

Fungi from palms. XXXIX. *Asymmetricospora* gen. et sp. nov. (Melanommataceae)

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The genus *Asymmetricospora* (Melanommataceae, Melanommatales) is introduced here to accommodate a single species, *A. calamicola*, which has immersed ascomata, fissitunicate asci and a hamathecium of trabeculae. It is separated from other Melanommataceous genera by the absence of a subiculum, the absence of short dark setae around the papilla, and its asymmetric ascospore morphology. *Astrosphaeriella* is the most similar in overall appearance, but *Asymmetricospora* differs in ostiole and ascospore morphology and in the coalescing ascomata (i.e. the fruiting bodies of *Asymmetricospora calamicola* contain more than one locule, those of *Astrosphaeriella* normally one).

Keywords: *Astrosphaeriella*, new species, Melanommatales.

We are investigating the fungi occurring on palms and in this paper we describe a new genus, *Asymmetricospora*, to accommodate a single species, *A. calamicola*. The species keys out to the Melanommataceae (Melanommatales *sensu* Barr, 1990) on the basis of its immersed ascomata, ostiole and peridium morphology, fissitunicate asci and trabeculate pseudoparaphyses (Barr, 1990). *Asymmetricospora calamicola* sp. nov. cannot be accommodated in any of the known genera. The characteristics separating *Asymmetricospora* from other Melanommataceous genera are the absence of a subiculum and of short dark setae around the papilla, as well as its asymmetrical ascospore morphology. Species of *Astrosphaeriella* Syd. & P. Syd. (Platystomataceae, *sensu* Barr, 1990) are most similar in overall appearance (Hyde & Fröhlich, 1998). *Asymmetricospora*, however, differs in having a central ostiole which is a simple opening without tissue differentiation, asymmetric ascospores, and in having ascomata that do normally not coalesce (i.e. in *Astrosphaeriella* there is usually one locule per fruiting body, whereas in *A. calamicola* fruiting bodies contain more than one chamber). In *Astrosphaeriella*

ascomata are also more structured and have definite, differentiated ostioles.

Mycomicrothelia Keissl. (Arthopyreniaceae) is also somewhat similar, but cannot accommodate this collection as the pseudoparaphyses are sparse, cellular and septate and ascospores are pigmented with verrucose wall ornamentations.

Asymmetricospora calamicola should not be confused with species in the Lophiostomataceae, e.g. taxa in the genus *Massarina* Sacc. (Barr, 1992; Hyde, 1995; Hyde & Aptroot, 1996). The best diagnostic character of *Asymmetricospora* is the hamathecium composed of trabeculae and not narrowly cellular pseudoparaphyses. Anamorphs of *Asymmetricospora* have so far not been observed.

***Asymmetricospora* J. Fröhl. & K. D. Hyde, gen. nov.**

Ascomata immersa, solitaria vel gregaria, uni- vel multilocularia, trabeculis praedita. Asci 8-sporei, clavati, breviter pedicellati, bitunicati, apparatu apicali praediti. Ascosporae 2-3-seriatae, naviculares vel obovatae, hyalinae vel pallide coloratae, bicellulares, asymmetricae, tunica gelatinosa praeditae.

Species typica: *Asymmetricospora calamicola* J. Fröhl. & K. D. Hyde, sp. nov.

Etymology. – From the Latin *asymmetricus* meaning “asymmetric, irregular” and *spora* meaning “spore, in reference to the unequal cells of the ascospores of the type species.

Ascomata immersed, singly or in groups, appearing as black domes on the host surface, lenticular in section, uni- or usually multi-locular. – Ostiole a simple central opening without tissue differentiation. – Upper peridium carbonaceous, thicker at sides and apex, composed of several layers of irregular cells arranged in a *textura angularis*. – Lower peridium composed of irregularly-shaped, hyaline cells. Vertically orientated stomatal tissue separate individual locules and occur at the periphery of ascomata. – Pseudoparaphyses trabeculate, persistent, numerous, tightly packed, filiform, branched and anastomosing, held within gelatinous matrix. – Asci 8-spored, clavate, short pedicellate, bitunicate with an ocular chamber. – Ascospores navicular to obovate, straight or curved, hyaline or lightly pigmented, unequally bicelled with a larger, rounded apical cell and a smaller, tapering, basal cell, constricted at the septum, usually with a mucilaginous sheath.

Type species: *Asymmetricospora calamicola* J. Fröhl. & K. D. Hyde.

Asymmetricospora calamicola J. Fröhl. & K. D. Hyde, sp. nov.
Figs. 1–8.

Ascomata immersa, solitaria vel gregaria (2–10), uni- vel multilocularia, lenticularia, 320–400 µm diam., 175–270 µm alta, immersa, ostiolata, trabeculata. Asci 137.5–207.5 × 26.3–35 µm (mean: 172.8 × 31.5 µm, n = 20), 8-spore, clavati, breve pedicellati, bitunicati, apparatus apicali praediti. Ascospores 35–55 × 10.5–15 µm (mean: 44.7 × 12.4 µm, n = 50), biseriatae, naviculares vel obovatae, hyalinae vel luteolae, laeves, guttulateae, bicellulares, asymmetricae, tunica gelatinosa praeditae.

