

*Comoclathris antarctica*



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***Comoclathris antarctica*** Ł. Istel, J. Pawłowska & Wrzosek, *sp. nov.*

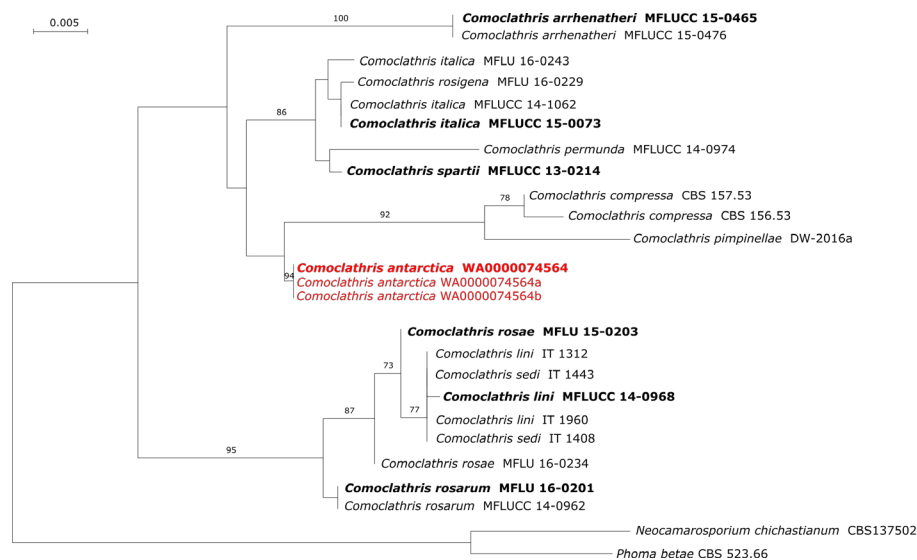
*Etymology.* The specific epithet 'antarctica' refers to the isolation locality – Antarctica.

*Classification* — *Pleosporaceae*, *Pleosporales*, *Dothideo-mycetes*.

*Colonies:* On potato glucose agar (PGA) after 7 d of growth at 24 °C reaching 2.58 cm ( $\pm$  0.34 cm) diam. Initially sterile, pink in the centre, becoming orange at the colony edge. Reverse orange to dark brown. Aerial hyphae and ascocarps appear after 6 wk of incubation at 4 °C. *Ascocarps* perithecial, separate or in groups, dark brown to almost black, strongly enclosed in aerial hyphae, ovoid to spherical, 339 ( $\pm$  103)  $\times$  299 ( $\pm$  97)  $\mu$ m, without distinct ostiole, 51–116  $\mu$ m diam; neck very short, up to 26  $\mu$ m long; operculum semispherical, flattened, 102–197  $\times$  97–182  $\times$  24  $\mu$ m; perithecial hyphae dark; wall of 2–3 cell layers. *Asci* bitunicate, mostly 8-spored, 72–84  $\times$  18–26  $\mu$ m, immature asci shorter ( $\sim$  60  $\mu$ m), cylindrical to clavate, bitunicate with a rounded apex. *Ascospores* lanceolate to ovoid, clavate, yellow to pale brown, elongated, asymmetrical with a blunt apex, muriformly, with 6–8 transvers septa, consisting of 10–17 cells, apical cell not divided, 31 ( $\pm$  2)  $\times$  13.5 ( $\pm$  1)  $\mu$ m.

*Typus.* ANTARCTICA, King George Island, 50 m from the front of Sphinx Glacier, coordinates S62°11'36.3" W58°27'18", isolated from soil sample using Warcup method on Minimal Media with 0.01 % diesel oil, 21 Mar. 2018, Ł. Istel (holotype WA0000074564 – dried specimen, culture ex-type CBS 147272, ITS and LSU sequences GenBank MW040594 and MW040597, MycoBank MB 837527).

*Notes* — The genus *Comoclathris* was described by Clements (1909). In 2015 the genus was placed in the *Pleosporales* by Ariyawansa et al. (2015). Currently, the genus consists of 41 registered names in MycoBank. However, data on only 10 species are represented in GenBank. The type species of the genus is *C. lanata*, which lacks ITS nrDNA sequence data. Ariyawansa et al. (2014) used sequences of two strains of *C. compressa* (CBS 157.53 and CBS 156.57) as reference. Those two strains together create a well-supported clade inside *Pleosporaceae* but outside the *Alternaria* complex. The morphological characteristic features of the genus are the presence of operculate perithecia, and asymmetrical, muriform, strongly divided ascospores (Shoemaker & Babcock 1992, Wanasinghe et al. 2018) and the isolate described here represents these features. The main characteristic that differentiates *C. antarctica* from another species in the genus is the 6–8 transversal ascospore septa. Additionally, *Comoclathris* representatives were never observed before in Antarctica. The rDNA sequences of ITS and LSU regions of *C. antarctica* are showing the highest similarity (95 % and 97 % respectively) to *C. spartii* (GenBank KM557160.1). However, *C. spartii* is saprobic on *Spartium junceum* and has smaller ascocarps (Crous et al. 2014b). The main morphological difference between *C. antarctica* and *C. compressa* is in the number of ascospore septa. *Comoclathris antarctica* has 6–8 transverse septa while ascospores of *C. compressa* only have three septa (Shoemaker & Babcock 1992). *Comoclathris antarctica* is the most similar to *C. arctica* based on morphology. However, *C. arctica* has much smaller ascocarps ( $\sim$  200  $\mu$ m diam) and larger asci, being up to 120  $\mu$ m long (Shoemaker & Babcock 1992).



*Colour illustrations.* Collection site (photo by H. Galera). Top left: colony after 7 d of incubation on PGA medium (sterile); perithecium with perithecial hairs; ascospores; ascospores in ascus; immature ascospores in ascus (photos by M. Wrzosek). Scale bars = 20  $\mu$ m.

Maximum Likelihood (RAxML-ng v. 0.9.0 BETA; Kozlov et al. 2019) phylogenetic tree based on the combined ITS and LSU nrDNA sequences data (GTR+FC+G4m+B model, 1 228 sites, Final LogLikelihood = -2508.6, AICc score: 5156.8, BIC score: 5486.6, bootstrap replicates = 1000) of selected representatives of the genus *Comoclathris*. The novel species is in red bold text, ex-type strains are in bold, the branch support values over 70 % are shown. The scale bar indicates the expected number of changes per site.

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