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Fungi from palms. XIV. *Durispora elaeidicola* gen. et sp. nov.

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Hyde, K.D. (1994). Fungi from palms. XV. *Durispora elaeidicola* gen. et. sp. nov. – Sydowia 46(2): 315–320.

Durispora gen. nov. is described with *D. elaeidicola* as the type of this monotypic genus. The fungus is characterised by immersed clypeate ascomata with a central ostiole; distinctly tapering paraphyses; unitunicate, oblong ellipsoid asci, with a refractive, subapical, nonamyloid apparatus and fusiform, hyaline, unicellular ascospores with a spine at each end. *Durispora* is probably best accommodated in the Diaporthaceae until more is known on the classification of this and related families.

Keywords: *Ceriosporella, Durispora, Urosporella*, palm fungi.

A collection of dead petioles of *Elaeis guineensis* Jacq. (oil palm) made in the grounds of the University of Malaya yielded a fungus which could not be accommodated in any existing genus. The fungus is superficially reminescent of *Oxydothis* Penz. & Sacc., but is clearly distinguished by its unicellular ascospores, oblong ellipsoid asci and immersed ascomata with a central vertical neck. It had formed on recently dead fronds and may have been endophytic in the host before death. This is evident in several *Oxydothis* species (Fröhlich & Hyde, 1994). The new genus is described in this paper.

Durispora K. D. Hyde, gen. nov.

Ascomata immersa, clypeata, ostiolata, coriacea, solitaria vel gregaria. Paraphyses angustatae. Asci octospori, oblongati, ellipsoidei, pedunculati, unitunicati, apparato subapicali praediti. Ascosporae 2–3–seriatae, fusiformes, hyalinae, unicellulares, spinosae.

Typus generis: *Durispora elaeidicola* K.D. Hyde.

Etymology. – From the Malay 'Duri' meaning spine, in reference to the spines at each end of the ascospore.

Ascomata developing under blackened raised circular areas on the host surface, with a central periphysate, ostiolar canal; in vertical section ellipsoidal or subglobose, immersed beneath a

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clypeus, with a central ostiole. – Peridium up to 20 µm wide, brown, comprising 5–7 layers of brown-walled angular cells somewhat flattened at the base. – Clypeus comprising host cells with brown intracellular fungal hyphae. – Paraphyses ovoid at the base, hypha-like, filamentous, septate, hyaline, numerous and tapering abruptly distally. – Asci 8-spored, oblong ellipsoid, pedunculate, thin-walled, unitunicate, apically rounded and narrowed, with a subapical, refractive, J^- ring. – Ascospores 2–3-seriate, fusiform, hyaline, unicellular, with polar spines.

Type species: *Durispora elaeidicola* K. D. Hyde.

Durispora elaeidicola K. D. Hyde, sp. nov. – Figs. 1-17.

Ascomata 280–400 µm diam, 120–160 µm alta, immersa, clypeata, ostiolata, coriacea, solitaria vel gregaria. Paraphyses ad basim 12 µm crassae, septatae, angustatae. Asci 70–96 x 18–24 µm, octospori, oblongati ellipsoidei, pedunculati, unitunicati, rotundati, apparato subapicali praediti, J^-, 3 µm diam, 2 µm alti. Ascosporae 30–34 x 7–8 µm, 2–3-seriatae, fusiformes, hyalinae, unicellulares, spinosae, ad 24 µm longae.

Etymology. – From the host *Elaeis*.

Ascomata developing under blackened, raised, circular areas on the host surface, with a central ostiolar dot; solitary or joined in groups; in vertical section 280–400 µm diam, 120–160 µm high, ellipsoidal with a flattened base, clypeate, (Fig. 1) with a central periphysate ostiole. – Peridium up to 20 µm wide, brown, comprising 5–7 layers of brown-walled angular cells somewhat flattened at the base (Figs. 3,4). – Clypeus comprising host cells with brown intracellular fungal hyphae (Figs. 1, 2). – Paraphyses 12 µm wide at the base, where cells are ovoid, with 3–5 distal cells, tapering distally and quickly to a fine point, septate, hyaline and numerous (Figs. 11,16). – Asci 70–96 x 18–24 µm, 8-spored, oblong ellipsoid, pedunculate, thin-walled, unitunicate, apically rounded and narrowed, with a subapical, refractive, J^- ring, 3 µm diam, 2 µm high (Figs. 12–17). – Ascospores 30–34 x 7–8 µm, 2–3-seriate, fusiform, hyaline, unicellular, apically truncate with polar spines to 24 µm long (Figs. 5–10,17).

