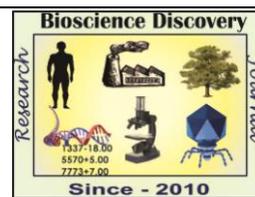


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Research Article



Four Species of Cyperaceae as New Record for Andhra Pradesh, (India)

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Abstract

Four species under the genus *Fimbristylis* Vahl. (Cyperaceae) are reported in Andhra Pradesh (India) for the first time.

INTRODUCTION

The genus *Fimbristylis* Vahl. is represented by four species namely *Fimbristylis bispicula* and *F. pseudomicrocarya* (under the trigynous section *Fuscae*.) *Fimbristylis eligulata* and *F. ligulata* (under the digynous section *Fimbristylis*.)

The present report is the result of exploration of Andhra Pradesh (India) which yielded many interesting plants of the most neglected family Cyperaceae.

The full investigated four species have been enumerated together with brief diagnostic descriptions, illustrations and critical notes as under. All the species have been in the herbarium of Cyperaceae, Majalgaon College, Majalgaon (HCMCM) Dist. Beed, Maharashtra, (India).

Fimbristylis bispicula Govind. In. J. Rheede 6(2): 59. f. 1. 60. 1996. Prasad & Singh Sedg. Karnataka (Fam. Cypr.): 161. 2002. (Fig. 1)

Annual, stems rather slender, stiff, tetragonous, smooth, 3-7 cm long, ca 0.5 mm thick. Leaves: basal ligulate shorter than stem, flat, 0.5-1 mm wide, glabrous, with smooth margins; sheaths all laminiferous, brown. Inflorescence : simple, usually bearing a single pair of spikelets (rarely up to 4), 5-

7 mm long; involucre bracts usually 2, glumiform; rays absent. Spikelets paired, sessile, ovoid-lanceolate, angular, acute at apex, 3-4 x 1-1.2 mm dark brown, 8-10 flowered; rachilla winged. Glumes spiral, membranous, broadly ovate, acute and muticous at apex, ca 2 x 1.2-1.3 mm acutely keeled; keel 3-nerved; sides nerveless, dark brown translucent towards margins. Stamens 2; anthers very short, ovate, 0.2-0.3 mm long, Style 3-fid triquetrous with narrow pyramidal base, ca 1 mm long, glabrous. Nut trigonous, broadly obovoid or subglobose, tricolostulate with convex sides, obtuse at apex, ca 1 x 0.5-0.6 mm, somewhat verruculose, brownish; epidermal cells transversely elongated-hexagonal, in 4-6 regular rows on each face.

Occasional, growing along with grasses.

Fls. & Frts. :- October - November.

Specimens examined :- A. P. State, East Godavari District, Rajamundry, Solanke S.N. 777.

Notes :- The specimens, *Wadoodkhan*, Kas plateau of Maharashtra, 5431 well agree diagnostic description and illustrations provided by Govindrajalu (l.c.) except form some minor variations in the glume acutish, apiculate and the

spikelets not strictly in pairs, some of the stems with single or even 3 spikelets, the style 2 or 1, (2-fide Govindrajalu). Its relation has been shown to be with *F. microcarya* is doubtful. It appears to be more closely related with *F. woodrowii* Clarke the

involucral bract are variable, glume like to setiformis with long awn, sometimes longer than the inflorescence, usually 2 but one often caducous seemingle inflorescence one bracteate. (see also notes under *F. ratnagirica* Prasad & Singh.)



Fig. - 1 *Fimbristylis bispicula* Govind.
A - Habit, B - Glume, C - Nut, D - Style

Fimbristylis eligulata Govind. in. Proc. Indian Acad. Sci. 76B. 184. 1972. Karthik. et al Fl. Indic. En. Monocots: 52. 1989. (Fig. 2)

