

Frondisphaeria palmicola gen. et sp. nov. from Brunei

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The monotypic genus *Frondisphaeria* (Unitunicate Ascomycetes inc. sed.) is introduced to accommodate a new palm ascomycete with slightly curved long-fusiform ascospores. *Frondisphaeria* has similarities with *Linocarpon*, but differs in having clavate asci, which are narrow at the apex and are provided with a refractive discoid subapical ring. Ascospores also form under darkened blotches on the host surface.

Key Words—*Frondisphaeria*; new genus; palm fungi.

During an expedition to Kuala Belalong Field Studies Centre in Brunei Darussalam, I investigated the saprobic fungi developing on palms in the surrounding rainforest. One of the ascomycetes that I collected had curved, long-fusiform ascospores with apiculate ends. The species has superficial similarities with *Linocarpon* Syd. & P. Syd. (Hyponectriaceae, sensu Barr (Barr, 1990)), but the asci are more reminiscent of the Diaporthaceae, having a discoid, refractive, subapical ring. A suitable genus or family is not available in which to accommodate this taxon and therefore *Frondisphaeria* gen. nov. (Unitunicate Ascomycetes inc. sed.) is introduced.

Taxonomy and Results

Frondisphaeria K. D. Hyde, gen. nov.

Ascospores sub stromate immersa, ostiolata, cylindracea, solitaria vel gregaria. Asci 8-spori, clavati, pedicellati, unitunicati, rotundi, apparatus subapicali praediti. Ascospores fasciculatae, unicellulatae, hyalinae, longi-fusiformes, apiculatae.

Typus generis: *Frondisphaeria palmicola* K. D. Hyde.

Ascospores developing beneath raised, dome-shaped, slightly darkened areas on the host surface, solitary or clustered, with an inconspicuous ostiole; in section irregularly cylindrical with tapered ends, immersed beneath a stroma. Vertically orientated palisade-like cells form columns between the upper and lower parts of the host. Paraphyses hypha-like, filamentous, septate, numerous and tapering. Asci 8-spored, clavate and narrow at the apex, long pedicellate, unitunicate, apically rounded with a refractive discoid subapical ring. Ascospores fasciculate, multiseriate, unicellular, hyaline, long-fusiform, slightly curved, ends apiculate.

Type species: *Frondisphaeria palmicola* K. D. Hyde.

Frondisphaeria palmicola K. D. Hyde, sp. nov.

Figs. 1–13

Ascospores sub stromate immersa, ostiolata, cylindracea, solitaria vel gregaria, 1–2 mm diam, 170–250 μ m

alta. Asci 158–225 \times 22.5–30 μ m, 8-spori, clavati, pedunculati, unitunicati, rotundi, apparatus subapicali 5 μ m diam 2 μ m alto praediti. Ascospores 81–115 \times 8–10 μ m, fasciculatae, unicellulatae, hyalinae, longi-fusiformes, apiculatae.

Holotype. BRUNEI: Temburong, Kuala Belalong Field Studies Centre, on rachis of *Eugeissona minor*, June 1993, K. D. Hyde B94 (BRIP 23235).

Etymology: from palm and -cola, meaning 'dwelling on.'

