



Peer Reviewed Referred
and
UGC Listed Journal
(Journal No. 40776)

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AN INTERNATIONAL MULTIDISCIPLINARY
QUARTERLY RESEARCH JOURNAL
ISSN 2277-5730



Volume-VII, Issue-III
Part - I
July - September - 2018

IMPACT FACTOR / INDEXING
2018 - 5.5
www.sjifactor.com

AJANTA PRAKASHAN

ISSN 2277 - 5730
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ज्ञान-विज्ञान विमुक्तये

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www.sjifactor.com

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Ajanta Prakashan

Aurangabad. (M.S.)



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6. Floristic Studies in some Species of *Cyperus* Linn. (Cyperaceae) of Coastal Region of Andhra Pradesh

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Abstract

Present study is on our own critical observations on fresh huge plant material collected from the study region. The observations are also based on herbarium specimens. Relevant data from literature have been referred for comparative study and conclusion including recent nomenclature. The study of *Cyperus* Linn provides a detailed taxonomic description, illustration and relevant information for its easy identification in the field. It is a large genus with over 600 species in the world, well represented in India with over 100 species. Three species are collected from study region and are described. The present report is hoped to provide basic material for further research in experimental taxonomy of Cyperaceae.

Key Words: *Cyperus*, Cyperaceae, Coastal region.

Introduction

As part of taxonomic revision of the family Cyperaceae in Coastal Andhra Pradesh, species of *Cyperus* has been collected by the authors. On critical examination and perusal of literature, they were identified as *Cyperus pygmaeus* Rottb., *Cyperus rotundus* L. and *Cyperus squarrosus* L.

The floral structure resembles to those of the members of scirpus. However, in *Cyperus* the hypogynous structures are lacking and the glumes are distichous. Opposing opinions have been expressed by the Cyperologists and general taxonomists about the generic delimitation C.B. Clake the founder of modern Cyperology (1884) considered *Cyperus* in wide sense, but in his later publications (1893, following J.D. Hooker p. 586) and (1902) he segregated it into the genera like *Kyllinga*, *Pycneus*, *Juncellus*, *Cyperus*, *Mariscus*, *Courtoisia* (now *Courtoisina* Sojak) and *Torulinium*. More recently two other monotypic genera, namely *Sphaeromariscus* Camus (based on *C. compactus*) and *Queenslandiella* Domin (= *Mariscopsis* Cherm.) based on *C. hyalinus* which species is now transferred to *Kyllinga* by Koyama (1976, 1985). According to Kern (1974) Clarke's division is artificial and genera like *Juncellus*, *Mariscus* and *Torulinium* are ill-defined even at subgeneric level. Anatomically *Juncellus* resembles *Cyperus* in part and

Mariscus in part (Metcalf & Gregory, 1971). Embryology provides no ground for separation of *Juncellus* and *Mariscus* from *Cyperus* (Vanden der Veken, 1965).

Taxonomic Treatment

Cyperus pygmaeus Rottb. Descr. & Icon. 20. t. 14.f. 4,5.1773; Cooke T. fl. Pres. Bombay 3:372 (BSI reprint) Kern In Steenis, Fl. Malesiana 1.7(3): 634.1974. W. Khan in Ind. Bot. Reprt. 1(1):53.1982. Koyama in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 5.214.1985. W. Khan in Naik Fl. Marathwada 2:937.1998. Prasad & Singh in sedge. Karnataka (Fam. Cypr.): 121.2002. *Dichostylis pygmaeus* Nees, Linnaea 9:289.1834. *Juncellus pygmaeus* Clarke in Hook f. Fl. Brit. India 6: 596.1893; Brahmam & Saxena in Fl. Orissa : 4. 2148.1996; Pullaiah & Hanumanth.Cypr. in Fl. Andhra Pradesh 3:1090.1997. *Cyperus michelianus* (L.) Delile subsp. *pygmaeus* Asch. & Graeb. Syn. 2.2:273.1903.

Tufted annual, 5-10 cm tall, with much thickened bases; stems triquetrous, 0.5-1.5 mm wide, with one face concave, much spreading. Leaves: sheaths glabrous, membranous; blades linear, 1-3 mm wide, basal, as long as or longer than the stems, scabrid in the upper part, acuminate. Inflorescence : solitary, terminal, globose heads 0.5-1.5 cm in diam., involucre bracts 5-7, the longest ones 4-12 cm long; the setiform bracts with dilated, glume-like bases; rays absent. Spikelets ellipsoid, oblong or linear, 3-10 x 1.5-2.5 mm, numerous, closely packed, compressed, greenish or stramineous, acute; rachilla wingless. Glumes distichous, narrowly-oblong, 1.7-2 x 0.5-0.8 mm, loosely imbricated, strongly keeled; keel 3-nerved; sides with 1-2 nerves, white-hyaline, acute at apex, apiculate. Stamen(s) 1 or 2; anthers linear, 0.5 mm long, mucous. Nuts palmoconvex to trigonous, narrowly ellipsoid, 1-1.2 x 0.5 mm, acute at both the ends, smooth, yellowish to brown. Styles 2-3, linear, longer than the nuts.

