



Research Communication

Genus *Notoscyphus* Mitt. - New to the liverwort flora of the Eastern Ghats

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Abstract

Notoscyphus paroicus Schiffn. has been discovered in the Kolli Hills of Eastern Ghats. The genus is new to the liverwort flora of this region. A brief description with figures and photo plate is provided.

Keywords

Marchantiophyta; *Notoscyphus paroicus*; Eastern Ghats

Citation

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Introduction

In India *Notoscyphus* Mitt. is represented by four species namely *N. darjeelingensis* Udar & Ad. Kumar var. *darjeelingensis*, *N. lutescens* (Lehm. & Lindenb.) Mitt., *N. pandei* Udar & Ad. Kumar and *N. paroicus* Schiffn., and one variety *N. darjeelingensis* var. *sikkimensis* D. Singh & al. [1]. All the four species occur in the Western Ghats barring the lone variety [1, 2]. However, none of these species has been reported from the Eastern Ghats so far [3, 4]. The present discovery of *N. paroicus* in Kolli Hills fills this lacuna thereby adding one more genus to the liverwort flora of the Eastern Ghats. The same has been described and illustrated.

Notoscyphus paroicus Schiffn., Denkschr. Kaiserl. Akad. Wiss., Wien Math.-Naturwiss. Kl. 67: 192. 1898; Udar & Ad. Kumar, J. Hattori Bot. Lab. 49: 258. 1981. - Type: Java (Indonesia), Batavia Province, in the field of Buitenzorgensi,

Kampong Baru, alt. ca 230 m.s.m, 11.03.1894, 486 (G). (Figs. 1 & 2)

Plants prostrate to suberect, 7–10 mm long, 1.2–3.8 mm wide including leaves, yellowish-green to pale green; branching ventral intercalary. Stems 0.22–0.4 mm × 0.2–0.3 mm; cells thin-walled, 4–16 × 4–8 μm, irregularly quadrate-hexagonal, homogenous. Leaves imbricate, obliquely spreading, 0.5–1.75 × 0.4–0.9 mm, quadrate-oblong to oblong-ovate, entire, more or less rounded at apex; cells thin-walled, with distinct bulging trigones; apical leaf cells 12–20 × 12–16 μm; median leaf cells 8–20 × 8–12 μm; basal leaf cells 12–24 × 8–16 μm; oil bodies seen disintegrated; cuticle faintly granulose. Underleaves distant, bilobed to more than half its length, 0.55–0.68 × 0.4–0.45 mm, with a slime papilla at apex, entire, sometimes with an accessory tooth at lateral margin. Rhizoids clustered at underleaf base. Pseudoperianth or sporogonium not seen.

