

Neophysalospora eucalypti



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***Neophysalospora* Crous & M.J. Wingf., gen. nov.**

Etymology. Name reflects the fact that the genus is morphologically similar to the genus *Physalospora*.

Endophytic and plant pathogenic. *Ascomata* globose, solitary, brown, immersed, with central ostiole; wall of 2–3 layers of brown *textura angularis*. *Asci* cylindrical, hyaline, stipitate, unitunicate with apical mechanism staining in Melzer's reagent, ascospores uniseriate but overlapping, with 8 ascospores per ascus. *Paraphyses* intermingled among asci, hyaline, septate, branched. *Ascospores* hyaline, smooth, guttulate, fusoid-ellipsoid, with acutely rounded ends. *Conidiomata* globose, solitary to aggre-

gated, brown, with central ostiole; wall of 2–3 layers of brown *textura angularis*. *Conidiophores* lining the inner conidiomatal wall, subcylindrical, straight to curved, branched, septate, or reduced to conidiogenous cells, hyaline to pale brown, smooth or finely verruculose. *Conidiogenous cells* ampulliform to subcylindrical, hyaline, smooth, terminal or intercalary, phialidic with flared collarette at the apex. *Conidia* solitary, hyaline, smooth, subcylindrical, curved, with obtuse apex and truncate base, thick-walled.

Type species. *Neophysalospora eucalypti*.
Mycobank MB810608.

***Neophysalospora eucalypti* Crous & M.J. Wingf., sp. nov.**

Etymology. Name reflects the host genus *Eucalyptus*, from which this species was isolated.

Associated with brown leaf spots in plantations, and cutting rot in nurseries. *Ascomata* globose, solitary, brown, up to 250 µm diam, with central ostiole, up to 80 µm diam; wall of 2–3 layers of brown *textura angularis*. *Asci* cylindrical, hyaline, stipitate, unitunicate with apical mechanism staining in Melzer's reagent, ascospores uniseriate but overlapping, with 8 ascospores per ascus, 70–100 × 6–8 µm. *Paraphyses* intermingled among asci, hyaline, septate, branched, 2–3 µm diam. *Ascospores* hyaline, smooth, guttulate, fusoid-ellipsoid, widest in middle, tapering to acutely rounded ends, (13–)15–17(–19) × (4–)4.5(–5) µm. *Ascospores* germinate from one end, remain hyaline, fusoid-ellipsoid, 15–17 × 7 µm. *Conidiomata* globose, solitary to aggregated, brown, up to 200 µm diam, with central ostiole; wall of 2–3 layers of brown *textura angularis*. *Conidiophores* lining the inner conidiomatal wall, subcylindrical, straight to curved, branched, 1–3-septate, or reduced to conidiogenous cells, hyaline to pale brown, smooth or finely verruculose, 10–30 × 2.5–4 µm. *Conidiogenous cells* ampulliform to subcylindrical, hyaline, smooth, terminal or intercalary, 7–12 × 1.5–3 µm, phialidic with flared collarette at the apex, 1.5–2 µm diam. *Conidia* solitary, hyaline, smooth, subcylindrical, curved, with obtuse apex and truncate base, thick-walled, (13–)14–15(–16) × 1.5 µm.

Culture characteristics — Colonies spreading with sparse, appressed aerial mycelium, reaching 6 mm diam after 2 wk at 25 °C in the dark; surface folded with feathery, lobate margin. On MEA surface flesh with patches of saffron, reverse red with patches of coral. On OA surface red with patches of peach and saffron. On PDA surface white, reverse saffron.

Colour illustrations. *Corymbia henryi* leaves in Mozambique; conidiomata on SNA, asci and ascospores, conidiogenous cells, germinating ascospores and conidia. Scale bars = 10 µm.

Typus. MOZAMBIQUE, on leaves of *Corymbia henryi* (Myrtaceae), 1 Feb. 2014, M.J. Wingfield (holotype CBS H-21996, culture ex-type CPC 24209 = CBS 138864; ITS sequence GenBank KP004462, LSU sequence GenBank KP004490, MycoBank MB810609). – SOUTH AFRICA, Mpumalanga province, Piet Retief, forestry nursery, cutting rot of *Eucalyptus grandis* × *camaldulensis*, 9 Jan. 1989, P.W. Crous, CPC 123 = CBS 110740 (ITS, LSU sequence GenBank KP031106, KP031108), CPC 124 = CBS 111123 (ITS, LSU sequence GenBank KP031107, KP031109) (specimen also deposited in IMI, now Kew).

Notes — The genus *Physalospora* (*Hyponectriaceae*) is polyphyletic, and in need of taxonomic revision. *Neophysalospora eucalypti* is reminiscent of *Clypeophysalospora latitans* and to some extent also *Plectosphaera eucalypti* (= *Phyllachora eucalypti*). *Clypeophysalospora latitans* is a saprobe or weak pathogen that is commonly encountered on living eucalypt leaves and leaf litter (Crous et al. 1990). It has a melanised clypeus, and unitunicate asci that stain in Melzer's reagent, and does not produce an asexual morph in culture. *Plectosphaera eucalypti* has black ascomata embedded in the leaf tissue, with a melanised pseudoclypeus, forming circular to irregular colonies on the leaf surface. It has bitunicate asci and ascospores with a prominent mucoid sheath. Infections are usually visible on only one side of the leaf surface (Pascoe 1990, Park et al. 2000).

ITS. Based on a megablast search of NCBI's GenBank nucleotide database, the closest hits using the ITS sequence are *Bagadiella lunata* (GenBank GQ303269; Identities = 586/625 (94 %), Gaps = 15/625 (2 %)), *Bagadiella koalae* (GenBank JF951142; Identities = 586/627 (93 %), Gaps = 14/627 (2 %)) and *Bagadiella victoriae* (GenBank JF951141; Identities = 584/627 (93 %), Gaps = 12/627 (1 %)).

LSU. Based on a megablast search of NCBI's GenBank nucleotide database, the closest hits using the LSU sequence are *Plectosphaera eucalypti* (GenBank DQ923538; Identities = 821/840 (98 %), Gaps = 2/840 (0 %)), *Bagadiella victoriae* (GenBank JF951161; Identities = 815/839 (97 %), no gaps) and *Bagadiella lunata* (GenBank GQ303300; Identities = 815/839 (97 %), no gaps).

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