

*Calonectria pentaseptata*



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***Calonectria pentaseptata*** L. Lombard, M.J. Wingf., P.Q. Thu & Crous, *sp. nov.*

*Etymology.* Name refers to the 5-septate macroconidia produced by this fungus.

*Sexual morph* unknown. *Conidiophores* consisting of a stipe bearing a suit of penicillate fertile branches, a stipe extension, and terminal vesicle; stipe septate, hyaline, smooth 47–133 × 6–10 µm; stipe extension septate, straight to flexuous, 168–350 µm long, 3–6 µm wide at the apical septum, terminating in a narrowly clavate vesicle, 2–6 µm diam. *Conidiogenous apparatus* 70–99 µm long, 23–90 µm wide; primary branches 0–1-septate, 19–31 × 4–7 µm; secondary branches aseptate, 16–34 × 4–7 µm; tertiary branches aseptate, 14–22 × 4–6 µm, each terminal branch producing 1–3 phialides; phialides cylindrical to allantoid, obpyriform when carried singly, hyaline, aseptate, 15–24 × 4–6 µm; apex with minute periclinal thickening and inconspicuous collarette. *Macroconidia* cylindrical, rounded at both ends, straight, (75–)87–109(–115) × (5–)6–8(–10) µm (av. = 98 × 7 µm), 5(–8)-septate, lacking a visible abscission scar, held in parallel cylindrical clusters by colourless slime. *Megaconidia* and *microconidia* not seen.

*Culture characteristics* — (in the dark, 24 °C after 1 wk): Colonies fast growing, with optimum growth at 24 °C on MEA; surface sienna to dark brick, reverse sepia-brown; abundant aerial mycelium and sporulation; chlamydospores extensive throughout the medium, forming microsclerotia.

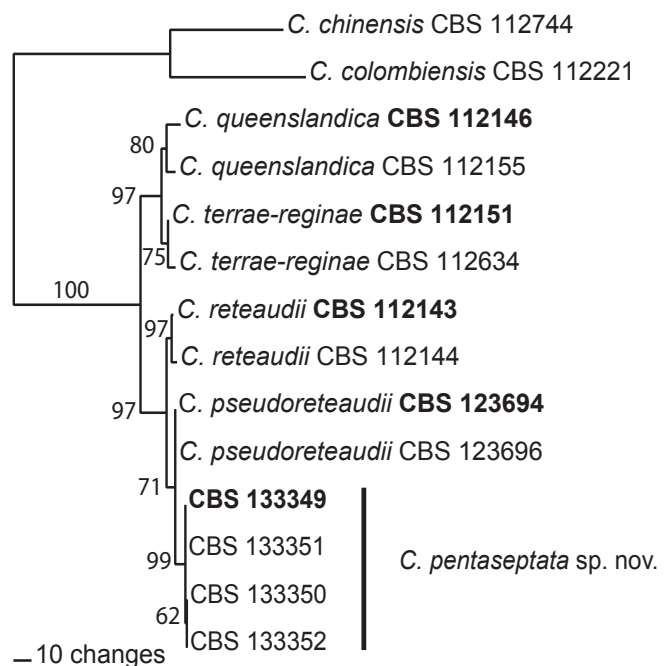
*Typus.* VIETNAM, Bavi, Hanoi, *Eucalyptus* hybrid, Sept. 2011, P.Q. Thu, holotype CBS H-21062, culture ex-type CBS 133349, β-tubulin (TUB) sequence GenBank JX855942, Histone H3 (HIS3) sequence GenBank JX855946, ITS sequence GenBank JX855950, LSU sequence GenBank JX855954 and translations elongation factor 1-alpha (TEF1-α) sequence GenBank JX855958, MycoBank MB801468.

*Colour illustrations.* *Eucalyptus* plantation in Vietnam; conidiophore; clavate vesicles; conidiogenous apparatus; conidia. Scale bars = 10 µm.

*Other specimens examined.* VIETNAM, Bavi, Hanoi, *Macadamia* sp., Sept. 2011, P.Q. Thu, CBS 133351, TUB sequence GenBank JX855944, HIS3 sequence GenBank JX855948, ITS sequence GenBank JX855952, LSU sequence GenBank JX855956 and TEF1-α sequence GenBank JX855960; *ibid.*, *E. urophylla*, Sept. 2011, P.Q. Thu, CBS 133350, TUB sequence GenBank JX855943, HIS3 sequence GenBank JX855947, ITS sequence GenBank JX855951 and TEF1-α sequence GenBank JX855959; *ibid.*, *Eucalyptus* hybrid, Sept. 2011, P.Q. Thu, CBS 133352, TUB sequence GenBank JX855945, HIS3 sequence GenBank JX855949, ITS sequence GenBank JX855953 and TEF1-α sequence GenBank JX855961.

*Notes* — *Calonectria pentaseptata* resides in the *C. reteaudii* species complex (Kang et al. 2001, Lombard et al. 2010a, b, c) based on morphological characteristics supported by phylogenetic inference. The macroconidia of *C. pentaseptata* (av. = 98 × 7 µm) are smaller than those of *C. pseudoreteaudii* (av. = 104 × 8 µm), and larger than those of *C. queenslandica* (av. = 69 × 6 µm), *C. reteaudii* (av. = 84 × 6.5 µm) and *C. terrae-reginae* (av. = 76 × 6 µm) (Lombard et al. 2010c). As with *C. queenslandica* and *C. terrae-reginae*, *C. pentaseptata* failed to produce microconidiophores and microconidia, distinguishing this fungus from *C. pseudoreteaudii* and *C. reteaudii*, which readily form these structures in culture (Lombard et al. 2010a, b, c).

One of two equally most parsimonious trees (TI = 380, CI = 0.942, RI = 0.921, RC = 0.868) obtained from a heuristic search with 1 000 random taxon additions of the combined sequences of TUB, HIS3 and TEF1-α sequence alignments of the *C. reteaudii* complex using PAUP v. 4.0b10. The bootstrap support values from 1 000 replicates are shown at the nodes. The tree was rooted to *C. chinensis* (CBS 112744) and *C. colombiensis* (CBS 112221). The ex-type strains are printed in **bold**.



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