



Research Article

On the occurrence of two little known *Fimbristylis* (Cyperaceae) from Kerala, India.

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Abstract: Two little known *Fimbristylis* species have been collected from lateritic plains of Kerala. A brief description, notes and detailed illustrations are provided for easy identification.

Keywords: Cyperaceae, *Fimbristylis*, endemic, Kerala

Introduction

The genus *Fimbristylis* Vahl has about 300 species and distributed widespread in pantropical and warm temperate regions of the world with the highest concentration of species in tropical Asia (Kern 1974, Goverts *et al.*, 2007). In India, the genus is represented by 115 species of which 59 are reported from Kerala (Prasad & Singh 2002; Nayar *et al.*, 2014; Viji *et al.*, 2016).

During the intensive explorations in the lateritic region of northern Kerala, two interesting *Fimbristylis* species were collected by the authors, which upon a critical study had been identified as *F. stigmatotecta* Govind. and *F. tristachya* R. Br. *Fimbristylis stigmatotecta* Govind. was described by Govindarajulu in 1996 based on the collections from Lockhart gap, Devikulam, Idukki district, Kerala (Type: CAL 15126) and there after no collection of this species has been reported so far from India. Hence, the present collection is not only confirmed its existence in Kerala but also forms a recollection of this species after a lapse of two decades. *Fimbristylis tristachya* R. Br., a perennial sedge species is widely distributed in tropical Asia to North West Pacific and the known distribution of this species in Kerala is from Chinnar Wildlife Sanctuary in Idukki district (Sasidharan, 2004). The present report of this highland species from the lateritic regions is confirmed the extended distribution to the low land regions. Detailed descriptions with illustrations, colour photographs and relevant notes are provided to facilitate easy identification.

Taxonomic Treatment:

Fimbristylis stigmatotecta Govind., Rheedeae 6(2): 61. 1996. (Fig. 1 & 2)

Type: India, Kerala, Idukki district, Lockhart gap, Devikulam, *Govindrajulu 15126* (Holotype: CAL; Isotypes: MH, BSI, BLAT, DD)

Annual *herbs*, 20 – 35 cm tall. *Roots* fibrous. *Culms* solitary or tufted, sulcate, compressed, smooth, 18 – 30 cm high, 1 – 1.5 mm thick, swollen at base. *Leaves* basal, lower ones reduced to sheaths, upper bladed; *sheaths* laminiferous, glabrous, many nerved, mouth oblique; *blades* linear, 7 – 25 cm long, 0.5 – 1 mm wide, erect or slightly curved, flat or with thickened margins, acuminate, 3-5 nerved. *Inflorescence* simple, loose, 1 – 5 spikelets, 1 – 3 x 1 – 2 cm; involucre *bracts* much shorter than inflorescence, erect or suberect, lanceolate, smooth, glabrous, 5 – 10 mm long; *primary rays* up to 5, slender, 0.5 – 3 cm long, obliquely patent, compressed, glabrous, smooth. *Spikelets* solitary, elliptic ovoid or ellipsoid, angular, acute, 8-12 flowered, 8 - 10 x 2 - 4 mm, ferruginous – castaneous brown; rachilla narrowly winged; *glumes* spiral, chartaceous, obliquely erect, ovate-oblong, 3 – 3.8 x 1 – 2 mm, apex obtuse, mucronate, scarcely keeled, many nerved, nerves excurrent into mucro, fulvous-ferruginous, hyaline margins. *Stamens* 3; *anthers* linear, 1 – 1.5 mm long; *filaments* short. *Ovary* obovoid, 0.3 - 0.5 mm long; *style* flat, broad, ca. 2 mm long, slightly dilated at base; *stigmas* 2, 0.8 - 1 mm long. *Nutlets* globose obovoid, rounded at apex, smooth, stipitate, 1 – 1.5 x 0.5 – 1 mm, yellowish brown or blackish brown, epidermal cells in upper half distinct, hexagonal, arranged in 10-15 regular rows on each face.

