

### Lichens of Great Britain & Ireland edn 3

Draft genus account version 1.1, January 2018

Prepared by Paul Cannon, based on the LGBI2 account of *Degelia* by James & Purvis (2009)

#### PECTENIA P.M. Jørg., L. Lindblom, Wedin & S. Ekman (2014)

**Thallus** foliose, lobate or placodioid, ± round to irregular, ± loosely attached by a dense felt of rhizines; lobes to 1 cm wide, mostly contiguous, laterally sometimes ± imbricate, the apices rounded, entire or notched, sometimes secondarily lobate, schizidiate or isidiate, grey-blue to pale grey when dry, sometimes with yellowish patches. **Upper surface** smooth or with distinct longitudinal ridges, sometimes scalloped, occasionally minutely scabrid. **Lower surface** pale, with dense, entangled, unbranched blue-black rhizines, rarely extended as a prothallus. **Upper cortex** of compacted, periclinal or anticlinal hyphae. **Lower cortex** ± apparent or lax and merging into blue-black rhizines. **Photobiont** *Nostoc*. **Medulla** of parallel, horizontally orientated hyphae. **Ascomata** apothecia, laminal, sessile, biatorine, usually with a paler margin; disc concave at first, becoming flat or ± convex, matt, non-pruinose, ± red-brown, occasionally ± blackened. **Thalline exciple** absent. **True exciple** well developed, of radiating isodiametric cells. **Hymenium** yellow-brown above, I+ deep blue. **Hamatecium** of paraphyses, unbranched, not or slightly enlarged at the apex. **Asci** 8-spored, clavate to subcylindrical, thickened at the apex with a distinct K/I+ blue plug and occasionally an external amyloid cap. **Ascospores** aseptate, ellipsoid, colourless, without a perispore or gelatinous sheath. **Conidiomata** pycnidia, laminal to marginal, wart-like, blackish. **Conidia** bacilliform, lateral or terminal on branching, short-celled conidiophores. **Chemistry**: lichen products not detected by TLC. **Ecology**: on bark and mossy rocks in oceanic environments; often a component of the *Lobarion*. **Distribution**: 4 species, mostly in oceanic Europe and Macaronesia.

*Pectenیا* species were included in *Degelia* Arv. & D.J. Galloway as sect. *Amphiloma* (Fr.) P.M. Jørg. & P. James by James & Purvis (2009). Ekman et al. (2014) demonstrated that *Pectenیا* deserved recognition at generic rank based on phylogenetic and biogeographical data. Research by Otálora et al. (2017) suggests that there are forms of both *P. atlantica* and *P. plumbea* with spatulate schizidia that are here accepted as *P. ligulata*, and that *P. cyanoloma* is a morph of *P. atlantica* that lacks isidia. This arrangement may well be accepted in further editions, but more data are required from British and Irish populations. Careful notes of lobe morphology (see couplet 2 below) in recording should be advocated, as this appears to correspond to clade membership.

The very rare *Toninia plumbea* occurs on *Pectenیا* species in both corticolous and saxicolous communities. They are more commonly parasitized by *Stigmidium degelii* R. Sant. (1993), with numerous, minute, immersed perithecia. The thalli are frequently accompanied by squamules of *Normandina pulchella*.

#### Literature:

- Blom, H.H. & Lindblom, L.** (2010). *Degelia cyanoloma* (Schaer.) H.H. Blom & L. Lindblom *comb. et stat. nov.*, a distinct species from western Europe. *Lichenologist* **42**: 23-27.
- Ekman, S., Wedin, M., Lindblom, L. & Jørgensen, P.M.** (2014). Extended phylogeny and a revised generic classification of the Pannariaceae (Peltigerales, Ascomycota). *Lichenologist* **46**: 627-656.
- James, P.W. & Purvis, O.W.** (2009). *Degelia*. In *Lichens of Great Britain and Ireland* (Smith, C.W., Aptroot, A., Coppins, B.J., Fletcher, A., Gilbert, O.L., James, P.W. & Wolsely, P.A. eds): 370-371. London: British Lichen Society.
- Jørgensen, P.M.** (2007e). *Degelia*. In Ahti, T., Jørgensen, P.M., Kristinsson, H., Moberg, R., Söchting, U. & Thor, T. eds), *Nordic Lichen Flora* **3**: 96-98. Stenungsund: Nordic Lichen Society.
- Jørgensen, P.M. & James, P.W.** (1990). The lichen genus *Degelia*. *Bibliotheca lich.* **38**: 253-276.

Otálora, M.A.G., Martínez, I., Aragón, G. & Wedin, M. (2017). Species delimitation and phylogeography of the *Pectenia* species-complex: A misunderstood case of species-pairs in lichenized fungi, where reproduction mode does not delimit lineages. *Fungal Biol.* **121**: 222-233.

- 1      Thallus without isidia or schizidia; apothecia usually abundant ..... 2  
       Thallus with isidia or schizidia; apothecia absent or few ..... 3
- 2(1) Thallus with radiating, crescent-shaped and longitudinally striate depressions; apothecia  
       dark red to almost black ..... *cyanoloma*  
       Thallus ± smooth, with longitudinally arranged lines of maculae; apothecia pale to  
       reddish brown..... *plumbea*
- 3(1) With erect or ± decumbent, ± dorsiventral, elongate, spatulate schizidia..... *ligulata*  
       With knob-like, ± erect, terete, branched, ± coralloid isidia ..... *atlantica*

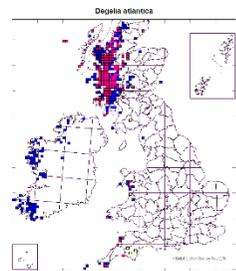
**Pectenia atlantica** (Degel.) P.M. Jørg., L. Lindblom, Wedin & S. Ekman (2014)

LC IR

*Degelia atlantica* (Degel.) P.M. Jørg. & P. James (1990)

Like *P. cyanoloma*, but with the thallus thinner, more closely adpressed and sometimes with grey-yellow patches, the surface knob-like or partially coralloid due to the presence of marginal and laminal isidia, to 0.2 mm diam.; these may be very numerous and form a thick, irregular, cracked-areolate crust ± obscuring the thallus. Apothecia very rare, usually few per thallus when present, appearance as in *P. cyanoloma*. **BLS 1027.**

On ± shaded, mossy, broad-leaved trees in cool, sheltered, humid woodlands, more rarely on mossy rocks. W. British Isles; locally abundant in W. Scotland & Ireland, less frequent elsewhere. Oceanic W. Europe and Macaronesia.



