



### ***Cyperus surinamensis* Rottbøll, 1772 (Cyperaceae): a new record for India**

*Cyperus* Linnaeus is the second largest genus in Cyperaceae Jussieu with some 600 species mostly distributed in the tropics and subtropics of the world (Govaerts & Simpson, 2007). Of these, 70 species occur in India (Prasad & Singh, 2002). They usually grow as part of wet land vegetation, mud banks, open areas, etc., and yet they get little attention from the floristic workers even though they contribute significantly to the economic and ecologic stability of the ecosystem/region.

While exploring Pathiramanal Island and its environs in the Vembanad Lake area of the Alappuzha District, Kerala, in 2010, the authors discovered an interesting *Cyperus* along the canal sides of Kayippuram. In 2011, the plant was collected again from the coastal region of Parippally, Kollam District adjacent to Alappuzha. On critical examination and perusal of literature, the specimens were identified as *Cyperus surinamensis* Rottbøll hither to known from the New World and recently reported as naturalized in China, Taiwan and Indonesia (Chen *et al.*, 2009; Dai Lunkai, 2010). Thus, our collections represent a new record for India, and a detailed description, illustration, photographs, and specimen citations are provided for easy identification.

#### ***Cyperus surinamensis* Rottbøll, 1772**

Descriptiones plantarum rariorum 20 (1772).

**Herbs**, perennial, tufted. **Rhizome** short, brown; roots fibrous, reddish brown. **Culms** trigonous, scabrous with sparse retrorse prickles, dark green, 15–100 cm tall, 2–3 mm wide. **Leaves** 3–5, shorter than culm, V-shaped, 8–65 cm long, 2–4 mm wide; blades linear with antrorse prickles on distal margins; sheaths 3–10 cm long, pale green.

**Inflorescence** compound to decompound; leafy bracts 3–6, very unequal, spreading or reflexed, 2–35 cm long, 1–6 mm wide, margins antrorsely scabrid, V-shaped; primary rays 5–10, unequal, 1–6 cm long, scabrous with retrorse prickles; secondary rays short when present. **Spikelets** many, clustered in a globose head, ovate to ovate-lanceolate, flattened, 5–10 mm long, 1.5–2 mm wide, 14–35-flowered; rachilla slightly zig-zag. **Glumes** ovate, 1.2–1.5 mm long, 0.5–0.6 mm wide, pale green; keel green, mucronulate apically. **Stamen** solitary; filaments 0.5 mm long, white; anthers yellow, 0.5 mm long, linear with a subulate appendage apex. **Ovary** light green, trigonous, 0.5–0.6 mm; style pale brown, 0.5 mm; stigmas 3, 0.5–0.6 mm, pale brown. **Achenes** trigonous, narrowly ellipsoid, 0.5–0.8 mm long, 0.3–0.4 mm wide, slightly stipitate, acute and apiculate apically, reddish brown, reticulate on surfaces (Figs. 1–2).

**Specimens examined:** TBGT 74202; Kayippuram, Alappuzha District, Kerala, India (alt. 6m); T. Dhruvan & A.G. Pandurangan; 18 Jul 2010, TBGT 74230; Kayippuram, Alappuzha District, Kerala, India (alt. 6m); T. Dhruvan & A.G. Pandurangan; 19 Jul 2010, TBGT 68473; Parippally, Kollam District, Kerala, India; T. Dhruvan & A.G. Pandurangan; 2 Jul 2011.

**Flowering & Fruiting:** July–December.

**Habitat & Ecology:** The species is found near the coastal regions of Alappuzha and Kollam districts of Kerala at an altitude of  $\pm 10$  m or less from MSL. It occupies water-logged areas amidst *Cyperus iria* Linnaeus, *C. haspan* Linnaeus, *C. pilosus* Vahl, *Sporobolus indicus* (Linnaeus) Robert Brown var. *flaccidus* (Roemer & Schultes) Veldkamp, *Eleusine indica* (Linnaeus) Gaertner, *Biophytum reinwardtii* (Zuccarini) Klotzch.

**Distribution:** *Cyperus surinamensis* is known from the southern United States (Tucker *et al.* 2002), Central and South America (Svenson 1943; Tucker, 1998), and the West Indies (Acevedo–Rodrigoz, 1996; Correll & Correll, 1996). It is also known to be naturalized in the lowlands of China (Dai Lunkai 2010), Taiwan (Chen & Wu, 2007; Chen *et al.*, 2008, 2009), Indonesia (Dai Lunkai, 2010), and now in India (Kerala). It is observed that the birds feed on the achenes and this may account for the spread across continents by migratory birds.

