribe of *Collemata*, but is not very gelatinous, being so thin as to be almost membranous. Its colour is a greenish pellucid brown, often tinged with a glaucous or purplish hue. The fronds form tufts on the ground among moss or other Lichens, and are near an inch high, crowded or imbricated, very much cut, forked and toothed, the edges all revolute. Small sessile globose brown shields are scattered about the disk of the lobes on the fore side, whose margins are reddish and entire.

1635



Fig 186-6. Published by J. C. Sowerby, London.

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[ 1427 ]

## LICHEN tenuissimus.

*Fine-cut gelatinous Lichen.**CRYPTOGAMIA Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, gelatinous, greenish black. Leaves much divided, into linear unequal somewhat fringed segments. Shields sessile, reddish brown, with a thick entire border.

SYN. Lichen tenuissimus. *Dicks. Crypt. fasc. 1. 12. t. 2. f. 8. Achar. Prod. 139. With. v. 4. 61. Hull. 298.**Parmelia tenuissima. Achar. Meth. 244.*

WHEN Mr. Dickson first paid a visit to Norwich in the year 1782, this was one of the new cryptogamic plants then first made known to him by its discoverer Mr. Crowe. Twenty more, at least, of the same class rewarded their researches during his stay, most of which have been published since. This species grows on dry sandy banks among short grass or moss. Mr. Woodward found it very fine at Ditchingham, from whence Mr. Turner has sent us specimens.

The fronds or leaves are very minute and crowded, forming a patch an inch or two broad, of an exceedingly deep olive brown, almost black. Their texture is thin and gelatinous; their form palmate; their lobes linear, unequal, jagged or fringed. The shields are large in comparison of the leaves, sessile, flat, very dark brown, with a thick elevated entire border, nearly of the same colour. By drying they become paler and more reddish. The border is not leafy, as it should seem, by Mr. Dickson's figure, to be.

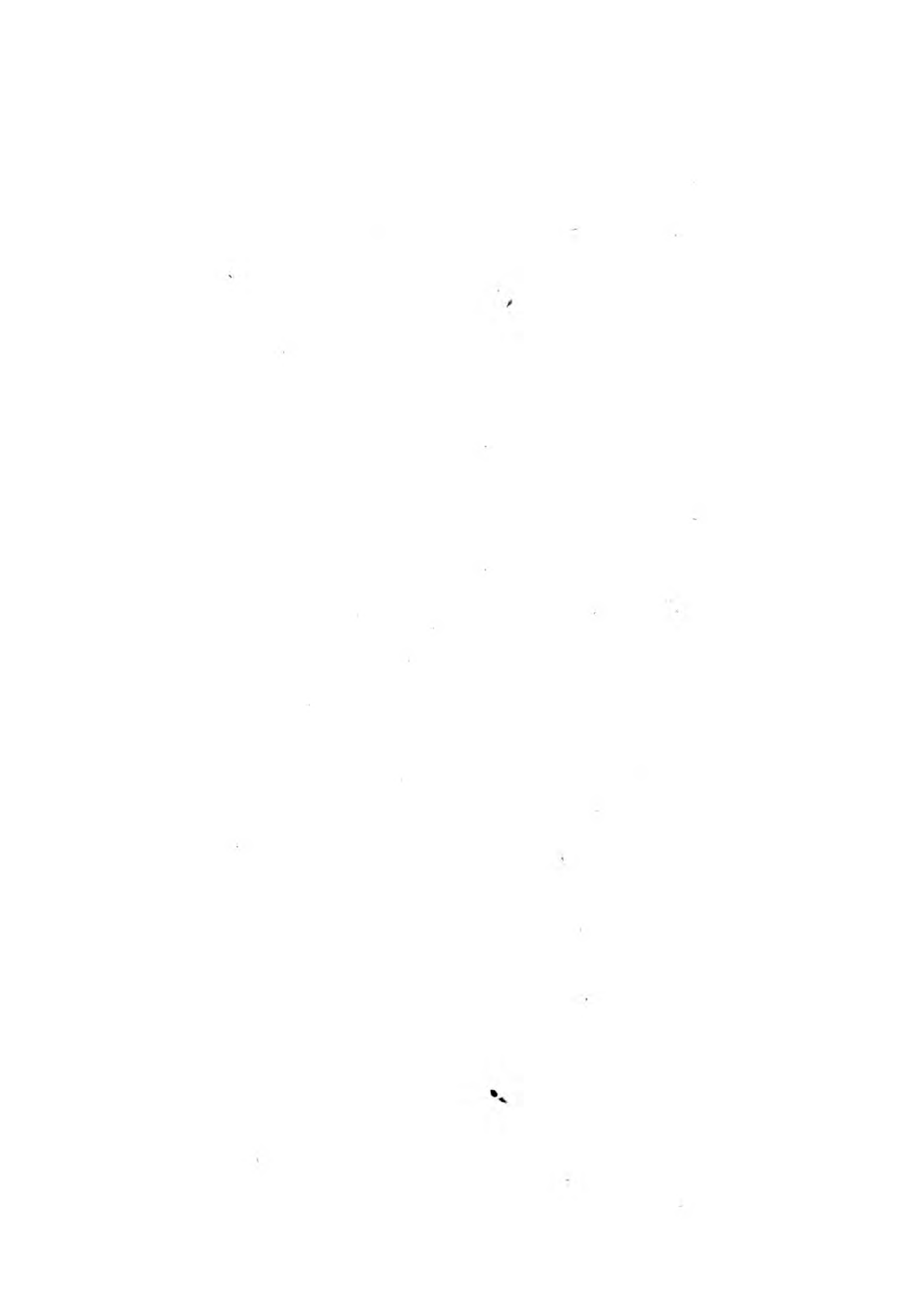
2427



*March 1 1865. Prepared by J. S. Edwards, Esq.*







## COLLEMA Schraderi.

*Schrauerian Collema.*

## CRYPTOGAMA Algae.

GEN. CHAR. *Suessia* orbicular, horizontal, nearly sessile, superficial, with a gelatinous accessory border.

SPERM. CHAR. Frond somewhat fleshy, tufted, erect, branched in a forked manner, rugose. Shields lateral, reddish, with a pale border.

SYN. *Collema Schraderi*. *Sm. Fl. Brit.* v. 4, *ined.*

*Lichen Schraderi*. *Bernh. in Schrad. Journ. for*  
1799, fasc. 1. 22. t. 2. f. 5.

*Parmelia Schraderi*. *Ach. Meth.* 243.

OUR specimens marked I were gathered during a visit to Madock in June 1783, on a low stone wall next to a wood, half way betwixt the two principal inns. No British botanist has observed the same, and they have remained undescribed hitherto; but we find them exactly accord with what Dr. Schrader has sent us under the above name. They compose little tufts, mixed with moss, among the crumbling mortar and limestone, and grow erect, repeatedly branched, forked and level-topped. They are of a dull and darkish olive green; paler below: compressed and shrivelled when dry; gelatinous and somewhat fleshy when wet. Such is the indubitable *C. Schraderi*, on which no fructification has yet been found.—Fig. 2 represents a plant found by Mr. Turner on Caistor church, Norfolk, also on heaths near Bury, and in Sussex, which has small reddish shields. He thought it a distinct species; but considering how much this gelatinous family often varies when it bears fruit, and still how little essential difference there is between the two specimens, we venture to publish them, at least for consideration, as the same.