Holotypus. – MALAYSIA. Petaling Jaya, in grounds of University of Malaya, behind Rumah University (University House), in secondary regrowth forest (originally rubber and oil palm plantation), on dead rachides of *Elaeis guineensis* Jacq., lying on forest floor, Nov 1992, K. D. Hyde ML50, KDH 1645, BRIP 22531.

The taxon most reminescent of *Durispora elaeidicola* is probably *Ceriosporella bicalcarata* (Cesati) Berlese (1894), which was recently

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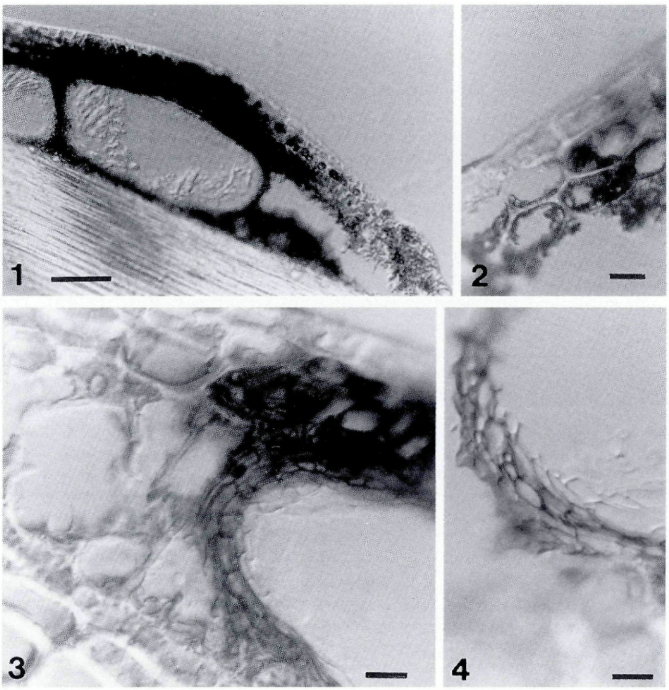

Figs. 1–4. – Interference contrast micrographs of *Durispora elaeidicola*. – 1. Section of clypeus and immersed ascomata. – 2. Clypeus comprising host cells and intracellular fungal hyphae. – 3. Upper clypeus and peridium. – 4. Peridium. – Bars: 1 = 100 µm, 2–4 = 10 µm.

illustrated by Hyde (1993). Hyde (1993) did not think this taxon was correctly assigned to *Ceriospora* Neissl and retained the name *Ceriosporella* Berlese. *Ceriosporella bicalcarata* differs from *Durispora elaeidicola* in several important aspects. The most striking differences are seen in the extent of stromatal development, the nature of the paraphyses, ascospore septation and in the length of the polar spines (Tab. 1).

Durispora is also distinct from *Ceriospora* Niessl as in the former the ascomata develop under a clypeus, the paraphyses distinctly taper distally, the asci lack a J^+, apical ring, instead having a refractive,

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subapical ring and the ascospores are unicellular with distinct long spines at each end (Hyde, 1993). It also differs from *Oxydothis* in many respects, most noticeably in having clavate as compared to cylindrical asci, and also lacking a J+, subapical ring, having instead a refractive J- subapical ring (Hyde, 1993).

Durispora should also be compared with *Urosporella* Atkinson which is typified by *U. alabamensis* (Ellis & Everh.) M. E. Barr (Barr, 1966). In *U. alabamensis* the ascospores are unicellular and also provided with spines at each end. The asci of *Urosporella alabamensis*, however, are cylindrical with a non-refractive apical ring, which can be seen due to invaginations in the plasmalemma. In *Durispora* the asci are oblong ellipsoid, whilst the ring is refractive and subapical and seen as two distinct structures (Figs. 12-15). The paraphyses also differ being filamentous and irregular in *Urosporella*, while broad at the base and tapering abruptly in *Durispora*. A synopsis of the characteristics found in *Ceriosporella, Durispora* and *Urosporella* is given in Tab. 1.

