

New species and combinations in *The Lichens of the British Isles*

Brian J. COPPINS and André APTROOT

Abstract: The preparation of the new edition of *The Lichen Flora of the British Isles* necessitates the publication of several taxonomic and nomenclatural novelties. The following new species are described: *Anisomeridium robustum* (Monoblastiaceae), *Antennulariella lichenisata* (Antennulariaceae), *Fellhanera duplex* (Pilocarpaceae), *Gyalideopsis crenulata* (Gomphillaceae), *Micarea farinosa* (Pilocarpaceae) and *Xerotrema quercicola* (Odontotremataceae). *Antennulariella lichenisata* is the first lichenized member of the order Capnodiales to be described. The following new combinations are proposed: *Bacidia squamellosa*, *Catillaria lobariicola*, *Collempsidium arenisedum*, *C. argilospilum*, *C. caesium*, *C. chlorococcum*, *C. monense*, *C. subarenisedum*, *Miriquidica pycnocarpa* f. *sorediata*, *Pyrenocarpon thelostomum*, *Topeliopsis azorica*, and *Verrucaria nigrescens* f. *tectorum*.

Key words: *Anisomeridium*, *Bacidia*, *Catillaria*, *Collempsidium*, *Fellhanera*, *Gyalideopsis*, *Micarea*, *Miriquidica*, *Pyrenocarpon*, *Topeliopsis*, *Verrucaria*, *Xerotrema*

Introduction

Although the lichen flora of Britain is one of the best known in the world, additions are still found on a regular basis. While preparing a new edition of the ‘*The Lichens of the British Isles*’, several species new to Britain, or even to science, were discovered. Furthermore, several species and infraspecific taxa needed to be transferred to other genera. In order to prevent the use of invalid names in the *Flora*, we formally propose below those transfers and new species descriptions that are not being made elsewhere.

New species and combinations

Anisomeridium robustum Orange, Coppins & Aptroot sp. nov.

A. polypori similis sed pycnidiiis grandioribus (0.2–0.58 mm diam.), conidiis grandioribus (4.5–6 × 2.5–3 µm) differt.

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Typus: Scotland, V.C. 101, Kintyre, 5 km SW of Skipness, Claonaig Wood SSSI [Coille Rubha Dhuibh], 16/86.55, 0–60 m, on bryophytes on *Quercus*, 10 June 1994, B. J. Coppins & A. M. O’Dare [Coppins 16242] (E—holotypus).

(Fig. 1A–D)

Thallus thin, white or pale greyish, often cracked, with *Trentepohlia* as photobiont. *Ascomata* unknown.

Pycnidia black, 0.2–0.6 mm diam. and 0.2–0.5 mm high, with globose or conical base tapering into a narrow, up to 1.5 mm long neck. *Conidia* hyaline, simple, pyriform to ellipsoid, with truncate base, 4.5–6 × 2.5–3 µm, sometimes extruded as a c. 20 µm wide cirrus. *Microconidia* not detected.

Chemistry. Lichen products not detected.

Ecology and distribution. On bark of mature broad-leaved trees, especially *Acer pseudo-platanus*, *Fraxinus*, and *Quercus*, less often *Corylus* and *Salix*, in old woodland and parkland, occasionally overgrowing bryophytes on trees or rocks. So far recorded in western Britain from Cornwall north to

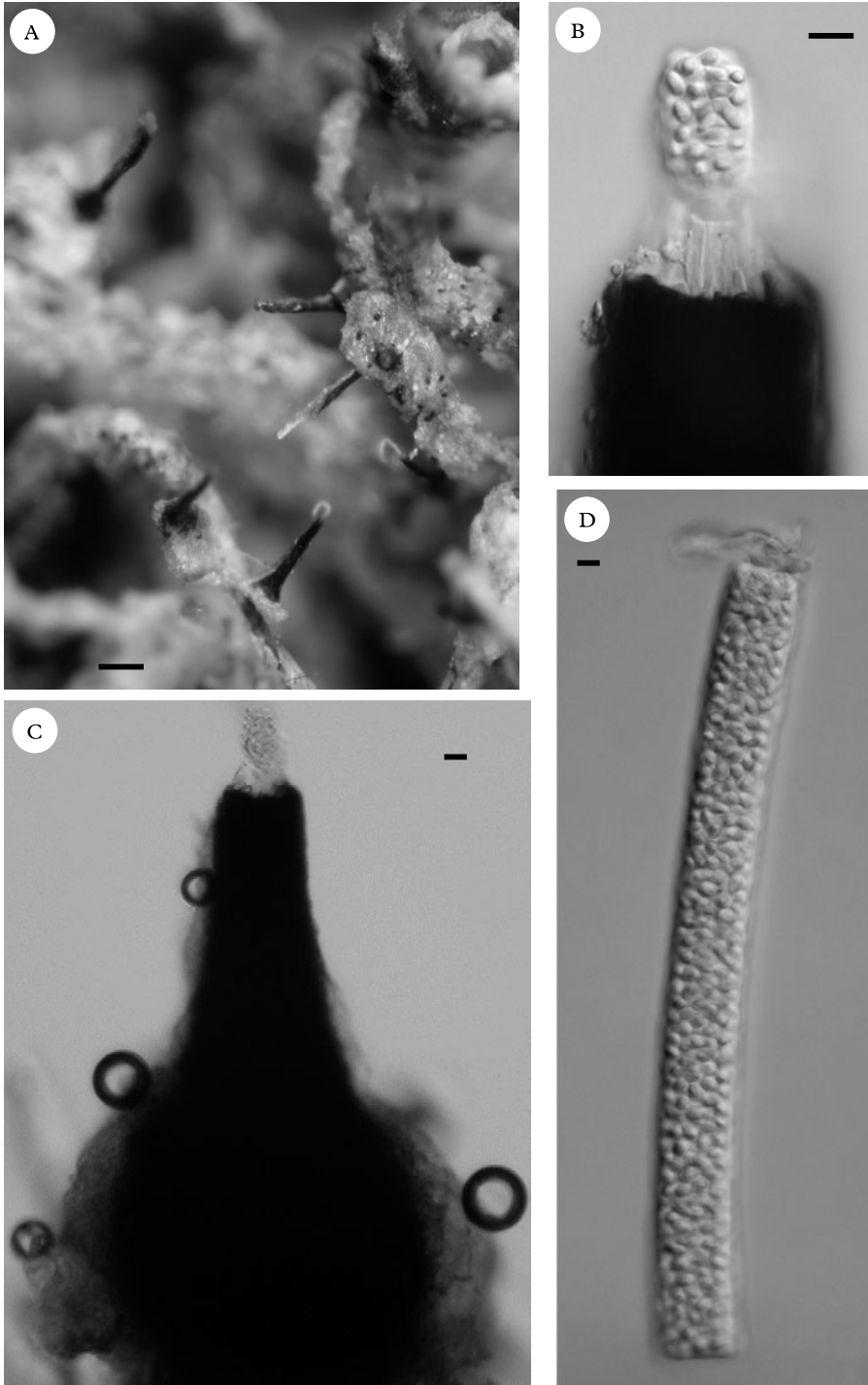


FIG. 1. *Anisomeridium robustum*, holotype. A, habitus; B, ostiole; C, pycnidium; D, cirrus of conidia. Scales: A=50 µm; B & C=10 µm; D=5 µm.