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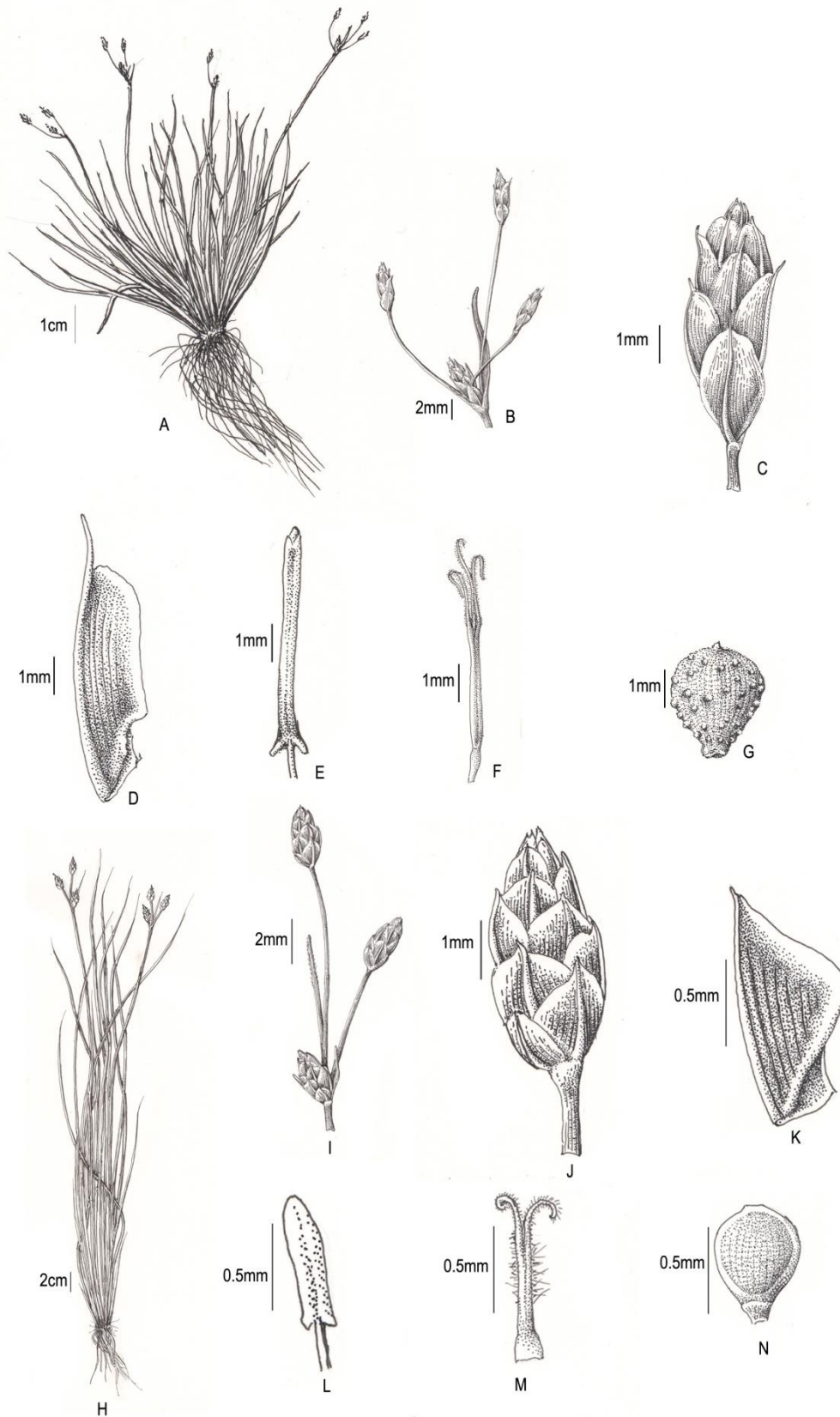


Figure 1. *Fimbristylis stigmatotecta* Govind. A. Habit, B. Inflorescence, C. Spikelet, D. Glume, E. Anther, F. Style & Stigma, G. Nutlet.

Fimbristylis tristachya R. Br., H. Habit, I. Inflorescence, J. Spikelet, K. Glume, L. Anther, M. Style & Stigma, N. Nutlet.

