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## ***Gymnostomiella M. Fleisch* (Pottiaceae, Pottiales, Bryopsida): a new generic record to eastern ghats of India**

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### **Abstract**

*Gymnostomiella* are presenting *G. vernicosa* var. *tenerum* (Mull. Hal. ex Dusen) Arts, collected from Rudrakod, Nallamalais of Andhra Pradesh and Umamaheswaram, Nallamalais of Telangana is a new generic record for Eastern Ghats of India.

**Keywords** *Gymnostomiella*, New Generic Record, Eastern Ghats

### **Introduction**

The Eastern Ghats (77° 22' to 85°20' E and 9° 95' to 20° 74' N), a significant eco-region of India represents an assemblage of discontinuous hill ranges. The Eastern Ghats comprises an area of about 75,000 km<sup>2</sup>, which passes through the states of Odisha, Andhra Pradesh, Telangana, Tamil Nadu, and a small portion of Karnataka. The eco-region is quite diverse with distinct forest types, i.e., evergreen, semi-evergreen, moist deciduous, dry deciduous, dry evergreen, scrub, and savannah.

*Gymnostomiella M. Fleisch* belongs to an acrocarpous moss family, Pottiaceae which represent 12 genera (WFO 2021). In India, the genus is represented by 38 genera, of which 9 genera are known to occur in Eastern Ghats (Dandotiya et al., 2011; Alam, 2015).

During our inventory in 2017-18, some interesting moss plant specimens were found on the temple walls of Rudrakod Siva temple, Kurnool district, Andhra Pradesh, and Umamaheswaram temple, Nagar Kurnool district, Telangana which after critical examination were identified belonging to *Gymnostomiella vernicosa* var. *tenerum*. Perusal of published literature (Kumar and Krishnamurthy 2007; Dash et al., 2009; Satish et al., 2014; Sandhya Rani et al., 2014; Mishra et al., 2016; Palani et al., 2017; Sreenath and Ravi Prasad Rao 2020) revealed that this genus is not reported from Eastern Ghats hill ranges of India and form a distributional record at the genus and species level.

### **Materials and Methods**

The collected specimens labeled with field number were air-dried and preserved in thick paper covers. Observations were made about habitat and field photos were taken using Nikon D3300. A critical study was done by separating plant parts using micro forceps and observed Olympus CH20i and Olympus SZ61) microscopes. Measurements were taken using ERMA ocular micrometer. Microscopic photos were taken by using Moto g3 turbo and Samsung on6 equipped with 13 MP cameras. Identification of the specimens was done by using standard floras. In this paper, citation, description, habitat details, voucher specimen data, and field photographs were provided for the taxon. All the specimens were deposited in the herbarium of Sri Krishnadevaraya University, Ananthapuramu. Abbreviations for the plant collectors are AS (Ananthaneni Sreenath) and BR (Boyina Ravi Prasad Rao).

### **Results**

#### **Taxonomic treatment**

*Gymnostomiella vernicosa* var. *tenerum* (C. Muell. ex Dusen) (Fig.1) Arts, J. Bryol. 20(2): 424. 1998. *Splachnobryum tenerum* C. Muell. ex Dusen, K. Sennsk. Vet. Handl. 28(3): 39. 1896; Gangulee Moss. E. India 2(4): 861 - 863 1974.

Plants delicate, very small to small, yellowish-green, up to 5.0 mm high, some sterile plants up to 1.5 cm long. Stems filiform bearing leaves and club-shaped gemmae in the leaf axils (Fig.1B, C).

Gemmae 170 – 220  $\mu\text{m}$  long  $\times$  58 – 73  $\mu\text{m}$  in diameter wide. Gemmae are also present on rhizoids (Fig.1D). Leaves orbicular, obovate, 0.341-0.45  $\times$  0.25-0.32 mm, concave, erectopate to erect-spreading when moist, crumpled and appressed to stem when dry; margin entire in the lower half, very rough warty to dentate in the upper half; apex broadly rounded, costa weak ending near mid leaf or mid leaf (Fig.1E). Leaf cells rectangular to hexagonal. Basal leaf cells elongated, rectangular, smooth and hyaline, 18 – 23  $\times$  7 – 10  $\mu\text{m}$ , middle and upper leaf cells quadrate-hexagonal, 10 – 13  $\times$  9 – 11  $\mu\text{m}$ , with firm yellowish walls, sparsely warty papillose. Sporophytes are not seen (Fig.1F, G).