As to the genus now first introduced to our readers, we have hinted at it in p. 2264, and are persuaded that none of this natural order can be more natural or distinct.



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2.



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[ 1374 ]

LICHEN spongiosus.  
*Spongy Gelatinous Lichen.*

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CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

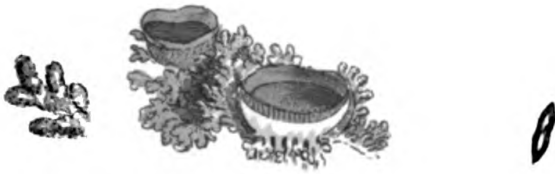
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Gelatinous, dull green. Leaves clustered, much branched, granulated, cylindrical, obtuse. Shields scattered, concave, brown; externally spongy and pale, with a thin upright margin.

---

WE are obliged to the Rev. Mr. Harriman for this Lichen also, sent from the county of Durham in 1802. That gentleman informs us he had long passed it over as a *Pexiza*, a genus he did not particularly study; but at length he found the leafy crust to be so intimately united with the cups, as to put the matter out of all dispute. After much consideration, we cannot but assent to this opinion; and we conceive this plant to be one of the most curious Lichens, of the tribe of *Collemata*, that has ever been discovered.

The crust is of the dull olive-green hue usual in that tribe, and consists of a very gelatinous spongy mass of thick branched and fingered leaves, whose lobes are cylindrical, obtuse and granulated. In drying they turn paler and greyish. They readily revive with moisture, and dry again speedily. The shields are sessile, scattered, large, with a dark-chesnut smooth concave disk, surrounded with a peculiar erect thin greenish border; their outside invested with a convex thick and spongy coat, of a light brown or buff colour, which renders them very conspicuous. Mr. Harriman observes the plant to be perennial, and the shields seem to be of long duration.





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[ 1008 ]

## LICHEN subtilis.

*Fine-spun Gelatinous Lichen.*

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CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Gelatinous, dull green, very minute.

Leaves somewhat imbricated, much branched, linear, bluntish. Shields central, clustered, with a flat brownish disk, and narrow even border.

SYN. Lichen subtilis. *Schrad. Spicil.* 95. *Bernhardi in Schrad. Journ.* v. 1. 5. t. 2. f. 6. *Achar. Prod.* 136. *Dicks. Crypt. fasc.* 4. 25.

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MR. EDWARD FORSTER discovered this Lichen near Hale End, Walthamstow, in 1791. It has since been found in Scotland and Ireland by Mr. Brown.

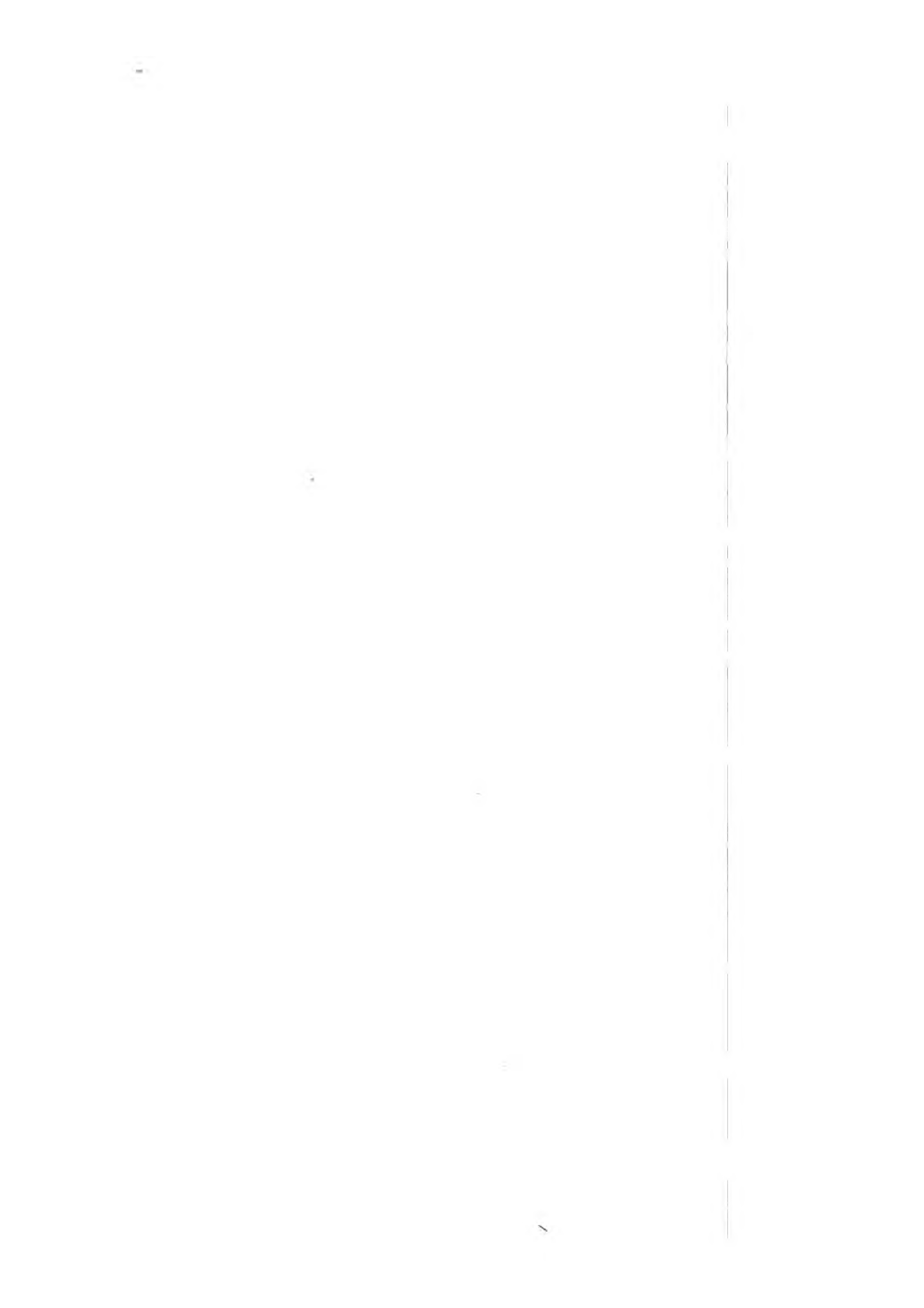
This is one of the most minute plants hitherto detected, and, as its first describer the accurate Dr. Schrader observes, would scarcely be visible to the naked eye, did it not grow in patches, which are from half an inch to an inch and half broad, fixed to the naked earth on a clay soil. Our specimens were sent from Coltishall, Norfolk, by Mr. Turner.

