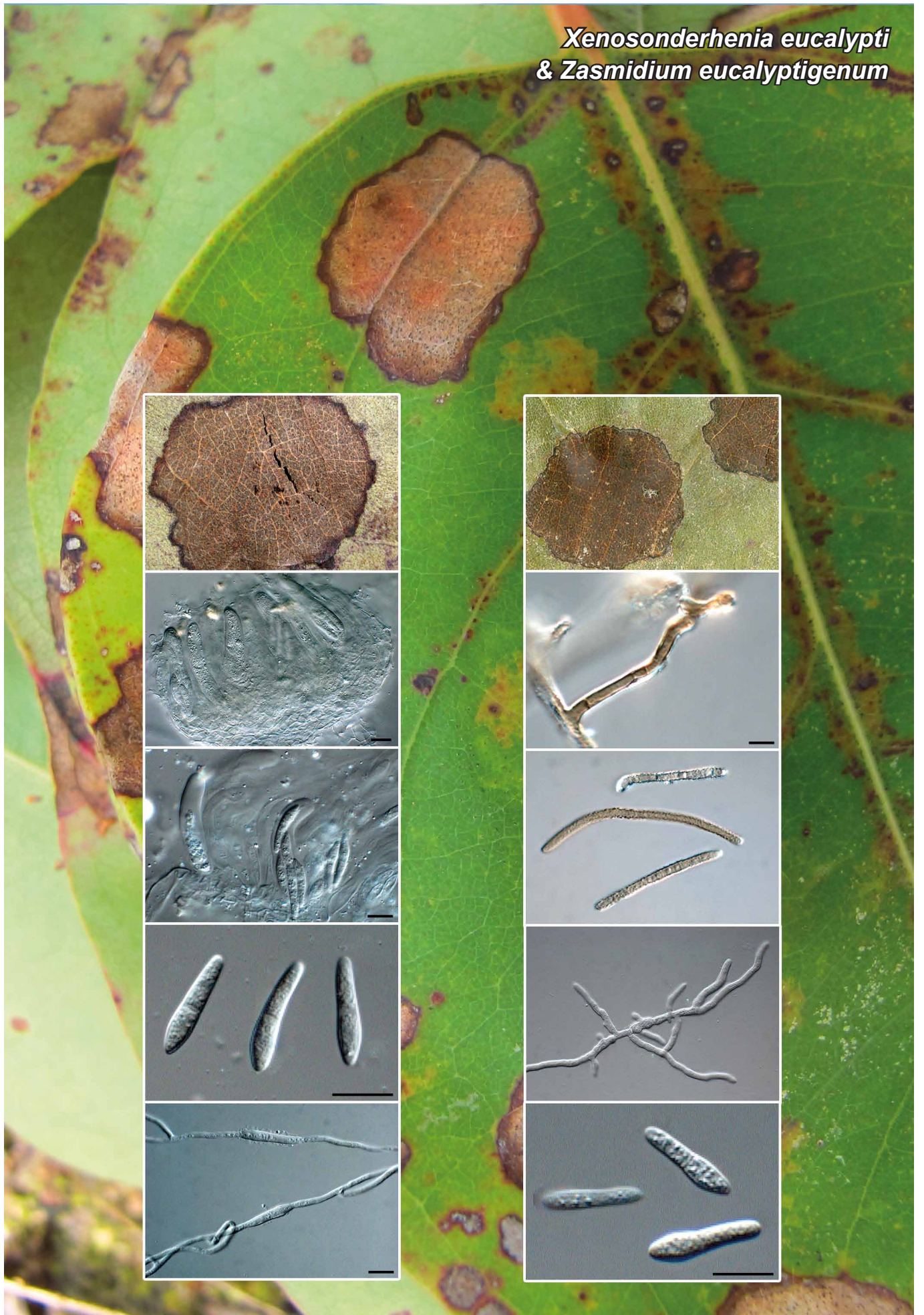


Xenosonderhenia eucalypti
& *Zasmidium eucalyptigenum*



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

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

Leaf spots amphigenous, dark brown, 10–20 mm diam, with dark brown border. Co-occurring on leaf spots with *Zasmidium eucalyptigenum*. *Ascomata* hypophyllous, black erumpent, globose, solitary, up to 110 µm diam, with central ostiole; wall of 2–3 layers of brown *textura angularis*. *Asci* fasciculate, bitunicate, subsessile, hyaline, smooth, 8-spored, obovoid to ellipsoid, apophysate, straight to slightly curved, 35–45 × 10–12 µm. *Pseudoparaphyses* absent. *Ascospores* tri- to multi-seriate, hyaline, smooth, fusoid-ellipsoid, widest in apical cell, one third from apex, tapering towards both ends, not constricted at median septum, (17–)18–20(–22) × (3–)4 µm; ascospores germinating from both ends, not constricting or distorting, remaining hyaline, 4–5 µm diam; germ tubes developing numerous lateral branches.

Culture characteristics — Colonies spreading, erumpent with moderate aerial mycelium and smooth, lobate margins, reaching 20 mm diam on PDA, MEA and OA after 2 wk at 25 °C in the dark. On MEA surface pale luteus with patches of dirty white, reverse sienna. On OA surface saffron. On PDA surface saffron, reverse pale luteus.

