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A new, Asian species in the *Parmeliella mariana* complex (*Pannariaceae*)

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Abstract: *Parmeliella zeylanica* is described as a new species in the *P. mariana* group, although it differs from all known species in the group by not having radiating marginal lobes resting on a distinct mat of rhizohyphae. It is as yet known only from the highlands of Sri Lanka. The new combination *Parmeliella leiostroma* (Nyl.) P. M. Jørg. is made for a closely related species from the same region, and it is shown that *Parmeliella endomilta* var. *achromatica* Makhija & Adawara falls within the variation of *Parmeliella mariana* (Fr.) P. M.Jørg. & D. J. Galloway, and is not closely related to *P. endomilta*.

Key words: new species, new combination, *Parmeliella endomilta*, *Parmeliella zeylanica*, Sri Lanka

Introduction

The *Parmeliella mariana* (Fr.) P. M. Jørg. & D. J. Galloway complex is poorly understood, particularly in the Asian/Pacific regions (Jørgensen & Sipman 2006). Although new taxa in the group have recently been described from mainland India (Jørgensen 2003; Upreti *et al*. 2005; Dube & Makhija 2008) and from its southern islands (Makhija & Adawadkar 1999), there are still unresolved taxonomic problems in this group. These problems are mainly due to poor and few collections which are difficult to classify since there are so few characters except for the morphological ones, which are very dependant on the environment and the degree of development. A new species from Sri Lanka is described here.

Materials and Methods

The material studied is that cited below and the methods are the same as in the author's previous papers.

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The New Species

Parmeliella zeylanica P. M. Jørg. sp. nov.

Parmeliellae endomiltae similis, sed thallo minute squamuloso, crasso, medulla dilute ochraceae pigmentosa; sporae minutae et guttiformae.

Typus: Sri Lanka, Central Prov., Nuwara Eliya, near the Golf Club, on more or less solitary trees, alt.1850 m, 22 March 1964 *G. Degelius* As-438 (UPS— holotypus).

(Fig.1)

Thallus brown, squamulose, forming orbicular patches to 5 cm of imbricating lobes to 1mm wide, 130–150 µm thick, without a thick mat of rhizohyphae, but occasionally with a few bundles of projecting rhizohyphae. Upper cortex distinct, cellular, to 30–40 µm upon a loose medullary layer, enclosing packets of *Nostoc*, individual cells of which are 3–5 µm. Lower cortex absent.

Apothecia laminal, sessile, to 1·5 mm diam. with distinct squamulose thalline margin obscuring the proper margin; disc brown, plane. *Hymenium* 75–100 µm high, I+ blue, made up of simple, septate hyphae, apically thickened, with external dark brown pigment. *Asci* narrowly subcylindrical, 60–70 × 5–7 µm, apically with internal amyloid ring-structure; 8-spored. *Ascospores* drop-like, simple, colourless, 10–12 × 4–6 µm, with