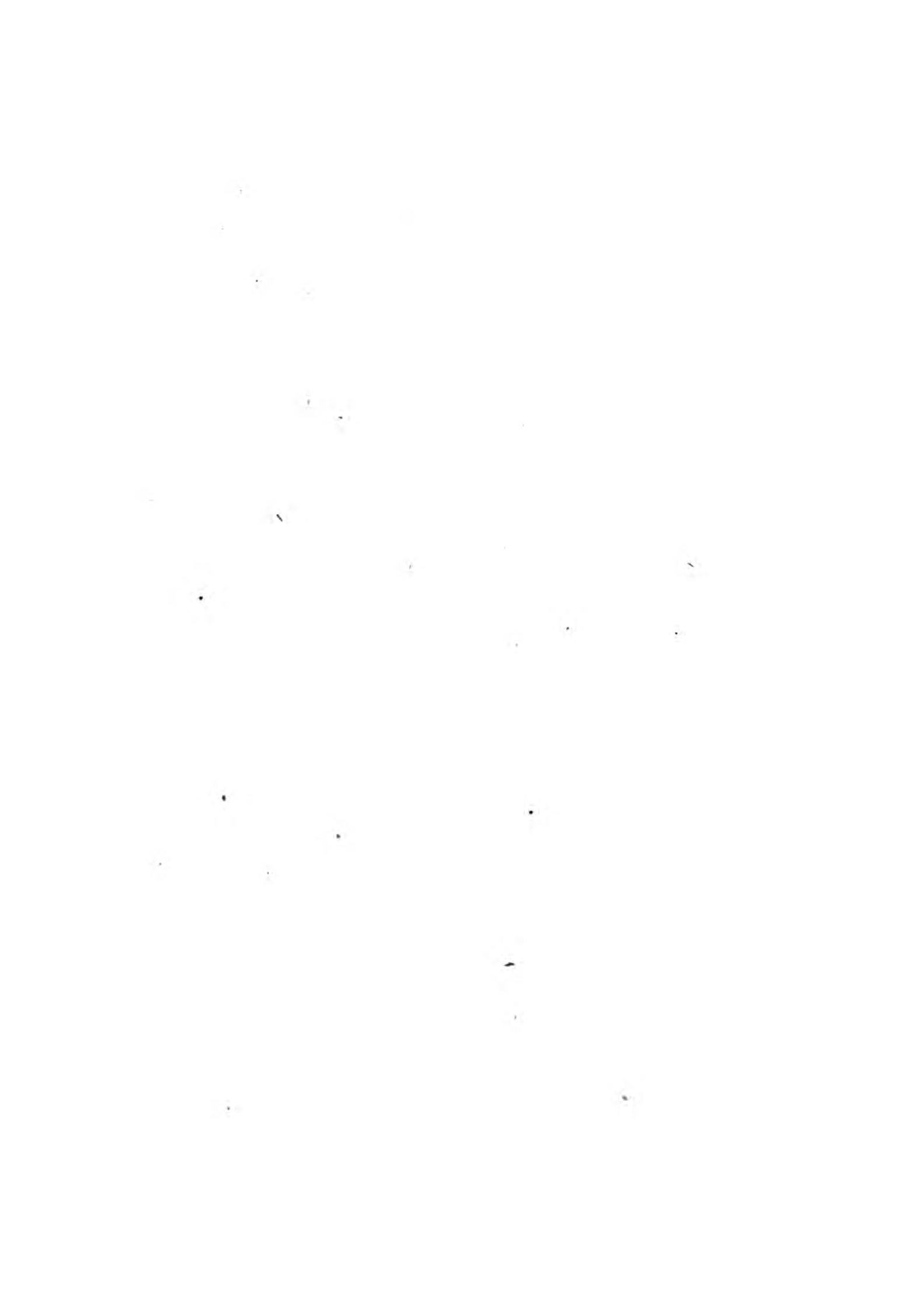
The whole plant is of a dull green, gelatinous and pellucid when moist, black when dry. The fronds or leaves spread from a centre, and are a little imbricated or entangled, variously and repeatedly branched into narrow, waving, entire, bluntish, fleshy segments, which under a high magnifier appear granulated. The shields are central, clustered (in very small plants only solitary,) sessile, top-shaped, having a flat or rather elevated brownish granulated disk, and a narrow entire green border.

On a careful comparison of this with our *L. cretaceus*, v. 11. t. 738, under a good microscope, we find the fronds indeed very similar in some instances, but the shields of the latter are redder, their margin pale brown, and thicker than in *L. subtilis*.



*April 1, 1802 Published by T. G. Smith, London.*





L I C H E N muscicola.  
*Gelatinous Moss Lichen.*

CRYPTOGAMIA *Algae.*

GEN. CHAR. Male. scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Gelatinous, tufted, olive black. Segments cylindrical, branched, upright, level-topped, bluntish, wavy and uneven. Shields nearly terminal, horizontal, flattish, brown, with an entire border.

SIN. *Lichen muscicola.* Ach. *Prod.* 215. *Act. Holm.* for 1795. 12. t. 1. f. 3. Swartz. *Nov. Act. Ups.* v. 4. 248. *Dicks. Crypt. fasc.* 2. 23. t. 6. f. 9. *Bernhardi in Schrad. Journ. for 1799.* 22. t. 2. f. 8. *With.* v. 4. 46. *Hull.* 306.

*Parmelia muscicola.* Ach. *Meth.* 244. *Winch.* v. 2. 59.

ALL our specimens of this curious Lichen have been communicated by the Rev. Mr. Harriman from the county of Durham, where it grows, running over mosses, on rocks and stones; as well as in Scotland and Wales.

Its habit is in appearance that of the tribe called *Cornicularia*, but it is now more justly reckoned by Acharius among the gelatinous Lichens, or *Collemata*, which, though sunk in his *Parmelia*, form as natural a genus by themselves as possible, and we venture to think they may be defined by a technical character, the *gelatinous* accessory margin of the shields, that of the rest being *coriaceous*.