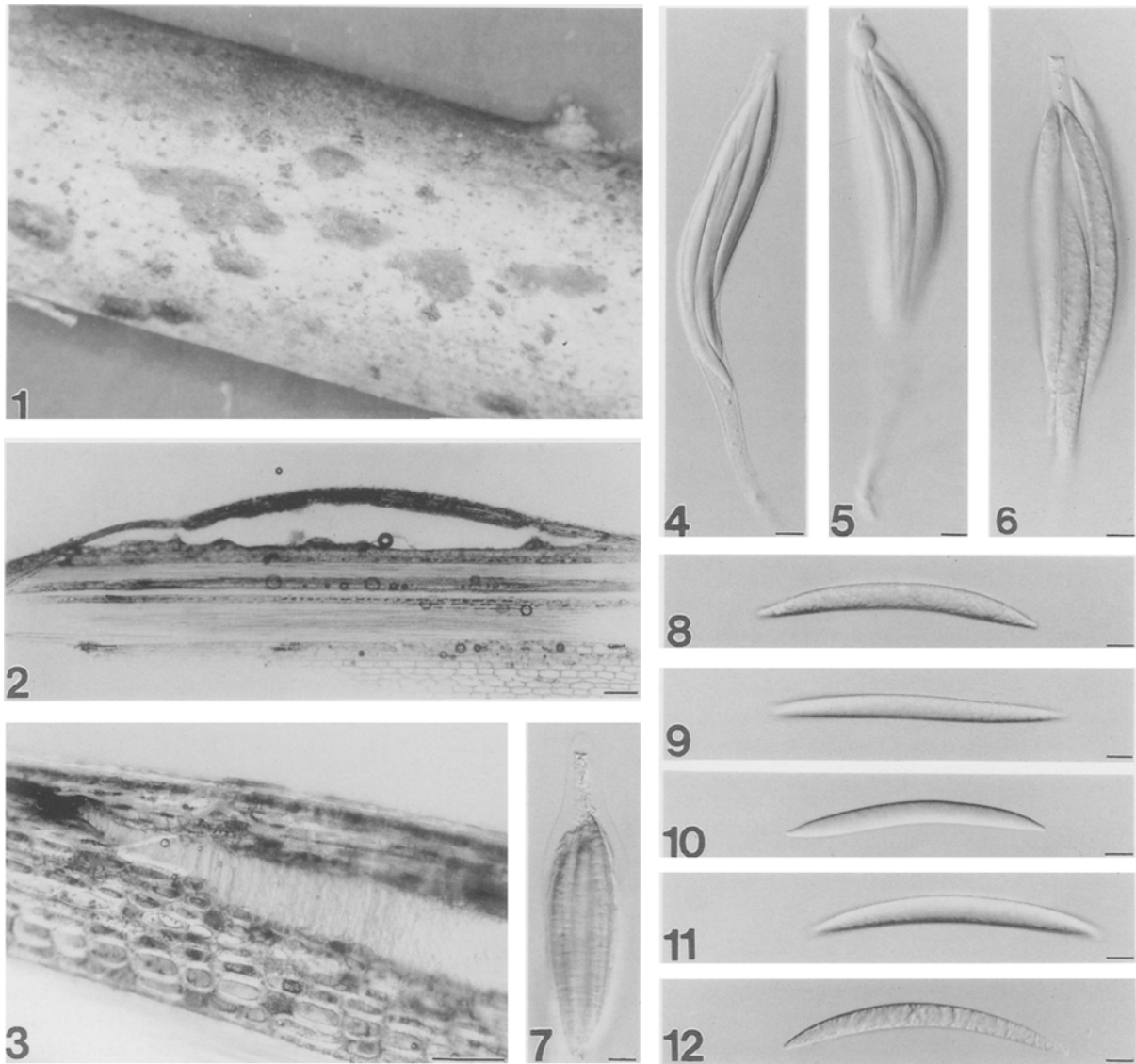
Ascospores developing beneath raised, dome-shaped, slightly darkened, irregular regions on the host surface, up to 7 \times 3 mm, solitary or clustered, with a central aperiphysate inconspicuous ostiole; in section 1–2 mm long, 170–250 μ m high, irregularly cylindrical with attenuate ends, immersed beneath a stroma (Figs. 1–3). Vertically orientated palisade-like cells form columns between the upper and lower parts of the host (Figs. 2, 3). Paraphyses to 5 μ m at the base, hypha-like, filamentous, septate, numerous and tapering. Asci 158–225 \times 22.5–30 μ m, 8-spored, clavate and narrow at the apex, long pedicellate, unitunicate, apically rounded with a refractive discoid subapical ring, 5 μ m in diam, 2 μ m high (Figs. 4–7, 13). Ascospores 81–115 \times 8–10 μ m, fasciculate, unicellular, hyaline, long-fusiform, slightly curved, ends apiculate (Figs. 8–12).

Known distribution. Brunei.

Known hosts. *Eugeissona*.

Material examined. BRUNEI: Temburong, Kuala Belalong Field Studies Centre, on rachis of *Eugeissona minor*, June 1993, K. D. Hyde B94 (BRIP 23235, holotype).

Frondisphaeria should be compared with *Linocarpon* Syd. & P. Syd. and *Pemphidium* Mont., genera with filiform unicellular ascospores whose species mostly occur on palms (Hyde, 1989, 1992, 1993). In *Linocarpon*, however, the ascospores usually develop under blackened discs of clypeal tissue and the ostioles are conspicuous. Asci are cylindrical with a cylindrical refractive apical (as compared to discoid subapical) ring. Ascospores are



Figs. 1–12. *Frondisphaeria palmicola*. 1. Dark raised dome-shaped regions under which ascomata develop. 2,3. Section of ascoma with palisade cells at periphery. 4–7. Asci. Note the discoid subapical ring. 8–12. Long-fusiform ascospores with apiculate ends. Bars: 1=10 mm; 2=100 μm ; 3–12=10 μm .

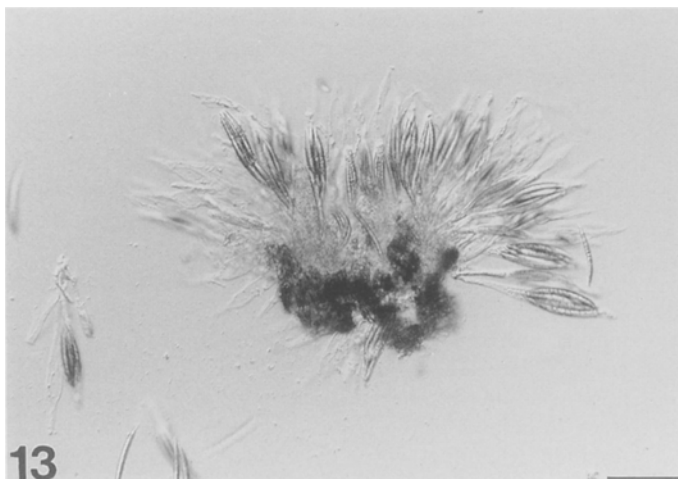


Fig. 13. *Frondisphaeria palmicola*. Squash mount illustrating asci attached at the base. Bar: 10 μm .

filiform, often with refringent septum-like bands and the ends are often provided with appendages (Hyde, 1989, 1992). In *Pemphidium* Mont. the ascomata also tend to develop under blackened discs or regions of stromatic tissue and the ostioles are conspicuous. Asci are also cylindrical with an indistinctive subapical apparatus. Ascospores are cylindric-fusiform, provided with polar appendages comprising a hollow cylinder containing mucilage (Hyde, 1993).

The asci of *Frondisphaeria* are reminiscent of the Diaporthaceae. It is, however, unlikely that it can accommodate here because of the presence of paraphyses, the much reduced peridium, the lack of periphyses, and since the asci are not freed from the base. *Frondisphaeria* is therefore referred to the Unitunicate Ascomycetes inc. sed.

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