West Ross, with several additional localities in Ireland; it is certain to occur elsewhere in neighbouring continental Europe.

Associated lichens on bark include *Anisomeridium bifforme*, *Cresponea premnea*, *Dimerella pineti*, *Enterographa crassa*, *Lecanora chlarotera*, *Lecidella elaeochroma*, *Micarea micrococca*, *Opegrapha atra*, *O. rufescens*, *O. varia*, *O. vulgata*, *Pertusaria leioplaca*, *Porina borrieri*, *P. leptalea*, *Pyrenula chlorospila*, *P. macrospora*, *Strigula taylorii*, *Thelotrema lepadinum* and *Wadeana dendrographa*. The single collection from mossy rocks was accompanied by *Dimerella lutea*.

Notes. This species has characteristic macro-pycnidia and conidia, similar to *A. polypori* (Ellis & Everh.) M. E. Barr, but much larger; *A. polypori* has pycnidia 0.08–0.15 mm diam. and conidia 3.5–4.5 µm. These species are close to, or may even prove to be referable to, the genus *Caprettia* Bat. & H. Maia (Sérusiaux & Lücking 2003). The length of the pycnidial neck appears to be environmentally determined, being longest in sheltered situations, especially when growing on bryophytes. On exposed tree trunks, such as in parkland, the necks are often short or abraded.

The two collections from SW Ireland (Jørgensen 9132, 9162) are somewhat anomalous and may represent yet another species. Both are growing on *Frullania*, the pycnidia are more sessile and bottle-shaped (ampulliform), and the macroconidia are released in globose to ovoid packets (c. 65–110 µm wide), rather than in cylindrical packets forming a cirrus.

Selected specimens examined. **England:** V.C. 2, *East Cornwall:* Poundstock, Millook Woods, 20(SX)/18.99, on *Quercus*, 24 iii 1985, F. Rose (E). V.C. 3, *South Devon:* Buckland on the Moor, Holne Chase SSSI, W of Lizwell Meet, N side of East Webburn River, 20/71.73, 170 m on mossy *Quercus*, 2002, B. J. Coppins & A. M. Coppins 16654 (E). V.C. 4, *North Devon:* Bideford, Clovelly, 21/30.25, woodland on S side of stream, on *Corylus*, 1994, B. J. Coppins & A. M. O'Dare [Coppins 16493] (E); Marsland to Clovelly Coast SSSI, Clovelly Park, 21(SS)/312.253, 85 m, on *Fraxinus*, 2005, B. J. Coppins & J. C. E. Hope [Coppins 22095] (E); Watersmeet SSSI, W of Hoarook Water, Shortacombe Wood, 21/731.466, on *Quercus*, 2002, B. J. & A. M. Coppins 20413 (E).—**Wales:** V.C. 44, *Carmarthen:* Llandeilo, Dynevor Deer Park, 22(SN)/612.226, on

Acer pseudoplatanus, 1985, A. Orange 2886 (E); Llandoverly, Allt Rhyd y Groes NNR, 22(SN)/766.473, 230 m, on *Quercus* by stream, 2001, R. G. Woods [Coppins 20367] (E); *ibid.*, B. J. & A. M. Coppins 20359 and 20366 (E); *ibid.*, 22(SN)/768.477, on mosses and bark of *Quercus*, B. J. & A. M. Coppins 20376 (E). V.C. 45, *Pembroke:* Stackpole Estate, Castle Dock Wood, 11/97.96, 20 m, on young *Fraxinus*, 1997, A. M. & B. J. Coppins 17765 (E). V.C. 46, *Cardiganshire:* near Cardigan, Coedmore National Nature Reserve, 22(SN) 194.443, on *Quercus petraea*, 1996, A. Orange 19057 (NMW [C.2003.002.78]). V.C. 48, *Merioneth:* Talsarnau, Pont Dolorgan, 23(SH)/6222.3555, on *Quercus petraea*, 2002, A. Orange 13876 (NMW [C.2002.017.31]). V.C. 52, *Anglesey:* Beaumaris, Baron Hill, 23(SH) 601.764, on *Acer pseudoplatanus*, 1996, A. Orange 10857 (NMW [C.2003.002.68]).—**Scotland:** V.C. 101, *Kintyre:* Tainish NNR, 16/73.86, on *Quercus*, 1991, B. J. Coppins & A. M. O'Dare [Coppins 14577] (E). V.C. 105, *West Ross:* Inverpollly NNR, SE-facing slopes of Gleann Lochan Sàl, 29(NC)/07.15, on moribund hepatics on side of boulder, 1999, B. J. & A. M. Coppins 18736 (E); Beinn Eighe NNR, Coille na Glas-leitire, 28(NH)/015.634, 20 m, on *Salix* by stream, 2001, B. J. & A. M. Coppins 19799 (E).—**Ireland:** V.C. H2, *North Kerry:* Cromaglan Bridge, V/92.82, on bryophytes on *Quercus*, 1982, P. M. Jørgensen 9132 (E). V.C. H3, *West Cork:* Glengarriff Woods, V/9.5, on bryophytes on *Quercus*, 1982, P. M. Jørgensen 9162 (E). V.C. H35, *West Donegal:* Glenveagh National Park, valley above Glenveagh Castle, C/02.20, on moribund *Frullania* on *Quercus*, 1991, B. J. Coppins 15039 (E). V.C. H38, *Down:* Rostrevor Wood, J/18.17, on *Quercus*, 1992, B. J. Coppins 15516 (E).

Antennulariella lichenisata Coppins & Aptroot sp. nov.

Fungus Capnodiaceus lichenisatus, algae *Trentepohliae* associatis, ascomatis sessilibus, hyphidis fuscis ornamentatis, hamathecio nullo, ascis pyriformis, ascosporis hyalinis clavatis uniseptatis, 13–16 × 2.5–3.5 µm.