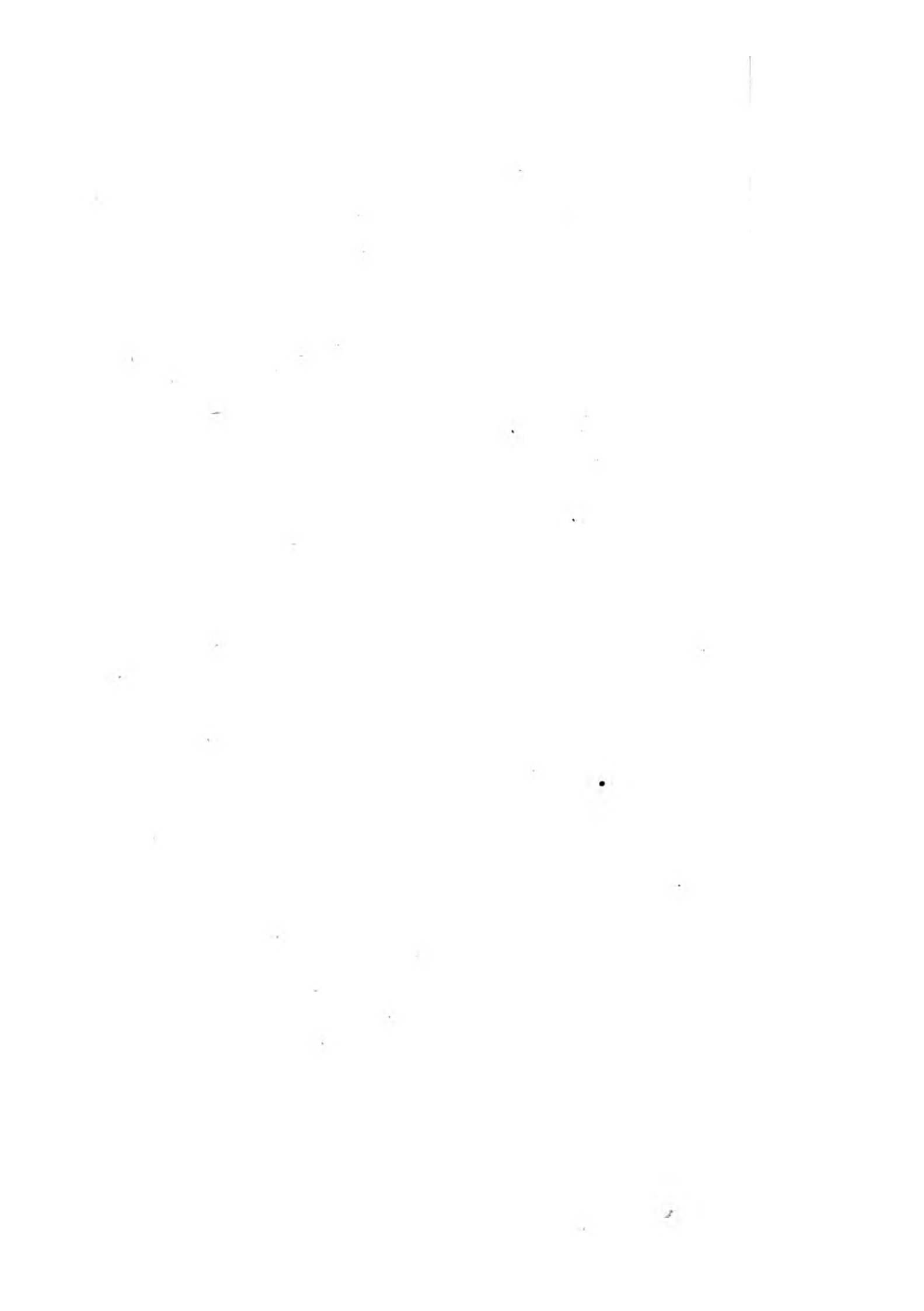
The frond of the present species is very peculiar, consisting of innumerable tufted entangled and interbranching upright compound fibres, all cylindrical, but rugged, bent and wavy without any order or regularity, their ends bluntish, entire, or notched; their substance rigid when dry, soft and gelatinous when wet; their colour olive black. The excellent *Bernhardi* has well remarked that the shields are often common to two or three of the branches, a thing difficult to explain, except by the tendency which these plants possess, in common with *Fungi*, to unite their various growing parts when they come in contact. These shields are tolerably abundant, small, horizontal, when dry of the colour of the branches, when wet lighter and browner, a little concave when young, the reverse when old, with a thin smooth accessory border.



*Mass. 1. 1880 published by J. C. Smith, London*



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## LICHEN nigrescens.

*Blackish, or Bat's-wing Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, gelatinous, membranous, rugged and blistered, of a dark dull green, the lobes rounded. Shields clustered, reddish brown.

SYN. Lichen nigrescens, *Huds. Fl. An.* 537. *With. Bot. Arr.* v. 3. 198. *Relh. Cant.* 430. *Sibth. Ox.* 328. *Dicks. H. Sicc. fasc.* 11. 22.L. vespertilio. *Lightf. Fl. Sc.* 840.Lichenoides saxatile membranaceum gelatinosum tenue nigrescens. *Raii Syn.* 72.L. gelatinosum membranaceum, tenue, nigricans. *Dill. Musc.* 138. t. 19. f. 20.

NOT unfrequent on the trunks of trees in damp woods, or on moist rocks, &c. It grows in patches lying close to the bark, especially the outermost lobes of the frond, which are rounded and entire, appearing very much wrinkled from numerous oblong parallel pustule-like elevations in the substance of the frond, each of which is hollowed out on the under side. The whole plant is smooth, membranous, tender and gelatinous, of a dull deep green when wet, blackish when dry, and not unaptly compared by Dillenius to a bat's wing. Clusters of little granules arise about the centre of the plant, and sometimes all over it, which are probably *gemmae*, analogous to the bulbs of *Dentaria bulbifera*, *Lilium bulbiferum*, &c.; and this appears to be the most common mode of propagation in this Lichen as well as some others. The shields are rarely found. When present, they are clustered about the middle of the plant, small, of a reddish brown, each elevated on a little protrusion of the frond, and with a slight entire green margin originating from it. When old they become convex,



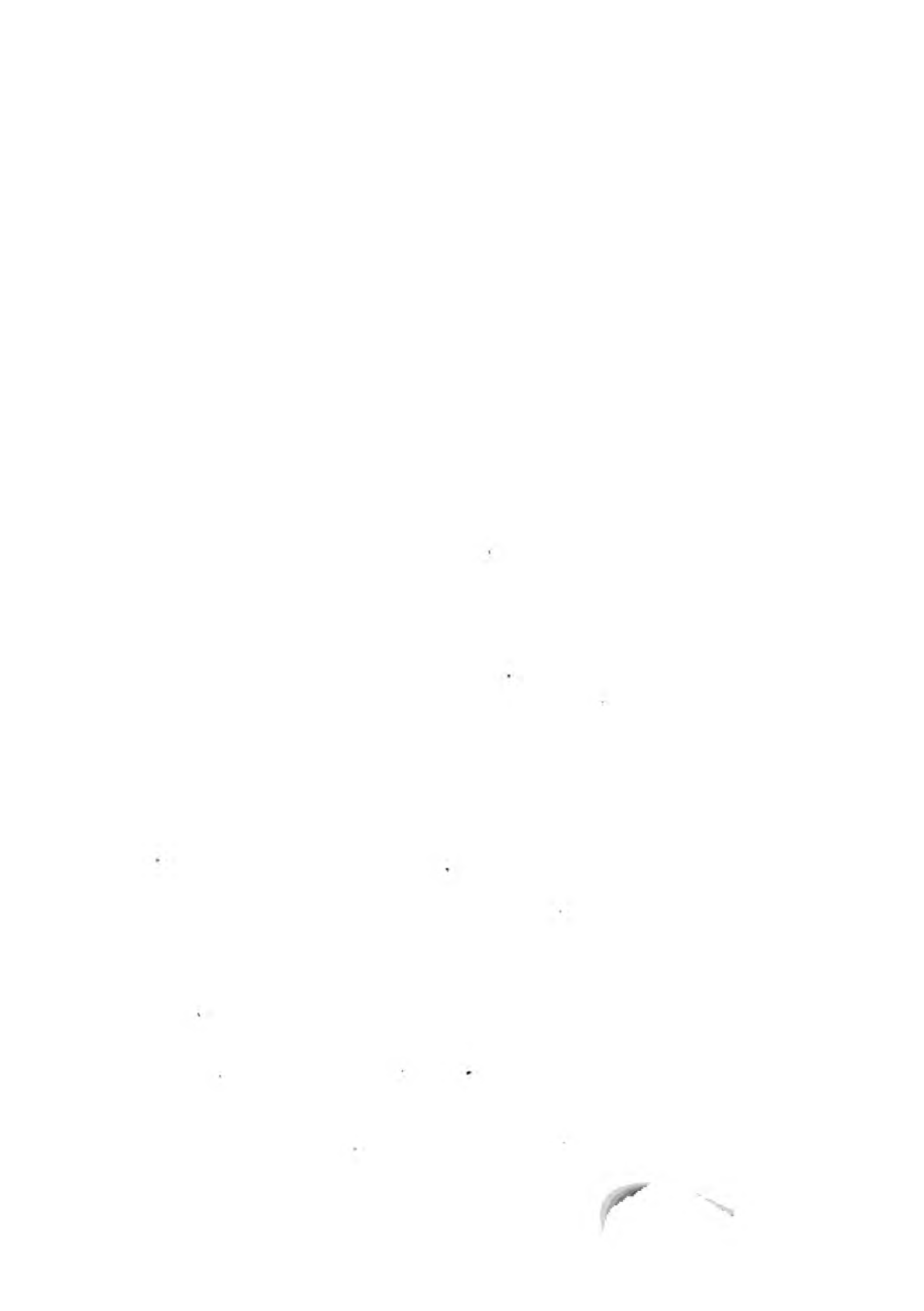
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LICHEN *flaccidus*.*Frustrum Solanum Lichen.*SYNOYMS. *Age.*