Occasional, in open areas water.

Phenology: Flowering and fruiting was observed from December to February

Specimen examined: A.P. Visakhapatnam Dist. Chintapalli, Shaikh R. I. 899, Chintapalli forest, Shaikh R. I. 893.

Cyperus rotundus L. Sp. Pl. 45. 1753; Clarke in Hook f. Fl. Brit. India 6: 614.1893. T. Cooke fl. Pres. Bombay 2:859.1908. Kern In Steenis, Fl. Malesiana 1.7(3):604.f. 49.1974; Naik, Fl. Osmanabad 357.1979; W. Khan in Ind. Bot. Reprt. 1(1):53.1982. Koyama in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 5:181.1985; Karthik. et al, Fl. Indic. En. Monocot. 47.1989. Fischer in Gamble Fl. Pres. Madras (1931) 3:1636 (repr.ed.) 1994; Brahmam & Saxena in Fl. Orissa: 4. 2149.1996; L'narsimhn in Sharma et al Fl. Maharashtra (Monocots): 293.1996; Pullaiah & Hanumanth.Cypr. in Fl. Andhra Pradesh 3:1069.1997; W. Khan in Naik Fl. Marathwada 2:938.1998. Prasad & Singh in sedge. Karnataka (Fam. Cypr.): 122.2002.

Rather slender perennial, 20-30 cm tall; stolons slender, wiry ending in ellipsoid or subglobose, more or less zoned tubers; stems slender trigonous, 1.5-2 mm wide, arising from tuberous base. Leaves: sheaths glabrous, stramineous or pale yellowish-brown, loosely distichous; blades linear, 3-6 mm wide, coriaceous, glaucous beneath, crowded little above the base, shorter than or as long as the stems, long-acuminate. Inflorescence : compound, or subdecompound; involucre bracts 4-5, the longer ones often much overtopping the inflorescence, spreading; primary rays 7-10, very unequal, rather rigid, erect; secondary ones very short, filiform; spikes ovoid, with 8-10 spikelets. Spikelets linear, 1-2 cm x 2 mm, compressed, erect, pale to dark reddish-brown, acute; rhachilla broadly winged. Glumes elliptic-oblong, 3.5-4 x 2 mm, 5-7 nerved, closely imbricated; keel with 3-nerves ending little below the apex, recurved at the tips; sides with 1-2 nerves on either side close keel; margins narrowly hyaline; acute or sub-acute at apex. Stamens 3; anthers linear, 2 mm long with reddish appendage at the tips. Nuts rarely developed, the immature ones acutely trigonous, ellipsoid 1.5 x 0.4 mm, smooth or faintly reticulate, greyish, apiculate, sessile. Styles 3-fid, longer than the nuts, glabrous.

Common, weed of agricultural fields, around rice fields, in marshes along the banks of water courses.

Phenology: Flowering and Fruiting was observed from September to December.

Specimen examined: A.P. Chittoor Dist. Karvetnagar, *Shaikh R. I.* 855. Krishna Dist. Vijayawada, *Shaikh R. I.* 705; Nellore Dist. Pulicut lake, *Shaikh R. I.* 871, Akkarapaka, *Solanke S.N.* 158.

Cyperus squarrosus L. Cent. 2:6.1756; Kern in Blumea 10; 642.1960 et In Steenis, Fl. Malesiana 1.7(3):631.1974. W. Khan in Ind. Bot. Repr. 1(1):54.1982. et in Naik Fl. Marathwada 2:940.1998. *C. aristatus* Rottb. Progr. 22.1772; Clarke in Hook. f. Fl. Brit. India 6: 606.1893. Naik, Fl. Osmanabad 354, 1979. *Mariscus squarrosus* sensu Clarke in Hook. f. Fl. Brit. India 6: 623.1893. quoad synon; Koyama in Dassan. & Fosb. Rev. Handb. Fl. Ceylon 5:229.1985; Fischer in Gamble Fl. Pres. Madras (1931) 3:1645.(repr.ed.) 1994. Brahmam & Saxena in Fl. Orissa: 4. 2152.1996; Pullaiah & Hanumanth.Cypr. in Fl. Andhra Pradesh 3:1098.1997.