Typus: England, V.C. 13, West Sussex, Iping, St Cuthman's School, 41(SU)/8.2, on *Quercus*, 7 February 1974, F. Rose (E—holotypus).

(Fig. 2A–E)

Thallus very thin, inconspicuous, forming a pale pinkish area on bark. *Photobiont* *Trentepohlia*-like, with pale brown perpendicular filaments c. 7–14 µm wide with rounded apical cells.

Ascomata sessile, globose, black, closed, 50–75 µm diam.; surface with black hairs of up to 40 µm long, built of somewhat

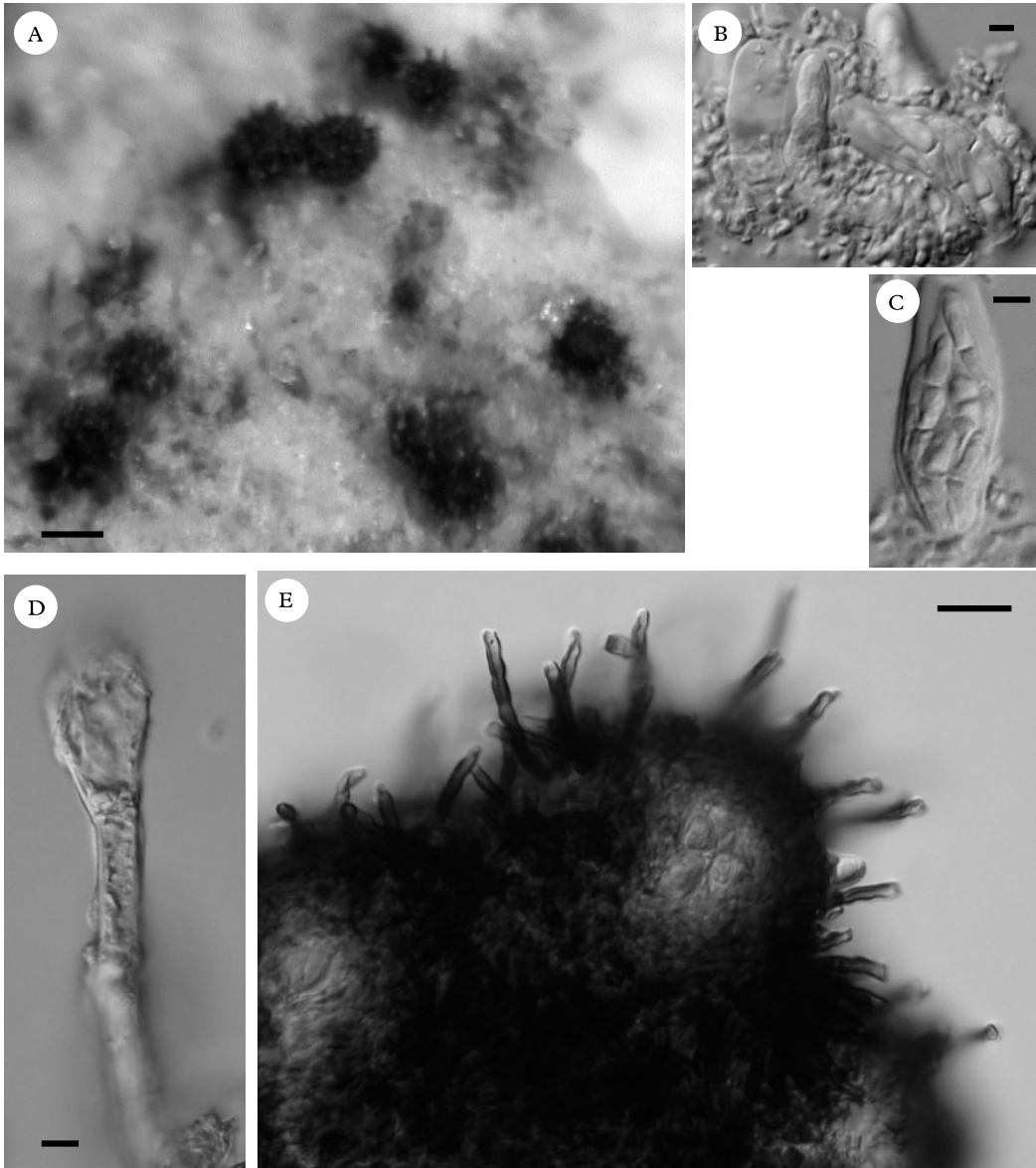


FIG. 2. *Antennulariella lichenisata*, holotype. A, habitus; B, asci and associated cells; C, ascus with ascospores; D, vertical filament; E, ascoma ornamentation. Scales: A=50 μm , B–D=5 μm , E=10 μm .

wavy cells *c.* 5–10 \times 2 μm ; ostiole brown. *Hamathecium* absent, but some loose cells present between asci. *Asci* bitunicate, 8-spored, pyriform, 25–36 \times 10–13.5 μm , upper half at the sides *c.* 2–3 μm thick. *Ascospores* hyaline, 1-septate, clavate, upper

cell shorter and broader than lower cell, 13–16 \times 2.5–3.5 μm , not ornamented, ends rather pointed.

Conidiomata not seen.

Chemistry. Lichen products not detected.

Ecology and distribution. This species has been collected on dry, acid bark of tree trunks, especially of *Betula* and *Quercus*, but also *Alnus*, *Corylus* and *Fraxinus*, mostly in humid woods with a high water table or by streams. It seems to be a poor competitor, and none of the several collections have closely associated lichens. Its known distribution is western Britain from SW England, north to West Ross in NW Scotland, but extending eastwards in the south to West Sussex, and with three finds in the north of Ireland. It remains to be found in Wales and may be overlooked elsewhere, as this kind of 'fungal material' is generally neither collected by mycologists nor by lichenologists.

Notes. This species has puzzled us for some time. It is quite common and sometimes abundant on rough-barked trees. The minute globose, hairy ascumata are sessile on the bark or even elevated on hyphal mycelium and intermixed with upright perpendicular filaments of the trentepohlioid photobiont. Such upright sporangial filaments can be seen in some species of *Coenogonium*, but especially in *Microtheliopsis uleana* Müll. Arg. (Santesson 1952: 134), and may indicate weak lichenization. The overall impression is that of a non-lichenized fungus, but it is consistently associated with algae, and the delimitation of the area with ascumata coincides with the delimitation of the pinkish colour indicating the thallus. The possibility that *A. lichenisata* is lichenicolous is unlikely as in none of the collections is it closely associated with a *Trentepohlia*-containing lichen. In one collection, Coppins 18735, the thallus is co-inhabited by *Chaenothecopsis vainioana*, itself facultatively lichenicolous. The characters of the ornamented ascumata place it in the *Capnodiales* (sooty moulds) genus *Antennulariella* Woron., a hitherto monotypic genus in the *Antennulariaceae* Woron. (Barr 1987) with only three species known to date; the two species of *Achaetobotrys* Bat. & Cif. have glabrous ascumata.

