

## *Phaeosphaeria capensis* sp. nov. from *Avicennia marina* in South Africa

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A new species of *Phaeosphaeria* is described from mangroves in South Africa. In *Phaeosphaeria capensis* ascospores are 29–36 × 7–8 μm, cylindric-fusiform or somewhat clavate, widest at the middle, narrow at the base and rounded at the apex, (6-)7-septate, light brown or brown, minutely verruculose and surrounded by a spreading mucilaginous sheath. It is compared with *P. luctuosa* and *P. berleseii* from grasses.

Key Words—mangrove fungi; marine fungi; *Phaeosphaeria*.

The south bank of the Kobonqaba River was visited in September 1995 as part of a programme to investigate the occurrence and distribution of marine fungi associated with the decomposition of mangrove wood in estuaries in southern Africa. Included among the 18 species collected on wood of *Avicennia marina* (Forssk.) Vierh. at this site, were two unrecorded species. One of these, *Gloniella clavatispora* T. D. Steinke & K. D. Hyde (Steinke and Hyde, 1997) is widespread, whereas a species of *Phaeosphaeria* l. Miyake has so far been found only on the Kobonqaba River. No species presently described in *Phaeosphaeria* can accommodate this taxon, and therefore *P. capensis* is described as new here.

### Materials and Methods

A comprehensive collection of intertidal dead wood was removed from the living trees of *A. marina*, placed in plastic bags and returned to the laboratory. This material was incubated in plastic boxes and examined for fungi within 14 d. Voucher slides of the fungi identified are held in the senior author's herbarium, and type material is deposited at PREM. All measurements given were made in seawater.

### Taxonomy

*Phaeosphaeria capensis* T. D. Steinke & K. D. Hyde, sp. nov. Figs. 1–17

Ascomata 250–300 μm diam, immersa, semi-immersa vel erumpentia, globosa vel subglobosa, atro-brunnea, ostiolata, periphysata, gregaria. Asci 150–187.5 × 11–14 μm, 8-spore, cylindrici, pedicellati, bitunicati, fissitunicati, apparatus apicali praediti. Ascosporeae 29–36 × 7–8 μm, 1-2-seriatae, cylindro-fusiformes vel clavatae, (6-)7-septatae, pallide brunneae, verruculosae, tunica gelatinosa praeditae.

