The moss *Cyathophorum hookerianum* (Griff.) Mitt. - new to Peninsular India from the Eastern Ghats

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**Abstract**

Surveys carried out in the Kolli Hills of Eastern Ghats led to the discovery of *Cyathophorum hookerianum* (Griff.) Mitt. which is new to Peninsular India. On the other hand, the genus *Cyathophorum* P. Beauv. is new to the moss flora of the Eastern Ghats. A detailed description with illustrations and microphotographs is provided.

**Keywords**

*Cyathophorum hookerianum*; Eastern Ghats; Kolli Hills; Peninsular India

**Introduction**

Kruijer [1] revised family Hypopterygiaceae of the World based on a series of phylogenetic analyses and merged genus *Cyathophorella* (Broth.) M. Fleisch. with that of *Cyathophorum* P. Beauv. which resulted in the transfer of a host of species under the latter with only 7 valid species for the world. Earlier, 6 species of *Cyathophorum* were recognized in India under the genus *Cyathophorella* [2]. Kruijer [1] reduced *Cyathophorella anisodon* Dixon & Herzog, *C. burkillii* (Dixon) Broth., *C. hookeriana* (Griff.) M. Fleisch. and *C. intermedia* (Mitt.) Broth. to synonyms under *Cyathophorum hookerianum* (Griff.) Mitt. and *Cyathophorella tonkinensis* (Broth. & Paris) Broth. to a synonym of *Cyathophorum adiantum* (Griff.) Mitt. Thus, only 2 species of *Cyathophorum* are currently known to occur in India of which *Cyathophorum adiantum* has been reported from the Western Ghats [3,4]. Hence, the present discovery of *C. hookerianum* in Kolli Hills of Eastern Ghats is an addition to the moss flora of Peninsular India and on the other hand genus *Cyathophorum* is new to the moss flora of the Eastern Ghats [5,6,7]. A detailed description with illustrations and microphotographs is provided.

**Key to the Indigens**

1a. Lateral leaves ovate to ovate-lanceolate, weakly bordered, spine at margin above, faintly bordered or not, twisted at apex  
-----------------------------------------------  *C. hookerianum*  

b. Lateral leaves oblong-ovate, serrate-spinose at apical margin, distinctly bordered, not twisted at apex  
-----------------------------------------------  *C. adiantum*

Plants loosely caespitose, pale green to green. Primary stems rhizomatous, tomentose; secondary stems 2–4 cm tall, 0.28–0.30 × 0.22–0.23 mm in cross section, ovate, with a faint central strand; cortex 2- or 3-layered; cells 12–32 × 11–24 µm, rounded-quadrate, thick-walled; medullary cells 16–36 × 14–28 µm, rounded-hexagonal, thin-walled. Lateral leaves contiguous, wide-spreading, 3.5–4.5 × 2.0–2.7 mm, ovate to ovate-lanceolate, slightly asymmetric, weakly bordered, spinose at margin above, acuminate and twisted at apex; axillary hair absent; apical leaf cells 24–80 × 8–12 µm, rhomboid; median leaf cells 24–51 × 8–16 µm, elongate-hexagonal, pitted; basal leaf cells 20–56 × 16–20 µm, elongate-hexagonal, pitted; costa short, forked. Ventral leaves 1-rowed, symmetric, 1.0–1.5 × 0.5–1.0 mm, ovate-acuminate, weakly bordered, ecostate or faintly costate, forked. Gemmae clustered at distal half of stem, filamentous, to 30-celled, pale brown. Sporophyte not seen.

Habitat: Corticolous on Diospyros melanoxylon Roxb. (Ebenaceae), in degraded evergreen forests.

Distr.: Bhutan, Cambodia, China, Indonesia, Japan, Laos, Malaysia, Myanmar, Nepal, the Philippines, Taiwan, Thailand, Vietnam and India: Western Himalaya (Uttar Pradesh), E. Himalaya (Arunchal Pradesh, Sikkim and W. Bengal), NE. India (Meghalaya) [1,2] and Eastern Ghats of Tamil Nadu (Namakkal).


Discussion

Kruijer [1], recognizes two ecological variants; one prefers a warm-temperate habitat and the other a more tropical, humid habitat in riparian and monsoon forests. The tropical variant is usually more robust, with straight and semi-erect to erect secondary stems. The leaf border is faint to distinct, usually continuous reaching the acumen. The material to hand agrees well to all these features and hence a tropical variant. The occurrence of this species indicates that the
evergreen forests occurring in Kolli Hills, though degraded and fragmented, are still moist and humid, and are potential habitats for moisture loving bryophyte species such as *Cyathophorum hookerianum* thereby re-iterating the need for their conservation.

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

Acknowledgements
The authors thank the Tamil Nadu State Forest Department for permission to explore the study area and help in the field, the Ministry of Environment, Forests & Climate Change, Govt. of India, New Delhi, for financial assistance, and the Principal, Scott Christian College, for facilities.

Conflict of interest
The authors declare that they have no competing interests.

References