

NEW REPORT OF *CAREX DIANDRA* (CYPERACEAE) FROM IRAN

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In review of specimens gathered from northern and eastern slopes of Sabalan Mountains wetlands (NW Iran), interesting specimens belonging to *Carex* L. genus was collected out of which, one specimen was determined as *Carex diandra* Schrank which is the first report for the Flora of Iran. Some interesting species of the genus has been also collected which are included herewith. The species has been compared with the nearby species. In addition, morphological characters, geographical distribution in the world and Iran is also presented.

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(Cyperaceae) *Carex diandra*

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در بررسی نمونه‌های جمع‌آوری شده از تالابهای واقع در دامنه‌های شمالی و شرقی کوه‌های سبلان، نمونه‌های جالبی از جنس *Carex* جمع‌آوری شد که از میان آنها، نمونه‌ای تحت *C. diandra* تعیین نام گردید که اولین گزارش از گونه مذکور برای ایران تلقی می‌گردد. علاوه بر این، تعدادی گونه جالب دیگر از این جنس نیز جمع‌آوری شده است که در مقاله به آنها اشاره شده است. شرح مورفولوژیکی و پراکنش جغرافیایی گونه مذکور در ایران و دنیا ارایه می‌شود. همچنین، این گونه با گونه‌های نزدیک نیز مقایسه شده است.

Introduction

Carex L. (Cyperaceae) with approximately 2000 species (Goetghebeur, 1998; Egorova, 1999) is one of the largest genera of vascular plants in the world and is taxonomically a complicated taxon. The genus, with 57 species (Amini Rad 2011), is the largest genus in Cyperaceae family in Iran and it seems that the number of species rather exceeds this number. The genus is classified into 4 subgenera [*Vigneastra* (Tuck.) Kük. (= *Indocarex* (Baill) Kük. in Engler), *Vignea* (P. Beav. ex T. Lestib.) Petern., *Carex* and *Psyllophora* (Torr. & A. Gray) I. Bailey].

In review of the collected specimens from Sabalan mountain wetlands (NW Iran), a specimen was identified as *Carex diandra* Schrank which is known to be the first report for the flora of Iran. The species belongs to subgenus *vignea* section *Heleoglochin* Dumortier. Since the specimen did not match with the reported species in Flora Iranica (1998), it was determined by the help of Egorova (1999), Nilsson (1985) and Chater (1980).

Furthermore, except *C. diandra*, some interesting specimens of *Carex* genus were also collected from these

wetlands such as such as *C. pycnostachya* Kar. & Kir., *C. rostrata* Stokes, *C. melanostachya* M. B. ex Willd., *C. spicata* Huds., *C. riparia* Curtis, *C. pseudocyperus* L., *C. acutiformis* Ehrh. and *C. leporina* L.

Material and methods

For the study of vegetation and flora, 32 sites were selected; the appropriate level of each sample site were selected, using the minimal area and plot number of primary samples giving certain changes in total cover 320 plot size 1 square meter each. The *Carex* specimens were identified by using available references, i. e. Amini rad (2011), Kukkonen (1998), Egorova (1999), Nilsson (1985) and Chater (1980). The materials are preserved in IRAN.

Carex diandra Schrank, Cent. Bot. Anmerk.: 57 (1781).

Syn.: *Vignea diandra* (Schrank) Soják, Cas. Nár. Mus., Odd. Prír. 148: 195 (1979 publ. 1980); *Carex paniculata* var. *diandra* (Schrank) Fiori, Nuov. Fl. Italia 1: 185 (1923).

