

Arecophila bambusae sp. nov. and *A. coronata* comb. nov., from dead culms of bamboo

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A new species of *Arecophila* and a species previously known as *Amphisphaeria coronata* are described and illustrated from dead culms of bamboo. *Arecophila bambusae* sp. nov. is distinct in the genus in having ellipsoidal ascospores with slightly round ends, and asci with a narrow subapical ring. *Arecophila coronata* comb. nov. has asci with a wedge-shaped apical ring and weakly striated ascospores enclosed in wide mucilaginous sheath.

Key Words—*Amphisphaeria*; ascomycetes; bamboo fungi; taxonomy.

Arecophila K. D. Hyde was introduced by Hyde (1996) to accommodate seven species collected from palms. A comparison with other genera and a key to species are provided by Hyde (1996). During our investigation of microfungi on dead culms of bamboo in Hong Kong and the Philippines, we have collected one new *Arecophila* species and a species previously described as *Amphisphaeria coronata* Rehm.

Materials and Methods

Slides were prepared from sections of fresh and dried material cut with razor blade and mounted in water. The mucilaginous sheath of the ascospores was observed using India ink as the mounting medium. The apical ring was stained using the Melzer's solution. All measurements were made in water. Type material of *A. bambusae* was deposited in the herbaria of the Department of Ecology and Biodiversity, The University of Hong Kong (HKU(M) 8446). The material of *Amphisphaeria coronata* was loaned from W.

Taxonomy

Arecophila bambusae Umali & K. D. Hyde, sp. nov.

Figs. 1–12

Ascomata 294–350 μm alta, 500–560 μm diam, immersa, solitaria, globosa vel subglobosa, brunnea, ostiolata. Asci 132.5–140 \times 7.5–8 μm , 8-sporei, cylindracei, pedicellati, unitunicati, apice leniter truncati, apparatus subapicali cuneiformi iodo coerulescenti 2.5–3 μm diam 2.5 μm alto praediti. Ascosporeae 19–22.5 \times 5.5–7 μm , ellipsoideae, apice utrinque leniter attenuatae, brunneae, medio 1-septatae, ad septum constrictae, striatae, tunica gelatinosa praeditae.

