

Macromitrium incrustatifolium Robins. new to China

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Abstract. *Macromitrium incrustatifolium* Robins. is reported as a new addition to the bryoflora of China, and *Macromitrium yunnanense* L. Zhang, *nom. nud.* is reduced to a synonym of *Macromitrium incrustatifolium*.

Macromitrium incrustatifolium Robins. is an eastern Indian endemic species previously only known from Assam (Robinson 1968, Gangulee 1974-1977). *Macromitrium yunnanense* L. Zhang, based on three specimens from Xishuangbanna, SW China, is a *nom. nud.* (Zhang 1990), but it was listed by Redfearn et al. (1996). Detailed comparisons of the type specimen of *M. incrustatifolium* and the original specimens of *M. yunnanense* reveal that the two species are conspecific. Therefore, we reduce *M. yunnanense* to a synonym of *M. incrustatifolium*. As a consequence, we here report *M. incrustatifolium* as a new addition to the bryoflora of China.

***Macromitrium incrustatifolium* Robins. (Fig. 1)**

Bryologist 71(2): 90. 1968. — Holotype: India, Assam, Hmuntha, Lushai Hills, 5, 000 ft., on top limb of forest tree, *Koelz 27437* (US).

M. yunnanense L. Zhang, A study on the mosses of Menglun, Xishaungbanna. pp. 47. 1990, *nom. nud.*, *syn. nov.* — Original collections: China, Yunnan, Xishuangbanna, Mengla Co, Menglun, Tropical Botanical Garden, 580 m, on rotten wood, *L. Zhang 533A* (IBSC, KUN); Valley of 52 - 53 km of highway, 600 m, on rotten wood by stream; *L. Zhang 865* (IBSC, KUN, NY); Limestone Hill, 700 m, on lianas, *L. Zhang 884* (IBSC, KUN).

Plants medium-sized, in dense mats, reddish- or slight greenish-brown. Stems creeping, elongate, abundantly covered with brown rhizoids, densely branching. Stem leaves triangular to oblong lanceolate, 0.6-1.1 x 0.4-0.5 mm, slightly arcuate-recurved, upper lamina keeled; costa percurrent; cells in upper and median lamina rounded, thick-walled, bulging, indistinct multipapillose, 5-10 μm in diameter, basal cells linear to rectangular, thick-walled, 8-18 x 3-7 μm , smooth. Branches erect, simple, to 7 mm high, densely foliate. Branch leaves contorted when dry, erect-spreading when moist, lingulate lanceolate, 1.6-2.4 x 0.4-0.6 mm, keeled, more or less mucronate at least in some leaves; costa percurrent; cells of upper and median lamina isodiametric, obscure, with peculiar proliferation of 1-3 multipapillose cells on both surfaces, rounded, 7.5-10 μm ; cells between midleaf and base 5-7.5 μm , thick-walled; basal cells 10-38 x 2.5-7.5 μm , smooth, thick-walled, somewhat porose, outermost cell row of basal margins thin-walled, rectangular, 16.1-35.5 x 6.4-7.1 μm . Perichaetial leaves triangular, 1.8-3.1 x 0.4-0.7 mm; costa percurrent; cells linear to long rectangular, somewhat porose, basal ones, 65-75 x 5-7.5 μm , median ones 20-35 x 4-5 μm , upper ones 15-25 x 4-5 μm . Setae terminal on branches, smooth, 6.5-7.5 mm. Capsules erect, cylindrical, 2.25-2.72 x 0.5-0.7 mm. Spores rounded, 27-32 μm . Peristome and calyptra not found.

Gangulee (1974-1977) attributed the peculiar proliferation of the upper and median lamina cells to development in a very humid environment and suggested that they functioned as gemmae. On the contrary, the Chinese materials were all collected in a semi-humid habitat which experiences a long dry season lasting about 5 months each year. This suggests that this character is under genetic control and not just an environmental modification.

This peculiar proliferation, which is best seen in transverse section, is so far known only in the present species among all the Chinese members of *Macromitrium*. The Chinese materials match the type specimen well except that the spores are slightly larger. This is the first record of the species outside Assam.

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Fig. 1. *Macromitrium incrustatifolium* Robins.

— a-d. Branch leaves, from Zhang 865. — e-g. Perichaetial leaves, from Zhang 884. — h. Capsule, from Zhang 884. — i-j. Transverse section of branch leaves, from Zhang 533A. — k. Cells of basal lamina of branch leaf, from Zhang 865. — l. Cells of median lamina of branch leaf, from Zhang 865.