Densely tufted, small, slender annual, 3-12 cm tall; stems filiform, triquetrous. Leaves: sheaths glabrous, thinly membranous; blades filiform, shorter than the stems, scabrid in the upper half, long acuminate. Inflorescence : reduced to pseudolateral clusters 5-8 mm in diam., involucre bracts 3, filiform, the lowest the longest, 3-5 cm long, rays absent or when present 3-6 mm long. Spikelets linear, 3-6 x 1-1.5 mm, compressed, squarrose, 6-10 flowered, brown to chest-nut brown or green tinged; rhachilla wingless. Glumes broadly ovate, 1.5-1.8 x 0.5 mm, 9-

11 nerved; keel green, 3-nerved; sides with 3-4 nerves spreading near to the margins, hyaline, often tinged with brown; awns almost as long as the body of glumes, recurved. Stamen 1; anther elliptic, minute, mucous. Nuts-trigonous, obovoid, 0.8-1 x 0.3 mm, almost as long the glumes, smooth or obscurely dotted. Styles 3-fid, shorter than the nuts, glabrous.

Common in rice-fields, wet rocky localities, along margins of water courses.

Phenology: Flowering and Fruiting was observed from August to October

Specimen examined: A.P. Chitoor Dist. Vinayakupuram, *Shaikh R. I.* 845; Krishna Dist. Vijayawada, *Shaikh R. I.* 706; Nellore Dist. Akkarapaka, *Shaikh R. I.* 875; Vishakhapatnam Dist. Botawara, *Shaikh R. I.* 928.

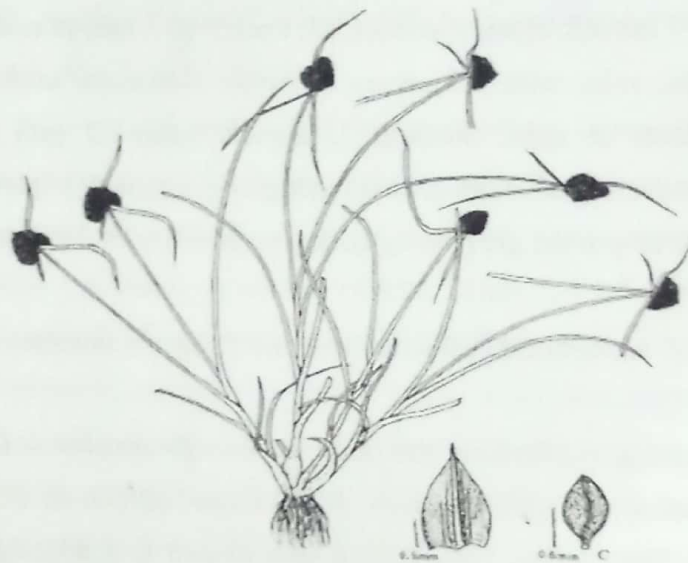


Fig : - *Cyperus squarrosus* L.

A - habit, B - glume, C - nut.

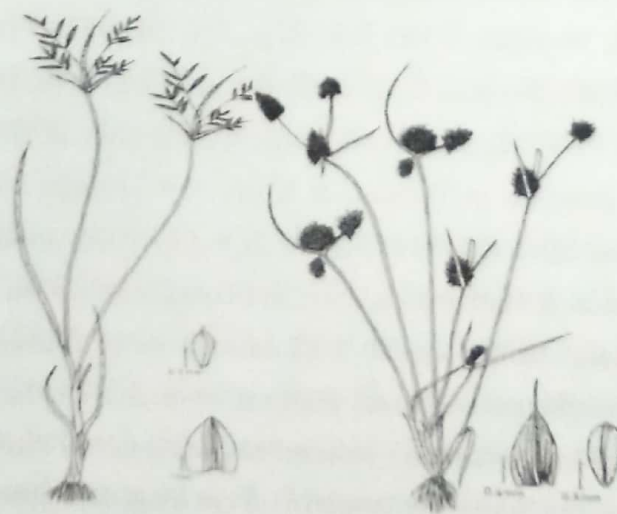


Fig : - *Cyperus squarrosus* L.

A - habit, B - glume, C - nut.

Fig. *Cyperus pygmaeus* Rottb.

A - habit, B - glume, C - nut.

Aknowledgements

The author is thankful to Dr. M. A. Wadoodkhan ex Reder and Head, Dept. of Botany, Herbarium of Cyperaceae, Majalgaon College Majalgaon (HCMCM) for the confirmation of identity of taxa and going through the manuscript. The Principal, Majalgaon College Majalgaon for laboratory and library facilities.

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