

Cryptothecia punctosorediata, a new species from Northern Thailand

Laurens B. SPARRIUS and Wanaruk SAIPUNKAEW

Abstract: A new species of *Cryptothecia* (*Arthoniales*, lichenized ascomycetes) is described from Northern Thailand. The species has been collected from planted mango trees at a single site in a rural area and is characterized by the punctiform soralia, soredia containing gyrophoric acid and 8-spored asci.

Key words: *Arthoniales*, *Arthoniaceae*, Thailand

Introduction

The genus *Cryptothecia* belongs to the *Arthoniaceae* (*Arthoniales*) and is characterized by the combination of globose asci being formed in more or less undifferentiated parts of the thallus and the ascospores being muriform. Other characters are (1) the medulla being I+ blue in patches, (2) thin, wavy spore septa (visible in older specimens in KOH), and (3) paraphyses (paraphysoids) only found enclosing the asci (Thor 1997). The most closely related genus is *Stirtonia*, which differs in having transversely septate spores only. Remarkable in *Cryptothecia* is the absence of well-defined ascomata, a very much reduced hypothecium and paraphysoids and asci that are essentially formed in the medulla. We refer to the key by Grube (1998) for comparison with other genera and the position in the order *Arthoniales*.

Makhija & Patwardhan (1994) revised *Cryptothecia*, continuing from their earlier work (Makhija & Patwardhan 1985), and they have subsequently revised the related genus *Stirtonia* (Makhija & Patwardhan 1998). They accepted 40 species in *Crypto-*

thecia. Thor (1997), described ten new species from Australia and gave an excellent historical overview and new generic characters. Lücking (1995) described a new foliicolous species and Sipman (2003) one new corticolous species in the genus. A further new taxon is described below, so that the current number of accepted species is 53.

The Species

Cryptothecia punctosorediata Sparrius sp. nov.

A congeneribus differt in thallo punctiforme-sorediatio; ascosporae octonae; acidum gyrophoricum continens.

Typus: Thailand, Nan Province, Ban Hauy Som Poy, 18°49'32" N, 100°45'51" E, 300 m, corticolous on *Mangifera indica*, 21 August 2002, Saipunkaew T3S3 (BM—holotypus).

(Figs 1 & 2)

Thallus corticolous, crustose, becoming more than 5 cm diam., epiphloeodal, thin, smooth, adpressed to the substratum, greenish white, heteromerous. *Photobiont* *Trentepohlia*, cells rounded, *c.* 15 µm diam. *Prothallus* 2–5 mm wide, white, byssoid, of radiating hyphae. *Medulla* white. *Soralia* punctiform, convex, 0.5–1.0 mm across, rarely confluent, soredia farinose, *c.* 30 µm diam., white to cream coloured.

Fertile part of the thallus visible as paler, pruinose dots of 0.1 mm diam., which are

L. B. Sparrius: BIO.DIV, Vrijheidslaan 27, NL-2806 KE Gouda, The Netherlands.

W. Saipunkaew: Faculty of Science, Chiang Mai University, Chiang Mai 50200, Thailand.

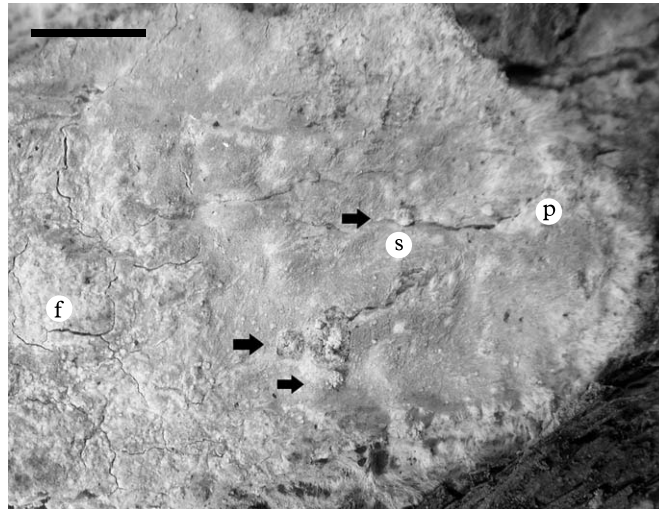


FIG. 1. *Cryptothecia punctosorediata*, thallus (type); f=fertile zone, s=zone with scattered punctiform soralia, p=byssoid prothallus. Arrows indicate soralia. Scale bar=5 mm.

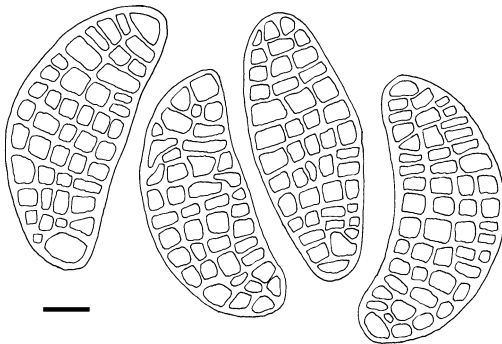


FIG. 2. *Cryptothecia punctosorediata*, ascospores in water (type). Scale bar=10 μ m.

present in the central zone of the thallus, each dot containing 1–4 asci. *Hypothecium* not apparent. *Hymenium* of few thin, branched paraphysoids entangling the asci. *Asci* 60–70 μ m diam., globose, pale brown, (6–)8-spored, with usually 1–2 spores remaining immature. *Ascospores* ellipsoid, hyaline, often slightly curved, 40–50 \times 15–20 μ m, strongly muriform with 35–45 cells visible under a light microscope, perispore <0.5 μ m wide.

Conidiomata not observed.

Chemistry. Thallus C+ red (soredia only), K–, PD–, UV+ white; TLC: gyrophoric

acid and two unidentified spots; medulla I+ blue and KI+ blue in section.

Distribution and ecology. So far known only from Northern Thailand where it has been found corticolous on smooth bark of mango trees (*Mangifera indica* L.) of c. 20 cm dbh in a village in a rural area, close to moist secondary forest. The specimen was collected during air pollution studies by Saipunkaew *et al.* (2005), which have already yielded a number of new species in the *Arthoniales* family *Roccellaceae* (Sparriss *et al.* 2005).

Remarks. To date, this is the only species of *Cryptothecia* with discrete soralia. The soredia are C+ red (gyrophoric acid), whereas the thallus does not show this reaction. There are two other sorediate taxa: *Cryptothecia anamalaiensis* Patwadhan & Makhija and *Cryptothecia granularis* Sipman, both of which are entirely sorediate.

Additional specimen examined. **Thailand:** Nan Province: Ban Hany Som Poy, 18°49'32"N, 100°45'51"E, 300 m, corticolous on *Mangifera indica*, 2002, Saipunkaew T5S5 (CMU—paratype!).

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