

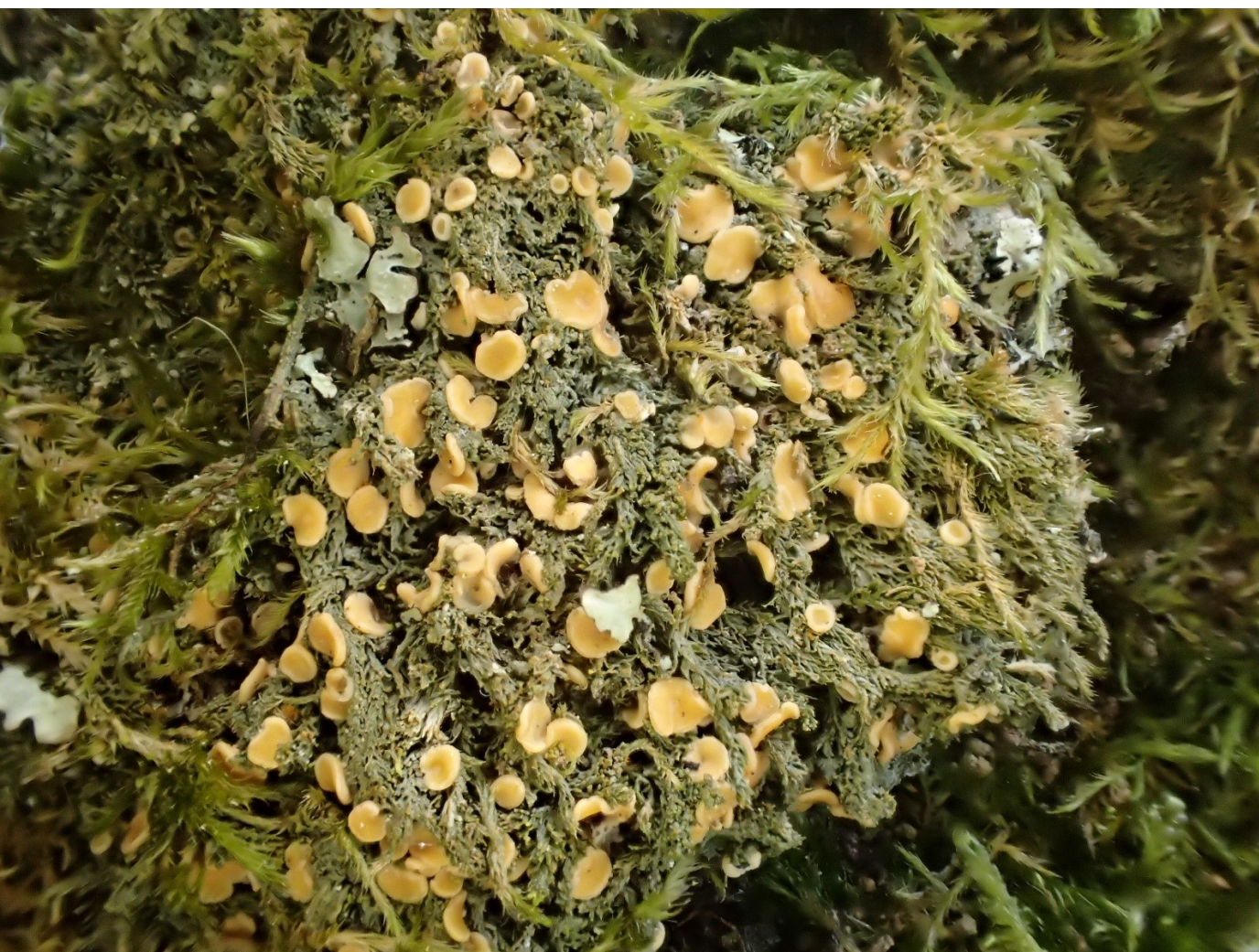
Revisions of British and Irish Lichens



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Ostropales: Coenogoniaceae

Cover image: *Coenogonium luteum*, overgrowing mosses on bark of *Magnolia* sp., Logan Botanic Garden, Wigtownshire.

Revisions of British and Irish Lichens is a free-to-access serial publication under the auspices of the British Lichen Society, that charts changes in our understanding of the lichens and lichenicolous fungi of Great Britain and Ireland. Each volume will be devoted to a particular family (or group of families), and will include descriptions, keys, habitat and distribution data for all the species included. The maps are based on information from the BLS Lichen Database, that also includes data from the historical Mapping Scheme and the *Lichen Ireland* database. The choice of subject for each volume will depend on the extent of changes in classification for the families concerned, and the number of newly recognized species since previous treatments.

To date, accounts of lichens from our region have been published in book form. However, the time taken to compile new printed editions of the entire lichen biota of Britain and Ireland is extensive, and many parts are out-of-date even as they are published. Issuing updates as a serial electronic publication means that important changes in understanding of our lichens can be made available with a shorter delay. The accounts may also be compiled at intervals into complete printed accounts, as new editions of the *Lichens of Great Britain and Ireland*.