Additional specimens examined. **England:** V.C. 4, North Devon: Holsworthy, Dunsland Park, 21(SS)/409.055, wet alder-sallow carr, on *Alnus*, 28 iii 1990,

A. M. O'Dare (E); Barle valley, Yamson Coppice, 21(SS) 868.299, 200 m, on *Fraxinus*, 2002, B. J. & A. M. Coppins 20572 (E). **V.C. 5, South Somerset:** Clatworthy Reservoir, Clatworthy Wood, 31(ST)/04.31, c. 250 m, on *Quercus*, 1996, B. J. & A. M. Coppins 16812 (E); Clatworthy Reservoir, Northern Wood, 31(ST)/04.32, 240 m, on *Quercus*, 1996, B. J. & A. M. Coppins 16829 (E). **V.C. 11, South Hampshire:** New Forest, Stricknag Wood, along Coalmeer Gutter, c. 41(SU)/260.124, in crevices of *Quercus* bark, 1984, B. J. Coppins 10160 (E).—**Scotland:** V.C. 98, Argyll Main: Seil, Ballachuan Hazelwood, 17(NM)/76.15, 20 m, on trunk of old *Betula*, 1997, B. J. & A. M. Coppins 17441 (E); Inverary, Glen Shira, SW of Kilblaan, 30 m, by small stream, on *Quercus*, 1996, B. J. & A. M. Coppins 16762 (E). **V.C. 104, North Ebudes:** Eigg, Galmisdale, Lodge Garden, on 'flame tree', 17(NM)/479.841, 35 m, 2000, B. J. & A. M. Coppins 19178 (E); Skye, Kyleakin, Kyle House, wood W of beach, 18(NG)/74.26, 0–20 m, on *Betula*, 1991, B. J. Coppins 14307 (E). **V.C. 105, West Ross:** Inverpolly NNR, S side of River Kirkaig, W of bridge at An Droigneach, 29(NC)/08.19, 30 m, on *Betula*, 1999, B. J. & A. M. Coppins 18735 (E).—**Ireland:** V.C. H33, Fermanagh: Correl Glen NNR, H/0.5, c. 50 m, on *Corylus*, 1993, B. J. Coppins, A. M. O'Dare & H. Fox [Coppins 15729] (E); Crom, Crom Castle Wood, H/35.24, c. 50 m, on *Betula*, 1993, B. J. Coppins & A. M. O'Dare [Coppins 15751] (E). **V.C. H35, West Donegal:** Church Hill, woods at NE end of Gartan Lough, C/05.16, on *Betula*, 1991, B. J. Coppins 15043 (E).

***Bacidia squamellosa* (S. Ekman)
Coppins & Aptroot comb. nov.**

Bacidia squamellosa S. Ekman, *Opera Bot.* 127: 123 (1996).

The genus *Bacidia* is taken up in a wide sense in the *Flora*. This necessitates a new combination for this recently described species, which is surprisingly common in western Britain.

***Catillaria lobariicola* (Alstrup)
Coppins & Aptroot comb. nov.**

Scutula lobariicola Alstrup, *Graphis Scripta* 8: 28 (1997).

The brown, capitate paraphyses tips and a uniformly K/I+ blue ascus apex clearly place this lichenicolous species in *Catillaria* s. str. It grows on moribund *Lobaria scrobiculata*.

Collemopsidium arenisedum (A. L. Sm.) Coppins & Aptroot comb. nov.

Arthopyrenia areniseda A. L. Sm., *J. Bot.* **49**: 42 (1911).—*Pyrenocollema arenisedum* (A. L. Sm.) Coppins, in Coppins, James & Hawksworth (1992).

Grube & Ryan (2000) discussed the problems surrounding the genera *Collemopsidium* Nyl. and *Pyrenocollema* Reinke. However, we consider that the British species previously included in *Pyrenocollema* are better placed in *Collemopsidium*.

Collemopsidium argilospilum (Nyl.) Coppins & Aptroot comb. nov.

Verrucaria argilospila Nyl., *Flora, Jena* **57**: 15 (1874).—*Pyrenocollema argilospilum* (Nyl.) Coppins, in Coppins, James & Hawksworth, *Lichenologist* **24**: 368 (1992).

Collemopsidium caesium (Nyl.) Coppins & Aptroot comb. nov.

Verrucaria caesia Nyl., *Bot. Not.* **1853**: 162 (1853).—*Pyrenocollema caesium* (Nyl.) R. C. Harris, in Egan, *Bryologist* **90**: 164 (1987).

Collemopsidium chlorococcum (Aptroot & van den Boom) Coppins & Aptroot comb. nov.

Pyrenocollema chlorococcum Aptroot & van den Boom, *Crypt. Bryol. Lichénol.* **19**: 194 (1998).

Although this species has not yet been found in the British Isles, it is here transferred to *Collemopsidium* in order to prevent it being orphaned in the genus *Pyrenocollema*.

Collemopsidium monense (Wheldon) Coppins & Aptroot comb. nov.

Acrocordia monensis Wheldon, *Lancast. Nat.* **8**: 196 (1915).—*Pyrenocollema monense* (Wheldon) Coppins, in Coppins, James & Hawksworth, *Lichenologist* **24**: 368 (1992).

Collemopsidium subarenisedum (G. Salisb.) Coppins & Aptroot comb. nov.

Arthopyrenia subareniseda G. Salisb., *Naturalist, Hull* **1953**: 17 (1953).—*Pyrenocollema subarenisedum* (G. Salisb.) Coppins, in Coppins, James & Hawksworth, *Lichenologist* **24**: 368 (1992).

Fellhanera duplex Coppins & Aptroot sp. nov.

F. margaritellae similis sed ascis 16–24-sporis et ascosporis parvioribus differt.

Typus: Wales, V.C. 46, Cardigan, Cwm Rheidol, Coed Simdde-lwyd NNR 22/(SN)/718.785, alt. 200 m, open valley-side *Quercus petraea* woodland, on *Hypnum* 'drip tassel' on trunk of fairly well-lit, S-facing *Q. petraea*, 15 April 2001, S. P. Chambers (E—holotypus; GZU—isotypus).