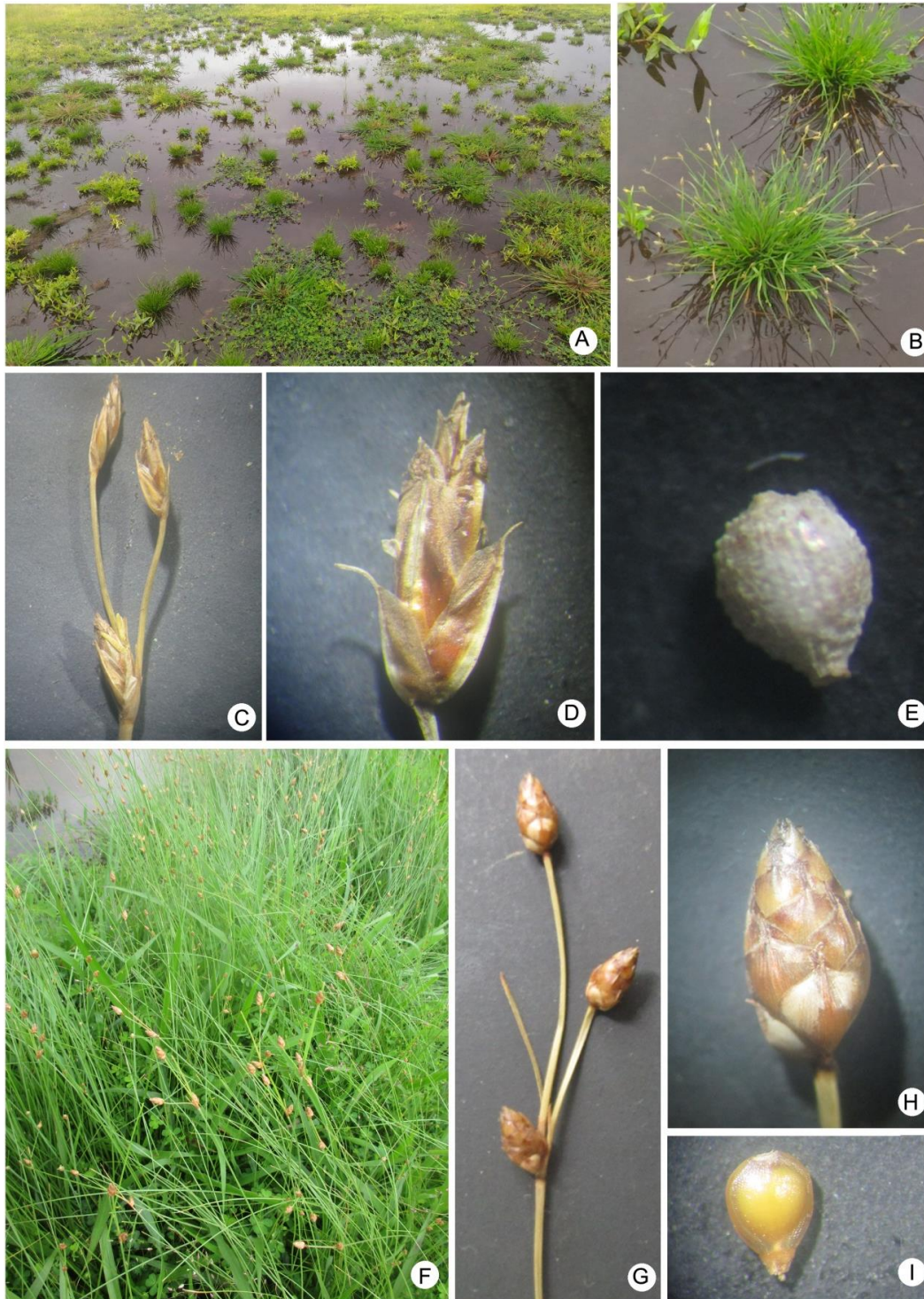


Figure 2. *Fimbristylis stigmatotecta* Govind. A. Habitat, B.Habit, C. Inflorescence, D. Spikelet, E. Nutlet.

Fimbristylis tristachya R. Br., F. Habitat, G. Inflorescence, H. Spikelet, I. Nutlet.

Phenology: July to December

Habitat & Ecology:

It is naturally growing in the waterlogged seasonal pools of Madayipara in Kannur District, Kerala. The associated species in the community are *Geissaspis tenella* Benth. var. *tenella* Hook. f.,

Dopatrium junceum (Roxb.) Buch.-Ham. ex Benth., *Isachne bhatii* Biju et al., *Murdannia crocea* (Griff.) Faden ssp. *ochracea* (Dalz.) Faden, etc.