CORP. CELL. VILLO. SCATTERED WARTS.

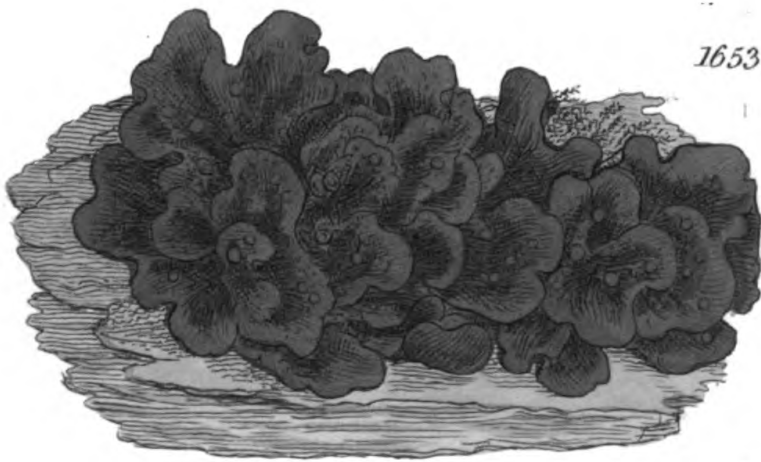
FRONDS. SHORT STRAITS OR TUBERCLES, in which the  
WARTS ARE IMMURED.SPEC. CELL. LEAF. pubescent, membranous, granu-  
lated, of a dark blackish green; its lobes ascending,  
rounded, imbric. entire. Shields scattered, reddish.SYN. Lichen *flaccidus*. *A. v. P. n. l.* 131.L. *flaccidus*. *Ann. d. Mus. Musc.* 57. *Swartz. Act.*  
1797. t. 4. 243.L. *flaccidus*. *Leers. Florula* 257.L. *flaccidus*. *Gunn. Norveg.* v. 2. 131. *Fl. Dan.*  
t. 472. f. 3.L. *flaccidus*. *Eich. Crypt.* 98.Parmelia *flaccida*. *A. v. Musc.* 229.

GATHERED in moist driving rocks in Westmoreland in 1793. Mr. DODSON about the same time received it from Denmark and Scotland. To him I am obliged for observing that the younger Linnæus quotes for this species a wrong synonym of Dodson, and yet has taken its description from that author. The Danish plant may remain as *L. rupestris* of W. Hervey, though not of Linnæus, while for the latter we gladly adopt the infinitely preferable name of *flaccidus* given by Adanson. The synonyms of Leers and Gunner stand on the authority of the late worthy Mr. Zier, and there is every reason to think them correct. If so, this is also *Parmelia desiosa* of Ach. *Meth.* 248.

Our specimens were gathered on trees at Pyecombe, Sussex, in April last by Mr. W. Borrer. The fronds grow in loose flaccid tufts, not creeping flatly as in *L. nigrescens* t. 345\*, neither are they rugged or blistered. Their lobes are elevated, rounded and entire; the upper surface rough or granulated. The colour is the dark blackish green common in this tribe, and is nearly the same on both sides of the frond, but the granulations are much blacker. Shields scattered, a little elevated, slightly convex, light reddish brown, with a crenate margin of the colour of the frond. With age the disk often falls out in fragments, leaving a very white receptacle. Sometimes the disk is of a darker hue.

\* It is proper to observe that t. 345 is accidentally coloured much too pale and green.

