

## REDISCOVERY OF *TRICHOSTOMUM HYALINOBLASTUM* (BRYOPHYTA: POTTIACEAE), AN ELUSIVE ENDEMIC MOSS OF WESTERN GHATS

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Brotherus (1899) described *Tortella hyalinoblasta* as a new species based on T.L. Walker's collections in Coorg (now Kodagu) in the Western Ghats between 1897 and 1898 which were sent to him by D. Prain, the then Superintendent of the Botanical Garden of Calcutta. In 1902, he placed the species under *Trichostomum* Bruch of *Pottiaceae* and made the combination *Trichostomum hyalinoblastum*. Almost 26 years later, the species was recollected by Foreau (the last of the Colonial Europeans to study the mosses of the Western Ghats) in 1924, 1926 and 1927 in the Palni Hills (now Palani Hills) in Western Ghats (Dixon & P. de la Varde, 1927; Foreau, 1961), not far from the type locality. Since then, very little studies have been made on the mosses of the Western Ghats where this species is seldom mentioned but for checklists. Aziz and Vohra (2008) have described and illustrated this species based on Walker's collections alone and have neither seen Foreau's nor any fresh material. While exploring the Anamalais in the Western Ghats for a bryoflora, material of this species was collected. This is a rediscovery of this species after 85 years. With a view to facilitate easy identification of this species elsewhere in the country, a brief description along with illustration and distribution map is provided.

***Trichostomum hyalinoblastum* (Broth.) Broth.** in Engl. & Prantl, Nat. Pflanzenfam. 1(3): 394. 1902; Dixon & P. de la Varde in Arch. Bot. Bull. Mens.1: 178. 1927; Foreau in J. Madras Univ. 2: 246. 1930 & in J. Bombay Nat. Hist. Soc. 58: 23. 1961; Bruehl in Rec. Bot. Surv. India 13(1): 37. 1931; R.S. Chopra, Taxon. Indian Moss.: 130. 1975; R.H. Zander in Bull. Buffalo Soc. Nat. Sci. 32: 90, Pl.13, ff. 1-5. 1993; A.E.D. Daniels in R. Annamalai, Tamil Nadu Biodivers. 57. 2004 & in Arch. Bryol. 65: 92. 2010; J. Lal, Checklist Indian Moss. 138. 2005; Aziz & Vohra, Pottiaceae (Musci) of India : 94, f. 34. 2008. *Tortella hyalinoblasta* Broth. in Rec. Bot. Surv. India 1(12): 318. 1899. Syntypes: India, South Coorg (Kodagu), on trunks of trees in jungle, Jan. 1898, *Walker* 205 (CAL); trees in Bamboo forest near Pollebetta, *Walker* 219 (CAL); trees at Ponnappet, *Walker* 239 (CAL). *Barbula hyalinoblasta* (Broth.) Paris, Index Bryol. Suppl.: 25. 1900. **(Fig. 1; Pl. 1)**

Plants 1.5 - 3.0mm high, yellowish-green to olive-green. Stems simple, c. 0.14 - 0.16mm in cross section, circular, with a thin-walled central strand; cortex and medulla not differentiated; sclerodermis faint; hyalodermis absent; cells 4 - 12 × 6 - 14µm, moderately thick-walled, reddish. Leaves erectopatent to patent, curled and inrolled when dry, 2 - 3 × 0.45 - 0.53mm, linear-lanceolate, hyaline at base, crenulate-papillose at margin, acute; apical and median cells 5 - 8 × 4 - 6µm, hexagonal to rounded-hexagonal, multipapillate on both sides; basal ones 40 - 60 × 8 - 12µm, rectangular, hyaline, epapillate, those at extreme base thin-walled; costa excurrent into a mucro; ventral epidermis and stereid band well-developed; dorsal epidermis and stereid band poorly developed; guide cells 4, rounded-hexagonal. Sporophyte not seen.

