

Lanceispora phyllophila sp. nov. on petioles of unknown dicotyledonous leaves in Singapore

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Lanceispora phyllophila is described based on specimens of petioles from an unidentified dicotyledonous host collected at Bukid Timan, Singapore. It is illustrated with interference contrast micrographs and compared with the type species *L. amphibia*. *Lanceispora phyllophila* differs from *L. amphibia* in having smaller ascomata and longer ascospores.

Key Words—Amphisphaeriaceae; ascomycete; *Leiosphaerella*; litter fungi; new species.

Lanceispora was introduced to accommodate *Lanceispora amphibia* Nakagiri, Okane, Tad. Ito et Katum., a leaf-inhabiting species from senescent and fallen leaves of mangroves from Irimote Island and Okinawa Island, Japan (Nakagiri et al., 1997). *Lanceispora* was found inhabiting decomposing leaves of *Bruguiera gymnorrhiza* Lam. and has immersed ascomata, cylindrical asci with a subapical ring staining blue in Melzer's reagent and oblanceolate ascospores with a septum above the middle. The genus was placed in the Amphisphaeriaceae (Nakagiri et al., 1997). In recent studies Kang et al. (1999b) have confined the Amphisphaeriaceae to species with *Pestalotia*-like anamorphs. However, *Lanceispora* was not discussed by them.

In a survey on leaf litter fungi from Singapore an undescribed ascomycete was encountered. It has similarities with *Lanceispora* and so here we describe our taxon as a new species of *Lanceispora*.

Materials and Methods

Decomposing leaf litter was collected in snap-lock plastic bags, at Bukid Timan, Singapore during January 1999 and brought back to the laboratory. Samples were examined by Olympus BH and BX microscopes with Nomarski Interference Contrast Microscopy. All measurements reported below are made in water. Attempts to isolate the fungus in pure culture were unsuccessful.

Taxonomy

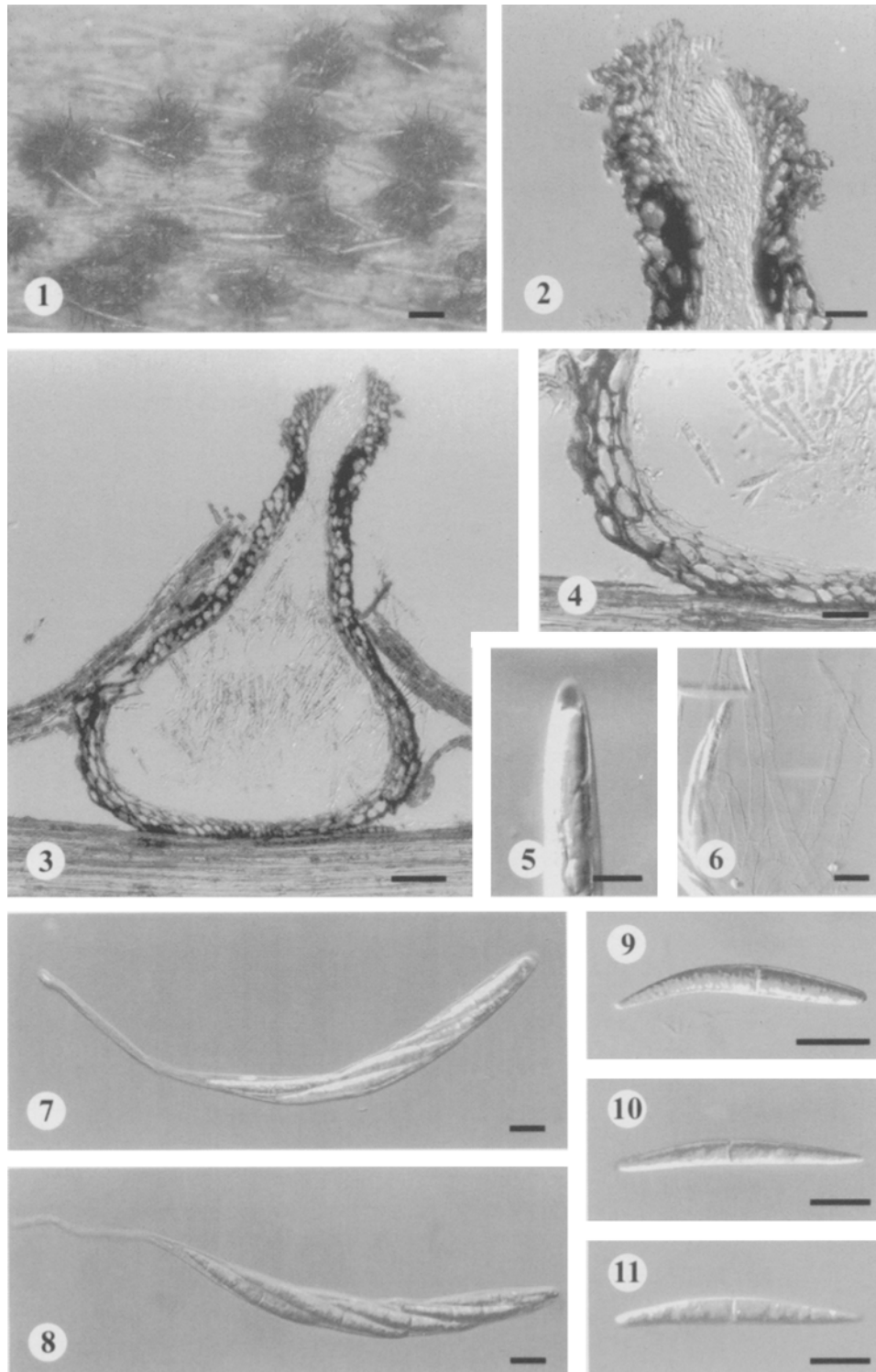
Lanceispora phyllophila V. V. Sarma & K. D. Hyde, sp. nov. Figs. 1–11.

