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Research Article

DISTRIBUTION OF FAMILY CYPERACEAE IN THE *VAYALS* OF MUDUMALAI TIGER RESERVE – NEW DISTRIBUTIONAL RECORDS

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INTRODUCTION

Cyperaceae, the sedge family is one of the largest families with 92 genera and 4450 species (Mabberley, 2009). In his historical Species Plantarum and Genera Plantarum Linnaeus (1753 and 1754) described 5 genera and 81 species of the family. Clarke (1893, 1894) was the first one to do extensive study on Indian Cyperaceae, whose work is included in J.D Hooker's Flora of British India. 449 species coming under 28 genera are enumerated in this flora. Among Indian cyperologist Prof. E. Govindrajulu's work has been remarkable. Presently only 76 species from 10 genera have been reported from Tamil Nadu.

Mudumalai Tiger Reserve lies between 110 32' and 110 43' N and 76 0 22' and 76 0 45' and is located the state of Tamil Nadu at the tri-junction where the states of Kerala on its west and Karnataka on its north meet. It covers an area of 321 Km² having a rainfall gradient of 50 to 200 cm/ annum from east to west at an average altitude of 1000 msl. The reserve has open grasslands colloquially called "*vayals*" interspaced between the thick forests which remain water- logged during the second half of the year.

During the study of the flora of the *vayals* or seasonally waterlogged grasslands of Mudumalai Tiger Reserve 33 species of Cyperaceae belonging to 11 genera were recorded. Literature review revealed that the genera *Diplacrum* and 7 species of Cyperaceae, one each belonging to genera *Cyperus, Diplacrum, Fimbristylis, Kyllinga, Lipocarpha* and two species to genera *Pycreus* were new distributional records to the state of Tamil Nadu. Ten species recorded from these wetlands *viz*. *Cyperus compactus* Retz., *Cyperus procerus* Rottb., *Cyperus michelianus subsp. pygmaeus (Rottb.) Asch. and Graebn.*, *Eleocharis acutangula* (Roxb.) Schult., *Eleocharis retroflexa* (Poir.) Urb., *Fimbristylis cinnamometorum* (Vahl) Kunth, *Fimbristylis dichotoma* subsp. *podocarpa*, *Lipocarpha gracilis* (Rich. ex Pers.) Nees, *Cyperus compactus Retz.*, *Rhynchospora rubra* (Lour.) Makino, *Schoenoplectus mucronatus* (L.)Palla. are new record to the district of Nilgiris.

The new records for the state of Tamil Nadu are described below:

Cyperus pseudokyllingioides Kük.in H.G.A.Engler (ed.), Pflanzenr., IV, 20(101): 14. 1935. *Kyllinga cyperoides* Roxb., Fl. Ind. 1: 182. 1820. *Courtoisia cyperoides* (Roxb.) Nees, Linnaea 9: 286.1834. *Indocourtoisiacyperoides* (Roxb.) Bennet and Raizada, Indian Forester 107: 432.1981.C.B.Clarke in Hook.f, Fl. Brit. India 6: 625.1893; T.Cooke, Fl. Bombay 2:877.1908 (3:391.1958, repr.ed.).; C.E.C. Fisch. in Gamble, Fl. Madras 1645.1931 (3:1143.1957,repr.ed.). V.P Prasad and N.P Singh, Sedges of Karnataka 67. 2002.

Tufted annual herbs; clums 15 - 75 cm high, trigonous. Inflorescence compound to decompound; involucral bracts 3 – 7. Spikes sub-globose; spiklelets many, congested,compressed; stamens 3; stigmas 3. Nut trigonous, linear – oblong, narrow at ends.

Fl .and Fr. : October - May

Distribution: Chad to S. Africa, Madagascar, Himalaya to Indo-China .

Diplacrum Robert Brown

R. Br., Prodr. Fl. Nov. Holl. 1.240.1810. *Scleria* sect. *Diplacrum*(R. Br.) Kern in Blumea 11:208.1961.

Type :*Diplacrum caricinum* R.Br.

Small, slender annuals. Leaves basal and cauline, linear, contraligule absent. Inflorescence head-like clusters of spikelets from the axil of leaf- like bracts, usually almost throughout the length of the stem. Spikelets as a rule bisexual, terminated by a female flower; nut bearing spikelets with 2 glumes which closely envelope the nut and falling off along with the nut.Stigma 3.Nut globular, bony, irregularly rugose or smooth. Disk (hypogynum) obsolete, completely adnate to base of the nut.

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Distribution: A small genus of 6 species distributed in the tropics of both the hemispheres, 3 species in India. This is the first report from Tamil Nadu.

Diplacrum caricinum R.Br.,Prodr. Fl. Nov. Holl.: 241.1810. C.B.Clarke in Hook.f., Fl. Brit. India 6:688.1894; C.E.C. Fisch. in Gamble, Fl. Madras 3: 1678. 1931. (3: 1164. 1957, repr.ed.); Koyama in Dassan. and Fosberg, Revis. Handb. Fl. Ceylon 5:367.1985. *Diplacrum zeylanicum* Nees in R.Wight, Contr. Bot. India: 119.1834; V.P Prasad and N.P Singh, Sedges of Karnataka 135. 2002.

Small, diffused annual herbs; clums 10-20 cm high. Inflorescence a axillary clusters of spikelets; male spikelet few-flowered;stamen 1; female spikelet single flowered ; glumes paired; stigmas 3. Nut enveloped by 2 subtending glumes, globular, umbonulate at apex.