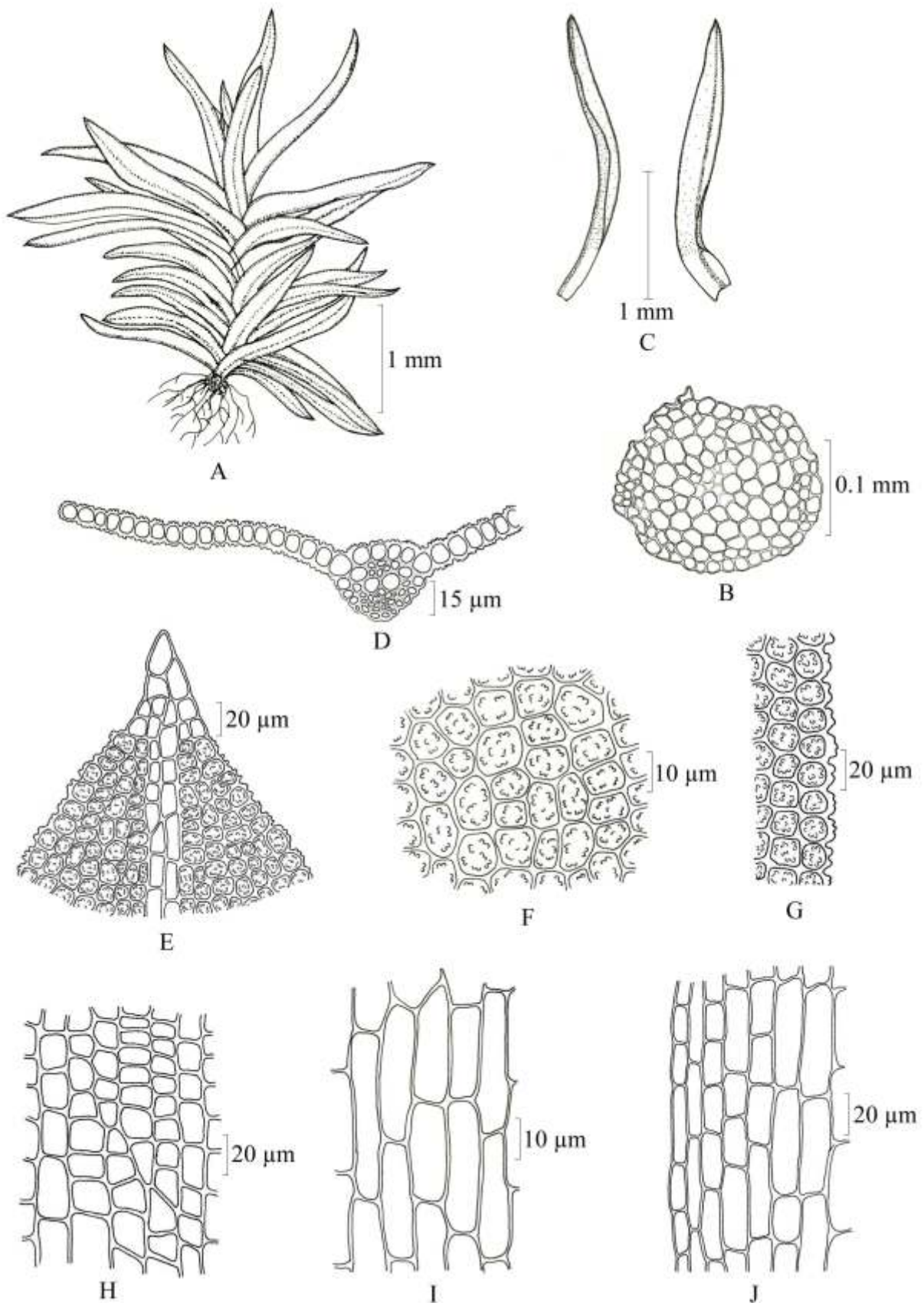
*Habitat* : Corticolous, on *Coffea arabica* L., c. 825m.

*Distribution* : India, Western Ghats: Karnataka and Tamil Nadu.