Ascomata singularia vel gregaria, immersa vel erumpentia, globosa, coriacea, 165–270 (–312) μm alta, 135–235 (–300) μm diam, obscure brunnea, papillata. Papilla 130–190 \times 50–92 μm , ostiolata, periphysata. Peridium 10–30 μm crassum, 2-stratosum, ex cellulis strati in-

terni compressis, strati externi angularis, brunneis compressum. Paraphyses filiformes, usque ad 7 μm diam, non ramosae, septatae. Asci unitunicati, octospori, cylindrici-falcati, longe pedunculati, 120–214 \times 10–14 μm , apice rotundati, annulo subapicali jodo cyanescenti praediti, annulus cuneiformis, 3–4 μm crassus, 4–7 μm altus. Ascospores uni- vel biseriales, 38–50 \times 4–6 μm , apice rotundatae, deorsum attenuatae, prope medium uniseptatae, hyalinae. Anamorphus non visus.

Holotypus: HKU (M) 8298, K. D. Hyde, in petiolis senescentibus et dejectis submersisque arboris dicotyledonis incognitae, Bukid Timan, Singapore, Januarii, 1999.

Ascomata 165–270 (–312) μm high, 135–235 (–300) μm in diam, (\bar{x} = 208 \times 193 μm , n = 25) spherical, dark brown, coriaceous, ostiolate, solitary or gregarious, immersed beneath host epidermis when young, becoming raised when mature, in section ascomata conical with a flattened to rounded base. Papilla 130–190 \times 50–92 μm , slightly swollen at the ends, cells angular, periphysate. Peridium 10–30 μm , comprising 2 strata, outer stratum thick-walled, dark brown, comprising 3–4 layers of angular cells, inner stratum thin-walled, comprising 3–4 layers of compressed, elongate, hyaline to light yellow cells. Paraphyses up to 7 μm wide, filamentous, non-branched, septate, broad base narrowing towards tip. Asci 120–214 \times 10–14 μm (\bar{x} = 169 \times 11 μm , n = 25), 8-spored, unitunicate, cylindrical-falcate, long pedicellate, rounded at apex, with a wedge-shaped subapical ring staining blue in Melzer's reagent, 3–4 μm wide \times 4–7 μm high (\bar{x} = 3.7 \times 5.6 μm , n = 10). Ascospores 38–50 \times 4–6 μm (\bar{x} = 44.2 \times 4.8 μm , n = 50), uni- to biserial, oblanceolate, rounded at the upper end, tapering toward the lower end, 1-septate, septum median to sub-median, hyaline, smooth, without any appendages or sheath. Attempts to isolate cultures were unsuccessful.



Figs. 1–10. *Lanceispora phyllophila*. 1. Host surface of unidentified petiole with *L. phyllophila* appearing as raised blackened spots. 2. Neck enlarged showing periphyses. 3. Section through a mature perithecium showing habit and relationship to the host. 4. Section enlarged showing peridial layers. 5. Ascus apex (Melzer's reagent). 6. Paraphyses. 7, 8. Mature asci with long pedicel. 9–11. Ascospores. Bars: 1 = 100 μm ; 2 = 20 μm ; 3 = 50 μm ; 4–11 = 10 μm .