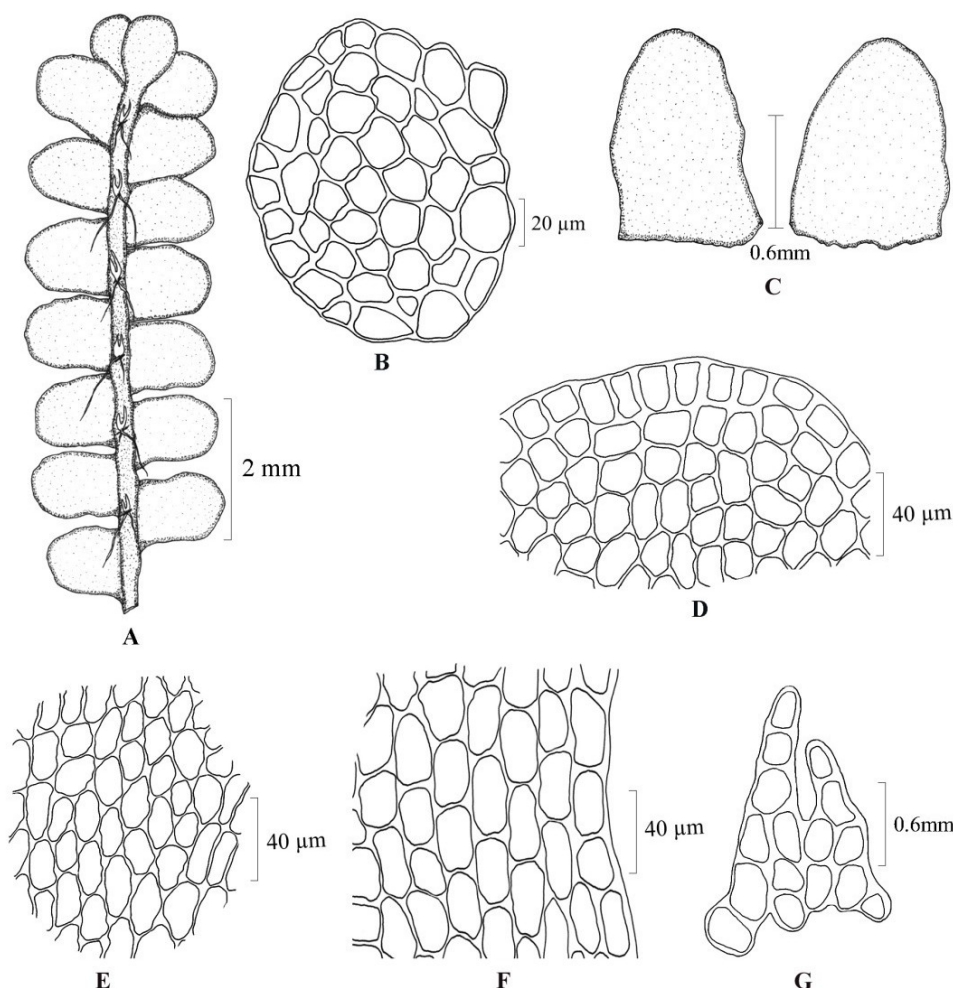


Fig. 1 (A–G). *Notoscyphus paroicus* Schiffn.

A. Portion of plant **B.** Cross section of stem **C.** Leaves **D.** Leaf apical cells
E. Leaf median cells **F.** Leaf basal cells **G.** Under leaf (*P.M. Biju* 1498)

Habitat: Terricolous, growing in degraded evergreen forests, at an altitude of ca 1240 m.

Distribution: India: Northeast India (Meghalaya), W. Ghats of Karnataka, Kerala and Tamil Nadu (Madurai and Nilgiri) and Eastern Ghats of Tamil Nadu (Namakkal District); Indonesia, Japan, Malaysia, the Philippines, Sri Lanka and Vietnam.

Specimens examined: Eastern Ghats: Tamil Nadu, Namakkal District, Kolli Hills, Perumakka Shola, ca 1240 m, 21.1.2016, *P.M. Biju* 1498 (SCCN).

Discussion

According to Vãna and Piippo [5], *Notoscyphus paroicus* and *N. lutescens* are hardly separable owing to the highly variable vegetative and sporophytic characters of both species and opined to treat them as a complex. Vãna and Long [6] state that they prefer to follow Vãna & Piippo [5] against a pending detailed revision and molecular study. Long and Rubasinghe [7] have followed Vãna and Long [6]. Since the circumscription of the species still remains unresolved, we treat *N.*

paroicus as a distinct entity following Singh *et al.* [1].

Northeast India is a separate geographical unit and not a part of Eastern Himalaya as visualized by Singh and Nath [8]. Hence, in the distribution, Meghalaya is given under Northeast India and not under Eastern Himalaya.

Authors' contribution

AEDD - Collection, determination and preparation of the MS; MMP - Dissection and preparation of colour plate; VA - Dissection and preparation of figures; PM - Dissection and help in determination; PMB - Collection.

