A new species of *Appendicospora* from Hong Kong

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A new species of *Appendicospora*, *A. hongkongensis*, occurring on fronds of *Livistona chinensis* in Hong Kong is described and illustrated with interference contrast micrographs. It differs from *A. coryphae* in having larger ascomata and ascospores, and a peridium of brown-walled cells. The differences between *Apiospora* and *Appendicospora* are reexamined in the light of the cultural characteristics of the latter.

Key Words—*Apiospora*; *Appendicospora*; *Arthrinium*; palm fungi; systematics.

In a study of the succession of fungi occurring on dead rachides of *Livistona chinensis* (Jacq.) R. Br. (Arecales), we identified a species of *Appendicospora* K. D. Hyde with ascospores that are much larger than those of the type of this monotypic genus. *Appendicospora hongkongensis* sp. nov. is described and illustrated based on a specimen collected on a rachis of *L. chinensis* in Hong Kong. This species is similar to *Appendicospora coryphae* (Rehm) K. D. Hyde (Hyde, 1995) in having ascospores with basal bifurcate appendages. Asci are also clavate, early deliquescing and lack an apical apparatus. In *A. hongkongensis*, the ascomata (226-270 μm in diam, 108-128 μm high) and the ascospores (17-24×5-8 μm) are larger than those in *A. coryphae*, and the peridium comprises brown-walled, as compared to hyaline cells. A synopsis of these differences is provided in Table 1.

*Appendicospora* was introduced to accommodate *Apiosporella coryphae* Rehm, which differed from typical *Apiospora* species in having ascospores provided with basal bifurcate appendages. In the type species, *Apiospora montagnei* Sacc., the ascomata are immersed, darkened, globose and occur in linear rows, the peridium consists of elongate angular brown cells, and the ascospores are 1-2-seriate and lack appendages. The anamorphs of several *Apiospora* species have been shown to be species of *Arthrinium* Kunze and these readily form in association with the telemorphs on the host tissues and in cultures (Samuels et al., 1981; Müller, 1992; Hyde, personal observation). The anamorph of *Appendicospora*, however, has not been seen in association with the telemorph on the host and has not been produced in culture.

The cultural characteristics of the two genera also differ. In *A. hongkongensis*, no *Arthrinium* anamorph is produced and the colonies are slow growing (2 cm diam in 3 mo on PDA at 25°C), dirty white in colour, powdery, with an outer brown radiating margin, brown from below, producing clusters of rounded light brown chlamydospores on the surface; in *Apiospora setosa* Samuels, McKenzie & D. E. Buchanan, colonies are relatively fast growing (4-5 cm in 1 wk on PDA at 18-20°C), very pale pink, felty, with conidia forming in white hyphal tufts after 2 wk (Samuels et al., 1981). Other *Apiospora* species produce similar cultural characteristics and an *Arthrinium* anamorph (Taylor, personal observations). This further exemplifies the differences between these genera.

The taxonomic position of *Appendicospora*, which may have taxonomic relationships with *Apiospora*, is uncertain. *Apiospora* has been placed at one time or another in the outdated Dothideales (bitunicate ascomycetes; Theissen and Sydow, 1915), then the Amphipsaeriaceae (Müller and von Arx, 1962), or Hyponectriaceae (Barr, 1976) and more recently in the Lasiosphaeriaceae (Barr, 1990). It will probably eventually require placement in a new family.

Materials and Methods

The fungi examined in this study were collected from dead fronds of *L. chinensis* in Hong Kong. Dead fronds were cut, placed in plastic bags and brought back to the laboratory for microscopic examination. The dead fronds were first incubated in moist boxes at 25°C for 3-5 d. Single ascospore isolations were made from ascospore suspensions placed onto PDA. Germinated ascospores were transferred onto new agar plates and grown at 25°C. Ascomatal sections were prepared using a freezing microtome at −20°C. All measurements given refer to water mounts.

Taxonomy

*Appendicospora hongkongensis* Yanna, K. D. Hyde & J. Fröhlich, sp. nov.

Figs. 1–11

Pseudostromata usque ad 45 mm longa, 3 mm crassa, nigra. Ascomata immersa 226–270 μm diam, 108–128 μm alta, lenticularia, ad basim applanata, uniloculare, periphysata, ostiolata. Peridium 5–8 μm crassum,
Figs. 1–11. Interference contrast micrographs of *Appendicospora hongkongensis*.

1, 2. Fungal colonies on host surface. 3. Section of an ascoma. Note the brown peridium and the upper layer of host cells filled with brown fungal hyphae. 4. Cells at periphery of ascoma. 5. Paraphyses. 6, 7. Asci. 8–11. Ascospores with basal bifurcate appendages. Scale bars: 1, 2 = 1 mm; 3 = 100 µm; 4–11 = 10 µm.