Tab. 1. – A comparison between *Durispora elaeidicola*, *Ceriosporella bicalcarata* and *Urosporella alabamensis*.

	D. elaeidicola	***C. bicalcarata***	***U. alabamensis***
Ascomata	Clypeate.	Stromatic.	Immersed, no clypeus.
Peridium	5-7 layers of brown-walled angular cells, some what flattened at the base.	Several layers of hyaline or brown thin-walled elongate cells, dark-brown towards the outside.	Several layers of small polygonal brown cells.
Paraphyses	Basal cells large, to 12 µm wide, ovoid and then tapering abruptly distally.	Amphisphaeriaceous,	Amphisphaeriaceous.
	No gelatinous matrix.	In gelatinous matrix.	In gelatinous matrix.
Asci	Oblong ellipsoid.	Clavate.	Cylindrical.
	Subapical refractive ring.	Apical refractive ring	Non-refractive apical ring.
Ascospores	One-celled.	Two-celled.	One-celled.
	Long spines at each pole.	Tapering to spine-like appendages.	Spines at each pole.

The placement of *Durispora* at the family level at this stage is difficult. It lacks a J^+, ascal ring and amphisphaeriaceous paraphyses (Fig. 23; Hyde, 1994), so is excluded from the Amphisphaeriaceae in which many palm ascomycetes belong (Hyde, 1993). The paraphyses distinctly taper, unlike other Lasiosphaeriaceous genera (e.g.

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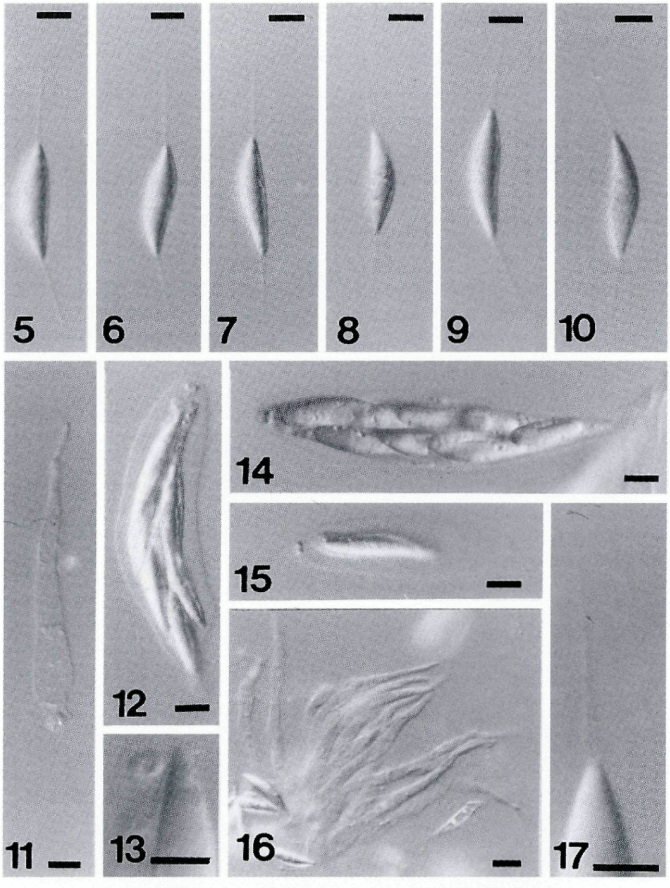

Figs. 5–17. – Interference contrast micrographs of *Durispora elaeidicola*. – 5–10. Ascospores with polar spines. – 11. Single tapering paraphyses. – 12–15. Asci. These are oblong ellipsoid with a subapical refractive ring. – 16. Squash illustrating short paraphyses. – 17. Polar region of ascospores illustrating attachment of appendage. – Bars = 10 μm.

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Linocarpon) on palms. The subapical ring is typical of Gnomoniaceae and the genus is probably best placed in the Diaporthaceae until more is known of the delimitation of these families.

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