

Pyrenula subcylindrica, a new pyrenocarpous lichen from India

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Abstract: A new species of pyrenocarpous lichen, *Pyrenula subcylindrica*, from the Sundarbans area on the delta of the River Ganges is described. It is characterized by ascomata with a distinct clypeus, and 7–11-septate ascospores 42–67 µm long made up of cells with rounded to polygonal lumina and with subacute apices.

Key words: pyrenocarpous lichens, *Pyrenulaceae*

Introduction

The subtropical and warm temperate regions of India support luxuriant growth of pyrenocarpous lichens. During a field trip in the Sundarbans area, situated in the delta of Holy River Ganges in eastern India, one of the authors (Jagadeesh) made an extensive collection of lichens and encountered a new species of *Pyrenula* (*Pyrenulaceae*), growing with other pyrenocarpous lichens, which is described below.

The Species

Pyrenula subcylindrica Jagadeesh & Upreti sp. nov.

Pyrenulae cylindricae Kashiwadani affinis, a quo imprimis differt ascosporis 7–11-septatis.

Typus: India, West Bengal, Sundarbans Biosphere Reserve, Lothian Island Wildlife Sanctuary, on *Avicennia alba*, 7 March 2003, T. A. M. Jagadeesh 13805 (ASSAM—*holotypus*; LWG, hb. Aptroot—*isotype*).

(Fig. 1)

Thallus crustose, corticolous, yellowish brown, epiphloeodal, smooth, corticated,

pseudocyphellate; prothallus a black line; cortex hyaline, 40–90 µm thick; *photobiont layer* not continuous, 12–18 µm thick, photobiont *Trentepohlia*; medulla white, immersed to partly superficial on the substratum.

Ascomata hemispherical, 0.3–0.45 mm diam., semi-immersed, partly covered by thalline layer; ascocarp wall carbonized, dark brown to black, with distinct clypeus at middle, clypeus 50–70 µm thick, thin at the base; ostiole apical, black, plane; centrum not interspersed with oil globules. *Hymenium* with colourless crystals, I–, K–; paraphyses simple, 1.0–1.5 µm thick. *Asci* cylindrical, 80–110 × 14–20 µm, 8-spored. *Ascospores* irregularly arranged, colourless when immature, dark brown at maturity, fusiform with subacute ends, middle locules rounded to polygonal, 7–11-septate, 42–67(–72) × 4.5–6.5 µm; spore wall smooth, constricted at the septa, without granules.

Pycnidia black, hemispherical, 80–200 × 75–150 µm; *conidia* colourless, filiform, curved, 18–35 × 1 µm.

Chemistry. Thallus K–, C–, KC–, P–, UV–.

Remarks. The new species is characterized by ascomata with distinct clypeus, fusiform, 7–11-septate, 42–67 × 4–6 µm ascospores with acute apices, and made up of cells with rounded to polygonal lumina. Other species

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FIG. 1. *Pyrenula subcylindrica* (holotype). A, vertical section of a perithecium; B, ascospores. Scales: A=100 µm; B=10 µm.

of *Pyrenula* having fusiform ascospores with more than six lumina (section *Fusidospora* Müll. Arg. (1885)) are *P. montagnei* Müll. Arg., *P. infida* (Nyl.) Müll. Arg., *P. moniliformis* (C. Knight) Müll. Arg., *P. cylindrica* Kashiwadani and *P. flagellata* Harada. Of these five species, *P. flagellata* is unique in having spores with a flagellum-like extension at one end; *P. moniliformis*, an endemic species of New Zealand, differs in having straight, 7-septate, $53\text{--}70 \times 10\text{--}12$ µm spores; *P. montagnei* and *P. infida* have 5–7 and 4–6-septate, $28\text{--}35 \times 5$ µm spores, respectively. *Pyrenula cylindrica*, endemic to Japan (Kashiwadani, 1989) has a similar thallus and perithecia, but the spores

are 10–17-septate, $45\text{--}60 \times 4\text{--}6$ µm, and have rounded apices.

Additional specimens examined: **India:** West Bengal, Sundarbans Biosphere Reserve, Chandanpiri, on bark, 15 iii 2002, *Jagadeesh* 12021 (ASSAM); Sousmie Island, on bark, 15 iii 2002, *Jagadeesh* 12034 (ASSAM); Lothian Island Wildlife Sanctuary, on bark, 15 iii 2002, *Jagadeesh* 12063, 13800 (ASSAM); Saptamukhi, on bark, 2002, *Jagadeesh* 12224 (ASSAM).

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