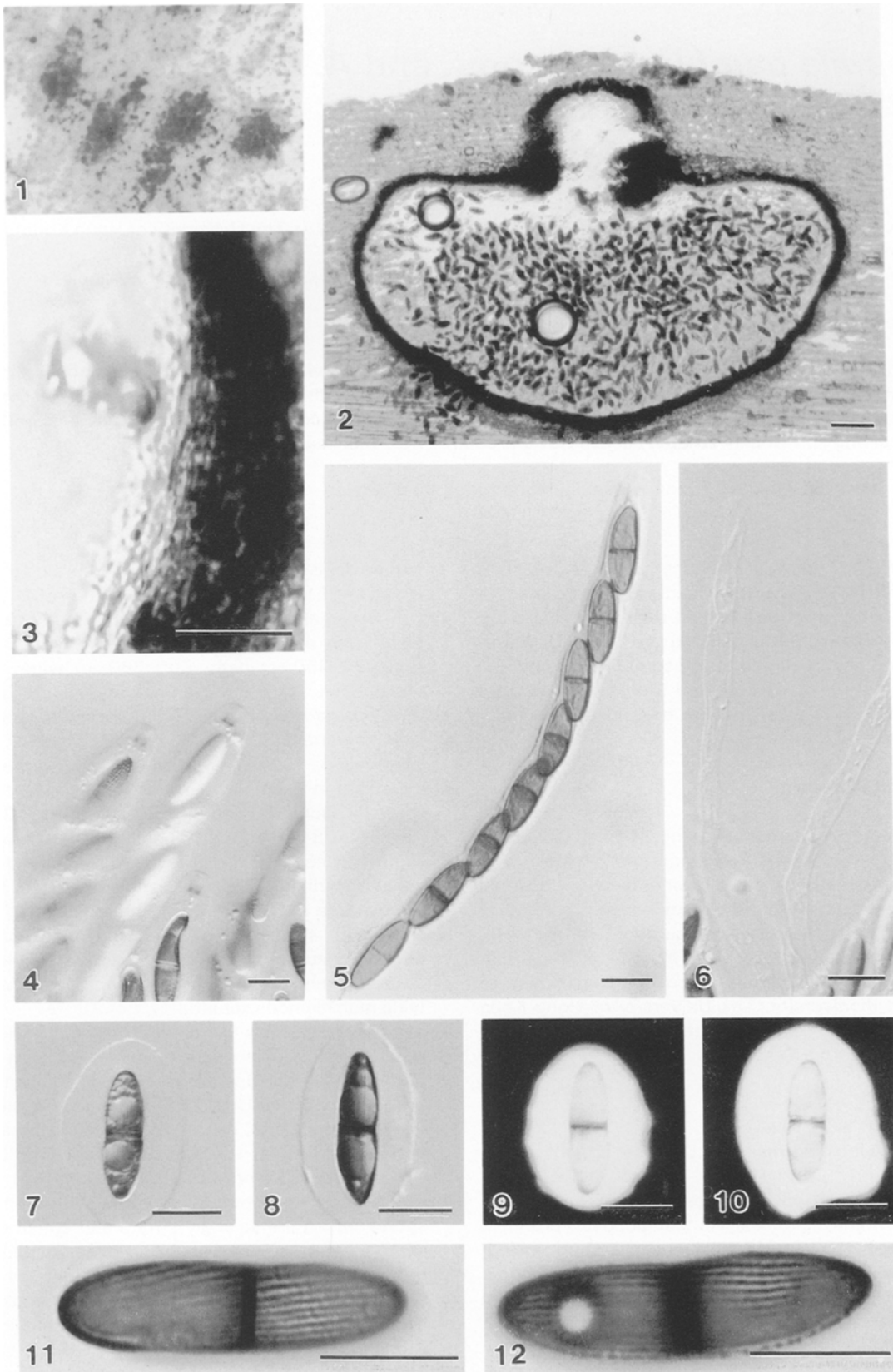
Holotype: Philippines, Laguna, Los Baños, Mt. Makil-