Specimen examined: India, Kerala, Kannur district, Madayipara, ±42 m, 20 July 2017, *Shaju, Rijuraj & Rajendraprasad, 90946* (TBGT)

Fimbristylis tristachya R. Br., Prodr. Fl. Nov. Holl. 227. 1810. (Fig. 1 & 2)

Type: Australia, Nov 1802 R. *Brown. 5941* (000990944, image, BM!)

Perennial *herbs*, 50 – 100 cm tall. *Rhizome* shortly creeping, covered with ovate, striate, brownish sheaths. *Culms* tufted, sulcate-angular, compressed, smooth or scabrid upwards, 40 – 95 cm high, 1 – 1.5 mm thick. *Leaves* basal, lower ones reduced to sheaths, upper bladed; *sheaths* coriaceous, brownish; *ligule* a dense fringe of short hairs; *blades* linear, 10 – 25 cm long, 0.5 – 1.5 mm wide, greyish green or glaucous, erect or slightly curved, flat or with inrolled margins, acuminate, scabrid on the margins in the upper part. *Inflorescence* simple or subcompound, loose, 1 – 7 spikelets, 1 – 5 x 2 – 4 cm; involucrel *bracts* much shorter than inflorescence, erect or suberect, scarious- margined at dilated base; *primary rays* up to 5, slender, 0.5 - 3 cm long, obliquely patent, compressed, glabrous, smooth. *Spikelets* solitary, ovate or ovate-lanceolate, terete, acute, densely many flowered, 5 - 25 x 4 - 6 mm, brown; rachilla narrowly winged; *glumes* spiral, chartaceous, obliquely erect, broadly ovate, 4 - 6 x 2 – 4 mm, apex obtuse, mucronate, scarcely keeled, many nerved, fulvous-ferrugineous, hyaline margins. *Stamens* 3; *anthers* linear, 1.5 – 2.5 mm long; *filaments* short. *Ovary* obovoid, 0.3 - 0.5 mm long; *style* flat, broad, 2 mm long, slightly dilated at base; *stigmas* 2, 0.8 - 1 mm long. *Nutlets* biconvex, obovoid, 1 – 1.5 x 0.5 – 1 mm, smooth, stramineous, obscurely reticulate by the isodiametric epidermal cells.

Phenology: July to November

Habitat & Ecology:

It is naturally growing in small populations in marshy areas on the lateritic rock surface of Peringome village in Kannur District, Kerala. The associated species in the community are *Geissaspis tenella* Benth. var. *tenella* Hook. f., *Eragrostis* sp., *Dimeria* sp., *Rotala malampuzhensis* R.V. Nair ex Cook, etc.

Specimen examined: India, Kerala, Kannur district, Peringome, ±55 m, 18 July 2017, *Rijuraj, Viji & Shaju, 90917* (TBGT)

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References

1. Govaerts, R., Simpson, D.A., Goetghebeur, P., Wilson, K.L., Egorova, T. and J. Bruhl. 2007. *World checklist of Cyperaceae*. The Board of Trustees of the Royal Botanic Gardens, Kew.
2. Kern, J. H. 1974. Cyperaceae. In: C. J. G. van Steenis, ed. *Fl. Males. ser. 1. 7* (3):435-753.
3. Prasad V. P. and N. P. Singh, 2002. *Sedges of Karnataka* (India). Scientific Publishers, Jodhpur.
4. Sasidharan, N. 2004. *Biodiversity Documentation for Kerala. Part 6. Flowering Plants of Kerala*. Forest Research Institute, Peechi.
5. Nayar, T. S., Rasiya Beegam, A. & Sibi, M. (2014). Flowering plants of The Western Ghats, India. Jawaharlal Nehru Tropical Botanic Garden and Research Institute, Kerala.
6. Viji, A. R., Pandurangan, A. G. and Deepu Sivadas 2016. *Fimbristylis tuckeri* (Cyperaceae), a new sedge species from the Western Ghats India. *Kew Bulletin*. 71: 38.

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Conflict of interest: Nil