

New and interesting records of South African fungi. X. New records of *Eucalyptus* leaf fungi

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During surveys of fungi occurring on *Eucalyptus*, five leaf-inhabiting fungi, previously unknown in South Africa, were found. These include *Clypeophysalospora latitans* (Sacc.) Swart, *Codinaea septata* Sutton & Hodges, *Cytospora australiae* Speg., *Idiocercus australis* (Cooke) Swart and *Seimatosporium eucalypti* (Mc Alp.) Swart.

In opnames van swamme op *Eucalyptus*-blare, is vyf nuwe rekords vir Suid-Afrika gevind: *Clypeophysalospora latitans* (Sacc.) Swart, *Codinaea septata* Sutton & Hodges, *Cytospora australiae* Speg., *Idiocercus australis* (Cooke) Swart en *Seimatosporium eucalypti* (Mc Alp.) Swart.

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Introduction

Numerous fungi have recently been recorded on *Eucalyptus* leaves in South Africa for the first time (Crous *et al.* 1988, 1989a, b). Most of these are pathogens and of importance to the forestry industry. During subsequent surveys of *Eucalyptus* leaves, five fungi, previously unknown in this country have been collected. In this report the fungi are listed and their morphological characteristics outlined.

1. *Clypeophysalospora latitans* (Sacc.) Swart, in Trans. Br. mycol. Soc. 76(1): 93 (1981).

Synonyms *vide* Swart (1981).

Physalospora latitans Sacc.: 67 (1893). *Amerostege latitans* (Sacc.) Theiss.: 411 (1916).

Laestadia eucalypti Speg.: 248 (1899). *Physosporella eucalypti* (Speg.) v. Höhn.: 56 (1918). *Phyllachora eucalypti* (Speg.) Petrak: 128 (1929).

Laestadia eucalypti Roll.: 118 (1901). *Laestadia rollandi* Sacc. & Syd.: 455 (1902). *Physalospora eucalypti* (Roll.) Schrantz: 326 (1960).

Perithecia immersed, mostly single, amphigenous, under a distinct dark clypeus with a periphysate ostiole. Asci unitunicate, paraphysate, cylindrical, with an amyloid apical ring and a pulvillus, 88–160 × 11–20 μm in size. Ascospores uniseriate or irregularly arranged, hyaline with lipid inclusions and mucous outer layer, ellipsoidal, with round to more attenuated apices, 12.5–18 × 5–10 μm (Figure 1).

Perithecia of this fungus occurred mostly on necrotic leaf tissue or leaf litter.

Specimens examined

—2727 (Kroonstad): Old Vegkop military base (–CA), collected on leaves of *Eucalyptus* sp., P.W. Crous, Mar. 1989, PREM 50447.

—3018 Stellenbosch: Stellenbosch mountain (–DD), collected on *E. bicostata* Maid. *et al.* leaves, P.W. Crous, Dec. 1988, PREM

50448; Stellenbosch mountain, (–DD), *E. deanei* Maid. leaves, P.W. Crous, Sept. 1988, PREM 50449; Stellenbosch mountain (–DD), *E. grandis* Hill: Maid. leaves, P.W. Crous, Oct. 1989, PREM 50450; Stellenbosch mountain (–DD), *E. tereticornis* Sm. leaves, P.W. Crous, Sept. 1988, PREM 50451.

2. *Idiocercus australis* (Cooke) Swart in Trans. Br. mycol. Soc. 90(2): 283 (1988).

Phoma australis Cke.: 17 (1886) (*vide* Swart 1988).

Conidiomata pycnidial, separate, immersed, globose to ellipsoidal, light brown, thin walled, dark brown around the semi-papillate ostiole. Conidiophores small, originating from the inner cells of the conidioma wall. Conidiogenous cells cylindrical to flask-shaped, hyaline, annellidic, not flared, annellations terminal, 7–10 × 1.8–3 μm. Conidia hyaline, smooth, aseptate with a minute basal frill, apex obtuse, base truncate, cylindrical to long clavate or slightly elliptical, 4.3–11 × 1.5–4 μm (Figure 2). Although the dimensions are smaller than those reported for Australian material, this identification was confirmed by Dr H.J. Swart, 136 Waiora Rd., Rosanna, Victoria 3084, Australia.

This fungus was reported to cause a severe infection of young *E. regnans* F. Muell. trees in Australia (Swart 1988). However, Swart (1988) mentions the possibility of the lesions being stress-related. In South Africa, *I. australis* has been found on older leaves of 15-year-old *E. cladocalyx* F. Muell. Swart (1988) suggested that this fungus could be the anamorph of *Clypeophysalospora latitans*. As was found in Australia, both fungi occurred in close association on necrotic leaf tissue in this study, but no teleomorph–anamorph connection was made.

Specimen examined

—3018 (Stellenbosch): Stellenbosch Farmers Winery (–DD), collected on *E. cladocalyx* leaves, P.W. Crous, Sept. 1988, PREM 50452.