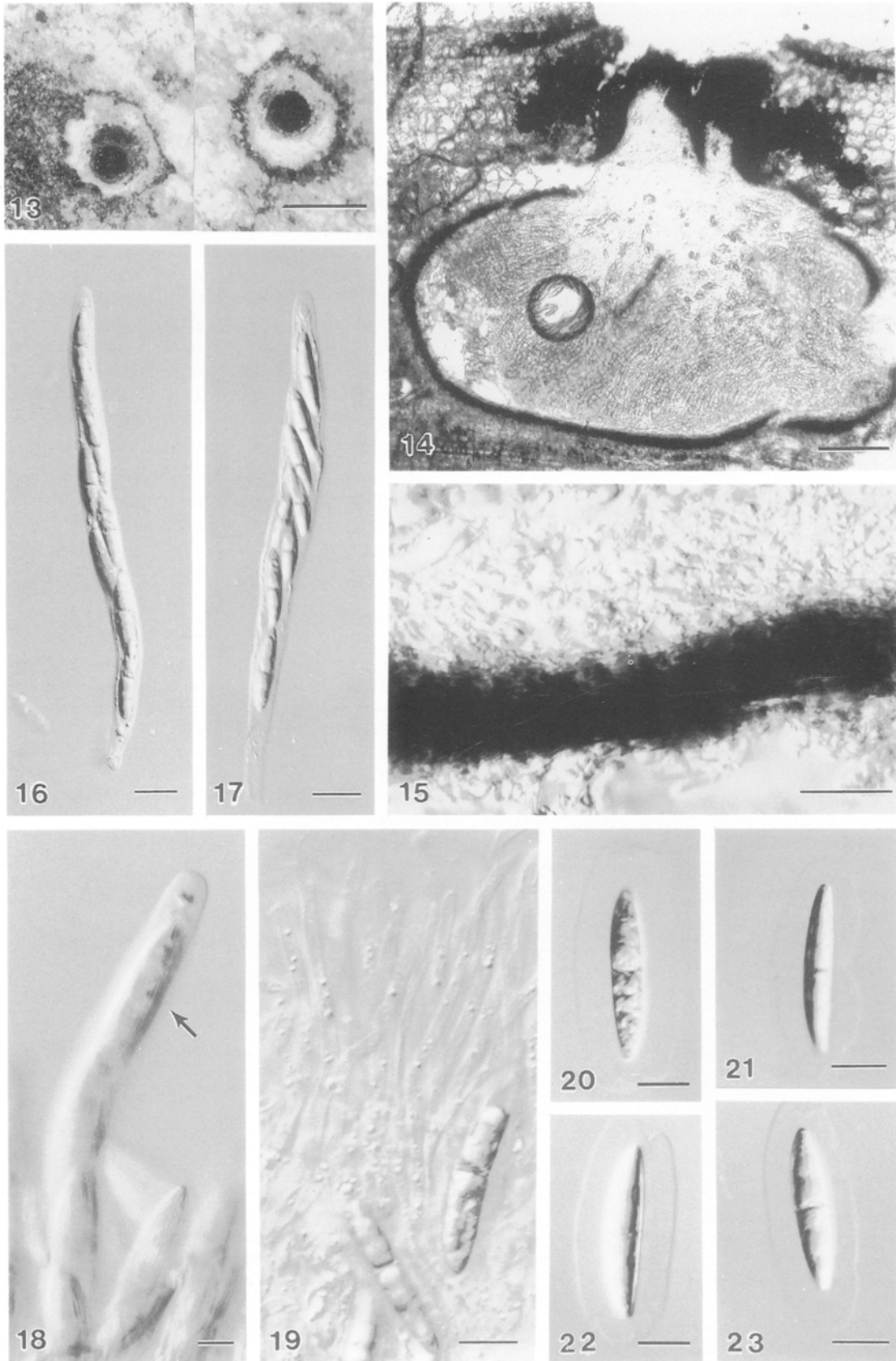
ing, on dead culm of *Bambusa* sp., September 1995, T. E. Umali and F. Nono, TD 2SP (HKU(M) 8446).

Ascomata immersed beneath slightly raised blackened areas on the host surface, solitary; in vertical section 294–350 μm high, 500–560 μm wide, globose to subglobose, ostiolate. Peridium (19–)23.5–30 μm in diam, composed of dense, compressed layers of angular cells towards outside, fusing with the host cells, and thin-walled inner layers of cells. Paraphyses ca. 2–2.5 μm in diam, filamentous, hyaline, septate, longer than the asci, flattened at the apex. Asci 132.5–140 \times 7.5–8 μm , 8-spored, cylindrical, pedicellate, unitunicate, slightly truncate at the apex, with a wedge-shaped, J+, subapical ring, 2.5–3 μm in diam, ca. 2.5 μm high. Ascospores 19–22.5 \times 5.5–7 μm , overlapping uniseriate, ellipsoidal, slightly tapering at the ends, equally two-celled, constricted at the septum, brown, covered by striations which run along at full length, surrounded by a wide mucilaginous sheath.

Other materials examined: Hong Kong, New Territories, Tai Po Kau, Tai Po Kau Country Park, on dead culm of *Bambusa* sp., September 1995, T. E. Umali and F. Layug, TD 2SP (HKU(M) 8743); Hong Kong, New Territories, Kadoorie Farm, on dead culm of *Dendrocalamus pulverulentus*, August 1998, D. Zhou (HKU(M) 9090).

Arecophila bambusae is comparable with *A. calamicola* K. D. Hyde as both have immersed ascomata, ascospores which are strongly striate and constricted at the septum, and asci with a J+, wedge-shaped subapical ring. It differs from *A. calamicola*, however, in having ellipsoidal ascospores with slightly round ends, asci with slightly truncate apices, and a smaller subapical ring, ca. 2.5 μm high \times 2.5–3 μm wide, vs. 3.2–4 \times 4–4.8 μm . The ascospores of *A. calamicola* taper strongly at the ends and are curved (Hyde, 1996). *Arecophila gulubii-cola* K. D. Hyde is also comparable with *A. bambusae* in





having ascospores that are ellipsoidal and strongly striated, but this species differs in having ascomata developing beneath raised blackened shiny areas and paraphyses with some enlarged or ballooning cells (Hyde, 1996).