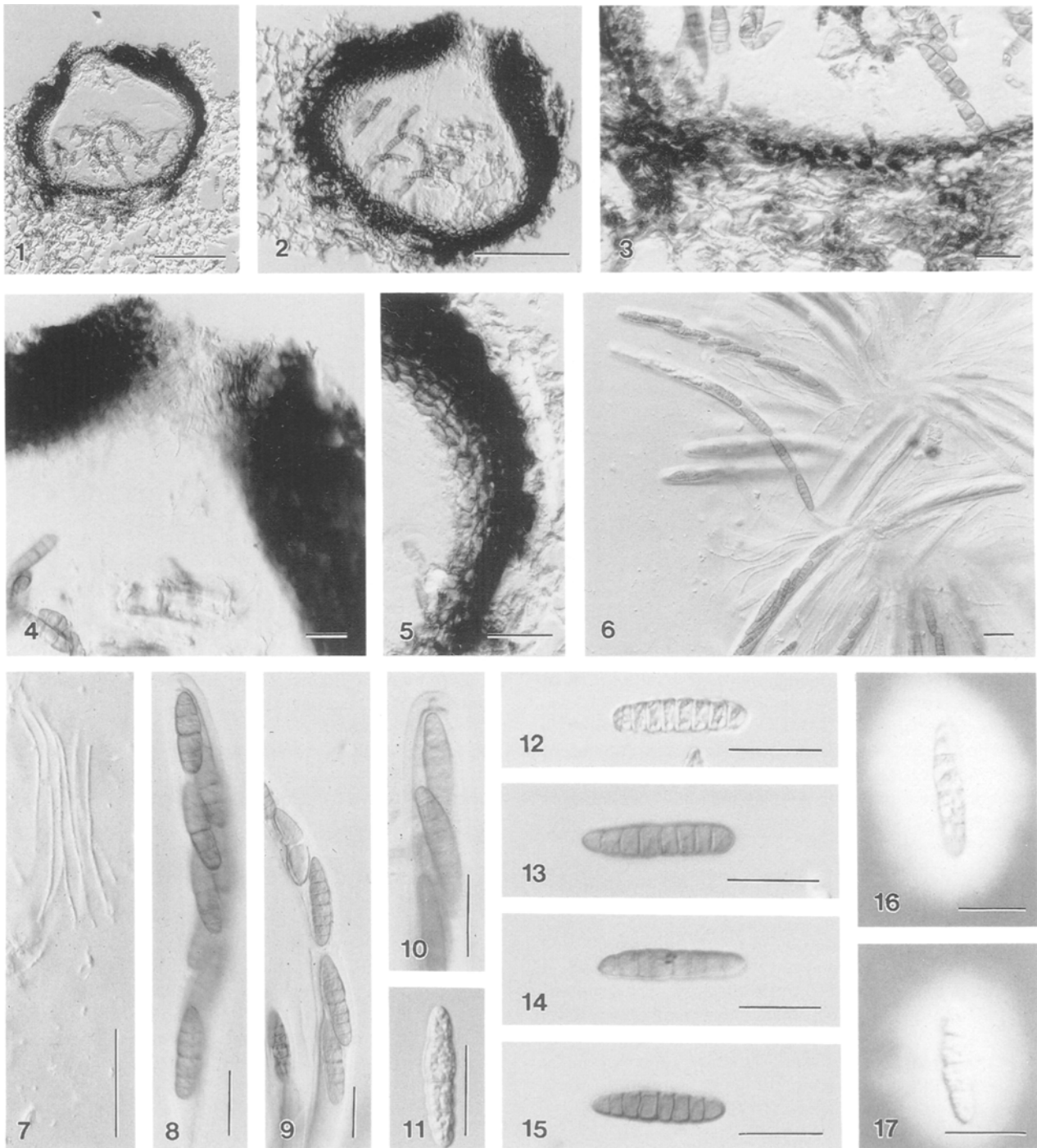
Holotypus: South Africa: Eastern Province, mangrove near the mouth of the Kobonqaba River (32° 36'S, 28° 29'E), on intertidal branch of *Avicennia marina* (Forssk.) Vierh., 27 Sep. 1995, T.D. Steinke (PREM 55308).

Ascomata 250–300 μm in diam, immersed, semi-immersed or erumpent, globose or subglobose, dark-brown, ostiolate, periphysate, gregarious. Peridium 20–30 μm in diam, composed of several layers of brown, thick-walled *textura angularis*, although narrower at the base and composed of *textura intricata*. Pseudoparaphyses 1.5–2 μm in diam, hypha-like, filamentous, septate, branching and anastomosing above the asci, numerous and embedded in a gelatinous matrix. Asci 150–187.5 × 11–14 μm ( $\bar{x}$  = 167.1 × 12.4 μm, n = 10), 8-spored, cylindrical, pedicellate, bitunicate, fissitunicate, with an ocular chamber and faint ring. Ascospores 29–36 × 7–8 μm ( $\bar{x}$  = 31.6 × 7.6 μm, n = 25), 1-2-seriate, cylindric-fusiform or somewhat clavate, widest at the middle, narrow at the base and rounded at the apex, (6-)7-septate, strongly constricted at the median septum, light brown or brown, minutely verruculose and surrounded by a spreading mucilaginous sheath.

Habitat: Saprobic on intertidal *A. marina* wood.

Known distribution: South Africa.