(Fig. 3A–C)

Thallus continuous, very thin, inconspicuous, forming a pale grey to brownish film on decaying mosses.

Apothecia sessile, round, (0.1–)0.15–0.2 mm diam.; disc pale yellowish brown, plane; margin similar or slightly darker. *Exciple* paraplectenchymatous, nearly hyaline, K–. *Epithyrium* granular, K+ dissolving. *Hypothecium* hyaline. *Paraphyses* branched and anastomosing, 1–1.5 µm wide, apices not thickened. *Asci* 16–24-spored, *Pilocarpaceae*-type. *Ascospores* broadly ellipsoid, simple, (2.5–)3–4(–5) × 2–2.3 µm.

Pycnidia not seen.

Chemistry. Lichen products not detected.

Ecology and distribution. On bleached decaying bryophytes on bark, more rarely on moss on limestone; Wales (Cardiganshire), Scotland (Mid-Perthshire, West Ross).

Notes. Characterized by the 16–24-spored asci and the simple ascospores. It comes closest to *F. margaritella* (Hulting) Hafellner (Poelt & Döbbeler 1975), which is also bryicolous, but has narrower ellipsoid ascospores, 8/ascus, measuring (5–)5.7–8 × 2.5–3(–3.5) µm. In the field it is most likely to be mistaken for a pale-fruited species of *Micarea*. It was mentioned by Fryday (1997: 59) as “?Biatorella sp.”

Additional specimens examined. **Scotland: V.C. 88, Mid-Perthshire**: Kinloch Rannoch, Loch an Dùim, 27(NN)/71.57, 350 m, over bryophytes in crevice in limestone, 1992, A. M. Fryday 3445 (E). **V.C. 105, West Ross**: Dundonnell, N side of lower part of Allt a'Chairn ravine, 18(NH)/12.84, 130 m, on bryophytes on *Corylus* on steep SE-facing slope near top of ravine, 2008, B. J. Coppins 22523 (E).

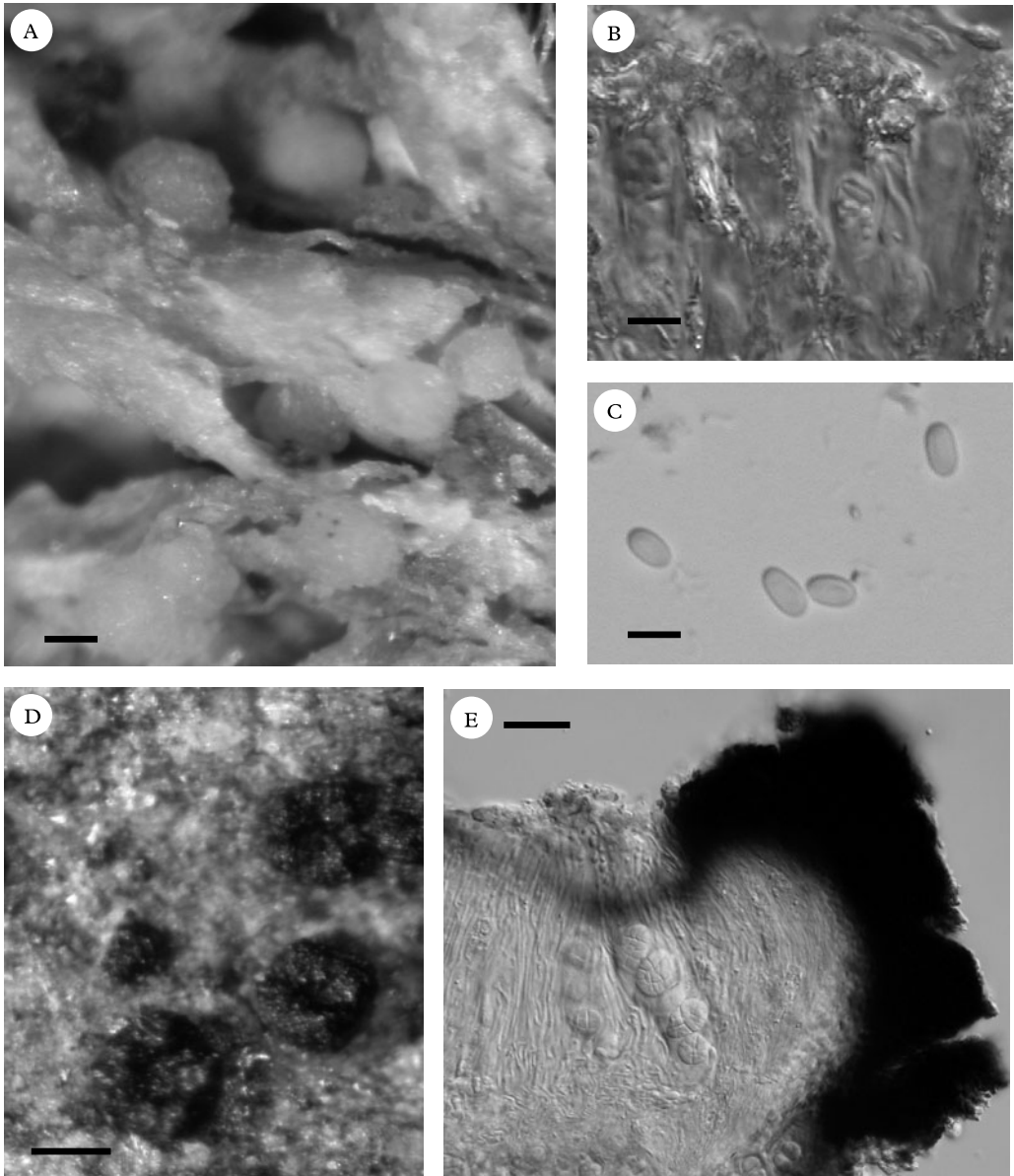


FIG. 3. A–C. *Fellhanera duplex*, holotype. A, habitus with apothecia; B, hymenium with epihymenium and multisporous asci; C, ascospores. Fig. 3 D–E. *Gyalideopsis crenulata*, holotype. D, habitus with apothecia; E, section through apothecium showing margin and asci with ascospores. Scales: A=0.1 mm; B=10 µm; C=5 µm; D=0.2 mm; E=20 µm.

***Gyalideopsis crenulata* Coppins & Aptroot sp. nov.**

G. lecideinae similis sed ascosporis parvioribus, submuriformibus differt. Apothecia brunneo-atra vel atra, 0.2–0.3 mm diam., margine crenato.

