

NEW AND RARE PLANTS OF CYPERACEAE FAMILY FROM KHUZESTAN, S. W. IRAN

M. Amini Rad

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During a trip to Khuzestan province, SW Iran, the specimens of *Eleocharis atropurpurea*, *Cyperus iria*, *Fimbristylis miliacea* and *Schoenoplectus lupulinus* were collected. *Eleocharis atropurpurea* is recorded as a new report to Iran, the others are rare plant records from Iran.

Mohammad Amini Rad, Department of Botany, Iranian Research Institute of Plant Protection, P. O. Box 19395-1454, Tehran, Iran. aminirad2000@yahoo.co.uk

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گزارش گونه‌های جدید و کمیاب از تیره *Cyperaceae* از ایران

محمد امینی راد، مربی پژوهش موسسه تحقیقات گیاهپزشکی ایران.

طی جمع‌آوری نمونه‌های گیاهی از استان خوزستان، نمونه‌هایی از گونه *Eleocharis atropurpurea* و همچنین گونه‌های *Cyperus iria*، *Fimbristylis miliacea* و *Schoenoplectus lupulinus* جمع‌آوری گردید. گونه *Eleocharis atropurpurea* برای اولین بار از ایران گزارش می‌شود و بقیه گونه‌ها به عنوان گونه‌های کمیاب از ایران جمع‌آوری شده و به همین جهت منطقه انتشار آنها گزارش می‌شود.

Introduction

In order to complete the *Cyperaceae* family for the project Flora of Iran (Assadi 1989), the author made a trip to Khuzestan province, S.W. Iran. Among the collected specimens, one species was determined as a new record for the flora of Iran and three species are considered as rare plants for the flora of Iran.

The aim of this paper is to introduce above-mentioned species. In addition, morphological characters and geographical distribution of the species in the world and Iran are presented.

Materials & Methods

The specimens were studied with an Olympus SZH stereomicroscope. The materials were determined using Flora Iranica (Kukkonen 1998), Flora of Iraq (Hooper 1985), Flora of Pakistan (Kukkonen 2000). All the specimens are deposited in IRAN herbarium.

Results and discussion

All reported species were collected in rice fields and considering to the old rice business in the Khuzestan province, it unlikely seems that these species have been newly introduced to Iran.

Eleocharis atropurpurea (Retz.) K. Presl, Rel. Haenk. 1: 96 (1828). (Fig. 1).

Syn.: *Scirpus atropurpureus* Retz., Obs. Pl. 5: 14 (1789).

Khuzestan: Izeh, Dehdez, Sadat Hoseini, Bar Aftab village, rice field, Leg. Amini Rad & Torabi (IRAN-54453).

Annual plants, 0.5-11 cm tall, small tufts. Roots fibrous. Stem 0.3-0.5 mm in diam., prostrate, terete or with 5-6 obtuse angles, with deep grooves. Leaves without blade or with 1 mm long blade; lower closed sheath 3-5 mm, reddish-brown; upper sheath to 10 mm, above green or grey-green and below reddish-brown, with 5-6 green nerves; mouth oblique; ligule absent. Spike 2.5-5.5 mm long and 1.5-2.5 mm wide, ovoid, acute, with 30 or more glumes in five spiral rows; glumes all fertile, 1-1.3 mm long, cymbiform, with green and prominent mid-nerve, obtuse at the apex,; sides purplish or reddish-brown; margins more or less scarious; basal glume not different from the others or slightly larger than the others. Perianth bristles reduced or 0. Stamens 1-2. Nut c. 0.6 mm long and 0.4-0.5 mm wide, obovoid, biconvex, apex rounded, gradually tapering at basal part, obscurely or finely reticulate, finally black, glossy; stylopodium much wider than

