Plantae Scientia – An International Research Journal in Botany Publishing Bimonthly Open Access Journal

Plantae Scientia : Volume 04, Issue 06
November, 2021

ISSN 2581-589X

REVIEW ARTICLE

Floristic Studies in two species of *Eleocharis* R. Brown (Cyperaceae)

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Manuscript Details

Manuscript Submitted : 13/07/2021
Manuscript Revised : 20/10/2021
Manuscript Accepted : 26/11/2021
Manuscript Published : 06/12/2021

Available On

https://plantaescientia.com/ojs

Cite This Article As

Shaikh R. I. (2021). Floristic Studies in two species of *Eleocharis* R. Brown (Cyperaceae). *Pla. Sci.* 2021; Vol. 04 Iss. 06:299-301.

Indexed In

CrossRef, Scientific Indexing Services (SIS), Google Scholar, Index Copernicus International (ICI), Directory of Research Journal Indexing (DRJI), CiteFactor, Scientific Journal Impact Factor (SJIF), General Impact Factor, Journal Factor, Cosmos Impact Factor, PKP Index, AJIFACTOR Indexing, etc.

ABSTRACT

Present study is on our own critical observations on fresh plant material collected from the different parts. 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 *Eleocharis* R. Brown provides a detailed taxonomic description, illustration and relevant information for its easy identification in the field. Two species are collected and are described. The present report is hoped to provide basic material for further research in Cyperaceae.

Keywords: *Eleocharis*, Cyperaceae, Floristic.

INTRODUCTION

As a part of floristic studies in Cyperaceae, species of *Eleocharis R. Brown* has been collected. On critical examination and perusal of literature, they were identified as *Eleocharis atropurpurea* (Retz.) and *Eleocharis lankana* Koyama

The genus is comparatively small with over 120 species distributed throughout the world, and represented by about 16 species in India (Clarke, 1893). It is mostly neglected in India in general and study regions in particular. In India the only work seems to be that of Clarke (1893), which provides a critical and comprehensive account of the genus. The different recent flora associated with these regions provide a very meagre account (Table-1) However, recently Khan (1999, 2003) provides a detail critical account of 11 (10 +1 in two publications) taxa of *Eleocharis* from Maharashtra alone. In present text, there are total 14 taxa. 3 have been included on the authority of respective workers and 11 are relocated from the study regions.

The genus is nearest to *Scirpus* (s.l.), *Fimbristylis* and *Bulbostylis* and is chief characterized by the more dilated style base, articulated with the ovary and persistent on fruit and bladeless sheaths. It is distinguished from both *Fimbristylis* and *Bulbostylis* in having hypogynous bristles while from *Scirpus* by the dilated, articulated persistent style base. In *Eleocharis* the leaf-sheaths are almost mucronate, while in *Scirpus* comparatively well-developed short blade or limb is present. (W. Khan, 1999)

Although leafless habit together with the feature of hypogynous bristles are not rare in *Scirpus*, similarly leafless habit is also found to occur in a few species of *Fimbristylis*. On the contrary, it is interesting to note that there is no such exception in the species of *Eleocharis*. Thus, the genus appears to be rather natural only one type of embryo has been shown to occur in *Eleocharis* and is a variant of *Fimbristylis* type. This further supports the homogeneous nature of the former genus (Khan, 1999). In present paper, two species are collected and described.

TAXONOMIC TREATMENT

Eleocharis atropurpurea (Retz.) Presl, Ret. Haenk. 1:196. 1828, excl. specimen ci.; Clarke in Hook. f. Fl. Brit. India 6:627.1893; T. Cooke, Fl. Pres.Bombay 2:889.1908; Kern in Steenis Fl. Malesiana 1.7(3):536.1974; Fischer in Gamble Fl. Pres. Madras (1931) 3:1647 (repr. ed.) 1994; Brahmam & Saxena in Fl. Orissa : 4. 2160.1996; L'narsimhn in Sharma et al Fl. Maharashtra : 298.1996; Cook, CDK. Aq. & wetl. Pl. India: 127.1996; Pullaiah & Hanumanth. Cypr. in Fl. Andhra Pradesh 3:1073.1997; W. Khan in Naik, Fl. Marathwada 2:943;1998; et in Sivadas. & Mathew Biod. Tax. Conser. Fl. Pl. 308. 1999. *Scirpus atropurureus* Retz. Obs. 5:14. 1789. (Fig.1).