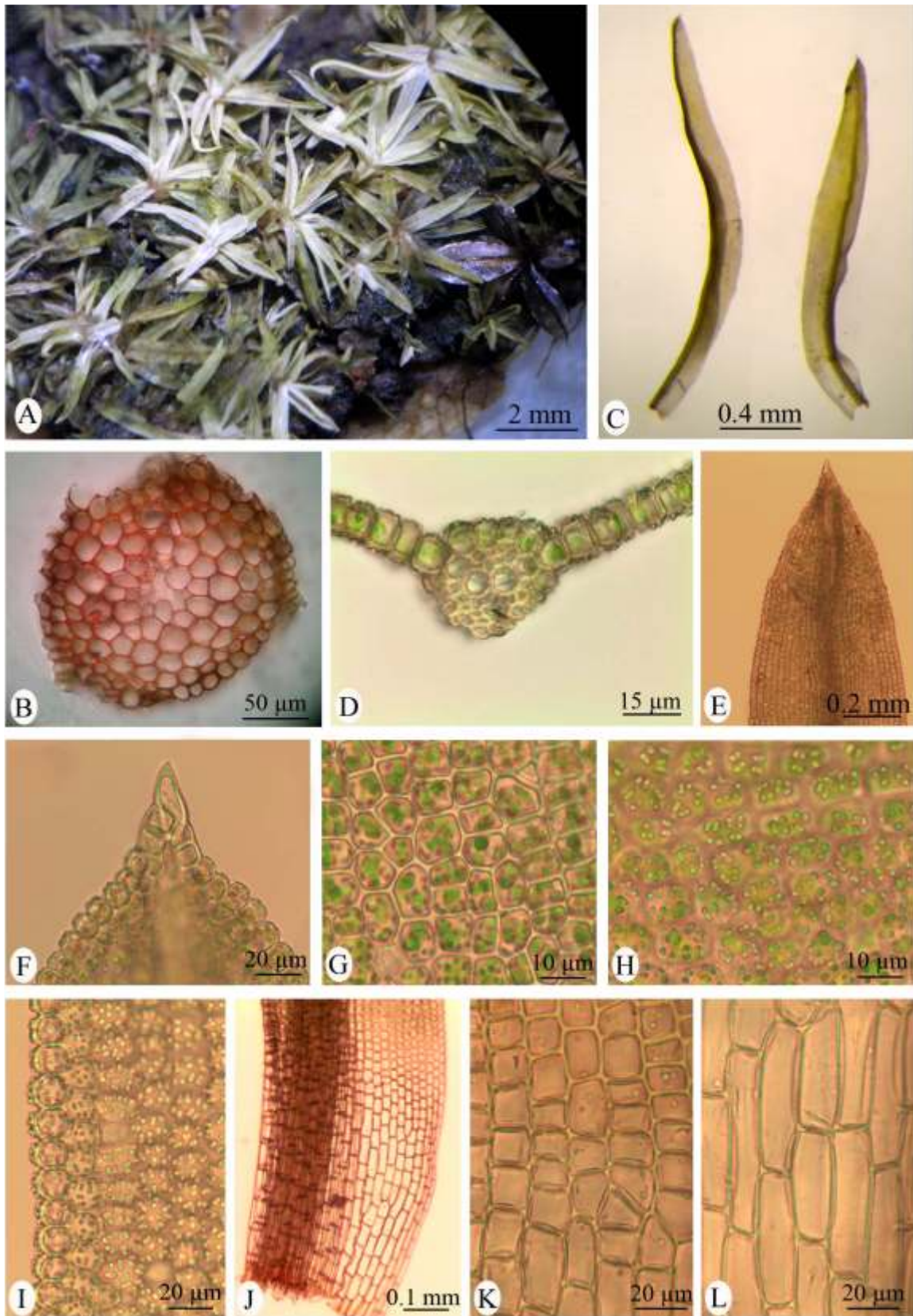
**(Fig. 2)**

*Specimen examined* : Western Ghats, Tamil Nadu, Coimbatore Dist., Anamalais, Valparai Taluk, Anali Estate, c. 825m, 12.8.2012, A.E.D. Daniels & K.C. Kariyappa 8814 p.p. (SCCN).

*Notes* : *Trichostomum hyalinoblastum* is most probably a corticolous form since all collections made so far were on bark of trees. The earliest collection was in Kodagu. Subsequent collections were in Palani Hills. With the present record in Anamalai Hills, it may be concluded that the species is a narrow endemic confined to a small part of the southern Western Ghats spanning a distance of less than 200km north-south between 10° 07' and 11° 58' latitudes.



**Fig. 1 :** *Trichostomum hyalinoblastum* (Broth.) Broth. : **A.** Plant; **B.** Cross section of stem; **C.** Leaves; **D.** Cross section of leaf; **E.** Leaf apical cells; **F.** Leaf median cells; **G.** Leaf marginal cells; **H.** Leaf median cells at hyaline region; **I.** Leaf basal cells at margin; **J.** Leaf basal cells (Drawn from Daniels & Kariyappa 8814 p.p.)



**Plate - 1 :** *Trichostomum hyalinoblastum* (Broth.) Broth. : **A.** Plant; **B.** Cross section of stem; **C.** Leaves; **D.** Cross section of leaf; **E & F.** Leaf apices; **G.** Leaf median cells; **H.** Leaf median cells showing papillae; **I.** Leaf marginal cells; **J.** Leaf base; **K.** Leaf midbasal cells; **L.** Leaf basal cells.



