



Cyperus arenarius Retz. var. *nairii* (Cyperaceae), a new variety from South India

Kondru YARRAYYA^{1*}, Garimella Venkata Suryanarayana MURTHY¹ and P.K. Ratna KUMAR²

1. Botanical Survey of India, Southern Regional Centre, Coimbatore, Tamil Nadu– 641003, India.

2. Department of Botany, Andhra University, Visakhapatnam, Andhra Pradesh– 530 003, India.

* Corresponding author Email: yarrayyakondru@yahoo.com

(Manuscript received March 2 2016; accepted July 10 2016; online published 15 August 2016)

ABSTRACT: *Cyperus arenarius* var. *nairii* is described here as a new variety from India. The differences between this and the typical *C. arenarius* are explained and a detailed description of the new variety is provided along with information on its habitat, distribution and illustration.

KEY WORDS: Cyperaceae, *Cyperus*, India, New variety, Tamil Nadu.

INTRODUCTION

While revising the genus *Cyperus* L. for the Flora of Tamil Nadu, a few interesting specimens were collected by P. Daniel from Gulf of Mannar Biosphere Reserve were found in MH. A detailed study of these specimens and perusal of literature (Clarke, 1893; Fischer, 1928; Henry *et al.*, 1989; Karthikeyan *et al.*, 1989; Prasad, 2002) revealed that these can be treated as a distinct variety of *Cyperus arenarius* Retz., because of its differences by having 3–4 globose heads with long rays 4–4.5 cm long. Daniel's collection was originally identified as *C. arenarius* Retz., but due to differences mostly in vegetative and floral characters it can be differentiated from typical *C. arenarius*. Normally inflorescence in the typical species is a single terminal head of spikelets. Both these variety grow in similar habitats, on sandy seashores. Also the specimens in question were collected from within the distribution range of the typical *C. arenarius*.

The protologue (Type: **India**, Barcode: B-W01279–010; Image Id: 321556; **B**) of *Cyperus arenarius* Retz. (1786) has clearly mentioned '*Capitulum sessile*' and this is the correct condition in all the specimens from the southern coast of the mainland India and Sri Lanka but some specimens with umbellate inflorescence with long rays mentioned above are distributed in Tamil Nadu, South India.

Further, it is clarified that considerable differences are available between the typical *C. arenarius* and the present specimens. These specimens vary mainly in the nature of the inflorescence and some vegetative characters (Table 1). Based on the differences, the plant collected by P. Daniel from Tamil Nadu is described here as a new variety (Plate 1).



Plate 1: *Cyperus arenarius* var. *nairii* var. nov.

TAXONOMIC TREATMENT

Cyperus arenarius Retz. var. *nairii* K. Yarrayya, G.V.S. Murthy & P.K. Ratna Kumar, var. nov.

Type: **INDIA**: Tamil Nadu, Gulf of Mannar Biosphere reserve, Appa Island, MSL, 31 January 1994, P. Daniel 101551 (Holotype: MH).

Fig. 1

Perennials. Rhizome horizontally long creeping, slender, 1–2 mm thick, branching, clothed with brownish

