

***Mycosphaerella elaeocarpi* Crous & Summerell, sp. nov.****Mycobank:** MB504456.**Etymology:** Named after its host genus, *Elaeocarpus*.**Latin diagnosis:** *Mycosphaerellae gregariae* similis, sed ascosporis majoribus, (12–)14–16(–18) × 3–4(–4.5) μm.

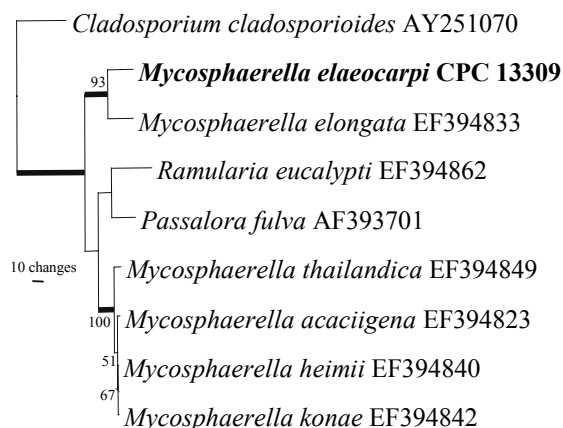
**Description:** Leaf spots amphigenous, irregular to sub-circular, 1–6 mm diam, grey to pale brown, with a thin, raised, dark brown border. Ascomata pseudothecial, predominantly epiphyllous, dark brown, subepidermal to somewhat erumpent, globose, up to 70 μm wide; apical ostiole 10 μm wide; wall consisting of 2–3 layers of medium brown *textura angularis*. Asci aparaphysate, fasciculate, bitunicate, sessile, obovoid to broadly ellipsoidal, straight to slightly curved, 8-spored, 30–40 × 8–9 μm. Ascospores tri- to multi-seriate, overlapping, hyaline, guttulate, thin-walled, straight to slightly curved, fusoid-ellipsoidal with obtuse ends, widest in middle of apical cell, mostly medianly 1-septate and unconstricted at the septum, but larger ascospores tend to be unequally 1-septate, and slightly constricted at the septum, tapering towards both ends, but more prominently towards the lower end, (12–)14–16(–18) × 3–4(–4.5) μm. Ascospores germinate from polar ends, with germ tubes parallel to the long axis of the spore; spore not distorting, but becoming constricted at the septum, up to 4 μm wide, at times developing 1–2 additional lateral branches on the original germ tubes, or spore body (germination Type I)<sup>1</sup>.

**Cultural characteristics:** Colonies reaching 17 mm diam after 2 months on 2 % malt extract agar<sup>2</sup>; colonies erumpent, sectored, with sparse aerial mycelium, and uneven, feathery margins; surface buff to honey with exudate droplets of cinnamon colour; reverse dark-brick.

**Typus:** Australia, Queensland, Cairns, Baron Falls train station, close to Kuranda, S16°50'123", E145°38'38.4", on leaves of *Elaeocarpus* sp. (*Elaeocarpaceae*), 19 August 2006, collected by P.W. Crous, CBS H-19919, **holotypus**, cultures ex-type CPC 13309 = CBS 121713, CPC 13310–13311, GenBank EU040212.

**Notes:** Presently no species of *Mycosphaerella* are known from *Elaeocarpus*<sup>3</sup>, and because *Mycosphaerella* species are generally regarded as host-specific, the current collection is regarded as new. *Mycosphaerella elaeocarpi* was observed to be associated with prominent leaf spotting on a species of *Elaeocarpus*, though inoculation tests need to be conducted to prove its pathogenicity. No anamorph was observed on the leaves, nor were we able to induce any asexual state in culture.

BLASTn results of the ITS sequence of *M. elaeocarpi* strain CPC 13309 had high identity to sequences of *M. elongata* Crous & M.J. Wingf. (EF394833, 93 % identical), *M. heimii* Bouriquet ex Crous (EF394840, 89 % identical) and *M. acaciigena* Crous & M.J. Wingf. (EF394823, 89 % identical), all three occurring on *Eucalyptus*.



One of four equally most parsimonious trees (TL = 291; CI = 0.859; RI = 0.661; RC = 0.568) obtained from a heuristic search with 100 random taxon additions of an ITS sequence alignment using PAUP v. 4.0b10. The scale bar shows 10 changes, and bootstrap support values from 1000 replicates are shown at the nodes. Thickened lines indicate the strict consensus branches and the species described here is printed in bold face. The tree was rooted to *Cladosporium cladosporioides* (Fresen.) G.A. de Vries (GenBank AY251070). The alignment and tree is available in MycoBank (Accession MB504456).

**Colour illustrations:** Train ride towards Baron Falls station, Kuranda, Queensland; leaf spot on *Elaeocarpus* sp.; germinating ascospores on 2 % malt extract agar; asci; ascospores (P.W. Crous). Scale bars = 10 μm.

**References:** <sup>1</sup>Crous PW (1998). *Mycosphaerella* spp. and their anamorphs associated with leaf spot diseases of *Eucalyptus*. *Mycologia Memoir* **21**: 1–170. <sup>2</sup>Gams W, Verkley GJM, Crous PW (2007). *CBS course of mycology*. 5<sup>th</sup> ed. Centraalbureau voor Schimmelcultures, Utrecht, Netherlands. <sup>3</sup>Aptroot A (2006). *Mycosphaerella* and its anamorphs: 2. Conspectus of *Mycosphaerella*. *CBS Biodiversity Series* **5**: 1–231.

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