**Phialoseptomonium** Crous & Carnegie, *gen. nov.*

_Etymology_. Phialo = phialides, septo = conidial septa, and -monium—from Acremonium.

Classification — _Nectriaceae_, _Hypocreales_, _Sordariomycetes._

_Mycelium_ consisting of hyaline, smooth, branched, septate hyphae. _Conidiophores_ erect, straight to flexuous, arising directly from hyphae or from a basal stalk, subcylindrical, 0–2-septate, 10–30 mm, giving rise to a rosette (2–6) of conidiophores. _Conidiophores_ erect, flexuous, subcylindrical with apical taper, hyaline but base at times appearing greenish olivaceous, 5–7-septate, 190–220 × 2.5–3 mm. _Conidiogenous cells_ apical, integrated, subcylindrical, phialidic with minute non-flared collarette (1 mm long), apex 1.5–2 mm diam, 90–120 × 2.5–3 mm. _Conidia_ solitary, aggregating in mucoid mass, hyaline, smooth, granular, fusoid, straight, medianly 1-septate, apex obtuse, base truncate, 1.5 mm diam, (16–)19–21(–23) × 3(–3.5) mm.

_Culture characteristics_ — Colonies flat, spreading, with folded surface, moderate aerial mycelium and smooth, lobate margin, reaching 60 mm diam after 2 wk at 25 °C. On MEA surface and reverse luteous. On PDA surface and reverse pale luteous. On OA surface saffron.

_Type_. **Australia**, New South Wales, Boorabee State Forest, McCorquodale plantation, on leaves of _Eucalyptus grandis × camaldulensis_ clone (_Myrtaceae_), 20 April 2016, A.J. Carnegie, HPC 2431 (holotype CBS H-23941, culture ex-type CPC 35732 = CBS 145542, ITS and LSU sequences GenBank MK876402.1 and MK876443.1, MycoBank MB830830).

Notes — _Phialoseptomonium eucalypti_ clusters with two acremonium-like isolates (Giraldo & Crous 2019), namely ‘A. _lichenicola_’ CBS 303.70 and ‘A. _rhabdosporum_’ CBS 438.66, which may be congeneric. Both the latter species have cylindrical, septate conidia. Based on a megablast search of NCBI’s GenBank nucleotide database, the closest hits using the ITS sequence had highest similarity to _Acremonium lichenicola_ (GenBank MH859549.1; Identities = 542/596 (91%), 14 gaps (2%)), _Acremonium rhabdosporum_ (GenBank MH858850.1; Identities = 535/593 (90%), 10 gaps (1%)) and _Trichonectria rectipila_ (GenBank NR_160175.1; Identities = 465/523 (89%), 13 gaps (2%)). The ITS sequence is also 2–6 nucleotides similar to unidentified sequences from an unpublished study on dark pigmented epifoliar fungi forming sooty patches on trees in a tropical rainforest (GenBank HE584928.1–HE584933.1). Closest hits using the LSU sequence are _Acremonium lichenicola_ (GenBank MH871536.1; Identities = 798/816 (97%), no gaps), _Sarcopodium flavolana-tum_ (GenBank MH876362.1; Identities = 794/816 (97%), no gaps) and _Sarcopodium macalpinei_ (GenBank MH876364.1; Identities = 791/816 (97%), no gaps).

**Phialoseptomonium eucalypti** Crous & Carnegie, _sp. nov._

_Etymology_. Name refers to _Eucalyptus_, the host genus from which this fungus was isolated.

_Mycelium_ consisting of hyaline, smooth, branched, septate, 1.5–2 mm diam hyphae. _Conidiophores_ erect, straight to flexuous, arising directly from hyphae or from a basal stalk, subcylindrical, 0–2-septate, 10–30 × 3–4.5 mm, giving rise to a rosette (2–6) of conidiophores. _Conidiophores_ erect, flexuous, subcylindrical with apical taper, hyaline but base at times appearing greenish olivaceous, 5–7-septate, 190–220 × 2.5–3 mm. _Conidiogenous cells_ apical, integrated, subcylindrical, phialidic with minute non-flared collarette (1 mm long), apex 1.5–2 mm diam, 90–120 × 2.5–3 mm. _Conidia_ solitary, aggregating in mucoid mass, hyaline, smooth, granular, fusoid, straight, medianly 1-septate, apex obtuse, base truncate, 1.5 mm diam, (16–)19–21(–23) × 3(–3.5) mm.

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