Typus: Wales, V.C. 49, Caernarvon, Gwydr Forest, Foxdale Mine, near wheel-pit, 23(SH)/765.598, 230 m, on spoil fragments, 25 October 1994, S. P. Chambers (E—holotype).

(Fig. 3D–E)

Thallus very thin, continuous, inconspicuous, forming a pale grey to brownish film on rock.

Apothecia emergent, 0.2–0.3 mm diam., disc dark brown to black; margin dark brown to black, *c.* 0.1 mm thick, crenate. *Epihymenium* red-brown. *Hypothecium* hyaline. *Paraphyses* anastomosing, *c.* 1 µm wide. *Asci* clavate, 8-spored, 55–75 × 15–25 µm. *Ascospores* 14–21.5 × 11–14.5 µm, ellipsoid, submuriform with 3 transverse septa and 1–2 longitudinal septa.

Pycnidia or hyphophores not seen.

Chemistry. Lichen products not detected.

Distribution and ecology. On rock (slate or pebble) in copper-rich mines, although the rock fragments on which the new species occurs do not seem to have a copper-rich mineralogy. None of the rock fragments have any other associated lichens.

Notes. This species differs from all known species of the genus (Lücking *et al.* 2006) by the dark apothecia with a thick crenate proper margin. It keys out close to *G. lecideina* Kalb & Vězda, which differs, for example, by the larger (20–35 × 12–20 µm) muriform ascospores. Superficially it resembles *Polysporina simplex*, which has simple ascospores.

Additional specimen examined. **Wales:** V.C. 46, Cardiganshire: Nant-y-cagl, Eaglebrook Mine, 22(SN) 735.892, 230 m, on stone in mine spoil, 1998, S. P. Chambers (E).

***Micarea farinosa* Coppins & Aptroot sp. nov.**

M. lithinellae similis sed thallo farinoso, apotheciis vulgo parvioribus, 0.15–0.25(–0.3) mm diametro, ascoporis parvioribus, 5–7.5 × 2–3.4 µm differt.

Typus: Wales, V.C. 46, Cardiganshire, Hafod, SE of Dologau, Nant Gau, 22(SN)/774.732, 240 m, on sheltered shale pieces in recess at base of tree in old woodland in stream gorge, 25 February 2000, S. P. Chambers (E—holotypus).

(Fig. 4A–C)

Thallus light green, farinose, of ± globose goniocysts; goniocysts 12–18 µm diam.,

sometimes coalescing to form granules to 35 µm diam.; outer hyphae colourless, K –; photobiont cells 4–7 µm diam.

Apothecia 0.15–0.25(–0.3) mm diam., convex to subglobose, immarginate, pale orange to orange-brown. *Exciple* poorly developed, reflexed, colourless. *Hymenium* 24–30 µm high. *Epihymenium* colourless. *Hypothecium* hyaline. *Paraphyses* 1–1.5 µm wide, to 2 µm towards apices, scanty, branched; a few additional, stouter (to 3 µm wide) paraphyses sometimes evident. *Asci* 27–30 × 7–10 µm. *Ascospores* 5–7.5 × 2–3.4 µm, ovoid, ovoid-ellipsoid to oblong-ellipsoid, simple.

Pycnidia not seen.

Chemistry. Lichen products not detected by t.l.c.

Ecology and distribution. On acid rock or consolidated soil, sometimes on moribund mosses, under sheltered, dry overhangs, recesses at tree bases and upended root-plates; rare or overlooked. S.W. England (Cornwall), Wales (Cardigan, Radnor), W. Scotland (Wigtown, Argyll).

Notes. Similar to *M. lithinella* (Nyl.) Hedl., but differing in its farinose thallus, smaller apothecia and ascospores, and occurrence in underhang niches. *Micarea myriocarpa* V. Wirth & Vězda ex Coppins with pale apothecia can be distinguished by its more scurfy granular thallus, narrower, often 1-sepate ascospores and reddish- to orange-brown hypothecium. Similar farinose or leprose species in similar habitats include *Psilolechia clavulifera* (Nyl.) Coppins (photobiont *Stichococcus*, ascospores smaller), *P. leprosa* (thallus C+ red), *P. lucida* (Ach.) M. Choisy (thallus and apothecia bright yellow-green), and *Lepraria ecorticata* (J. R. Laundon) Kukwa (photobiont cells larger, thallus containing usnic acid).

Additional specimens examined. **England:** V.C. 2, East Cornwall: Bodmin Moor, Phoenix United Mine, 20(SX)/266.718, alt. 280 m, on dry moss under granite outcrop partially surrounded by *Ulex* scrub, 2001, V. J. Giavarini (E).—**Wales:** V.C. 43, Radnor: Elan Valley, Nant Methan in remains of garden of Cwm Elan