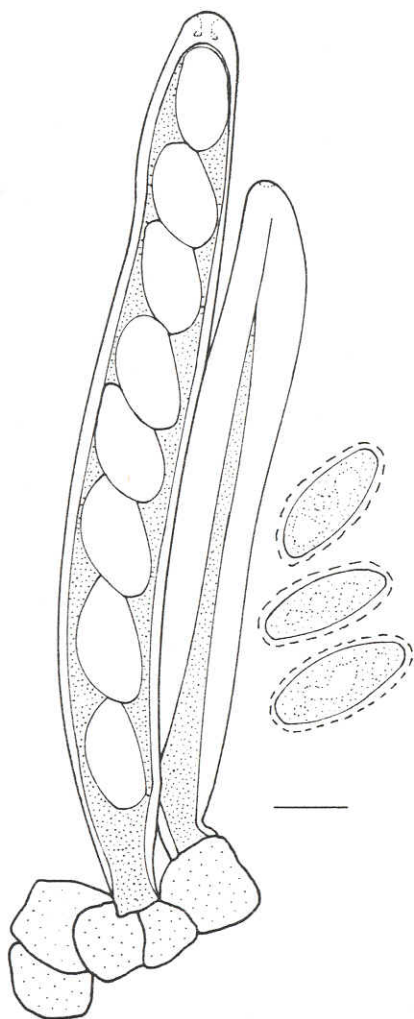


Figure 1 Asci and ascospores of *Clypeophysalospora latitans* (Sacc.) Swart. Bar = 10 μ m.

3. *Cytospora australiae* Speg., in Syll. Fung. 3: 256 (1884).

Cytospora eucalyptina Speg.: 319 (1899) (fide van der Westhuizen 1965).

Pycnidia black on stems but concolorous on leaves, slightly



Figure 2 Conidia and conidiophores of *Idiocercus australis* (Cooke) Swart. Bar = 10 μ m.

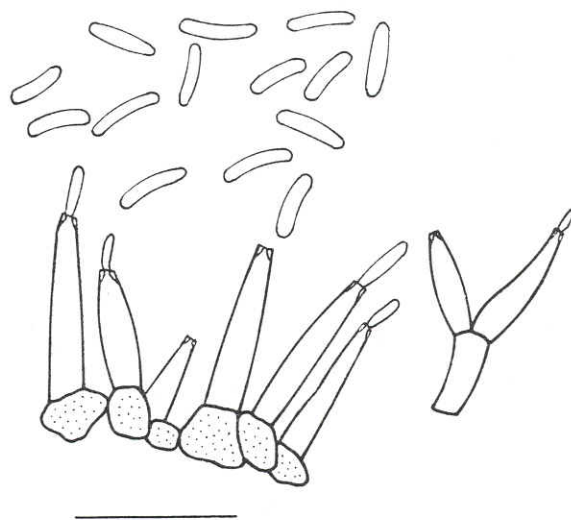


Figure 3 Conidia and simple and branched conidiophores of *Cytospora australiae* Speg. Bar = 10 μ m.

submerged to protruding, with short to elongated necks. Conidiophores hyaline, simple or branched above. Conidigenous cells enteroblastic, phialidic, cylindrical, hyaline, channel and collarette minute. Conidia hyaline, smooth, allantoid, curved with rounded ends, 3.5–6.0 \times 0.7–1.5 μ m (Figure 3), consistent with the degree of variation accepted by Saccardo (1884) for this species. Van der Westhuizen (1965) found records of two closely related *Cytospora* spp., *C. australiae* and *C. eucalyptina* Speg., occurring on *Eucalyptus*. An examination of the type material proved these two species to be identical (van der Westhuizen 1965). Moreover, the name *C. australiae* (1884) has precedence over *C. eucalyptina* (1899).

Gutner (1953) reported a new variety, *C. australiae* var. *foliorum* Gutner from leaves of a *Eucalyptus* sp. in the U.S.S.R. The fungus found on leaves in this study, however, did not differ from isolations made from *Eucalyptus* stems, and no differences were found between conidial, conidiophore or cultural characteristics. We, therefore, believe that *C. australiae* is the appropriate name for this fungus. The latter fungus is chiefly distinguished from *C. eucalypticola* van der Westhuizen by its larger conidial dimensions (Saccardo 1884; van der Westhuizen 1965).

Van der Westhuizen (1965) speculated about the influence of environmental conditions on the morphology of pycnidia of *C. eucalypticola*. This variation was also present in *C. australiae*, where pycnidia were found to be far more protruding on some collections of *E. nitens* (Deane et Maid.) Maid. stems than on others, collected from the same area but at different times of the year. This variation was less obvious when pycnidia occurred on leaves. Pycnidia of this fungus were always found in association with other pathogens, or on lesions apparently resulting from stress or wind-damage.

Specimens examined

—2531 (Barberton): Berlin Forest Station (–CC), collected on *E. grandis* leaves, P.W. Crous, Apr. 1988, PREM 50453; Jessievale State Forest (–CC), on *E. nitens* stems, P.W. Crous, Dec. 1988, PREM 50454.