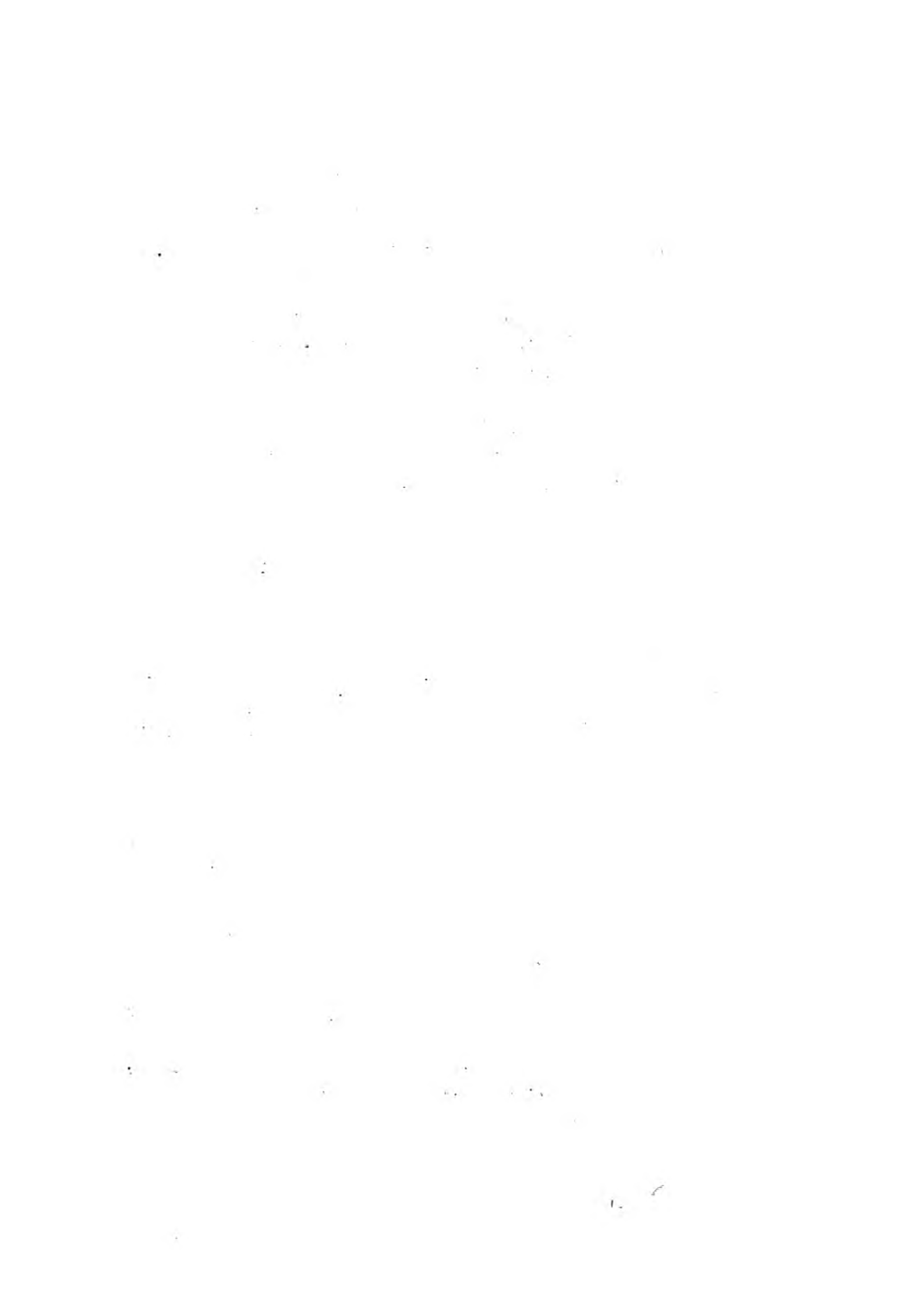
1653



*Oct. Labell. Publish'd by Ja. Sowerby, London.*







[ 1980 ]

LICHEN saturninus.  
*Saturnine Gelatinous Lichen.*

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CRYPTOGAMIA *Algae.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, gelatinous, membranous, dark greenish lead-coloured; glaucous and downy beneath; its lobes ascending, rounded, wavy. Shields scattered, reddish-brown, with a thin border.

SYN. Lichen saturninus. *Sm. Tr. of L. Soc. v. 1. 84.*

*Dicks. Crypt. fasc. 2. 21. t. 6. f. 8. Ach. Prod. 132. With. v. 4. 60. Hull. 298.*

*L. myochrous. Ehrh. Crypt. 286.*

*Parmelia saturnina. Ach. Meth. 221. Winch Guide v. 2. 58.*

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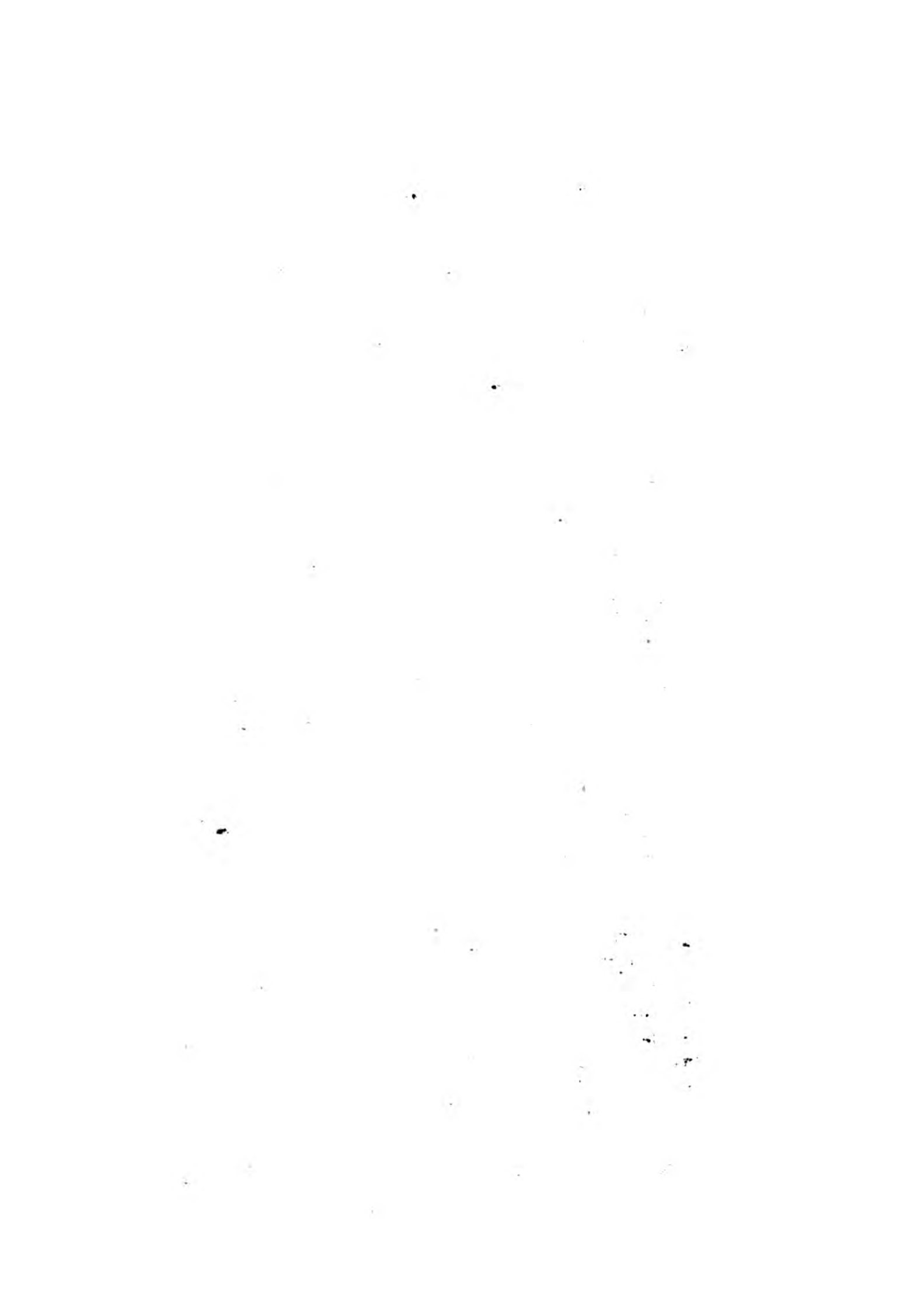
MR. DICKSON discovered this on trunks of trees in Scotland, about the same time that I gathered it in France and Savoy. Mr. Turner favoured us with our present specimens from Killin, North Britain. Ehrhart gathered his at Upsal, where it had escaped the notice of Linnæus, but Professor Acharius remarked and described it by the name of *discolor*, which, though excellent, he has given up to our prior appellation.

This species resembles *flaccidus*, t. 1658, and *granulatus*, t. 1757, but is of a more lead-coloured black than either, and moreover known by the downy whitish covering of its under side, which is peculiar. Ehrhart's name (mouse-skin Lichen) alluding to this circumstance is very expressive. The shields, rare in Britain, are scattered over the upper surface, a little elevated, of a reddish brown more or less dark, with a thin margin of the substance of the frond.



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## THIRTEEN Tremellodes.

*Novae Germanus Lichen.*SYMPHYCANTHA *Ag.*

GEN. CHAR. *Thal.* scattered warts.

*Fem.* smooth stalks or tubercles, in which the seeds are imbedded.

SPERM. CHAR. *Lect.* gelatinous, membranous, thin, smooth all over, green: light lead-coloured when dry: lobes ascending, rounded, folded, somewhat notched. Shields scattered, rather elevated, flat, reddish, with a smooth pale border.