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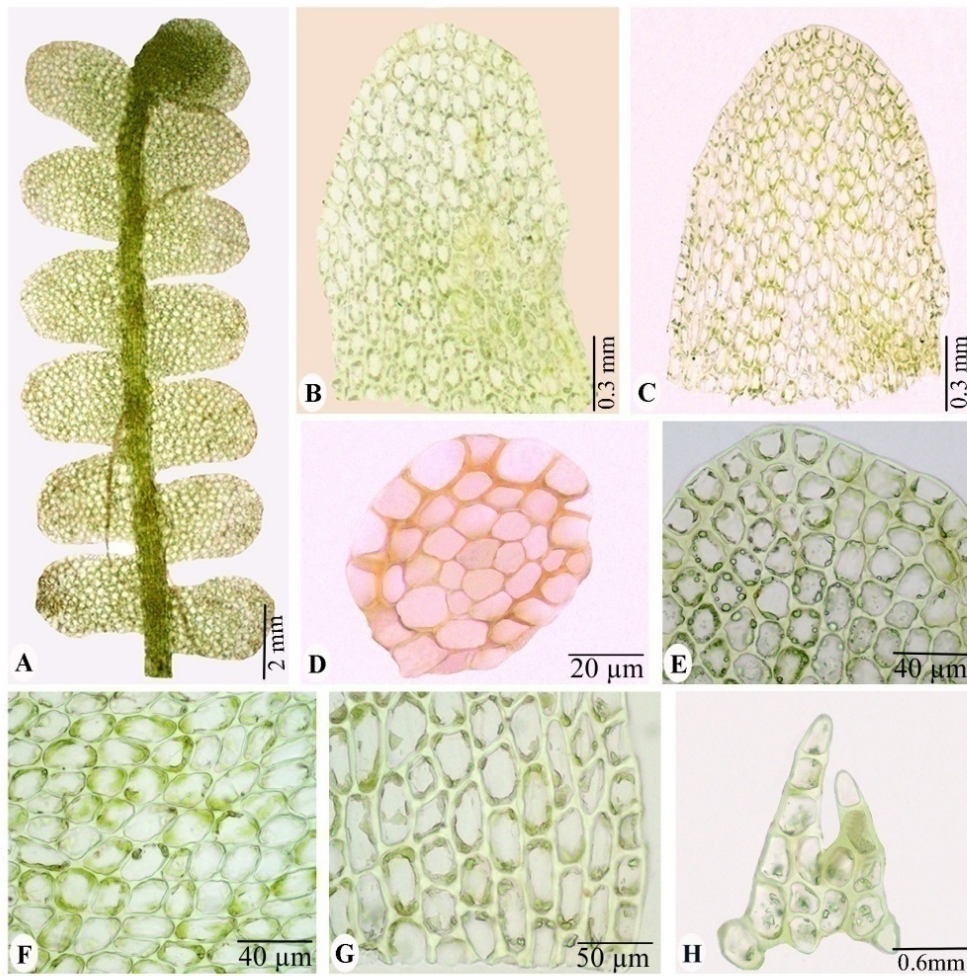


Fig. 2 (A–H). *Notoscyphus paroicus* Schiffn.

A. Portion of plant **B&C.** Leaves **D.** Cross section of stem **E.** Leaf apical cells
F. Leaf median cells **G.** Leaf basal cells **H.** Underleaf (*P.M. Biju* 1498)

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Conflict of interest

The authors declare that they have no competing interests.

References

1. Singh DK, Singh SK, Singh D. Liverworts and Hornworts of India, an annotated checklist. Kolkata: Botanical Survey of India; 2016. P. 1–439.
2. Udar R, Kumar A. Genus *Notoscyphus* Mitt. in India. J Hattori Bot Lab. 1981; 49: 247–260.
3. Daniels AED. Checklist of the bryophytes of Tamil Nadu. Arch Bryol. 2010; 65: 1–118.
4. Dandotiya D, Govindaparyari H, Suman S, Uniyal PL. Checklist of the bryophytes of India. Arch Bryol. 2011; 88: 1–126.
5. Vãña J, Piippo S. Bryophyte flora of the Huon Peninsula, Papua New Guinea. XXIX. Jungermanniaceae and Gymnomitriaceae (Hepaticae). Ann Bot Fenn. 1989; 26: 107–125.
6. Vãña J, Long DG. Jungermanniaceae of the Sino-Himalayan region. Nova Hedwigia 2009; 89: 485–517. <https://doi.org/10.1127/0029-5035/2009/0089-0485>
7. Long DG, Rubasinghe SCK. Liverworts and hornworts of Sri Lanka: a revised checklist. Ceylon J Sci (Bio Sci.) 2014; 43: 1–36.
8. Singh AP, Nath V. Hepaticae of Khasi and Jaintia Hills: Eastern Himalayas. Dehra Dun: Bishen Singh Mahendra Pal Singh; 2007: P. 1–382.