Zasmidium eucalyptigenum Crous & M.J. Wingf., *sp. nov.*

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

Co-occurring on leaf spots with *Xenosonderhenia eucalypti*. *Ascomata* hypophyllous, black erumpent, globose, solitary, up to 100 µm diam, with central ostiole; wall of 2–3 layers of brown *textura angularis*. *Asci* fasciculate, bitunicate, subsessile, hyaline, smooth, 8-spored, obovoid to ellipsoid, apophysate, straight to slightly curved, 25–40 × 8–10 µm. *Pseudoparaphyses* absent. *Ascospores* hyaline, smooth, fusoid-ellipsoid, widest in middle of apical cell, tapering towards both ends, constricted at median septum, 13–16 × (2.5–)3.5–4 µm; ascospores germinating from both ends, becoming constricted, but remaining hyaline and smooth, 4–6 µm diam, developing lateral branches. Mycelium brown, verruculose, typical of *Zasmidium* asexual morph. *Conidiophores* brown, verruculose, solitary on superficial hyphae, erect, branched or not, up to 50 µm tall, 3–4 µm diam, 1–3-septate. *Conidiogenous cells* terminal or intercalary, with several thickened, darkened, refractive scars, 1 µm diam. *Conidia* brown, verruculose, straight to curved, solitary or in branched chains, subcylindrical, apex obtuse, base tapering to a truncate hilum, 1–1.5 µm diam, 1–9-septate, 30–120 × (2.5–)3 µm.

Colour illustrations. Leaf spots on *Eucalyptus urophylla*. *Xenosonderhenia eucalypti* (left column): leaf spot, asci with ascospores and germinating ascospores; *Zasmidium eucalyptigenum* (right column): leaf spots, conidiophore and conidia, ascospores and germinating ascospores. Scale bars = 10 µm.

Typus. MOZAMBIQUE, Forestas de Niassa, leaf spots of *Eucalyptus urophylla* (*Myrtaceae*), 2 Feb. 2014, M.J. Wingfield (holotype CBS H-21991, culture ex-type CPC 24247 = CBS 138858; ITS sequence GenBank KP004457, LSU sequence GenBank KP004485, MycoBank MB810604).

Notes — *Xenosonderhenia eucalypti* appears to represent an undescribed genus in the *Mycosphaerellaceae*. It clusters with '*Mycosphaerella elaeocarpi*' that lacks an asexual morph and *Xenosonderhenia syzygii*, which lacks a sexual morph (Crous et al. 2012a). Because this taxon is clearly not a species of *Mycosphaerella* s.str., which has *Ramularia* asexual morphs (Verkley et al. 2004, Crous et al. 2009b), we tentatively place it in the genus *Xenosonderhenia*, pending further collections.

ITS. Based on a megablast search of NCBI's GenBank nucleotide database, the closest hits using the ITS sequence are *Xenosonderhenia syzygii* (GenBank JX069872; Identities = 506/525 (96 %), Gaps = 3/525 (0 %)), *Mycosphaerella elongata* (GenBank EF394833; Identities = 492/520 (95 %), Gaps = 4/520 (0 %)) and *Mycosphaerella elaeocarpi* (GenBank EU040212; Identities = 514/547 (94 %), Gaps = 7/547 (1 %)).

Culture characteristics — Colonies erumpent, spreading, folded, with mucoid exudate and sparse to moderate aerial mycelium, and smooth, lobed margins, reaching 3 cm diam after 2 wk at 25 °C in the dark. Culture is sterile. On OA surface olivaceous-grey. On MEA surface olivaceous-grey with patches of pale olivaceous-grey. On PDA surface olivaceous-grey with patches of pale olivaceous-grey, iron-grey in reverse.

Typus. MOZAMBIQUE, Forestas de Niassa, leaf spots of *Eucalyptus urophylla* (*Myrtaceae*), 2 Feb. 2014, M.J. Wingfield (holotype CBS H-21992, culture ex-type CPC 24251 = CBS 138860; ITS sequence GenBank KP004458, LSU sequence GenBank KP004486, MycoBank MB810605).

Notes — The genus *Mycosphaerella* is polyphyletic (Crous et al. 2007a), and *Zasmidium* is the oldest name to accommodate stenella-like taxa clustering in the *Mycosphaerellaceae* (Arzanlou et al. 2007). Several species have thus far been described from *Eucalyptus* (Crous et al. 2009a, b, Braun et al. 2010), all of which are phylogenetically distinct from *Z. eucalyptigenum*.

ITS. Based on a megablast search of NCBI's GenBank nucleotide database, the closest hits using the ITS sequence are *Zasmidium rothmanniae* (GenBank KJ869135; Identities = 461/480 (96 %), Gaps = 7/480 (1 %)), *Periconiella arcuata* (GenBank EU041779; Identities = 427/449 (95 %), Gaps = 6/449 (1 %)) and *Mycosphaerella pseudovespa* (GenBank DQ530216; Identities = 432/457 (95 %), Gaps = 6/457 (1 %)).

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