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Ostropales: Coenogoniaceae

including the genus *Coenogonium*

by

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COENOGONIACEAE Stizenb. (1862)

The Coenogoniaceae as currently circumscribed (Lücking *et al.* 2016) contains only the genus *Coenogonium*, so the description below constitutes that of the family.

COENOGONIUM Ehrenb. (1820)

Thallus crustose (in British species; elsewhere the genus includes fruticose and pulvinate growth-forms), thin and inconspicuous or well-developed, smooth or granular, usually grey-green, isidiate in one British species. **Photobiont** *Trentepohlia*. **Ascomata** apothecia, sessile, marginate, concave-urceolate to flat, pinkish-white, pale yellow (at least when young), to orange, the margin concolorous or rarely slightly paler than the disc. **Thalline margin** absent. **True exciple** colourless to pale brown in section, composed of globose to angular tissue with an outer layer of weakly vertically oriented hyphae. **Hymenium** I+ blue. **Epithecium** indistinct. **Hypothecium** colourless. **Hamathecium** of distinctly septate paraphyses, sometimes branched near the apex, with \pm swollen to moniliform apical cells. **Asci** 8-spored, narrowly cylindrical, the wall thin, not fissitunicate, sometimes with a minute amyloid ring below the apex. **Ascospores** ellipsoidal, 1-septate (in British species), colourless, smooth, without a perispore. **Conidiomata** pycnidia, one-half to three-quarters immersed, yellowish or whitish-pink, the wall colourless. **Conidiogenous cells** arising singly or several together from branched supporting cells, cylindrical or bottle-shaped. **Conidia** ellipsoidal, aseptate, colourless, sometimes biguttulate. **Chemistry**: no lichen products detected by TLC. **Ecology**: in humid, shaded or sheltered habitats, on leaves, over mosses, or on mainly acidic bark.

This is a quite large genus (with around 90 species) from moist temperate and tropical habitats, including many leaf-inhabiting species. Species were included in the genus *Dimerella* Trevisan (1860) in the second edition of this volume (see Benfield *et al.* 2009). That differs only in the crustose rather than filamentous thallus, and as this was considered to be phylogenetically insignificant, Rivas Plata *et al.* (2006) merged the two genera. Molecular data are sparse, however, and further changes may be needed.

Abconditella species have chlorococcoid rather than *Trentepohlia* algae, have an I– (or reddish) hymenium, and indistinctly septate paraphyses. *Gyalecta* species are also similar macroscopically to *Coenogonium*, but have multiseptate ascospores.

Literature

Alvarez Andrés & Carballal Durán (2001), Benfield *et al.* (2009), Kauff & Büdel (2005), Lücking *et al.* (2016), Rivas Plata *et al.* (2006), Resl *et al.* (2015).

- | | | |
|------|---|---------------------|
| 1 | Apothecia yellow-orange, 0.4–2 mm diam. | 2 |
| | Apothecia variously coloured, not yellow-orange, 0.2–0.5 mm diam. | 3 |
| 2(1) | Thallus lacking isidia; frequently fertile; conidia often present, 3–4 (–5) \times 1.5–2 μ m | <i>luteum</i> |
| | Thallus with coralloid isidia, forming dense mounds away from apothecia; rarely fertile | <i>confusum</i> |
| 3(1) | Apothecia white to pale cream or pinkish, not strongly constricted at the base; hymenium 70–90 μ m tall; conidia 6–8 \times 2–2.5 μ m | <i>pineti</i> |
| | Apothecia pinkish beige to orange-brown, \pm constricted at the base; hymenium 90–120 μ m tall; conidia not known | <i>tavaresianum</i> |

Coenogonium confusum Malíček & Sanderson ined.

Porina rosei auct. br. pro maxima parte

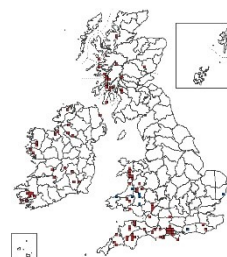
Thallus superficial, grey green to whitish, supporting abundant coralloid isidia, usually green, grading to pale ochre-orange where well lit, with a glossy surface, forming dense mounds away from the apothecia, more discrete near apothecia, 20–50 µm diam., with frequent constrictions and branching, with a compact clear cortex several cells thick surrounding up to four algal filaments. Apothecia 0.5–1.5 mm diam., sessile on the thallus (not when on isidia), distinctly constricted at the base, disc yellow-orange with pale creamy-yellow, often flexuose margins; hymenium 80–110 µm tall; paraphyses ca 1.5 µm diam., the apical cells to 4 µm diam. Ascus without an amyloid ring around the pore. Ascospores 9–11 × 2.5–3.0 µm. Pycnidia present but no data available. **BLS 2787.**

On a wide range of tree species with base-rich bark as well as on mossy rocks, in ancient woodland; widespread but local. S.W. England, Wales, S.W. Highlands, Ireland.

Very rarely fertile and long overlooked as the similar looking but much rarer *Porina rosei*. True *P. rosei* is also often sterile, but is darker orange with matt, softer-looking isidial mounds with narrower isidia, up to 27 µm diam., and a thinner clear cortex of a single layer of irregular rounded cells surrounding a single algal filament. *C. confusum* is very similar to the New Zealand species *C. fruticosum* (Ludwig 2014), except based on limited fertile material available, the hymenium is taller and the isidia appear more densely packed in the European species. It does not resemble any of the other varied tropical and austral isidiate *Coenogonium* species; see Aptroot & Cáceres (2018).