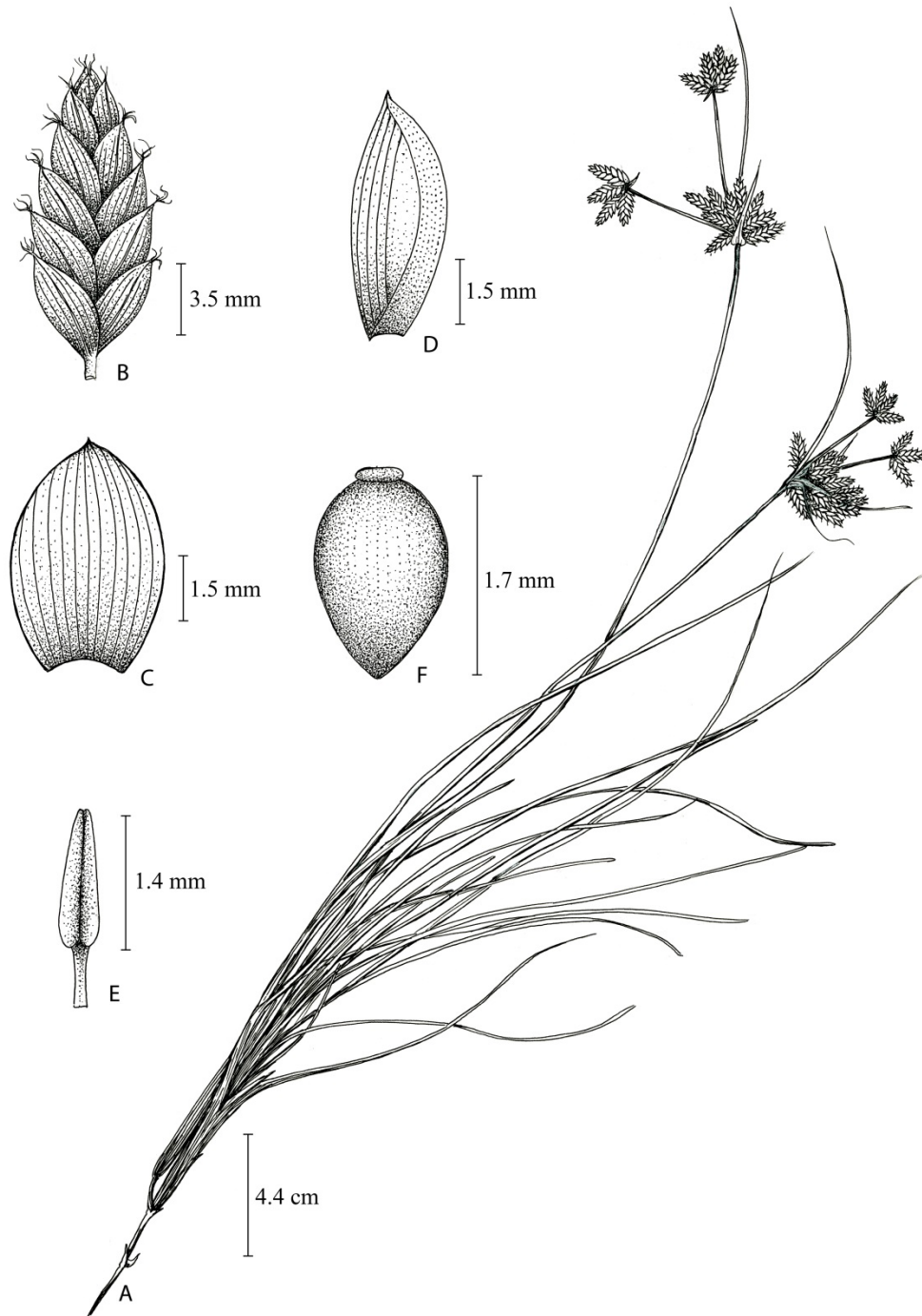


Fig. 1: *Cyperus arenarius* var. *nairii*. A. Habit. B. Spikelet. C & D. Glumes. E. Stamen. F. Nutlet.

scales. Culms usually solitary, at times 2–3 together, obtusely trigonous, 28–44 cm high, 1.5–2 mm thick, smooth, densely covered with leaf sheaths towards base, up to 8 cm long. Leaves few to many per culm, shorter than inflorescence, linear, recurved, thick, canaliculate or at times fused at margins, 18–24 cm × 1–2 mm thick, often scabrous on margins towards base, lower leaves reduced to bladeless sheaths, stramineous, striate, splitting

into fibres at later stage. Inflorescence umbellate with 3–4-globose heads, 4.5–6.0 cm across, having 2–3 primary rays up to 4.5 cm long; involucre bracts 1–3, suberect to reflexed, lowest 8–10 cm long, usually much overtopping the inflorescence, each globose head bearing 5–15 spikelets. Spikelets compressed, ovate to ovate-lanceolate, subacute at apex, 10–14 × 4–6 mm, 10–22-flowered, stramineous to light brownish; rachilla straight, wingless,

Table 1: Differences between *C. arenarius* and *C. arenarius* var. *nairii* var. *nov.*

| | <i>Cyperus arenarius</i> Retz. | <i>C. arenarius</i> Retz. var. <i>nairii</i> var. <i>nov.</i> (<i>P. Daniel</i> 101581) |
|----------------------|---|---|
| Leaves | About 32 cm long, equal or mostly overtopping the inflorescence | About 24 cm long, shorter than inflorescence |
| Inflorescence | A single globose head, 1.8–2.2 cm across. | Umbellate with 3–4 globose heads, 4.5–6.0 cm across. |
| Rays | Absent or rarely 1 cm long | Present, 3, 4–4.5 cm long |
| Spikelets | Each globose head bearing up to 21 spikelets | Each globose head bearing up to 15 spikelets |
| Florets | Each spikelet bearing 18–20 florets | Each spikelet bearing 10–22 florets |
| Glumes | 13-nerved | 16-nerved |
| Nutlet | Smooth, punctulate, 1.0–1.6 × 0.8–1.1 mm. | Smooth, slightly punctulate, 1.5–1.8 × 1.0–1.3 mm. |

excavated. Glumes densely imbricate, oblong-ovate to broadly ovate, obtuse at back, obtuse or shallowly emarginated and mucronate at apex, 5–6 × 2–3 mm, 13–16-nerved, membranous and hyaline at margins in upper half, stramineous to reddish brown. Stamens 3; filaments elongate, up to 5.5 mm long; anthers oblong, 1.2–1.4 mm long. Style 0.8–1.0 mm long; stigmas 3, 1.8–2.1 mm long. Nutlet broadly obovate, 1.5–1.7 × 1.0–1.3 mm, concave-convex with weak angulate dorsal side, rounded to umbonulate at apex, contracted at base, smooth, minutely punctulate, maturing blackish-brown.