Etyymology. – From the host genus *Calamus* and the Latin suffix *cola* meaning “dweller”.

Ascomata immersed, singly or in groups of 2–10, under hemispherical, black, domes, 875–1500 µm long, 675–950 µm wide, with a pale brown ring around the central ostiole (Fig. 1); in section lenticular, uni- or usually multilocular, individual locules 320–400 µm wide, 175–270 µm high, base flattened (Fig. 4). – Ostiole a simple central opening without tissue differentiation (Fig. 4). – Upper peridium 32–70 µm thick (at sides and apex), carbonaceous, composed of several layers of irregular cells, 410 × 25.8 µm, with thin, black walls arranged in a *textura angularis* (Fig. 2). – Lower peridium composed of hyaline cells up to 10 µm wide, arranged irregularly in a *textura globulosa* or *textura prismatic*. Vertically orientated stromatic tissue separate individual locules and occur at the periphery of ascomata. (Fig. 3). – Pseudoparaphyses 1.2–1.6(–2.2) µm wide, trabeculae in a gelatinous matrix (Fig. 6). – Asci 137.5–207.5 × 26–35 µm (mean: 172.8 × 31.5 µm, n = 20), 8-spored, clavate, short pedicellate, bitunicate with an ocular chamber (Fig. 5). – Ascospores 35–55 × 10.5–15 µm (mean: 44.7 × 12.4 µm, n=50), biseriatae, navicular to obovate, hyaline or with a yellowish-brown teint when old, straight or curved, guttulate, smooth walled, unequally bicelled with a larger, rounded apical cell and a smaller, tapering, basal cell, constricted at the septum, with a broad, spreading mucilaginous sheath (Figs 7, 8).

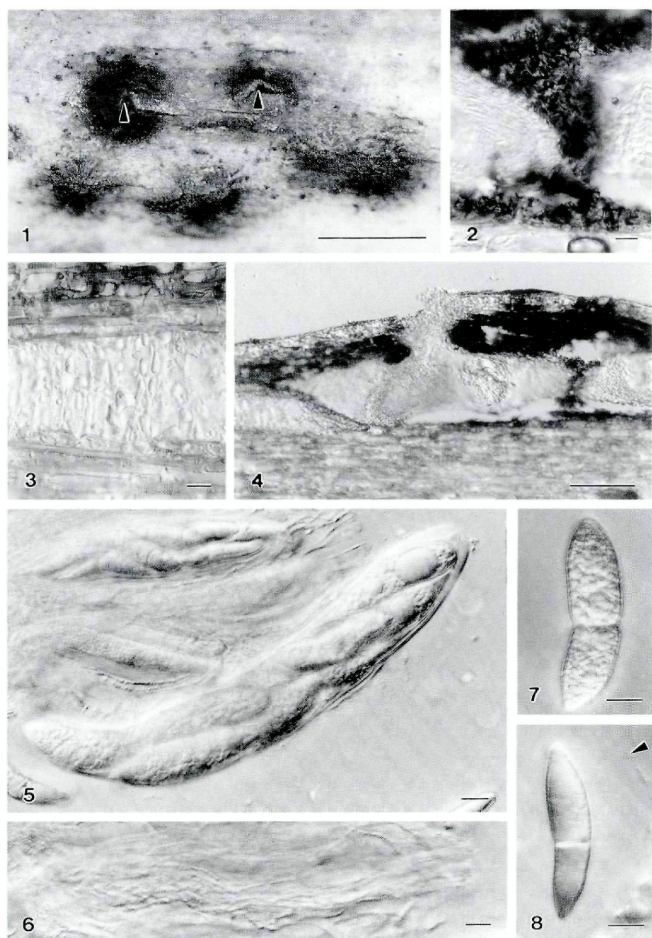
Host Species. – *Calamus caryotoides*.

Known Distribution. – Australia.

Material Examined. – AUSTRALIA, north Queensland, Palmerston, Palmerston National Park, on dead stem (rattan) of *Calamus caryotoides*, March 1994, J. Fröhlich (HKU(M))JF 293, holotype).

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Figs. 1-8. *Asymmetricospora calamicola*. - 1. Appearance of ascomata on the host surface. Note the central ostioles (arrowed). - 2. Vertical section through the peridium between neighbouring ascomata. - 3. Vertical section through the tissue at the periphery of the ascomata. - 4. Vertical section through the ascomata illustrating a simple central ostiole without tissue differentiation. - 5. Ascus. - 6. Trabeculae. - 7, 8. Ascospores. Note the mucilaginous sheath (arrowed in 8). Bars: 1 = 1 mm; 4 = 100 μ m; 2, 3, 5-8 = μ m.

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