

POLYPLEURUM WALLICHII (R. BR. EX GRIFF.) WARMING AND ZEYLANIDIUM LICHENOIDES (KURZ) ENGLER—TWO INTERESTING PODOSTEMACEAE FROM MEGHALAYA

The family Podostemaceae has hardly been known from the North-Eastern region of India. Hooker (1886) and subsequently Kanjilal *et al.* (1940) mentioned a few species but with hardly any description. Subramanyam (1962) has also not given any more details or included specific distribution data, for this area. This curious group of plants has naturally attracted our attention during plant exploration in the area and efforts have been made to obtain collections in different seasons as also to study the plants *in situ* to estimate the extent of polymorphism in the plants of this family.

Earlier (1970), *Zeylanidium olivaceum* (Gardn.) Engler and *Polypleurum stylosum* (Wt.) J. B. Hall have both been recorded for the first time and described in detail. Two more species respectively of the two genera are now described. Fresh illustrations based on our material have been provided to facilitate identification and further collections of these interesting plants.

Polypleurum wallichii (R. Br. ex Griff.) Warming in Kgl. Danske Vidensk. Selsk. Skr. Ser. 6, Naturvidensk. & Math. Afd. 11 (1): 4 & 64. 1901. *Podostemon wallichii* R. Br. in Wall. cat. 5225 (nomen), Griff. As. Res. 19: 103, t. 17. Hook. f. Fl. Brit. India 5: 67. 1886; Kanjilal *et al.* Fl. Assam 4: 24. 1940. *Dicraeia wallichii* (R. Br. ex Griff.) Tul. in Ann. Sc. Nat. Ser. 3, 11: 101. 1849. Subramanyam & Sreemadhavan in Bull. bot. Surv. India 11: 164-168. 1969. *D. wallichii* (R. Br. ex Griff.) Tul. var. *khassiana* Willis in Ann. Roy. Bot. Gard. Perad. 1: 216. 1902. *Dicraeia agharkari* Nandi in Journ. Depart. Science (Cal.) new series 1 (1): 25-51. 1937. (Lc. *et char.*).

Thallus membranaceous, unevenly lobulate, green, appressed and spreading on the

rough rock in fast flowing water, with numerous tiny, erect flowers. *Flowering shoots* 7.0-12.5 mm long, green, scattered over thallus, each with 2 pairs of imbricating bracts. Bracts 1.5-4.0 mm long, keeled, scooped inside, acute; tip caducous. Spathe 4.0-6.0 mm, ellipsoid, persisting as a shrivelled up collar at base. *Flowers* 7.5-12.5 mm long, bisexual. *Tepals* 1.5-2.0 mm long, 2 linear, adnate at base of the filament. *Stamens* 2.0-2.5 mm long, monadelphous, almost equalling the ovary; anthers 0.5 mm long, 2-loculed, dehiscing by longitudinal furrows. Ovary 2.0-2.5 mm long, ellipsoid, stalked faintly ribbed, ovules many. *Stigma* 0.5 mm long, subulate curved, sessile. *Fruit* a capsule, 2.0-3.0 mm long excluding stalk, 8-ribbed and ellipsoid dehiscing longitudinally more or less unequally both halves persisting or one half caducous. *Stalk* 7.0-15.0 mm long, slender. *Seeds* numerous, tiny (1-2 mm) ellipsoid, brown.

Flowering and fruiting: Sept.-Nov. (Capsules without seed were collected even in March-April) Cherrapunji, on way to Mawsmai falls near foot bridge to Mawsmai village, Khasi Hills, Meghalaya, *Hajra* 34299; *Subramanyam* 47274 (ASSAM).

In the light of extreme polymorphism of these plants it is inadvisable to recognise any infraspecific category. Hence, the varieties have been cited in synonymy. Further, although it has not been possible to obtain the type of *Dicraeia agharkari* Nandi the study of the original illustrations and the detailed description, as also study of the material from the type locality has lead us to include this also in synonymy.