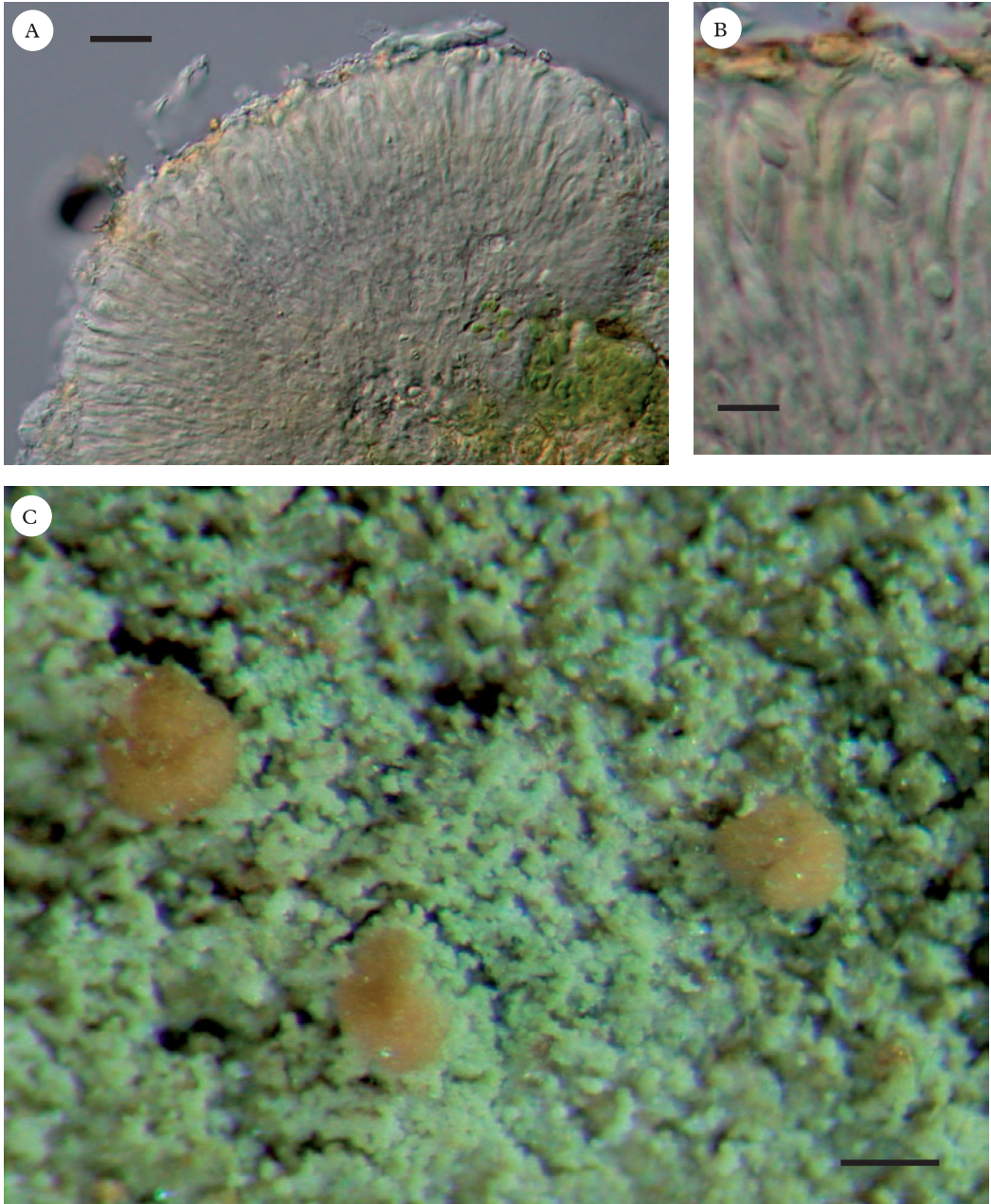


FIG. 4. *Micarea farinosa*, holotype. A, section through apothecium; B, ascus with ascospores; C, habitus. Scales: A=20 µm; B=10 µm; C=0.2 mm.

House, 22(SN)/909.647, encrusting *Thamnobryum alopecurum* fronds on damp vertical walls of ravine, 1988, R. G. Woods (E).—**Scotland: V.C. 74, Wigtownshire:** Castle Kennedy, Sheuchan Wood, 25(NX)/11.62,

1989, A. M. Fryday (E). **V.C. 98, Argyll Main:** Shian Wood, 17(NM)/90.41, alt. 20 m, on soil of large up-ended root plate, 2006, B. J. & A. M. Coppins & J. Douglass [Coppins 21872] (E).

Miriquidica pycnocarpa f. soredata
(Coppins & Fryday) Coppins &
Aptroot comb. nov.

Lecidea pycnocarpa f. *soredata* Coppins & Fryday, in Gilbert & Coppins, *Lichenologist* 24: 160 (1992).

This new combination is needed because the species has been transferred to the genus *Miriquidica* (Andreev 2004).

Pyrenocarpon thelostomum (Ach. ex J. Harriman) Coppins & Aptroot comb. nov.

Verrucaria thelostoma Ach. ex J. Harriman, in Winch, Thornhill & Waugh, *The Botanist's Guide through the Counties of Northumberland and Durham* 2: 44 (1807).—*Thrombium thelostomum* (Ach. ex J. Harriman) A. L. Sm., *Monogr. Br. Lich.* 2: 307 (1911).

Heterotypic synonym: *Pyrenocarpon flotowianum* (Hepp) Trevis. *Flora, Jena* 38: 181 (1855).

Both Ellis (1981) and Jørgensen (2007) considered making this combination and synonymizing *V. thelostoma* with *P. flotowianum* (the type species of the genus), but did not do so because the type material of *V. thelostoma* in BM is not in good condition. However, we studied two excellent isotype specimens in HAMU, which confirmed the identity of the species.

Pyrenocarpon thelostomum is the only species in the genus.

Specimens examined: **England**: V.C. 60, *West Lancashire*: Leck Beck, 34/64.77(-8), on mudstone by river, 2 ii 1986, M. Gosling (E). V.C. 66, *Durham*: "On Whinstone near Eggleston, D[urham], [J.] H[arriman]" (HAMU—isolates, two specimens).

Topeliopsis azorica (P. James & Purvis) Coppins & Aptroot comb. nov.

Ramonia azorica P. James & Purvis, in Purvis & James, *Arquipélago, Life and Marine Sciences* 11A: 11 (1993).

This species lacks the typical exciple structures of *Ramonia* and fits the genus *Topeliopsis* (Kantvilas & Vězda 2000) much better than the genus *Ramonia*. It is close or may even turn out to be identical with the type species, *T. muscigena* (Stiz.) Kalb (Frisch & Kalb 2006; Kalb 2001) from South Africa, Australia and New Zealand.

Verrucaria nigrescens f. tectorum (A. Massal.) Coppins & Aptroot comb. nov.

Lithocia tectorum A. Massal, *Symmicta Lich.*: 91 (1855) [as *Lithoidea*].—*Verrucaria tectorum* (A. Massal.) Körb., *Parerga Lich.*: 368 (1863).

(Fig. 5D)

The taxonomy of *Verrucaria* species that (often) produce blastidia has been unsettled for a long time, both due to confusion of the two taxa, and uncertainty about their taxonomic status. Examination of an isotype of *L. tectorum* in L (see Fig. 5D), a specimen on roof tiles (hence the name) from Italy, proved that this name can be applied to the blastidiate morph of *V. nigrescens* Pers. The other blastidiate *Verrucaria* has a much thicker and paler thallus and is regarded as a morph of *V. macrostoma* Dufour ex DC., viz. *f. furfuracea* B. de Lesd., which in the past has erroneously been called *V. viridula* f. *tectorum* (A. Massal.) J. R. Laundon by British authors.

Xerotrema quercicola Coppins & Aptroot sp. nov.

X. megalosporae similis sed excipulo viridi-suffuso et ad basim K/I – , ascosporis amyloideis vulgo parvioribus, substrato ad lignum *Querci* differt.

Typus: Scotland, V.C. 97, Westerness, Loch Aline SSSI, S of Ardtornish, above Rubha na Samhnachain, 17(NM)/69.46, alt. 40 m, on standing decorticate *Quercus*, 13 November 2006, B. J. Coppins 22117 (E—holotype).