SYN. *Lichen tremellodes. L. L. Suppl.* 450. *Ach. F. n.* 36.

*L. cochlearius. Dicks. Crypt. fasc.* 1. 13. t. 2. f. 9. *Wet. n.* 4. 74. *F. n.* 300.

*Parneia tremellodes. Ach. Meth.* 224.

THIS Lichen I first gathered in 1752 on the east side of Dumfries castle rock, in a moist spot near the bottom, but without shields. In Dumfriesshire, whence Mr. Slater sent specimens to Mr. Dickson, it is more generally found in fructification. Its fronds grow in creeping patches, and are very thin and tender, ascending, roundly lobed, a little notched here and there, of a dulish green when wet, of a light lead-colour when dry, smooth and naked all over, and of the same hue above and below. Shields scattered over the upper surface, somewhat elevated, with a flat reddish-chestnut disk, and a thick very smooth border, externally like the frond, but its inner edge is pale and buff-coloured.

Thunberg found this at the Cape of Good Hope, and the late Mr. Curtis is said to have gathered it in Yorkshire. Mr. Griffith declares it to be very common about his residence at Garn. We trust we need not dispute with that generally correct botanist on the subject of its difference from *granulatus*, t. 1757. The latter becomes almost black by drying.

1981



*Feb 1 1899 Published by J. A. Sewby London*







[ 1982 ]

LICHEN lacer.

*Jagged Gelatinous Lichen.*

CRYPTOGAMIA Age.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Leafy, gelatinous, membranous, extremely thin, nearly upright, blueish brown; lobes dilated, finely jagged and fringed. Shields scattered, minute, concave, red, with a thick brown border.

SYN. Lichen lacerus. *Art. Prod.* 133.

*L. tremelloides*. *Hass.* 537, *Lightf.* 842. *Hull.* 300.  
*Raii* 464. *Schw.* 328.

*L. Tremella*. *Winch.* 72.

*Lichenoides pellucidum*, *endiviæ foliis tenuibus crispis*.  
*Dill. Mat.* 143. t. 19. f. 51.

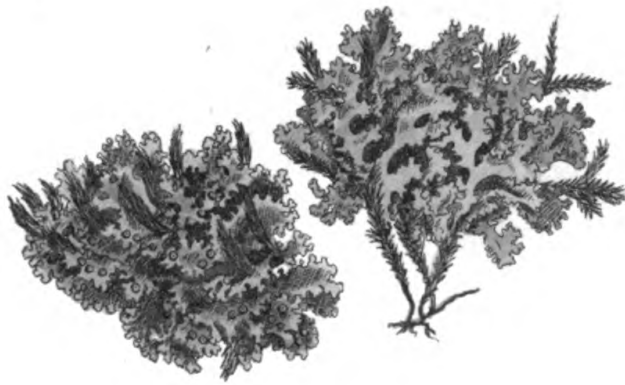
*L. saxatile tenue rufescens*. *Dill. in Raii Syn.* 77.

*Parmelia lacerata*. *A.A. Meth.* 225. *Winch Guide*  
t. 2. 58.

*Tremella lichenoides*. *Linn. Sp. Pl.* 1625.

WE resign with regret Hudson's name for this pretty Lichen, out of deference to Linnæus and Acharius, see last page; but we presume to change the word *lacerus* for the more classical *lacer*. We gathered our specimens long ago, full of shields, in Scotland and Westmoreland. The fronds grow nearly erect, among moss to which they adhere, being extremely thin and delicate, almost pellucid, light brown with a tinge of blue sometimes very vivid, and but little changed by drying. From a slender pale base they dilate and divaricate into a variously lobed and singularly jagged figure, the edges toothed or fringed. The shields, chiefly found in the north, are when present abundant, minute, prominent, with a red concave disk, and thick smooth light-brown border. The young ones resemble little grains like millet, scattered over the surface of the fronds. *Jacq. Coll. v. 3. t. 11. f. 1*, surely cannot be our plant, for nothing can be less like it!

1982



*Plat. 1809. Published by J. Sowerby London*





## LICHEN Burgessii.

*Crowned Lichen.*CRYPTOGAMIA *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

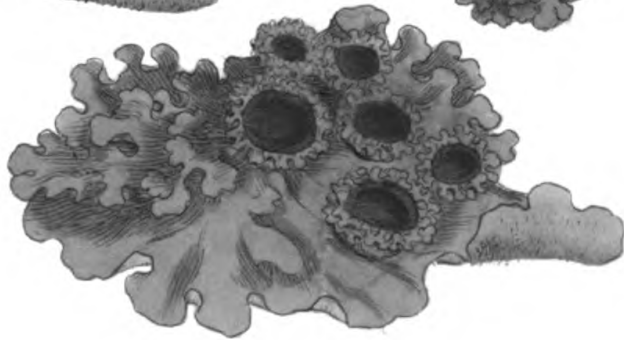
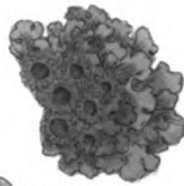
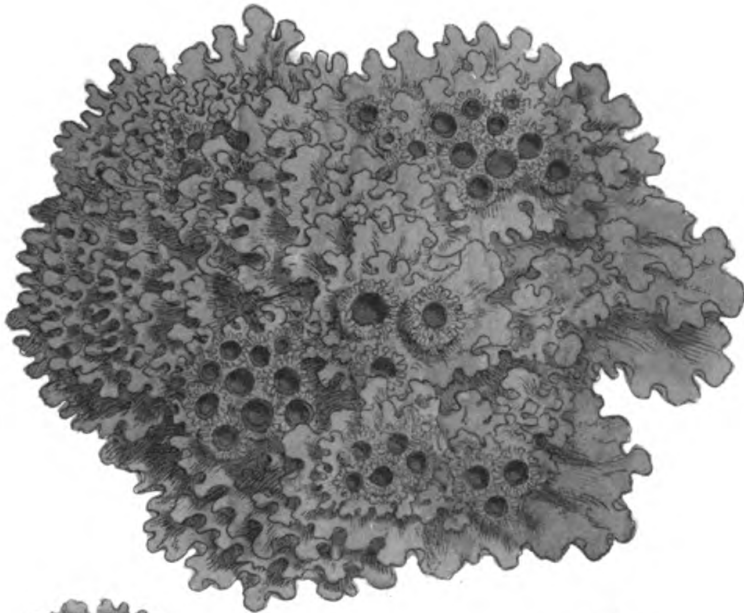
SPEC. CHAR. Leafy, somewhat imbricated, curled.

Shields elevated, brown, slightly concave, with a green, leafy, curled and sinuated border.

SYN. Lichen Burgessii. *Linn. Syst. Veg. ed. 13. 807.**Lightf. Scot. 827. t. 26. Huds. Fl. An. 538.**Wich. Bot. Arr. v. 3. 189.*

HITHERTO this curious *Lichen* has been found only in Dumfriesshire, Scotland, by the Rev. Dr. Burgess; but our specimens were gathered last summer on trunks of trees in the wild and beautiful country about the Devil's bridge, Cardiganshire, and at Hafod in that neighbourhood, by Dr. Smith. It grows, by no means copiously, in patches about as broad as the hand, the fronds being lobed, sinuated, curled and clustered together, so as to elevate one another into a thick cushion-like tuft; their substance is thin and pellucid, of a dull green, smooth above, finely downy beneath, when dry becoming of a purplish brown, and the under side whitish or hoary. The shields arise from the disk of the frond, in tolerable plenty when they are at all to be found, and the frond protruding with them makes them seem pedunculated, though they are really sessile; their disk is slightly concave, smooth, red brown, with a narrow, scarcely perceptible, border of its own substance and colour, and the whole enclosed in a luxuriant curled leafy elevated margin of the colour and texture of the frond.