Zeylanidium lichenoides (Kurz) Engler in Engl. & Prantl, Nat. Pflanzenfam. 18a: 62. 1930. Subramanyam, Aquatic Angiosperms 49. 1962. *Hydrobryum lichenoides*

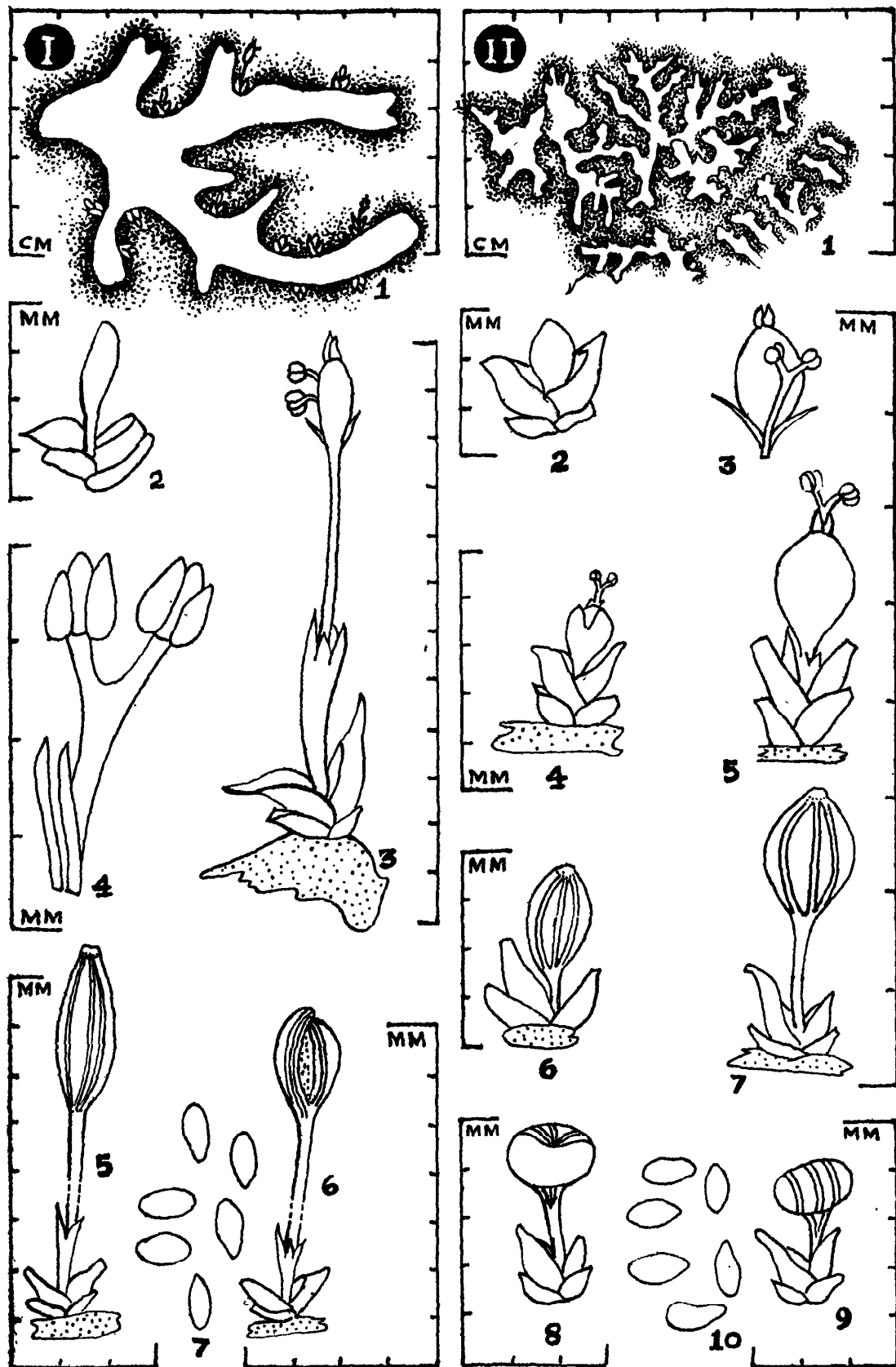


Fig. I (1-7): *Polypleurum wallichii* (R. Br. ex Griff.) Warming. 1. Habit. 2. Flower bud. 3. Flower. 4. Stamen with tepals. 5. Capsule. 6. Dehiscent capsule. 7. Seeds (not to scale) (Hajra-34299).
 Fig. II (1-10): *Zeylanidium lichenoides* (Kurz) Engler. 1. Habit. 2. Flower bud. 3. Young flower with spathe and bract removed. 4 & 5. Flowers. 6 & 7. Capsules. 8 & 9. Dehiscent capsules. 10. Seeds (not to scale) (A. S. Rao-22697).

ides Kurz in Journ. Asiat. Soc. Beng. 42: 103. 1873; Kanjilal *et al.* Fl. Assam 4: 24. 1940. *Podostemon microcarpus* Wedd. in DC. Prodr. 17: 76. 1873; Hook. f. Fl. Brit. India 5: 66. 1886.