**Remarks:** *Cyperus surinamensis* closely resembles *C. eragrostis* Lamarck in habit and habitat, but it can easily be distinguished from the latter by the presence of retrorsely scabrid culms, densely flowered spikelets, and narrowly ellipsoid achenes.

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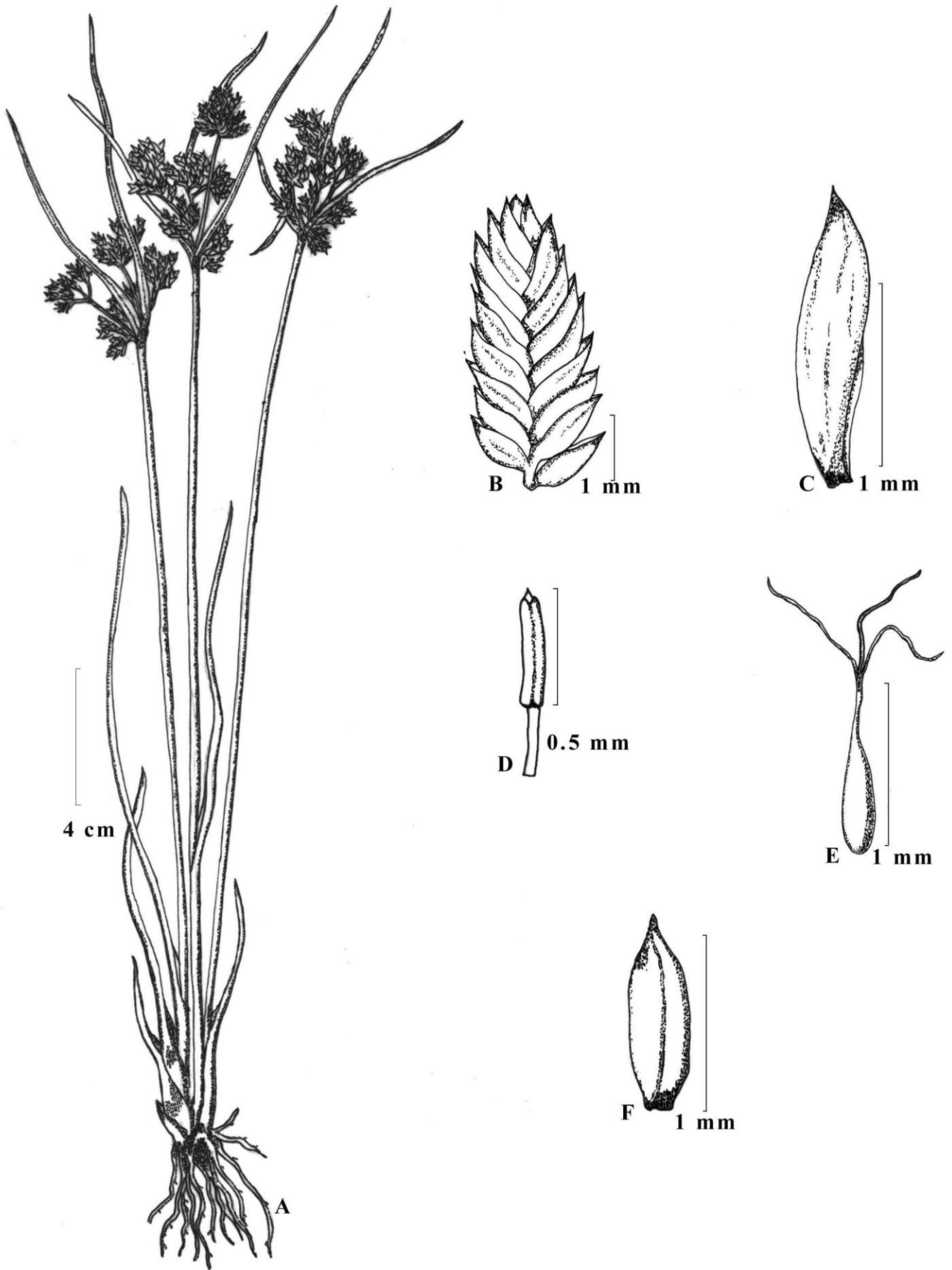
