**Fissidens angustifolius** (Fissidentaceae) - new to India from the Western Ghats

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**Abstract:** The moss *Fissidens angustifolius* is newly reported for India from the Agasthyamalai Biosphere Reserve in the Southern Western Ghats. It is described and illustrated with notes on its habitat.

**Key words:** Agasthyamalai, bryoflora, *Fissidens angustifolius*, India, Western Ghats

**INTRODUCTION**

Western Ghats in Peninsular India is one of the globally recognized hotspots and a part of the 250 million year old Gondwanaland. It comprises 27% of the country’s flora (Nayar, 1996). Though the vascular plants of this region have been studied elaborately, knowledge on the taxonomy and distribution of bryophytes is far from adequate (Daniels et al., 2011) and still largely based on the work done by the Colonial Europeans in the late 19th and early 20th centuries. Hence, explorations were initiated about a decade ago in the Agasthyamalai Biosphere Reserve in the Southern Western Ghats. During these explorations a new indigene for India, *Fissidens angustifolius* Sull. was discovered.

*Fissidens angustifolius* Sull., Proc. Amer. Acad. Arts 5: 275. 1861. - Type: Cuba, wet places on the ground in dense woods, *Wright & Sullivant* 18 (FH). (Fig. 1; Pl. 1)

Plants rhizoautoicous, 2–3 mm tall, caespitose. Stems simple, in transection 100–110 × 60–80 µm, 8–10 cells across, ovate, with a central strand. Leaves 4–6 pairs, curled and shrunk when dry, 1.5–2.0 × 0.2–0.6 mm, linear-lanceolate, entire, apiculate; dorsal laminae reaching the insertion; vaginant laminae closed to almost closed, acute at apex; cells rounded-hexagonal, thin-walled, unipapillate, occasionally a few smooth, translucent; apical cells 8–16 × 6–12 µm; median ones 6–14 × 8–12 µm; basal ones 8–60 × 7–20 µm; limbidium 1- or 2-stratose, 2-5-stratose on sheathing laminae, with narrow, elongated, 40–50 × 10–12 µm, cartilaginous, yellowish cells ending below leaf apex; costa with 2 guide cells in cross section ending below apex. Perigonal leaves oblong below, with a distinct constriction and a protrusion above, suddenly tapering into a linear-lanceolate apical portion, 0.64–0.83 × 0.14–0.16 mm, limbate; archegonia terminal; perichaetial leaves 1.5–2 × 0.3–0.4 mm, curved at middle, limbate. Sporophytes terminal. Setae 5–9 mm long, straight, sinuous when dry, reddish brown. Capsules 0.8–0.9 × 0.3–0.4 mm, ovate-oblong, brown, orange-red at mouth. Operculum long-rostrate, ca 0.8 mm long. Peristome teeth scariosus type, 200–280 × 8–80 µm, orange-red. Spores 8–10 µm, globose, faintly papillose, yellowish-green.

**Habitat:** Lignicolous and terricolous in moist evergreen forests, 800–1000 m.

**Distr.:** Africa, America, China, Cuba, Fiji, Indonesia, La Réunion, Madagascar, New Caledonia, New Guinea, Samoa, the Solomon Islands, Vanuatu, West Indies and India: Western Ghats of Tamil Nadu (Kanyakumari and Tirunelveli), common in the Western Ghats.

**Specimens examined:** Western Ghats, Tamil Nadu, Kanyakumari Dist., Mahendragiri, ca 1000 m, 17.8.2010, A.E.D. Daniels, K.C. Kariyappa & J.L. Mabel 3999, 4000; Tirunelveli Dist., Agasthyamalai, ca 1000 m, 19.4.2010, K.C. Kariyappa 3730; Courtallam, Vaythamalai, ca 800 m, 3.2.2011, K.C. Kariyappa 5747 p.p.

**Notes:** *Fissidens angustifolius* is a wide-spread species. In the Southern Western Ghats it is common. It is characterized by unipapillate laminal cells and limbate leaves and frequently has much-inflated juxta-costal vaginant laminal cells. It resembles *F. zollingeri* Mitt. which can be separated by its smooth laminal cells. Indian collections are from moist evergreen forests which are generally very humid. Loss of
such habitats could lead to local extinction of such delicate, moisture loving species. Hence, it is needless to say that conservation of forests, particularly moist evergreen forests, is essential for the survival of such species.

Fig. 1 (1 - 17). *Fissidens angustifolius* Sull.
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LITERATURE CITED


Plate 1 (1-3). Fissidens angustifolius Sull.
1. Peristome teeth 2. A portion at apex 3. A portion at base (Daniels & al., 3999)