Densely tufted, glabrous annual, 4-50 cm tall; stems angular, 0.4-0.5 mm wide, erect, striate. Leaves: sheaths glabrous, often basal, 2.5-4 cm long, purplish; blades reduce to 1.5-3 mm long. Inflorescence: reduced to a single, terminal ebracteate spikelet subglobose or ovoid, 3-6 x 2-3.5 mm, greenish tinged with brown, acute or subacute; involucral bracts replaced by 1-2 empty glumes at the base, with some-what thick 3-nerved keel; rhachilla wingless. Glumes narrowly elliptic-oblong, 1.5-1.8 x 0.5-0.8 mm, thinly membranous, with a uninerved keel, ending below the hyaline apex; sides nerveless, hyaline, red-brown, banded in the upper half, obtuse at apex, muticous. Stamen 1; anther linear *ca* 0.5 mm long, muticous. Hypogynous bristles 3-5, shorter than or as long as the nuts; tightly appressed to the nuts, retrorsely barbellate, glistening white, sometimes purplish. Nuts biconvex, obovate, 0.8-1 x 0.5-0.6 mm, smooth, shining, purplish to chest-nut brown, shortly stiptate, tumorous at apex. Styles 2-fid, shorter than the stigmas, hairy.

Common, in marshes of tanks, ditches, rice-fields, river banks.

Flowers and fruits: December to March.

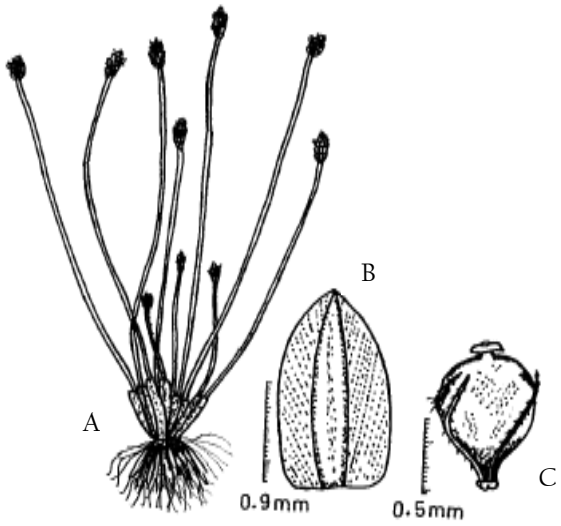

Fig 1. ***Eleocharis atropurpurea*** (Retz.) Presl.
A - Habit, B - Blume, C - Cut.

Specimens examined: T.N. Shivaganga Dist. Devakottai, *Shaikh R. I.* 1075, *R. D. Taur* 873, Paraiyankulam forest, *K. Ramamurthy* 21026 (MH).

Notes: A form recorded from Western Ghats at Maharashtra appears to be new on account of total absence

of hypogynous bristles, otherwise very similar to *E. atropurpurea* in almost all respects.

Eleocharis lankana Koyama, Bull. Nat. Sci. Mus. 17:67, f. 1. 1974, et in Dassan & Fosb. Rev. Handb. Fl. Ceylon 5:260. t. 1985.

subsp. **mohamadii** W. Khan, J. Eco. Tax. Bot. 22 (3):560. 1998, et in Sivadas. & Mathew Biod. Tax. Conser. Fl. Pl. 310.1999. (Fig. 2)

Densely tufted perennial; rhizome decumbent, 2-3, cm long, 6-9 mm thick; roots 1-1.5 mm thick, rather swollen, red-brown. Stems erect, 20-55 cm tall, 2-4.5 mm wide, terete, subrigid, deeply green, shiny, striate when dry, indistinctly transversely septate, the intersepta hollow, 0.6-3 cm long. Leaves: basal sheaths 2 or 3, membranous above, herbaceous below, pale or yellowish-green, stained with red-brown or purple towards base, the uppermost sheath 8-17 cm long, obliquely truncate at hyaline orifice, subobtuse at apex. Inflorescence: spikelets cylindrical, contracted to subacute apex, 12-30 mm long, 3-4 mm wide, pale green, subdensely many-flowered; bract broadly ovate to semicircular, 3-5 mm long, herbaceous, green. Glumes suberect, ovate-oval to elliptic, subacute, 5.5-6.5 mm long, 2.2-3 mm wide, herbaceous, whitish-green, tinged with brown inside the hyaline margin, wholly closely and finely striate, obtusely keeled, broadly white-hyaline on margins. Stamens 3; anther 3-3.5 mm long. Nuts obovte, thickly biconvexed with obtuse edges, 2-2.2 mm long, 1.7-1.8 mm wide, attenuated to base, rounded above to annulate apex, the sides olive colored, slightly shiny, smooth, the epidermal cells isodiametrically hexagonal to moderately vertically rectangular, not pitted. Style 5-6 mm long; hypogynous bristles 6-8, shorter than to equaling the nut pale brownish, subrigid, divided to very base, retrorsely scabrous on upper 2/3 to 3/5 with subdensely disposed spinules about half as wide as the birstle.