Holotype: Singapore, Bukid Timan, January 1999, K. D. Hyde, HKU (M) 8298, on senescent and decaying petioles of unidentified dicotyledonous leaf litter.

Etymology: *phyllo* = leaf, *philus* = liking, referring to the habitat leaves or petioles on which this fungus occurs. Known distribution: Singapore

Table 1. Comparison of morphological characteristics of *Lanceispora amphibia* and *L. phyllophila*.

	<i>Lanceispora amphibia</i> (Nakagiri et al., 1997)	<i>Lanceispora phyllophila</i> (Present study)
Ascomata	280–400 μm high, 260–380 μm diam. Solitary, immersed, coriaceous, olivaceous to olivaceous black, papillate, eperiphysate.	165–270 (–312) μm high, 135–235 (–300) μm diam, solitary or gregarious, immersed when young erumpent when mature, coriaceous, dark brown, papillate, periphysate.
Paraphyses	Filiform, 90–138 \times 4–8 μm , rarely branched, septate, hyaline.	Filiform up to 7 μm wide, hyaline, septate, broad base, narrowing to tip.
Asci	134–176 \times 8–10 μm , rounded at apex, long pedicellate, with sub-apical ring staining blue in Melzer's reagent.	120–214 \times 10–14 μm , cylindrical-falcate, long pedicellate, rounded at apex with a sub-apical ring staining blue in Melzer's reagent.
Ascospores	(24–) 28–34 (–36) \times 3–4.5 μm (\bar{x} = 29.6 \times 3.8 μm), 1–2-seriate, oblanceolate, hyaline, rounded at the upper end, tapering toward the lower end, 1-septate above the middle, smooth.	38–50 \times 4–6 μm (\bar{x} = 44.2 \times 4.8 μm), 1–2-seriate, oblanceolate, hyaline, rounded at the upper end, tapering toward the lower end, 1-septate, septum sub-medial.
Habitat	<i>Bruguiera gymnorrhiza</i> , Mangrove	Petioles of unidentified dycotyledonous leaf litter, Terrestrial

Discussion

Nakagiri et al. (1997) introduced *Lanceispora* to accommodate *L. amphibia* inhabiting senescent and fallen leaves of *Bruguiera gymnorrhiza* from Iriomote Island and Okinawa Island, Japan. It is characterized by immersed perithecial ascomata, unitunicate, long pedicellate asci with a shallow amyloid subapical ring, and hyaline, 2-celled, oblanceolate ascospores. *Lanceispora phyllophila* is similar to *L. amphibia* in having immersed perithecial ascomata, unitunicate, long pedicellate asci with an amyloid subapical ring, and hyaline, 2-celled ascospores with sub median septum. However, the ascospores in *L. phyllophila* are longer (38–50 \times 4–6 μm) when compared to *L. amphibia* (24–36 \times 3–4.5 μm). Other differences are included in the Table 1.

The only other similar genera to *Lanceispora* are *Leiosphaerella* Höhn and *Oxydothis* Penz. et Sacc. (Hyde, 1993; Hyde et al., 2000). *Leiosphaerella* is characterized by immersed upright ascomata, unitunicate asci with an amyloid subapical ring, and long narrow hyaline, 1-septate ascospores (Müller and Arx, 1962; Samuels and Rossman, 1987; Hyde, 1993). However, *Lanceispora phyllophila* differs from *Leiosphaerella* species in lacking a clypeus, but having a discoid ascus subapical ring (wedge-shaped in *Lanceispora*), and oblanceolate ascospores. *Leiosphaerella* was placed under Clypeosphaeriaceae because of the presence of a clypeus (Kang et al., 1999a). *Lanceispora* should also be compared with *Oxydothis*. The common features between *Lanceispora* and *Oxydothis* are immersed ascomata, long cylindrical asci with J+ subapical ring and long fusiform, 2-celled ascospores. However, *Oxydothis* differs from *Lanceispora* in having a dome-shaped clypeus, long fusiform or filiform ascospores with apicu-

late or spine-like poles, (some may have rounded ends) with mucilage (Hyde, 1994), in contrast to *Lanceispora* which has oblanceolate ascospores with a submedian septum.

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