

## Fungi from palms. XXII<sup>1</sup>. A new species of *Ascotaiwania*

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A new species of *Ascotaiwania* Sivan. is described from fronds of *Iriartia* sp. collected in Cuyabeno, Ecuador. It is compared with *Ascotaiwania lignicola* and *Crassoascus fusisporus*.

Keywords: *Ascotaiwania*, *Crassoascus*, palm fungi.

A new species of *Ascotaiwania* Sivan. was collected during investigations on the ascomycetes colonizing dead palm material in Cuyabeno, Ecuador in 1993. *Ascotaiwania* Sivan. & H. S. Chang was originally described from undetermined submerged wood collected in Taiwan (Sivanesan & Chang, 1992). The monotypic genus represented by *A. lignicola* Sivan. & H. S. Chang is characterized by partly to completely immersed, dark-brown to black, beaked ascomata, with their orientation oblique or horizontal to that of the host surface, and with a peridium of compressed angular brown-walled cells. The paraphyses deliquesce early and the asci are cylindrical with a relatively massive refractive apical ring. Ascospores are fusiform, 7-septate, with central brown cells and hyaline end cells (Sivanesan & Chang, 1992). The species of *Ascotaiwania* from Ecuador has smaller, 3-septate ascospores and is therefore described as new.

### Taxonomy

***Ascotaiwania palmicola*** K. D. Hyde, sp. nov. – Figs 1-12.

Ascomata 210-350  $\mu\text{m}$  in diam, 200-250  $\mu\text{m}$  alta, subglobosa, immersa, coriacea, nigra, ostiolata, papillata, paraphysata. Asci 150-175 x 7.5-8  $\mu\text{m}$ , 8-spori, cylindracei, unitunicati, pedicellati, truncati, apparatu apicali 5  $\mu\text{m}$  diam, 4  $\mu\text{m}$  alto praediti. Ascosporae 17.5-20 x 5-6.5  $\mu\text{m}$ , uniseriatae, fusiformes, 4-cellulatae, appendiculatae, cellulis centralibus brunneis, cellulis polaribus hyalinis vel pallide brunneis.

<sup>1</sup> XXI in *Sydowia* 47(2): 199-212.

**Holotypus.** – ECUADOR: Oriente, Napo Province, Rio Cuyabeno, Cuyabeno rainforest, on dead rachis of *Iriartia* sp., Aug. 1993, K. D. Hyde, E18, BRIP 22744. Syntype at the Biology Department, Catholic University, Quito, Ecuador.

Ascomata clustered under raised areas of the host with erumpent papillae; in section 210–350  $\mu\text{m}$  diam, 200–250  $\mu\text{m}$  high, subglobose, immersed, coriaceous, black, ostiolate, papillate (Fig.1). – Peridium up to 20  $\mu\text{m}$  wide, comprising ca 11 layers of brown-walled mildly flattened angular cells (Fig. 2). – Paraphyses up to 5  $\mu\text{m}$  at the base, hypha-like, filamentous, septate and tapering with free ends. – Asci 150–175 x 7.5–8  $\mu\text{m}$ , 8-spored, cylindrical, unitunicate, pedicel tapering to a fine point, apically truncate, with a J-, subglobose refractive apical ring, 5  $\mu\text{m}$  diam, 4  $\mu\text{m}$  high (Figs 3–5). – Ascospores 17.5–20 x 5–6.5  $\mu\text{m}$ , uniseriate, fusiform, 4-celled, constricted slightly at the central septum, central cells brown, end cells hyaline or pale brown, with polar mucilaginous appendages (visible only under phase contrast or in India Ink, Figs 6–12).

**Known hosts.** – *Iriartia* sp.

**Known distribution.** – Ecuador.

*Ascotaiwania palmicola* has many characteristics typical of *Ascotaiwania*; such as immersed ascomata, a peridium of brown-walled, flattened angular cells, cylindrical asci with a relatively massive refractive apical ring and septate ascospores with central brown cells and hyaline end cells (Figs 1–12). Differences between *A. palmicola* and *A. lignicola* include the orientation of the ascoma, the presence of polar ascospore appendages and the nature of paraphyses. In *Ascotaiwania lignicola* the ascomata are oblique or horizontal, whilst in *A. palmicola* they are perpendicular to the host surface. Little significance, however, should be given to this character as there are many examples of genera and species in which both types of orientation occur. In *Oxydothis* Penz. & Sacc. the orientation of the ascoma is species characteristic; in *O. grisea* Penz. & Sacc. it is horizontal, in *O. nypae* K. D. Hyde & Nakagiri it is oblique or perpendicular to the host surface (Hyde, 1994). In *Savoryella* R. A. Eaton & E. B. Jones and *Annulatascus* K. D. Hyde, the orientation in a single species may range from horizontal to perpendicular (Jones & Hyde, 1992; Hyde, 1992; Hyde, personal observations).

The appendages in *Ascotaiwania palmicola* cannot be seen with bright field or differential interference microscopy and are only visible in phase contrast microscopy or after staining with India ink. Polar appendages have not been described in *A. lignicola*. However,



Figs 1-12. - Interference contrast micrographs of *Ascotaiwania palmicola*. - 1. Section of immersed ascoma with erumpent papilla. - 2. Peridium composed of brown-walled flattened angular cells. - 3-5. Asci. Note the pedicel which tapers to a fine point and the relatively massive refractive apical ring. - 6-12. Ascospores, with brown central cells and hyaline to light-brown end cells. Note the polar appendages (seen in India Ink in Figs. 8-12). - Bars: 1 = 100  $\mu$ m; 2-12 = 10  $\mu$ m.

they may be evident, as portrayed in the micrograph (e. g. Fig. 7, page 483) provided by Sivanesan & Chang (1992). There is a need for a study of these ascospores with phase contrast microscopy or following staining with India ink.

The only difference between *Ascotaiwania palmicola* and *A. lignicola* lies in the nature of the paraphyses. In the former species

they are hypha-like, filamentous, septate, persistent and tapering with free ends. In *A. lignicola* they are filamentous, to 1 µm diam and deliquesce early (Sivanesan & Chang, 1992).

Sivanesan & Chang (1992) have already discussed the diagnostic differences between *Ascotaiwania* and the similar genera *Botanamphora* Nogrased & Scheuer (= *Herbampulla* Scheuer & Nogrased, 1993), *Melanochaeta* E. Müll., Harr. & Sulmont, *Melogramma* Fr., *Melanamphora* Laflamme and *Savoryella* E. B. G. Jones & R. A. Eaton. There are many similarities between *Crassoascus* Checa, Barrasa & Martinez and *Ascotaiwania palmicola*, but in *Crassoascus* the ascial apical ring is iodine positive and the ascospores have fugacious hyaline papillae at their tips (Barrasa & al., 1993).

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