Common, in low land marshes.

Flowers and Fruits: September to November.

Specimens examined: T. N. Triunvelveli Dist. on the way, *Shaikh R. I.* 795, Ranny, *D. P. Chavan* 5548.

Notes: It differs from the proper *E. lankana* only in having 10-30 cm long, 3-5 cm wide, often golden brown, bright stolons emitting from thick rhizome and the angular spikelets, otherwise very similar to the latter almost in all other respects. *E. lankana* has been described recently by Koyama (1974, 1985) and is said to be endemic to Sri Lanka. Besides, some morphological distinctions, it appears to be separated geographically also. Thus *E. lankana* is represented in study regions by the subsp. *mohamadii* (W. Khan l.c.).

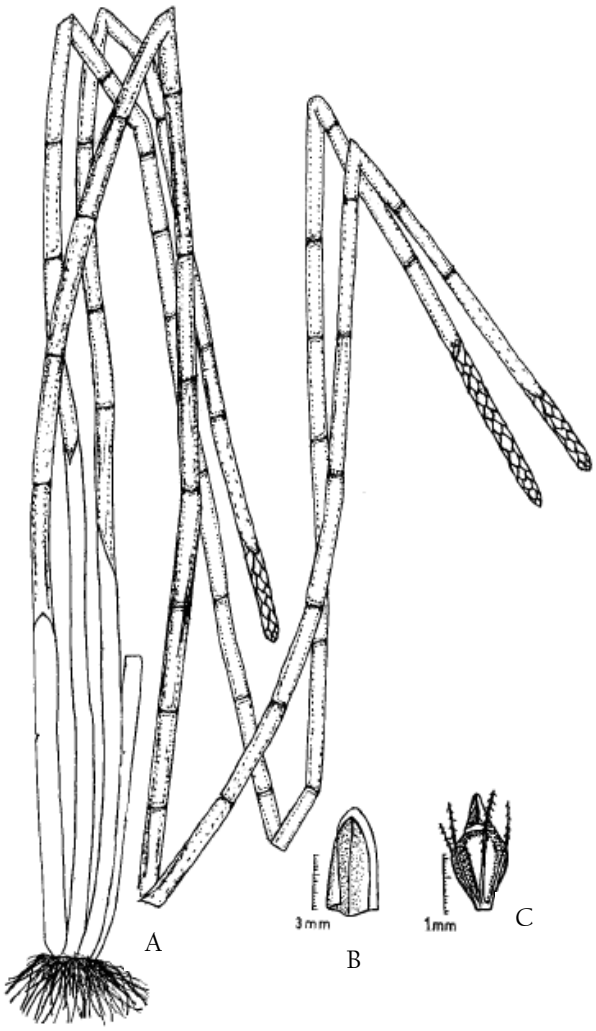

Fig. 2. ***Eleocharis lankana Koyama subsp. mohamadii*** W. Khan. A - Habit, B - Glume, C - Nut.

REFERENCES

Joesph, K. T. & Sivarajan V. V. (1984). Dimorphic Shoot in *Eleocharis dulcis* (Burm.f.) Henschel. in J. Eco. Tax. Bot. Vol. 5. No. 2. 489

Mathew, K. M. (1981). Material for A Flora of The Tamilnadu Carnatic 372-383. The Rapinat Herbarium St. Joseph's College- Tiruchirapalli, India.

Ragan, A. & V. S. Raju. (1990). *Eleocharis setifolia* (A. Rich) Raynal and *Scleria multilocunosa* T. Koyama: Two unreported sedges from Peninsular India. Indian J. Bot. 13: 199-203.

Ragan.A. (1989). The genus *Eleocharis* in Andhra Pradesh India. In M.L.Trivedi, B.S. Gill & S. S. Saini (ed) Plant Science Researh in India. Part I. 213-216. Today & Tomorrow's New Delhi.