Annual. Stems capillary, trigonous, smooth, glabrous, leafy and not thickened at base, 20-22 cm x 0.3-0.4 mm. Leaves : eligulate, few, capillary, keeled, smooth, glabrous, acute, 3-5 nerved with thickened margin, 10-15 cm x 0.3-0.5 mm; sheath membranous, dark brown, entire, obliquely truncate. Inflorescence : simple consisting of 1-3 spikelets, erect-spreading 2 x 3 cm; bracts leaf-like, capillary, erect, overtopping the inflorescence, 2.5-10 cm long. Spikelets ovoid-ellipsoid, obtuse-subacute, subterete, many flowered, solitary ferruginous brown, 3-4 x 2.3-2.5 mm. Basal

glumes 2, empty. Glumes ovate, subacute, concave, loose, inflated by the nuts with narrow scarious margin, minutely mucronulate, imbricate, glabrous with faintly nerved sides, 1.4-1.5 x 0.9-1.1 mm; cells vertically oblong-quadrate, more or less straight; keel distinct, 3-nerved; rachilla minutely winged. Stamens 1-2; anther oblong, apiculate, spurred at base, 0.3-0.4 mm long. Style 2-fid flat, dilated at base, glabrous, 0.7-0.9 mm long. Nut obcordate, yellow without thickened margin, biconvex, smooth, cancellate umbonulate, stipitate, 0.8-0.9 x 0.6-0.7 mm; outer cells in upper half transversely elongated, hexagonal occuring usually in 7-8-regular rows on each face. Occasional, along marshes on roadsides, wet grass lands

Fls & Frts. :- September to November.

Specimens examined :- A. P. State, Chittoor District, Vinayakpuram, *Solanke S. N.* 103; Khammam District, Konta, *Solanke S. N.* 142; Nellore District, Pulikat lake, *Solanke S. N.* 138.

Notes :- Appear to be a variable species. The specimens from both Tamil-Nadu and Andhra Pradesh have been worked out. They deviate from the typical *F. eligulata* by the glume broadly hyaline margined (like *F. glauca*), nuts with 4-6 vertical ridges and style is distinctly dilated at base and this appear to be intermediate form between the latter and former taxa.

It shows similarities with *F. dichotoma* and *F. merrillii* in certain respects but differs from both in having eligulate leaves and 3 style it shows more similarities with *F. glauca* Vahl. (*F. dichotoma* subsp. *glauca* (Vahl) Koyama) and often confuses with the latter. *F. eligulata* is common in coastal and inland habitat, and differs by the tuberculations of the nut base. According to Koyama (l.c.) *F. glauca* is strictly a coastal plant. However, further investigation is needed with the help of type material to understand their relationship.



Fig. - 2 *Fimbristylis eligulata* Govind.
A - Habit, B - Glume, C - Nut, D - Style

Fimbristylis ligulata Govind. in Proc. Indian Acad. Sci. 76. B. 187. f. 3. 188. 1972. Karthik. et al Fl. Indic. En. Monocots: 53. 1989. (Fig. 3)

Annual. Stems capillary, trigonous, smooth, gracile, glabrous, leafy and not thickened at base, 20-25 cm x 0.3-0.4 mm. Leaves : ligulate, few, capillary, gracile, keeled, smooth, glabrous, acute, 3-5 nerved with thickened margin, 10-15 cm x 0.3-0.5 mm; sheath membranous, dark brown, hirsutely hairy, entire, obliquely truncate. Inflorescence : simple consisting of 1-3 spikelets, erect-spreading 2 x 3 cm; bracts leaf-like, capillary, erect, somewhat gracile, distantly scabrid, hairy at base, overtopping the inflorescence, 2.5-10 cm long. Spikelets ovoid-ellipsoid, obtuse-subacute, subterete, many flowered, solitary ferruginous brown, 3-4 x 2.3-2.5 mm. Basal glumes 2, empty. Glumes ovate, subacute, concave, loose, inflated by the nuts with narrow scarious margin, cinnamomeous brown, minutely mucronulate, imbricate, glabrous with faintly nerved sides, 1.4-1.5 x 0.9-1.1 mm; cells vertically oblong-quadrate, more or less straight; keel distinct, 3-nerved; rhachilla minutely winged.

Stamens 1-2; anther oblong, apiculate, spurred at base, 0.3-0.4 mm long. Style 2-fid flat, dilated at base, glabrous, 0.7-0.9 mm long. Nut obcordate, yellow without thickened margin, biconvex, smooth, cancellate umbonulate, stipitate, 0.8-0.9 x 0.6-0.7 mm; outer cells in upper half transversely elongated, hexagonal occurring usually in 8-regular rows on each face; stipe 0.1 mm long. Occasional, along marshes on roadsides, wet grass lands

Fl. & Frts. : - September to November.

Specimens examined - A. P. State, Adilabad District, Adilabad, *Solanke S.N.* 529.