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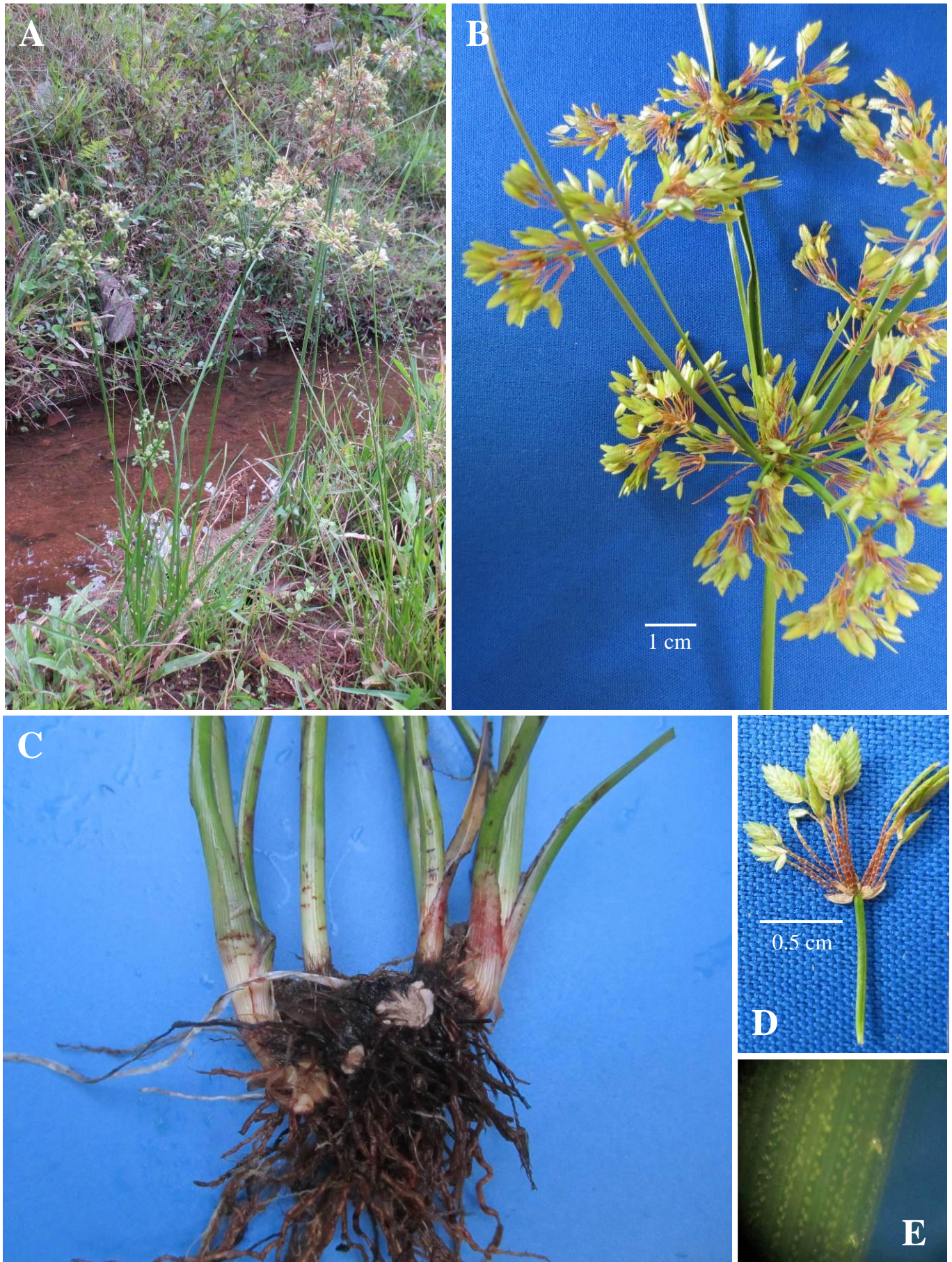
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# PLATE 7



**Figure 1:** *Cyperus surinamensis*, A, Habit; B, Spikelet; C, Glume; D, Stamen; E, Pistil; F, Nut.

# PLATE 8



**Figure 2:** *Cyperus surinamensis*, **A**, Whole plant; **B**, Inflorescence; **C**, Rhizome; **D**, Secondary ray with spikelets; **E**, Retrorsely scabrid culm.