

CELOTHELIUM

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Celothelium A.Massal., *Atti Reale Ist. Veneto Sci. Lett. Arti*, ser. 3, 5: 332 (1860); from the Latin *celo* (hidden) and Greek *theke* (a cup), in reference to the carbonised ascomatal wall.

Type: *C. socialis* (Zenker) A.Massal. [= *C. cinchonarum* (Müll.Arg.) Vain.]

Thallus crustose, usually lichenised, not corticate, occasionally surrounded by a black hypothallus or, rarely, the thallus absent. Algae *Trentepohlia*. Ascomata perithecioid, mostly solitary, occasionally with fused walls only or with fused walls and ostioles, lacking pseudostromatic tissues. Ascomatal wall usually only carbonised above, with or without a clypeus. Hamathecium colourless, IKI–, not inspersed with oil droplets. Interascal hyphae paraphysoids, anastomosing only above the asci; filaments c. 1 µm thick; periphyses absent. Asci fissitunicate, cylindrical, IKI–, with a small ocular chamber. Ascospores 8 per ascus, in a single bundle, transversely multiseptate, filiform, ±euseptate, colourless. Conidiomata pycnidial; microconidia filiform, multiseptate, colourless. Conidiogenesis acrogenous.

Chemistry: No substances detected.

The family, as delimited here, is exclusively corticolous and comprises one genus and eight species; two are known from Australia. It is most diverse in the tropics, where species are epiphytic on branches in rainforest and in coastal areas. Its status as the sister group of the Pyrenulaceae has been confirmed by molecular analyses.

Species are characterised mainly by the arrangement of the ascomata. Reported differences in ascospore length are not significant; often a wide variation is observed, even within the same specimen. This treatment follows the new systematics of the genus in Aptroot *et al.* (2008), which presents a slightly different species concept to that of Aguirre (1991) and Harris (1995).

B.Aguirre-Hudson, A taxonomic study of the species referred to the ascomycete genus *Leptorhaphis*, *Bull. Brit. Mus. (Nat. Hist.), Bot.* 21: 85–192 (1991); R.C.Harris, *More Florida Lichens* 161–162 (1995); A.Aptroot, R.Lücking, H.J.M.Sipman, L.Umaña & J.L.Chaves, A first assessment of the Ticolichen inventory in Costa Rica: Pyrenocarpous lichens with bitunicate asci, *Biblioth. Lichenol.* 97: 1–162 (2008).

Ascomata mostly in rounded groups; ostioles lateral, fused **1. C. aciculiferum**
Ascoma mostly in linear groups; ostioles apical **2. C. cinchonarum**