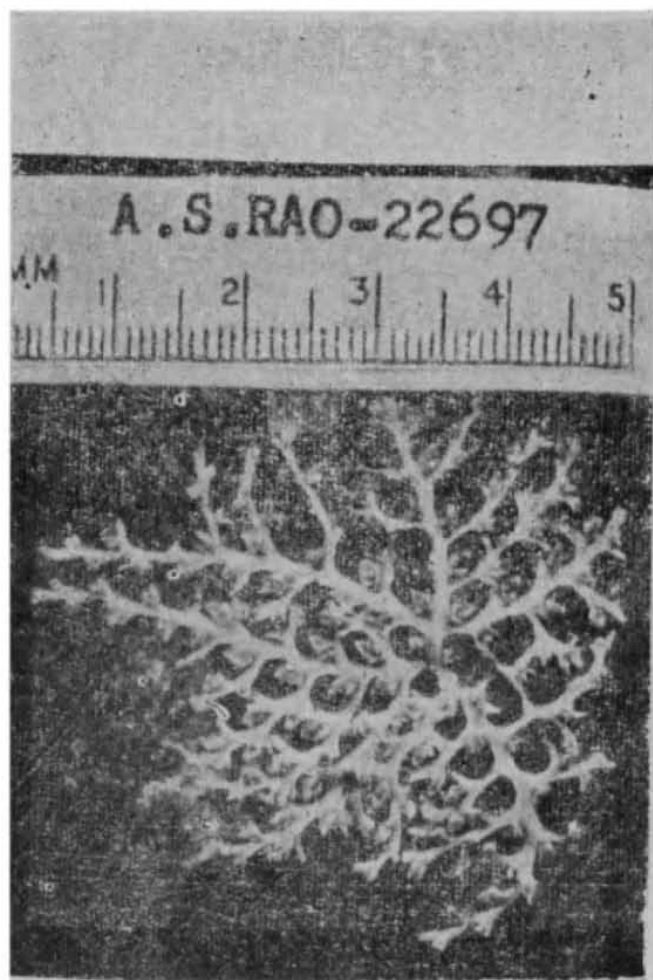


Plate I. *Zeylanidium lichenoides* (Kurz) Engler—Habit.

Thallus 2.5-5.0 × 4.0-9.0 cm closely adherent to rocks immersed in rapids, green to pinkish-green, ribbon-like, branching dichotomously irregularly spreading, with numerous pin-head-like tiny flower buds or flowers. *Flowering shoots* 2.5-5.0 mm, scattered over the thallus, each with 2, 3 pairs of imbricating bracts. *Bracts* 1.5-2.0 mm long, green, boat-shaped, keeled outside, acute or subacute. *Spathe* 1.5-2.0 mm long,

green, ovoid to ellipsoid, persisting as a shrivelled up collar at base. *Flowers* 2.5-3.5 mm, bisexual. *Tepals* 1.0-1.5 mm long, 2, linear, adnate at base of the filament. *Stamens* 1.5-3.0 mm long, 2, monadelphous, longer than the ovary; anthers 2-loculed, dehiscing by longitudinal furrows. *Ovary* 1.0-1.5 mm long, green, ovoid to ellipsoid, stalked, smooth when young, ovules many. *Stigma* 2-lobed, ovate, subsessile. *Fruit* a capsule, 3-4 mm long including stalk, 8-10-ribbed, obliquely ellipsoid to subglobose, brown, dehiscing unequally, the larger half persisting on the stalk. *Stalk* 1.5-2.0 mm long, slender. *Seeds* small, many, ellipsoid, brown.

Flowering and fruiting: Sept.-Dec.

Although individual thalli can be scraped off from some small pebbles and rocks, it is impossible to collect them from large rock surfaces where they are practically covering the entire area, and so closely that, the rock has to be chipped to get parts of the thalli.

Umtingar gate, Khasi Hills, Meghalaya, Hajra 25580; A. S. Rao 22697; Mamluh near the cement factory, Khasi Hills, Meghalaya, Subramanyam 47277 (ASSAM).

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