Fl.and Fr.: September - December

Distribution: Tropicaland Sub-tropical. Asia to NW. Pacific.

Fimbristylis alboviridis C.B.Clarke in Hook.f., Fl. Brit. India 6: 638. 1893. J.Kern in Blumea 8:140. 1955; S.S.Hooper in Saldanha and Nicolson, Fl. Hassan Dist. 675.1976; B.D. Sharma *et al*., Fl. Karnataka: analysis 309.1984; V.P Prasad and N.P Singh, Sedges of Karnataka 157. 2002.

Annual herbs; clum 20-50 cm high, compressed. Inflorescence simple or sub-compound; involucral bracts 1-2.Spikelets solitary; glumes spiral, sub-chartaceous; stamen 1; stigmas 2; nut biconvex, obovate, shortly stipitate, umbonulate on each face, stramineous.

Fl. and Fr.: September- November

Distribution: W. and WC. Trop. Africa, Trop. Asia.

Kyllinga odorata subsp. ***cylindrica*** (Nees) T.Koyama, Gard. Bull. Singapore 30: 161.1977.C.B.Clarke in Hook.f., Fl. Brit. India 6:588. 1893 (incl.var. *subtriceps* Nees); C.E.C. Fisch.in Gamble, Fl. Madras 1624.1931(3: 1130. 1957 repr. ed.). *Kyllinga cylindrical* Nees in R.Wight, Contr. Bot. India: 91 (1834).*Kyllinga odorata* var. *cylindrica* (Nees) Kük., J. Straits Branch Roy. Asiat. Soc. 76: 80 (1917).*Kyllinga cylindrica* var. *subtriceps* Nees in R.Wight, Contr. Bot. India: 91 (1834); V.P Prasad and N.P Singh, Sedges of Karnataka 242. 2002.

Tufted perennial herbs; clum10-30 cm high. Inflorescence a head of 1-3-spikes, straw-coloured; involucral bracts 3-5, reflexed. Spikelets numerous; glumes 4; stamens 2; stigmas 2. Nut laterally compressed, biconvex, obovate, truncate at apex.

Fl.and Fr. : June-October

Distribution: Tropical and Subtropical Old World.

Lipocarpha squarrosa (L.) Goetgh.,Wageningen Agric. Univ. Pap. 89(1): 71.1989. *Scirpus squarrosus* L., Mant. Pl. 2: 181.1771. *Rikliella squarrosa* (L.)J.Raynal, Adansonia, n.s., 13: 154. 1973. Sharma et al., Fl. Karnataka: analysis 215. 1984; Koyama in Dassan.and Fosberg, Revis. Handb. Fl. Ceylon 5: 254. 1985; C.B.Clarke in Hook.f., Fl. Brit. India 6: 663. 1894; C.E.C. Fisch.in Gamble, Fl. Madras 1166.1931 (3: 1156. 1957, repr.ed.); V.P Prasad and N.P Singh, Sedges of Karnataka 298. 2002.

Tufted annual herbs; clum 6-25 cm high. Inflorescence a pseudo-lateral head of 2-4-spikelets; involucral bracts 1-3, canaliculated. Spikelets sessile, many-flowered; glumes membranous; stamen 1;stigmas 3, short recurved. Nuttrigonous, oblong, smooth.

Fl.and Fr. : May- February

Distribution: Indian Subcontinent to S. China and Pen. Malaysia.

Pycreus diaphanus (Schrad. ex Roem.and Schult.)S.S.Hooperand T. Koyama, J. Jap. Bot. 51: 316. 1976. Sharma, *et al.*, Fl. Karnataka: analysis 313 .1984. *Cyperus diaphanous* Schrad.exRoem. and Schult.in J.J. Roemer and J.A.Schultes, Mant. 2: 477.1824.*Pycreus latispicatus* (Boeckeler) C.B. Clarke in Hook.f., Fl. Brit. India 6: 696.1894.*Cyperus latispicatus* var. *acaulis* C.B.Clarke, J. Linn. Soc., Bot. 21: 41 .1884; *Pycreus diaphanus* var. *latispicatus* (Boeckeler) M.R. Almeida, Fl. Maharashtra 5B: 370.2009; V.P Prasad and N.P Singh, Sedges of Karnataka 269. 2002.

Tufted annual herbs; clum10-35 cm high, trigonous. Inflorscence simple, reduced to a solitary head; involucral bracts 2-3. Spikelets compressed; glumes membranous; stamen 2; stigma 2. Nut laterally compressed, biconvex, broadly obovate, apliculate at apex, rugulose.

Fl .and Fr.: September – December

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Distribution: Trop. and Subtrop. Asia.

Pycreus macrostachyos (Lam.) J. Raynal, Kew Bull.23: 314. 1969. C.B. Clarke in Hook.f., Fl. Brit. India 6:594.1893; C.E.C. Fisch. in Gamble, Fl. Madras 1628. 1931 (3:1133.1957, repr.ed.). *Cyperus macrostachyos* Lam., Tabl. Encycl. 1: 147. 1791. *Pycreus albomarginatus* Mart. and Schrad. exNees in C.F.P.vonMartiusand auct. suc. (eds.), Fl. Bras. 2(1): 9.1842 ; V.P Prasad and N.P Singh, Sedges of Karnataka 274. 2002.

Annual herbs; clum up to 110 cm high. Inflorescence compound; involucral bracts 4-9, foliaceous. Spikelets spicately arranged, 8-20, acute at apex; glumes membranous; stamens 3; stigmas 2. Nut laterally compressed, black.

Fl. and Fr.: September – December

Distribution: Tropical and Subtropical.

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