Flowering & Fruiting: December - April.

Habitat: Seashore of Islands with sandy soil.

Specimens examined: INDIA: Tamil Nadu: Gulf of Mannar Biosphere reserve, Appa Island, 31 January, 1994, *P. Daniel* 101581; Tiruchi, Coleroon river, 65 m, *D.I. Arockiasamy* 6132.

Etymology: The specific epithet is named in honour of Dr. V.J. Nair, Former Joint Director of BSI, SRC, Coimbatore for his contributions in Indian Plant Taxonomy.

ACKNOWLEDGEMENTS

The authors are grateful to the Director, Botanical Survey of India, Kolkata for the facilities. Thanks are due to Dr. V.J. Nair, former Joint Director, MH, Coimbatore for his valuable suggestions. Thanks are also due to Dr. V.P. Prasad, Scientist D, BSI, Kolkata for his opinion and suggestions for making this manuscript and Ms. Kalyani, Library Information Assistant, BSI, SRC, for timely help in providing the required literature.

LITERATURE CITED

- Clarke, C.B. 1893. Cyperaceae. In Hooker, J.D., (ed.) The Flora of British India L. Reeve & Co., London.6: 453–663.
- Fischer, C.E.C. 1928. Cyperaceae. In Gamble, J.S., (ed.) Flora of Presidency of Madras Adlard & Sons, London. 3: 1662–1667.
- Henry, A.N., Chitra, V. and N.P. Balakrishnan. 1989. Cyperaceae. In Flora of Tamil Nadu Analysis, India. BSI. Coimbatore. Ser 1 (3): 65–86.
- Karthikeyan, S., Jain, S.K., Nayar, M.P., and M. Sanjappa. 1989. Cyperaceae. In Flora Indicae Enumeratio: Monocotyledonae. Botanical Survey of India, Calcutta. pp. 32–73.
- Prasad, V.P. and N.P. Singh. 2002. Sedges of Karnataka, (India). J. Econ. Tax. Bot. Addl. Ser. 21: 1–355.
- Retzius, A.J. 1791. Fasciculus Observationum Botanicarum fasc. 4. 1786/87; fasc. 5. 1788; fasc. 6. 1791.
- Ropert, D. (ed.) 2000. Digital specimen Images at the herbarium Berolinense. – Published at <http://www.bgbm.org/herbarium/> (Barcode: B-W01279-010/Image Id: 321556), (Accessed 16 May 2016).

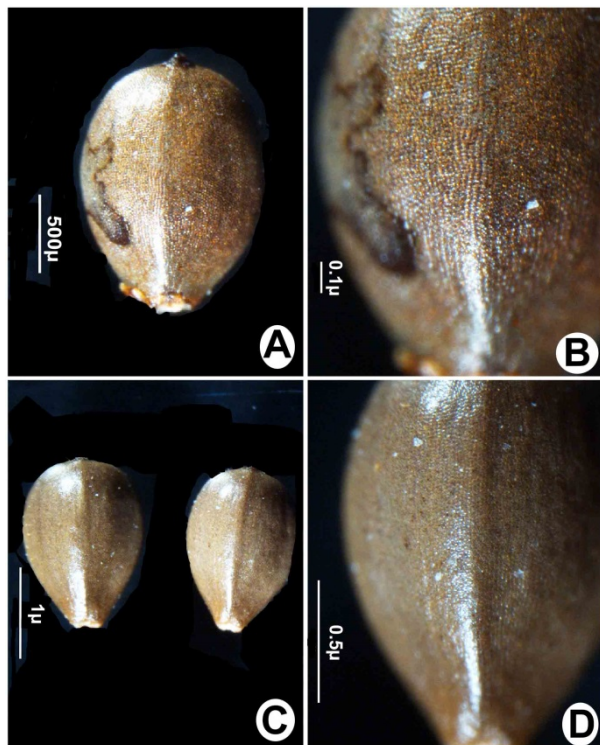


Plate 2: Surface pattern of the nutlets of A & B. *Cyperus arenarius* Retz. C & D. *Cyperus arenarius* var. *nairii* var. *nov.*