(Fig. 5A–C)

Thallus inapparent, doubtfully lichenized. *Apothecia* 0.3–0.6 mm diam., disc urceolate, dark brown; margins dentate, with coarse radial striations. *Exciple* with a distinctly green tinge in water mounts, lower parts K/I – . Asci 140–180 × 35–40 µm, 1-spored. *Ascospores* 52–98 × 16–28 µm, densely muriform, lumina 3–4 µm diam., I+ violet [I – in *X. megalospora*].

Pycnidia not seen.

Chemistry. None.

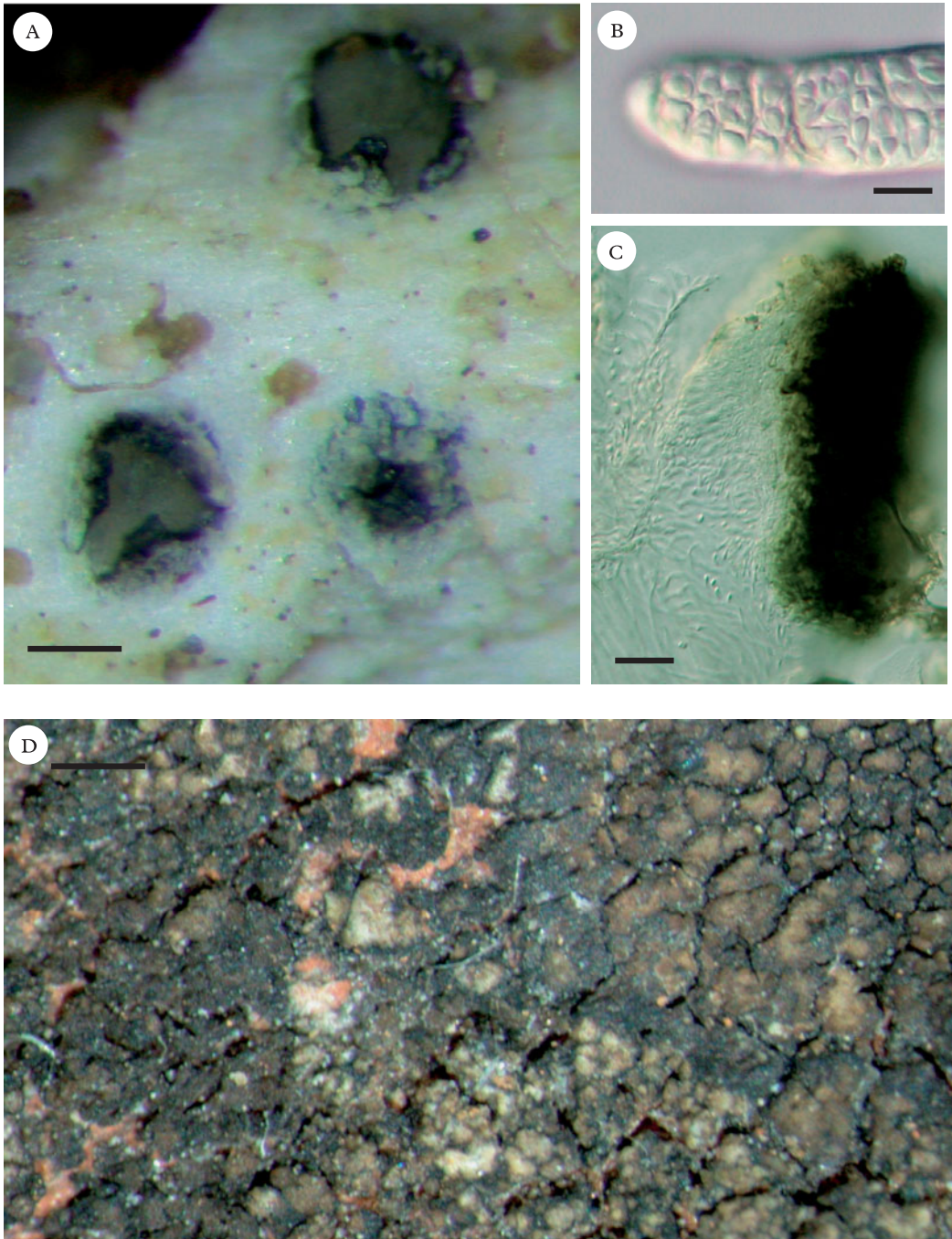


FIG. 5. A–C. *Xerotrema quercicola*, holotype. A, habitus with apothecia; B, part of ascospores; C section through apothecium showing green margin. D, *Verrucaria nigrescens* f. *tectorum*, isotype (L), habitus. Scales: A=0.5 mm; B & C=20 μ m; D=1 mm.

Ecology and distribution. On dry (or quickly drying), rather firm lignum of standing, decorticated *Quercus* trunks in Wales (Merioneth), W Scotland (Argyll and Westerness) and southern England (Hampshire: New Forest). This species is characteristic of former coppiced oak woodland undergoing self-thinning and resulting in scattered standing decorticated trunks with a whitish appearance.

Notes. The new species is identical in appearance to *X. megalospora* Sherwood & Coppins (1980), a not uncommon species on the dry, standing decorticate trunks of *Pinus* in the native pinewoods of the Scottish Highlands. *Xerotrema megalospora* is usually associated with *Trentepohlia* and so is at least facultatively lichenized but no *Trentepohlia* has yet been detected in the vicinity of the apothecia of *X. quercicola*.

The genus *Xerotrema* Sherwood & Coppins is currently placed in the *Odontotremataceae* (Kirk *et al.* 2001), but the possession of amyloid ascospores in the new species suggests an affinity to the *Thelotremataceae*.

Additional specimens examined. **England: V.C. 11, South Hampshire:** New Forest, Mallard Wood, large wet glade in pasture woodland, 41(SU)/3236.09554, on lignum of standing dead *Quercus*, 2008, *N. A. Sanderson* 1065 (E).—**Wales: V.C. 48, Merioneth:** Artro Valley, Coed Crafnant, SW end of wood near boundary wall with Coed Dolbebin, 23(SH)/617.286, 105 m, on hard decorticate lignum of standing dead *Quercus* in open area of old woodland, 2002, *S. P. Chambers* (E); Coed Ganllwyd, 23(SH)/7.2, on decorticate standing dead *Quercus*, 2002, *S. R. Davey* (E).—**Scotland: V.C. 97, Westerness:** Loch Sunart, Resipole, near Allt Mhic Chiarain, 17(NM)/72.64, 0–50 m, on *Quercus* lignum, 2004, *A. Aptroot* 61941 (ABL).

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