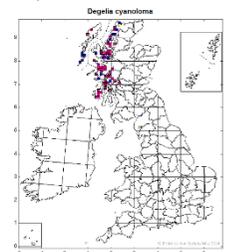
**Pectenia cyanoloma** (Schaer.) P.M. Jørg., L. Lindblom, Wedin & S. Ekman (2014)

LC IR

Thallus foliose, forming rosettes, mostly 5–15 (–25) cm diam., thick, loosely attached, lobes 2.5-3.5 mm wide, pale grey or pale bluish-grey with a series of successive shallowly concave, crescent-shaped longitudinally striate depressions, the margin often thickened, ascending, dark bluish-grey, smooth and glossy; squamules, schizidia and isidia absent. Apothecia usually numerous but sometimes lacking, often aggregated; disc dark red-brown to almost black with a slightly darker true exciple, flat to slightly convex; hymenium colourless, 120-160 µm tall; paraphyses unbranched, tips slightly swollen, to 5 µm diam. Asci clavate-cylindrical, 8-spored. Ascospores 15-20 × 6–8 µm, aseptate, ellipsoid, colourless, with or without oil droplets. Conidiomata pycnidia, laminal, immersed, wart-like, the ostiole pale. Conidia bacilliform, 3–6 × ca 1 µm. **BLS 2540.**

On mossy, broad-leaved trees and rocks in ± open, relict woodlands and on coastal rocks. W. Scotland from Argyll to Sutherland and the Outer Hebrides, also W. Ireland, locally abundant at least in Scotland. Norway, the Iberian Peninsula and Macaronesia.

Distinctive for its radially scalloped thallus lobes, and dark red apothecia. Only recently separated from *P. plumbea*, but perhaps more common than that species.



**Pectenia ligulata** (P.M. Jørg. & P. James) P.M. Jørg., L. Lindblom, Wedin & S. Ekman (2014)

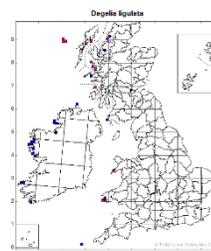
*Degelia ligulata* P.M. Jørg. & P. James (1990)

VUD2 IR

Like *P. plumbea*, but rarely fertile and with schizidia. Schizidia >1 mm in length, numerous, ± flattened, ligulate to spathulate, ± erect or randomly decumbent, usually blackened towards the apices and thus imparting an overall dark hue to the thallus. Apothecia <0.5 mm diam., very rare; disc brown, ± blackened with age, with a paler true exciple, structure as in *P. plumbea*. **BLS 1597**.

In crevices in coastal rocks and at the bases of small trees and shrubs in dry but intermittently humid coastal lowlands, possibly dependent on onshore sea mists; rare. W. Wales (Pembroke, Gwynedd), W. Scotland (Mid & S. Ebuies, W. Ross & St. Kilda), W. Ireland. Portugal and the Azores.

A distinctive morph differing from *P. atlantica* in possessing elongate, spathulate schizidia. A recently recognized component of the Macaronesian element in the British flora, which also includes *Herteliana gagei*, *Nephroma tangeriense*, *Pseudocyphellaria norvegica*, and *Topeliopsis azorica*.



**Pectenia plumbea** (Lightf.) P.M. Jørg., L. Lindblom, Wedin & S. Ekman (2014)

*Degelia plumbea* (Lightf.) P.M. Jørg. & P. James (1990)

LC IR

Thallus plate-like, thin and adpressed, forming ± orbicular, placodioid patches 5-10 cm diam.; lobes 1-2.5 mm wide, ± rounded at the apices, which tend to be irregular in outline and are not strongly thickened; upper surface blue-grey, sometimes with pale brownish or olivaceous patches, with a network of pale maculae but without prominent longitudinal ridges and concentric depressions; lower surface with a prominent, blue-black, beard-like hypothallus that may extend beyond as a prothallus; soredia and isidia absent, although occasionally ± knob-like lobules may develop. Apothecia 0.5-1 mm diam., usually numerous; disc pale red to red-brown with a paler true exciple, often becoming convex. Ascospores 17-25 × 7-10 µm, colourless, ellipsoid, smooth-walled; perispore absent. Conidiomata pycnidia, 0.1-0.2 mm diam., often produced individually in prominent warts. **BLS 2541**.

On mossy, broad-leaved trees and rocks in ± open, relict woodlands. Widespread in the Scottish Highlands, scattered and much reduced in distribution in upland Wales and S.W. England. Apparently with a less strongly oceanic distribution compared with *P. cyanoloma*. W. Europe, Macaronesia and the Mediterranean basin, also in eastern Canada.

Readily recognized by the relatively thin orbicular thallus that lacks the scalloped depressions of *P. cyanoloma*. It may also consist of small, often imbricate, lobes with some knob-like lobules, but these are usually more flattened than the isidia of *D. atlantica* and more rounded and expanded than the schizidia of *D. ligulata*.