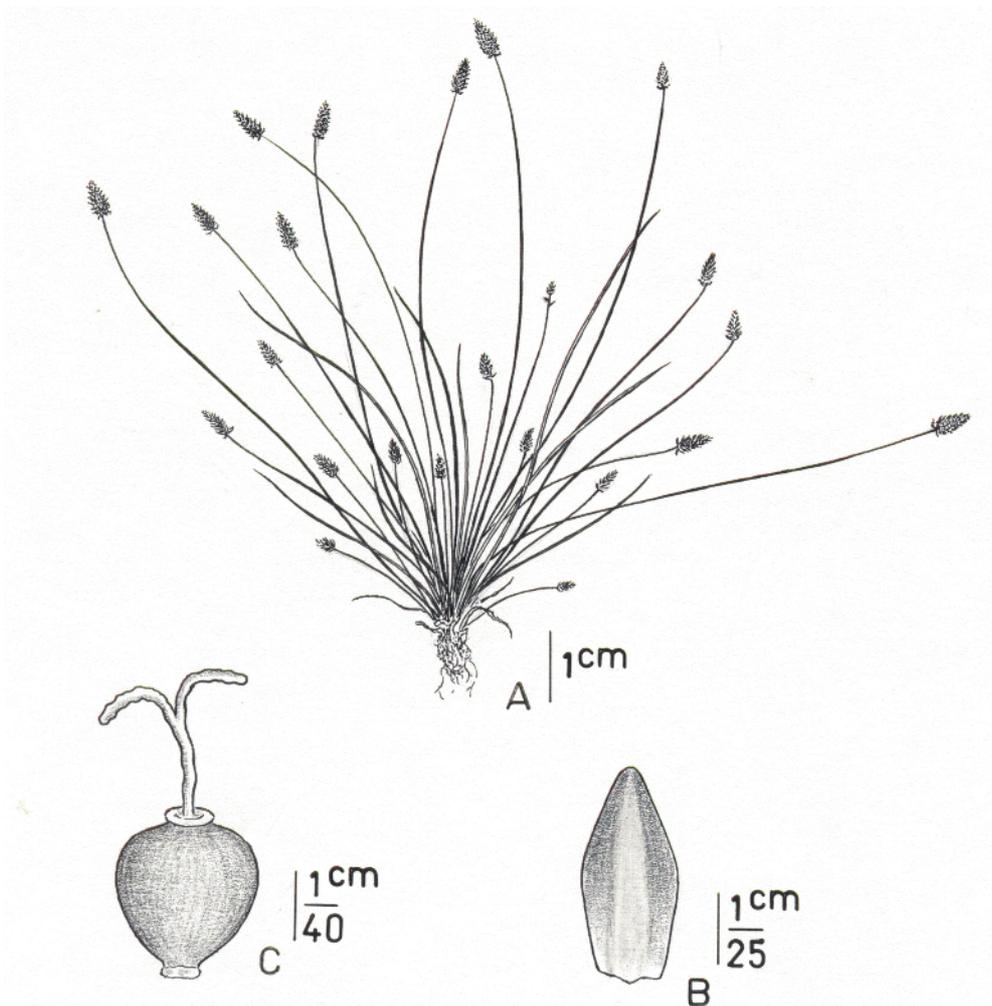


Fig. 1. *Eleocharis atropurpurea*. A. habit, B: glume, C: nut.

long, flat or discoid, ca 0.15 mm wide, white, clearly constricted from nut.

This species is similar to *E. geniculata* and both belong to sect. *Rigidae* (Svens.) Kukkonen. The diagnostic characters between the two species are: in *E. atropurpurea*, plant size is small in comparison with *E. geniculata*, glume mid nerve is sturdy (not very strong), nuts small and stylopodium is flat or disc shaped (in *E. geniculata*, mammiform or conical).

The plant is very small compared to rice and grows within its shadow. Considering the size of the species, it seems that it can not be considered as threatening weed in rice field.

In Flora Iranica, it has been reported from S. Europe, Turkey, Tadjikistan, Uzbekistan, Iraq, Afghanistan, Pakistan, India, China, Japan, Tropical Africa, Madagascar, Malaysia, Australia, N. and S. America. In Iran, it occurs in Zagros area.

Cyperus iria L., Sp. Pl. 1: 45 (1753). (Fig. 2).

Khuzestan: Izeh, Susan, Mehreno village, rice field, Leg. Amini Rad & Torabi (IRAN-54452).

Annual plant, 10-35 cm tall, tufted, or possibly perennial with short rhizome. Stem 2-3 mm in diam., acutely triangular, with concave margins, smooth. Leaves shorter or equal to stem length; sheaths 3-10 cm, soft, yellow-brown or reddish-brown; mouth margin straight; ligule absent; blades to 30 cm long and 2-4 mm wide, flat, keeled, with slightly revolute margins, green or grayish-green, towards the apex of keel and at the margin scabrous, acute and scabrous at the apex. Inflorescence a compound anthelodium, 5-12 cm long; bracts 4-6, foliose, much longer than the inflorescence length, to 20 cm long; primary branches 4-6, to 10 cm long; secondary anthelodium 3-3.5 cm long; tertiary anthelodium to 3 cm long; spikes cluster 10-40 mm long, spicate, with 20-40 spikes, erect, lax.