Species of *Phaeosphaeria* are mostly confined to monocotyledonous hosts (Leuchtman, 1984; Shoemaker and Babcock, 1989), where they may be parasites of cereals, grasses, sedges, rushes and other grass-like plants. The few species described from dicotyledonous hosts were excluded in the treatment of *Phaeosphaeria* by Shoemaker and Babcock (1989). There are, however, several examples of *Phaeosphaeria* species on non monocotyledonous hosts. *Phaeosphaeria silenesacaulis* (De Not.) L. Holm is restricted to *Silene acaulis* L. and one found on *Minuartia stricta* (Sw.) Hiern (both Caryophyllaceae), *Phaeosphaeria nigrans* (Rob. ex



Figs. 1–17. Interference contrast micrographs of *Phaeosphaeria capensis* (from holotype).

1, 2. Vertical sections of ascomata. 3. Basal peridium. 4. Ostiole. 5. Peridium. 6. Squash mount illustrating asci and pseudoparaphyses. 7. Pseudoparaphyses in a gelatinous matrix. 8–10. Asci with an ocular chamber (in 8, 10) and fissitunicate dehiscence (in 9). 11–17. Ascospores. Note the mucilaginous sheath which can be clearly observed in India ink (16, 17). Bars: 1, 2, 100  $\mu\text{m}$ ; 5, 7, 50  $\mu\text{m}$ ; 3, 4, 6, 8–17, 10  $\mu\text{m}$ .

Desm.) L. Holm, is common on grasses in Europe, but has also been found on *Rumex longifolius* DC. (Polygonaceae), and *Phaeosphaeria lycopodina* (Mont.) Hedjar. and *Phaeosphaeria marcyensis* (Peck) L. & K. Holm are found on *Lycopodium* species.

In *Phaeosphaeria* this taxon could belong in the subgenus *Vagispora* Shoem. & Babcock and is comparable to *Phaeosphaeria luctuosa* (Niessl) Otani & Mikawa and *Phaeosphaeria berleseii* (Larsen & Munk) Hedjar. In *P. luctuosa* the ascospores are 5-septate (cf. to (6-)7-sep-

tate) and smaller than those of *P. capensis* ( $23\text{--}30 \times 5.5\text{--}6.5 \mu\text{m}$  vs  $29\text{--}36 \times 7\text{--}8 \mu\text{m}$ ). In *P. berlesii* the ascospores are 7-11-septate (cf. (6-)7-septate) and longer ( $33\text{--}47 \mu\text{m}$  vs  $29\text{--}36 \mu\text{m}$ ). In the subgenus *Spathispora* Shoem. & Babcock it is comparable to *Phaeosphaeria lindii* (L. & K. Holm) Leuchtman, *Phaeosphaeria robusta* Shoem. & Babcock and *Phaeosphaeria saxonica* (Höhn.) Shoem. & Babcock (Shoemaker and Babcock, 1989). In *P. lindii* ascospores are  $25\text{--}32 \times 6\text{--}7 \mu\text{m}$ , smooth-walled and lack a sheath, while in *P. saxonica* ascospores are  $35\text{--}40 \times 5\text{--}6 \mu\text{m}$ , 5-septate, and smooth without a sheath. It is probably most similar to *P. robusta* which has 7-septate ascospores,  $28\text{--}36 \times 7\text{--}8 \mu\text{m}$ , but which differs in being smooth-walled and lacking a sheath (Shoemaker and Babcock, 1989). *Phaeosphaeria capensis* is not similar to any of the marine species of *Phaeosphaeria*.

The genus *Paraphaeosphaeria* O. Erikss. (Eriksson, 1967) should also be considered. *Phaeosphaeria capensis* is closest to *Paraphaeosphaeria obtusispora* (Speg.) O. Erikss., but this species has smaller 5-septate and echinate ascospores ( $17\text{--}22 \times 5\text{--}6 \mu\text{m}$ ) (Shoemaker and

Babcock, 1985).

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