Notes :- The diagnostic description of this species provided by the author is based on the type (BIATT) from Maharashtra, Bombay, Borivili National park, (grassy places) *Frenanez*, 1885 and paratype from Goa state. It is compared with the Malesian *Fimbristylis tenuinervia* Kern but, its glabrous style, trabeculate nutand nature of glume point its close relation with th common *F. merrillii* Kern. Mistry, M. K. & S. M. Almeida (J. Eco. & Tax. Bot. 9(2): 403-406. 1987) suspected *F. ligulata* Govind as conspecific to *F. merrillii* Kern.

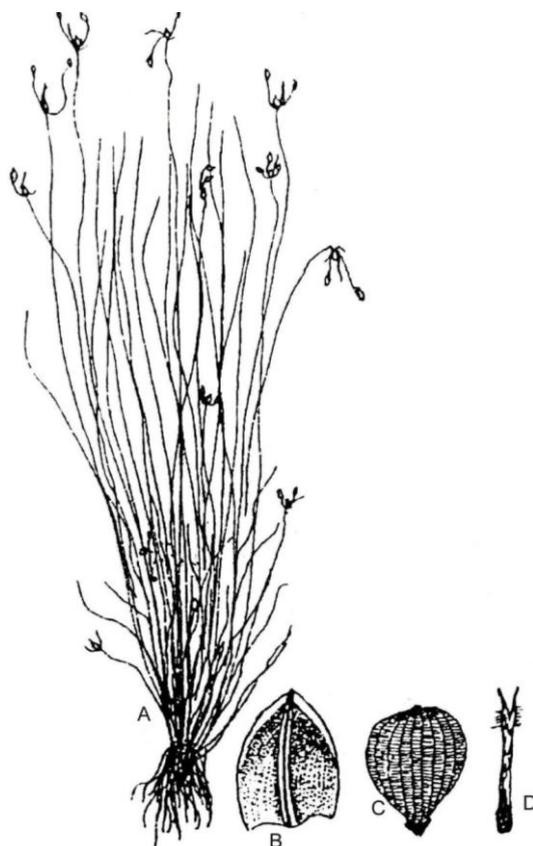


Fig -3 *Fimbristylis ligulata* Govind.
A- Habit, B -Glume, C -Nut, C - Style

Fimbristylis pseudomicrocarya Govind. in Proc. Indian Acad. Sci. 100: 77. f. 1. 78. 1990. Prasad & Singh in sedg. Karnataka (Fam. Cypr.): 201. 2003. (Fig. 4)

Annual, 5-6 cm tall; stems 0.4-0.5 mm thick, caespitose, filiform, 4-5 angled, glabrous, ribbed leafy at base. Leaves : ligulate few to many filiform flat 2-4 cm long 0.3-0.7 mm wide, with smooth margins, uppermost sheaths leaf bearing. Inflorescence : contracted usually with 3-9 spikelets. 6-10 cm long; involucre bracts somewhat leafy shorter than to as long as the inflorescence 4-10 mm long. Spikelets usually, paired or in threes, sessile, erect, linear oblong, obtuse or subacute, angular very small, 3-4 x 0.8-1 mm, cinnamomeous brown, many flowered. Glumes distichous in lower half spiral in upper half, chartaceous deltoid ovate, subacute, mucronate, 1.2-1.3 x ca 1 mm, keeled, shining glabrous throughout, nerveless on sides, distinctly scarious margined somewhat inflated by the nut; mucro erect or recurved, 0.1-0.2 mm long;

keel 3-nerved; rhachilla winged. Stamen 1; anther linear oblong, obtuse at both ends, minute, 0.2-0.3 mm long. Style 3-fid, triquetrous, slightly pyramidal at base, 0.4 -0.5 mm long, glabrous. Nuts trigonous tricostrate with convex sides, obovoid, umbonulate, minutely stipitate 0.5-0.6 x 0.3-0.4 mm, epidermal cells distinct in the upper half, transversely elongated-hexagonal, in 4-5 regular rows on each face giving transversely lineolate appearance.

Occasional in grasslands.

Fls & Frts :- December.

Specimen Examined :- A. P. State, Warangal District, *Solanke S.N.* 620; East Godavari District, Kovur, *Solanek S.N.* 775.

Note: - The type is very similar to *F. woodrowii* Clarke in many respects and hardly distinguished from the latter as shown in key. However, Govindrajalu (s.l.) compared it with unrelated *F. microcarya* according to present findings this the investigation is correct.



Fig. - 4 *Fimbristylis psuedomicrocarya* Govind.
A - Habit, B - Glume, C- Nut, D -Style

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