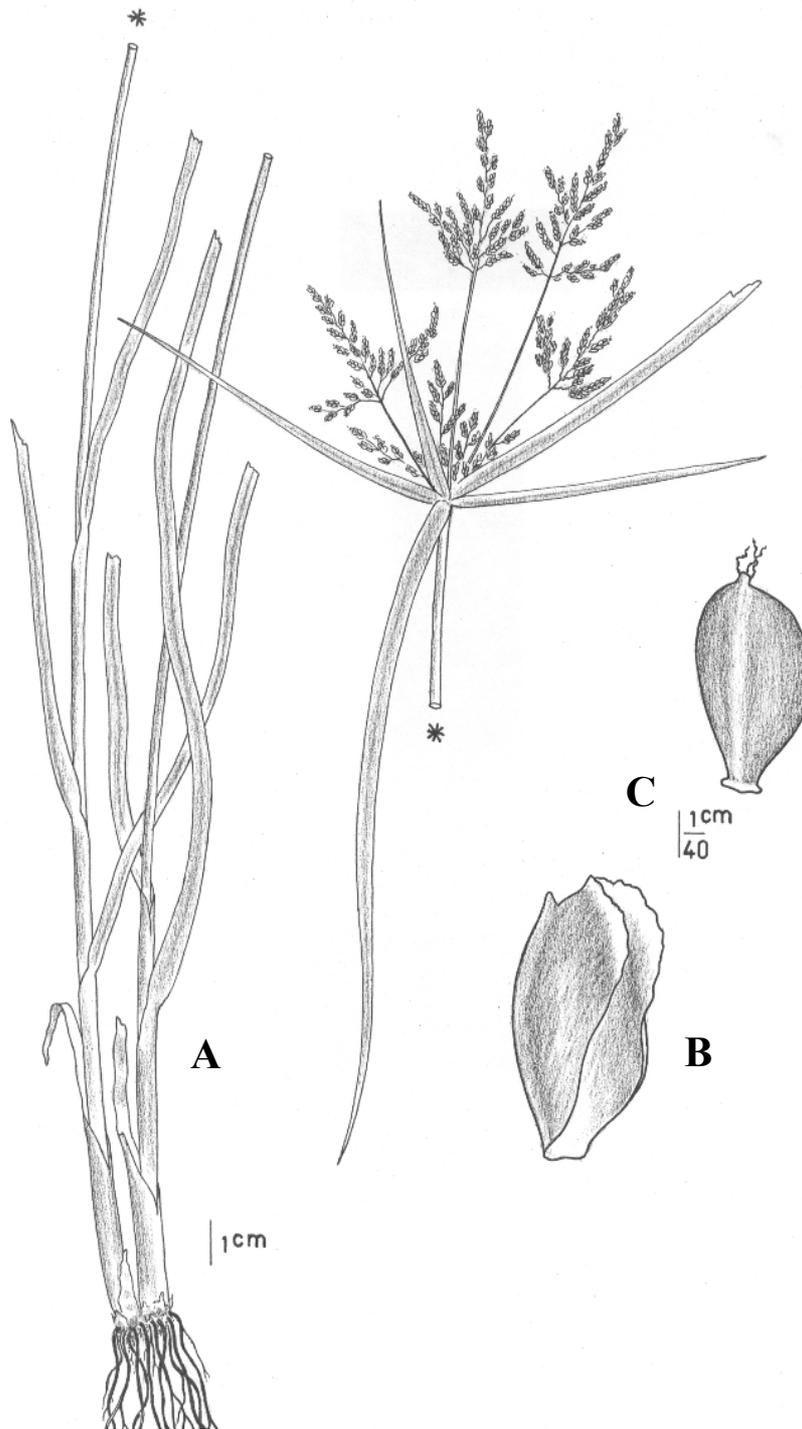


Fig. 1. *Cyperus iria*. A. habit, B. glume, C. nut.

Spikes 5-9 mm long and 2-2.5 mm wide, compressed, lax, with 8-20 glumes; glume-like bract to 1 mm long, acute; glume-like prophyll to 1 mm long, bi-nerved, obtuse; rachis 0.4 mm wide, with 1 mm internodes, narrowly winged. Glumes 1.6-1.7 mm long, cymbiform, emarginated or rounded at the apex, mucronate, nerveless at sides, yellow-brown, shiny, at the margins scarious. Stamens 2. Stigmas 3. Nut 1.3-1.4 mm long and 0.7-0.8 mm wide, sharply trigonous, ellipsoid, at the base to 0.1 mm long, brown to dark brown, finely papillose.

The specimen was collected in wet places around the rice fields in Zagros area.

Kükenthal (1936) reported the species according to one collected specimen by Haussknecht (1865-1869) from Iran (Susan). Kukkonen (1998) did not see the specimen and only verified Kükenthal's report. Probably the specimen has been destroyed and thus the current report is the second time after about 140 years.

Schoenoplectus lupulinus (Nees) V. Krecz., Fl. Uzbek. 1: 330 (1941).

Syn.: *Isolepis lupulina* Nees in Wight, Contrib. Bot. Ind.: 107 (1834).

Material examined. Khuzestan: Dezful, Ejirob, rice field, Leg. Amini Rad & Torabi (IRAN-41621). Lorestan: Khorram abad, leg. ? (IRAN-29368).

In Flora Iranica (Kukkonen 1998), only one specimen was reported from Lorestan province without collector. The new collected specimen is the second report from Iran (Khuzestan province).

Fimbristylis miliacea (L.) Vahl, Enum. Pl. 2: 287 (1805).

Syn.: *Scirpus miliaceus* L., Syst. Veg., ed. 10: 868 (1759). *Fimbristylis littoralis* Gaud., Voy. Uraine 10: 413 (1829).

Material examined. Khuzestan: Izeh, Susan, Mehreno village, rice field, Leg. Amini Rad & Torabi (IRAN-44266); Izeh, Dehdez, Sadat Hoseini, Bar Aftab village, rice field, Leg. Amini Rad & Torabi (IRAN-54154).

Kukkonen (1998) reported two specimens of *Fimbristylis littoralis* Gaud. from Iran. Then he accepted *F. miliacea* as a valid name for this species (see Flora of Pakistan, page 70, Kukkonen 2001). The collection of the new localities in this study confirms the occurrence of this species in Iran.

Acknowledgements

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