Mr. Lightfoot describes the shields as, when wet, of the same colour with the leaves; whereas they are of a rather brighter brown in that state than when dry. Indeed his whole description is not made with all that attention which so new and singular an object deserved.



*Hydrozoa, Helicostoma, Helicostoma, Helicostoma.*







## L I C H E N globiferus.

*Globe Lichen.*C R Y P T O G A M I A *Algæ.*

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles in which the seeds are imbedded.

SPEC. CHAR. Shrubby, solid, much branched, cylindrical, brownish, and polished. Shields terminal, globular, producing a ball of black conglutinated powder.

SYN. Lichen globiferus. *Linn. Mant.* 133.

L. globosus. *Huds. Fl. An.* ed. 1. 460.

L. fragilis  $\beta$ . *Huds. Fl. An.* ed. 2. 558. *With. Bot. Arr.* 215.

Lichenoides non tubulosum, ramulis scutellis nigris terminatis. *Ruiz Syn.* 66? See L. fragilis (114).

Coralloides cupressiforme, capitulis globosis. *Dill. Musc.* 117. t. 17. f. 35.

**A**NATIVE of mountainous rocky heaths, very abundant in Scotland, Wales, and on Cromford moor near Matlock.

This species forms tufts by far less dense than those of L. fragilis, from which it is very distinct, though much resembling it; and the flowering stems are abundantly produced, rising but little above the others. Its whole surface is polished and shining, greyish when wet, brown when dry, the branches tipped with white. The stems and branches are cylindrical, not compressed; and the fructifications perfectly globular, not flattened, opening by a small irregular orifice. They are scarcely ever surmounted by lateral ramifications; and in the bottom of their cavity (which never expands) is a round mass of black powder, probably the seeds.

How far the powdery fructification and singular habit of this and the preceding might entitle them to be considered as a distinct genus from real Lichens, botanists are at present too little acquainted with the tribe to determine.



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## SPHÆROPHORON fragile.

*Brittle Globe Lichen.*

## CRYPTOGAMIA Algæ.

GEN. CHAR. *Receptacles* nearly globose, terminal, of the substance of the frond. *Seeds* in a dense, black, powdery bail.

SPEC. CHAR. Frond densely tufted, brownish, brittle, cylindrical, repeatedly forked, without lateral branches.

SYN. *Sphærophoron fragile*. *Ach. Meth.* 135.

*S. coralloides* β. *Turn. & Borr. Lich. Brit.* v. 1. 111.

*Lichen fragilis*. *Linn. Sp. Pl.* 1621. *Fl. Suec.* ed. 2. 425. *Ehrh. Crypt.* 128.

*L. sterilis*. *Ach. Prod.* 211. "

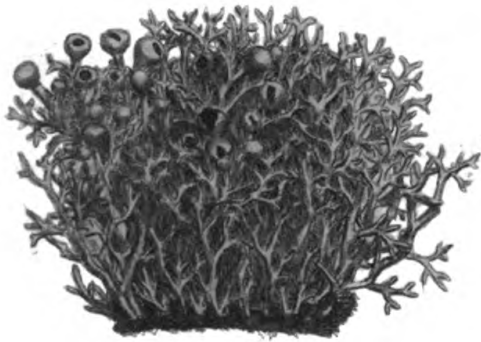
*Coralloides fragile*. *Hoffm. Pl. Lich.* v. 2. 34. t. 33. f. 3.

COMMUNICATED by Mr. Turner from rocks in Scotland. Being now satisfied of the necessity of separating this genus from *Lichen*, we take this opportunity of giving its characters. Three species only have been found in any part of the world. The habit of them all is no less peculiar than their fructification; shrubby, tufted, polished, more like a coral than a plant, the upper branches elongated, and tipped with large, solitary, nearly globose, balls, of their own substance, opening by an unequal orifice at the top, and displaying a globose mass of black powdery seeds, connected with a firm nucleus.

*S. coralloides*, *Schrad. Spicil.* 112, is our *Lichen globiferus*, t. 115, of which Mess. Turner and Borrer make the present a variety. We have always been disposed to think it so; but its regularly forked habit and uniform thickness, without those fine lateral compound branches, seen in our t. 115, added to the opinion of Acharius, make us hesitate to unite them.

*S. compressum*, *Ach. Meth.* 135, is our *L. fragilis*, t. 114, confounded with the present by Linnæus, but differing from both the above in its white colour, compressed stems, depressed receptacles, and the black fibres intermixed with its seeds.

2474



*Non. repulchra* by J. S. S. S. S.



✓



## LICHEN fragilis.

*Brittle Lichen.*

## CRYPTOGAMIA Alga.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded. *Hedwig in With. Vol. 3. p. 29, &c.*

SPEC. CHAR. Shrubby, solid, branched, compressed, whitish. Shields terminal, depressed, producing black powder intermixed with fibres.

SYN. Lichen fragilis. *Lim. Sp. Pl. 1621. Hudf. Fl. An. 558. With. Bot. Arr. V. 3. 215. Jacq. Misc. V. 2. 92. t. 9. f. 6. c. bad.*L. melanocarpus. *Swartz. Prod. 147.*Lichenoides non tubulosum ramosissimum, fruticuli specie, cinereo-fuscum. *Raii Syn. 65?*Coralloides alpinum, Corallinae minoris facie. *Dill. Musc. 116. t. 17. f. 34.*

**F**OUND on rocks and heaths in mountainous places, scarcely ever producing its shields except in moist shady situations. It was found in that state at Tunbridge by Mr. T. F. Forster, junr. in 1791, and by Dr. Smith, the following year, on the north side of the high rocks on Cromford moor near Matlock. We believe few persons since Dillenius have seen these shields.

The most common appearance of the plant is a thick tuft of short, erect, bluntish branches (fig. 1.) spreading on the rocks like a crustaceous Lichen. The flowering stems are widely different, an inch or two in height, more or less compressed, and much branched; each division terminating in a single shield, which when ripe produces a sooty powder intermixed with black fibres, and the margin of which is formed of the common covering of the stem irregularly lacerated, and often growing out into young branches, or tubercles tipped with black. Many of the lateral branches have often a jointed appearance (fig. 2.), and are sometimes tipped with black; but whether these or the small warts occasionally found on the flowering branches (fig. 3.) be the male fructifications of Hedwig, we have not seen enough to determine. The reddish colour sometimes assumed by this and other Lichens, seems to be owing to an alkaline substance, probably the urine of animals.

Our quotation of Ray is taken on the authority of Dillenius, but seems more applicable to *L. globiferus*. We should rather have guessed No. 13. of R. Syn. to be *L. fragilis*; but as that was inserted by Dillenius, he cannot surely have interchanged these two synonyms.