Enterographa brezhonega is occasionally parasitic on *C. confusum* and rarely on *C. luteum*, and could be easily mistaken as myxomycete fruit-bodies or blobs of *Lepraria*; however, if looked at closely the convoluted white lirellae are highly distinctive.

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Coenogonium luteum (Dicks.) Kalb & Lücking (2000)

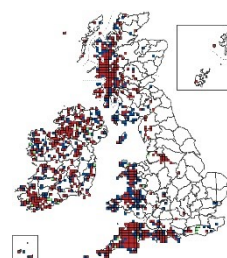
Dimerella lutea (Dicks.) Trevis. (1880)

Thallus evanescent or thin, effuse, ± unevenly scurfy, pale grey-green, occasionally orange-grey in patches when fresh. Apothecia 0.4–2 mm diam., distinctly constricted at the base; disc concave at first but soon flat or slightly convex, bright yellow-orange, with paler, often flexuose margins, but apothecia may be almost colourless and translucent in very wet or shaded conditions; hymenium 50–80 µm tall; paraphyses 1.5–2.5 µm diam., the apical cells to 4.5 µm. Ascus without an amyloid ring around the pore. Ascospores (6–) 8–11 × (2–) 2.5–3.5 µm. Pycnidia half to three-quarters immersed in the thallus, 150–250 µm diam., pale yellowish, the wall colourless. Conidia 3–4 (–5) × 1.5–2 (–2.5) µm, ellipsoidal, aseptate, colourless, sometimes biguttulate. **BLS 0490.**

On bark and associated bryophytes and occasionally on siliceous rocks in humid, shaded situations, and on mosses on soil; locally frequent. S. & W. Britain, throughout Ireland. In England it has recently spread east, probably in response to the decline in acidifying air pollution and potentially also warmer temperatures. Rarely parasitised by *Enterographa brezhonega*.

When sterile the continuous grey-green thallus is diagnostic, and a few pycnidia are usually present.

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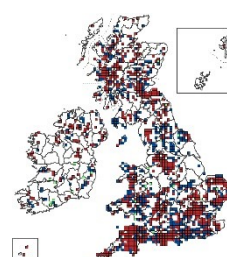
Coenogonium pineti (Ach.) Lücking & Lumbsch (2004)

Dimerella pineti (Ach.) Vězda (1975)

Thallus evanescent or ± thinly continuous, smooth to ± scurfy, grey-green to oily greenish black. Apothecia 200–500 µm diam., sessile, not strongly constricted at the base, disc concave to ± flat, white to pinkish-white or pale cream, the margin concolorous; hymenium 70–90 µm tall; epithecium indistinct; paraphyses 1–2 µm diam., the apical cells to 3.5 µm. Ascus apex slightly thickened to give an amyloid ring around the pore. Ascospores (8.5–) 9–14 (–15) × (2–) 2.5–4 (–4.5) µm. Pycnidia frequent, 100–220 µm diam., whitish, the wall colourless; conidia 6–8 × 1.8–2.5 µm, cylindrical, biguttulate, with a ± clear, median constriction. **BLS 0489.**

On shaded, ± acid bark, occasionally also on base rich very shaded bark, more rarely on wood, mosses, rocks, old leather, or soil; common and widespread but

LC



easily overlooked. It can be very inconspicuous during dry periods. Throughout Britain, more frequent to the N.E. in Ireland.

In the field, specimens with only or predominantly pycnidia only can resemble a *Porina*. When on wood, rocks or soil, *C. pineti* needs to be carefully compared with *Absoconditella* species.

Coenogonium tavaresianum (Vězda) Lücking, Aptroot & Sipman (2006)

Nb

Dimerella tavaresiana Vězda (1969)

Thallus effuse, immersed to thinly superficial, then consisting of minute granules, 25–30 µm diam. or larger verrucose units, to ca 100 µm diam., dull olive-green to paler glaucous green. Apothecia 200–250 (–350) µm diam., sessile, ± constricted at the base, disc concave to ± flat, pale to medium orange-brown, the margin sometimes slightly darker; hymenium 90–120 µm tall; epithecium indistinct; hypothecium poorly developed, colourless; paraphyses 1–2 µm diam., the apical cells to 3.5 µm. Asci without an amyloid ring around the pore. Ascospores (8.5–) 10–12 (–15) × 3–4 µm. Pycnidia not known. **BLS 2695**.



On bark of veteran *Quercus* trees, particularly in crevices and rain tracks. Distribution incompletely known, but recorded from E. Wales (Montgomery) and central S, to S. W. England (Devon, Herefordshire, Hampshire, Oxfordshire, Buckinghamshire)

Has the appearance of a *Gyalecta* or *Pachyphiale* species, especially *P. carneola*, but the small toffee coloured apothecia are a distinctive colour and it has one- rather than multi-septate ascospores.

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