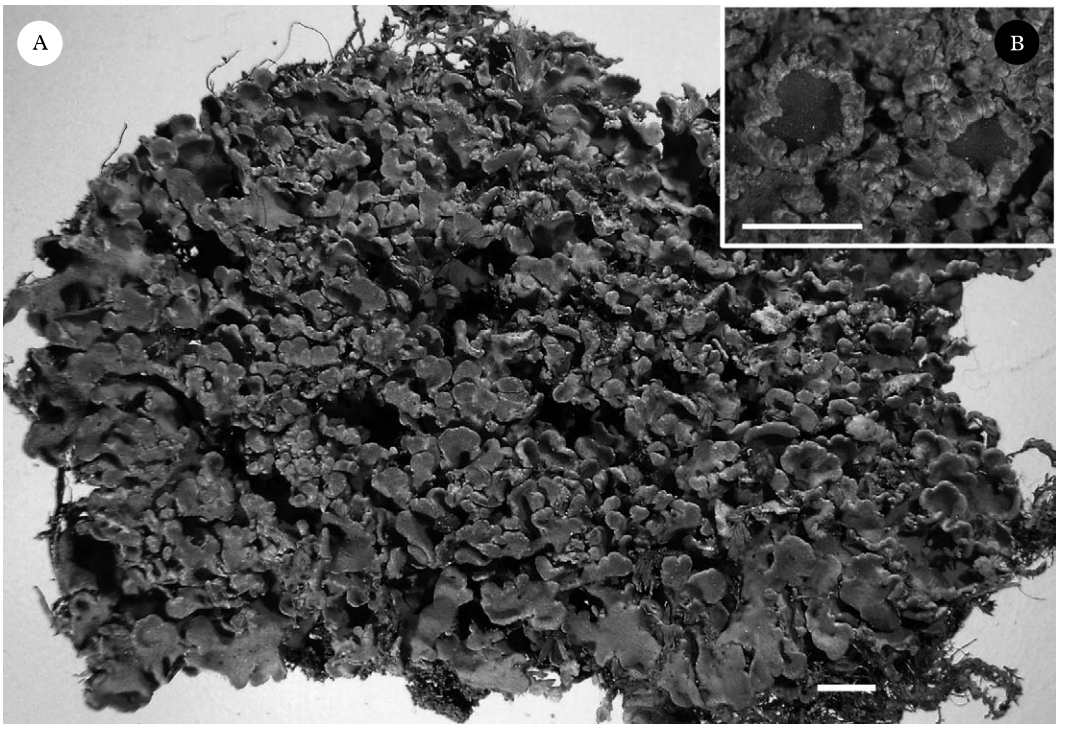

FIG. 1. *Parmeliella zeylanica* (holotype). A, habitus; B, detail of apothecia. Photographs by J. Berge. Scales: A = 1mm; B = 2mm.

distinct rugulose exospore tapering in the lower end.

Conidiomata not seen.

Chemistry. All reactions negative. No lichen substances present, but with a K+ intensifying pale yellow-orange, unknown pigment that is best observed after K has been added.

Ecology and distribution. As yet known only from the highlands of southern Sri Lanka where it grows on trees (and tree ferns). Possibly a local taxon, related to two other species in the region.

Additional specimens examined. **Sri Lanka:** *Central Prov*: Nuwara Eliya, Grand Hotel, on tree fern in garden, alt. 1850, 1964, *G. Degelius* As-483 (UPS); Horton Plains, 2008 *Jugalal Udeni* (HAKS).

Notes. Despite its atypical appearance, this new species is a member of the *Parmeliella mariana* group, because of the distinct thalline margin of the apothecia and the apical amyloid ring structure of the asci. It differs from most hitherto known species of this group in the lack of radiating marginal lobes resting on a thick blackish mat of rhizohyphae. This latter character is often also poorly developed in the closely related *Parmeliella endomilta* Vain., a widespread paleotropical species (Jørgensen & Sipman 2006), which has a placodioid, thinner (50–75 μm), more skin-like thallus with a strongly orange medulla, and larger citriform spores.

There is another closely related species described from Sri Lanka, *Pannaria leiostroma* Nyl., which needs to be transferred to *Parmeliella* because of the ascal characters which are the same as in *Parmeliella zeylanica*:

***Parmeliella leiostroma* (Nyl.) P.M. Jørg. comb. nov.;** basionym: *Pannaria leiostroma* Nyl. in Leighton, *Trans. Linn. Soc. London* **27:** 165 (1869).

This species differs from *Parmeliella zeylanica* in being thinner with confluent, skin-like lobes, and lacking any pigmentation in

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the medulla, and also by the larger ascospores, 12–15 × 5–7 µm. One might expect the recently described *Parmeliella endomilta* var. *achromatica* Makhija & Adaw. to be a synonym of *P. leiostroma*. However, examination of an isotype (BG) revealed that it has a rather thick thallus with discrete radiating marginal lobes resting on a prominent mat of blackish rhizohyphae. The characters of the apothecia are also in agreement with those of *Parmeliella mariana*, so it is best placed in synonomy with that species.

Emended key to brightly coloured species of *Parmeliella* in Jørgensen (2006)

1 Thallus with a yellowish hue, medulla not pigmented (Phillipines, New Guinea). . . . . **P. flavida P. M. Jørg.**
Thallus grey-brown with yellow or orange medulla. 2

2(1) Thallus small-squamulose, not resting on thick mat of rhizohyphae; medulla faintly pigmented (Sri Lanka) . . . . . **P. zeylanica P. M. Jørg.**
Thallus placodioid resting on thick mat of rhizohyphae, medulla strongly pigmented 3

3(2) Thallus greyish with citrine yelow medulla, lobes discrete, spores shorter than 15 µm (Phillipines, Borneo, New Guinea) . . . . . **P. endolutea P. M. Jørg.**
Thallus brownish with bright orange medulla, lobes confluent, spores longer than 15 µm (widespread paleotropical). . . . . **P. endomilta Vain.**

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