**Habitat and ecology**

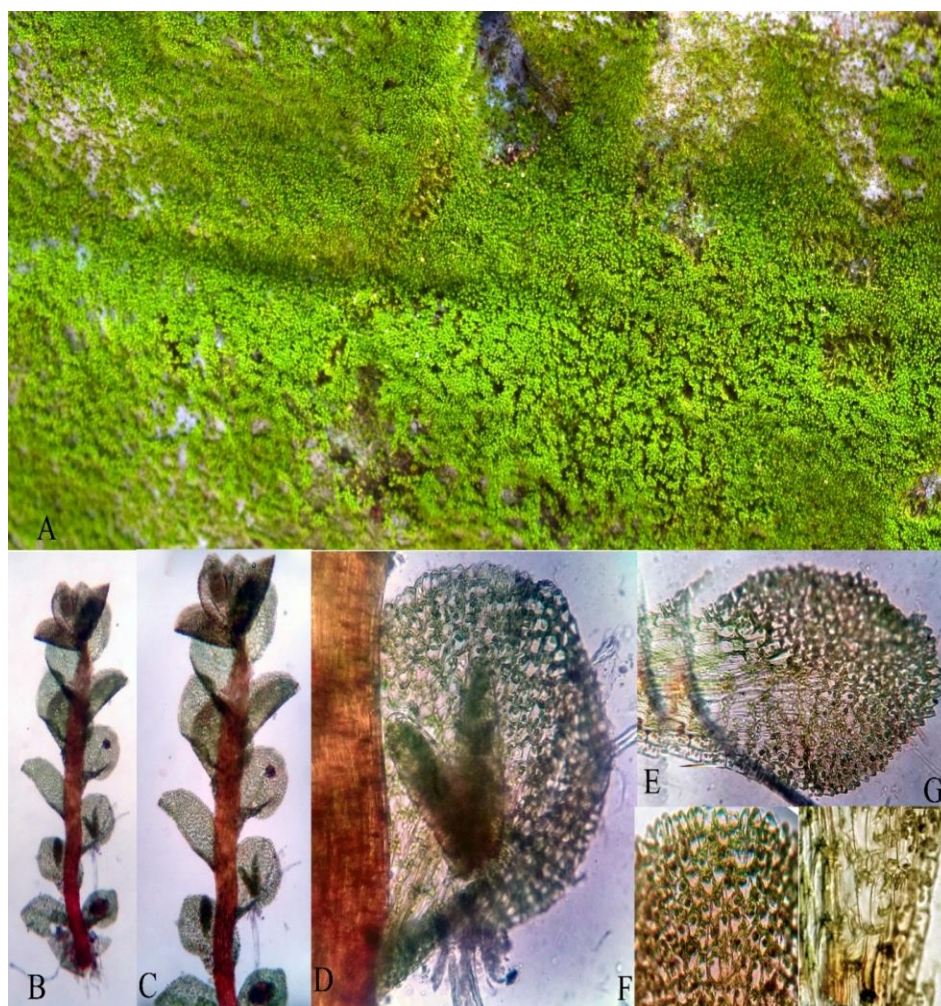
Saxicolous on lime-coated old moist cement walls near temples in moist deciduous forest, as mono dominant plants (Fig.1A).

**Specimens examined**

India, Andhra Pradesh State, Kurnool district, Nallamalais, Gundlabrahmeswaram Wild Life Sanctuary, Rudrakod Siva Temple, 10 July 2017, 53509 SKU, BR & AS; Telangana, Nagar Kurnool district, Nallamalais, on moist walls of Umamaheswaram temple 26 September 2018, 55137 SKU, BR & AS.

**Distribution**

**World** Brazil, Java, Lesser Sunda Islands, Philippines and **India** Chhattisgarh, Jharkhand, Kerala, Uttar Pradesh, Western Himalaya, Western Ghats and Eastern Ghats Present report new distributional record from Nallamalais of Andhra Pradesh and Telangana.



**Fig. 1 Plate 1: Legend: A – G: *Gymnostomiellavernicosa* var. *tenerum*, A. Habit, B & C. Magnified view of single plants, D. Magnified view of Leaf axil with Gemmae, E. Magnified view of leaf, F. Magnified view of leaf apical and middle cells and G. Magnified view of leaf basal cells.**

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## Consent for publication

The author declares that the work has consent for publication.

## Conflict of Interest

The author hereby declares no conflict of interest.

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