Specimen examined: Iran, Ardebil, Konsol kandi, 2670

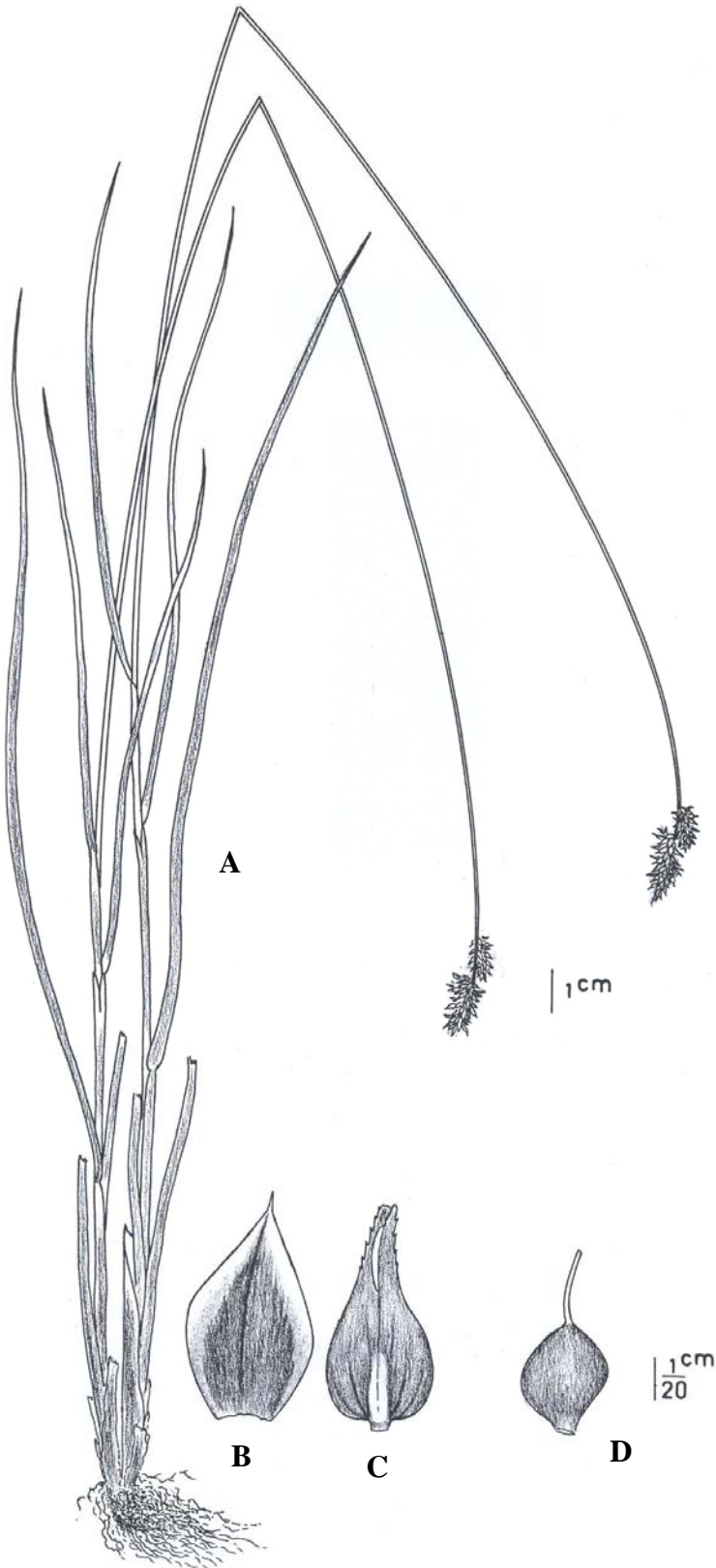


Fig. 1. *Carex diandra*. A. habit; B. glume; C. utricle; D. Nut.

m, Sharifi 2552; 1840 m, Amini Rad (55153-IRAN). Perennial plant, loosely tufted, with short rhizome. Stem 55-65 cm height, 0.8-1 mm in diameter, obtusely triangular, grooved, scabrous and acutely trinangular in below inflorescence. Leaves shorter than stem length; sheaths 10-15 cm long, reddish-brown or dark brown; ligule 1.5-2 mm long, arched; blades linear-acuminate, to 20 cm long and 4-5 mm wide, canaliculate, apex acute and triangular, margins scabrous. Inflorescence a small panicle, branched in below, 2-3 × ca. 1 cm; bracts shorter than inflorescence, glumaceous or sometimes setaceous. Spikes androgynous, ca. 5 mm long; glumes 2.2-2.5 × 1.5 mm, equal to or slightly shorter than utricule, light brown on the midrib, at the margins widely scarious, acute or sometimes with arista to 0.5 mm long. Utricle 2.4-2.7 × 1-1.2 mm, widely ovate with cordate base, castaneous to dark brown, suberous, with 3-4 short nerves at base, slightly attenuate, with 0.3 mm long stipe and 1-1.2 mm long beak, at the margins scabrous and serrulate, dorsally cleft, oblique. Nuts 1.3-1.4 × 0.9-1 mm, widely ellipsoid, biconvex, with short stipe, light brown. (Fig. 1)

Habitat. Alpine lakes, margins of swamps, marshes and boggy meadows.

Similarity of the species in *Carex* subgen. *Vignea* is much more than the other subgenera. Therefore, different views are found with respect to the boundaries of species in this section. *C. paniculata* L. is the closest species to *C. diandra*, which both belong to section *Heleoglochin*. The two species have panicle-shape inflorescence, but the former has longer inflorescence, utricles 3-3.5 mm long and denticulate from the base to beak; whereas *C. diandra* has shorter inflorescence, utricles 2.4-2.7 mm long and with the upper part denticulated. Related Iranian species to *C. diandra* can be named as *C. divisa* Huds. (sect. *Divisae* H. Christ ex Kük.) and *C. vulpinaris* Nees [sect. *Vulpinae* (Heuff.) J. Carey ex H. Christ] which the latter does not grow in

Iran. *C. divisa* is distinguishable from *C. diandra* for long creeping rhizome, size of utricles (3.2-4.7×1.5-2.1 mm), nerves on utricles, spongy cell wall (suberous in *C. diandra*) and sometimes winged in utricule margin. Also, distincting characters between *C. vulpinaris* and *C. diandra* are: utricule size (short size in *C. diandra*), clearly nerved utricule (without nerve or 3-4 short nerves only at base), ellipsoid shape of utricule (widely ovate with cordate base) and the most important one, dorsal surface of utricule not cleft (in *C. diandra* completely cleft to half of utricule).

Geographical distribution. Europe, Central Asia, Siberia, Caucasus, Turkey, Pakistan, Iran, China, North America, Pacific islands (New Zealand).

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References

- Amini Rad, M. 2011: Cyperaceae. In M. Assadi *et al.* (eds.). Flora of Iran, no. 71. –Research Institute of Forests and Rangelands.
- Chater, A. O. 1980: *Carex*. In: Tutin, T. G., Heywood, V. H., Burges, N. A., Moore, D. M., Valentine, D. H., Walters, S. M. & Webb, D. A. (eds). Flora Europaeae vol.: 5: 290-323.
- Egorova, TV. 1999: The sedges (*Carex* L.) of Russia and adjacent states. -St Petersburg: St Petersburg State Chemical-Pharmaceutical Academy.
- Goetghebeur, P. 1998: Cyperaceae. In: Kubitzki, K. (ed.) The Families and Genera of Vascular Plants 4: 141–190. -Berlin: Springer Verlag.
- Kukkonen, I. 1998: Cyperaceae. In: Rechinger, K.H. (ed.). Flora Iranica, no. 173: –Graz.
- Nilsson, Ö. 1985: *Carex*. In: Davis, P.H. (ed.). Flora of Turkey vol. 9: 73-158. –Edinburgh.