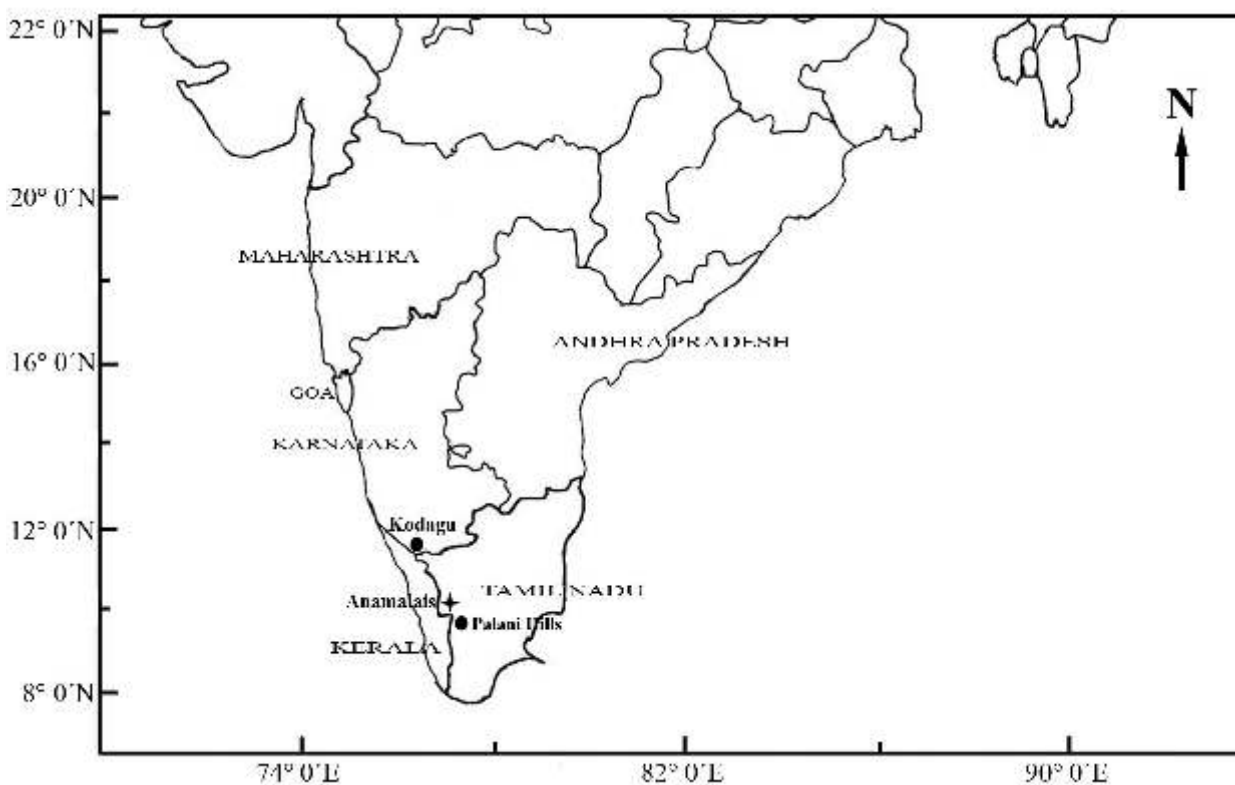


Fig. 2.: Distribution of *Trichostomum hyalinoblastum* (Broth.) Broth.

● Earlier localities    + Present locality

Clearing natural forests to introduce monoculture plantations such as coffee, tea, *Cinchona*, *Eucalyptus*, etc. and establishment of Hill Stations started as early as 19<sup>th</sup> century in Kodagu, Nilgiri Hills, Anamalai Hills and Palani Hills during the Colonial European era. Thus, the high-altitude mountain ranges of the southern Western Ghats have suffered destruction of forests for more than two centuries. Hence, it is not hard for one to imagine the enormity of deforestation and the resultant loss of habitats making the survival of corticolous species such as *Trichostomum hyalinoblastum* all the more difficult and elusive for bryologists. The present collection was made in an abandoned coffee plantation in Anali Estate. Needless to say that this species is a critically endangered one unless and until it is collected elsewhere in a bryogeographical region of the country or globe.

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