Arecophila coronata (Rehm) Umali & K. D. Hyde, comb. nov. Figs. 13–23

≡ *Amphisphaeria coronata* Rehm, Leafl. Philipp. Bot. 6: 2200. 1913.

Holotype: Philippines, Laguna, Los Baños, Mt. Maquiling, on *Gigantochloa scribneriana*, September 1913, C. F. Baker (W. 14735).

Ascomata immersed under a clypeus, visible as blackened ostiolar dots surrounded by a circle of white tissue, solitary; in vertical section 42–105 μm high \times 90–100 μm in diam, subglobose or ellipsoidal, ostiolate. Peridium 20–22.5 μm in diam, comprising of several compact layers of heavily pigmented elongate cells, of uniform thickness, fusing with clypeus. Paraphyses 4–5 μm in diam, hyaline, septate, tapering distally or sometimes flattened at the apex. Asci 132.5–157.5 \times 7.5–9 μm , 8-spored, cylindrical, pedicellate, unitunicate, apically rounded, with J+, wedge-shaped, subapical ring, 2–2.5 μm high \times 3.5–4 μm in diam, and a faint canal leading to the apex. Ascospores 29–31 \times 5–5.5 μm , overlapping uniseriate, narrowly ellipsoidal to fusiform, equally two-celled, slightly constricted at the septum, subhyaline to pale brown, covered with faint striations, which run along the full length of the ascospore, and surrounded by a wide mucilaginous sheath.

Other materials examined: Philippines, Laguna, Los Baños, Mt. Makiling, on dead culm of *Bambusa* sp., September 1995, T.E. Umali and F. Nono, TD 6SP (HKU(M) 8527); Hong Kong, New Territories, Tai Po Kau, Tai Po Kau Country Park, on dead culm of *Bambusa* sp., September 1996, T.E. Umali and F. Layug, TD 2SP (HKU(M)

8743); *ibid.*, (HKU(M) 8742); *ibid.*, (HKU(M) 8754).

We have examined the type material of *A. coronata* which is in very poor condition and located a few ascospores that were identical to our collections from the Philippines and Hong Kong. The apical ring of the ascus was also similar in size. One notable difference includes the presence of white tissues encircling the clypeus, but we do feel that this warrants separate species status. Although this taxon is described in *Amphisphaeria*, the taxon fits better in *Arecophila* (Hyde, 1996) as it has ascospores with longitudinal striations and surrounded by a mucilaginous sheath.

Arecophila coronata can also be compared with *Amphisphaeria striatispora* Cand. & Katum. which occurs on dead culms of *Pseudosasa japonica* (Candoussau et al., 1985). Both species have similar ascospore morphology, however, they differ in size. The ascospores of *A. bambusae* are narrower than those of *A. striatispora* (5.5–7 μm vs. 7–8 μm) (Candoussau et al., 1985).

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Figs. 1–12. *Arecophila bambusae*.

Light micrographs from holotype. 1. Appearance of ascomata on host surface. 2. Section of the ascoma. 3. Peridium composed of compressed layers of angular cells. 4, 5. Asci illustrating J+, wedge-shaped subapical rings. 6. Paraphyses. 7, 8. Ascospore with wide mucilaginous sheath. 9, 10. Ascospore sheath stained with India ink. 11, 12. Ascospores with distinct striations. Scale bars: 1 = 100 μm ; 2, 3 = 20 μm ; 4–12 = 10 μm .

Figs. 13–23. *Arecophila coronata*.

Light micrographs from HKU(M)8743. 13. Ascomata on host surface. 14. Section of the ascoma. 15. Peridium. 16, 17. Asci. 18. Asci with a J+ subapical ring and ascospores with faint striations (arrowed). 19. Paraphyses. 20–23. Ascospores. Note the wide mucilaginous sheath surrounding the ascospores. Scale bars: 13 = 100 μm ; 14, 15 = 20 μm ; 16–23 = 10 μm .