ARTHRAXON P. BEAUV (GRAMINEAE) AND CAREX CARYOPHYLLEA (CYPERACEAE), NEW GENUS AND SPECIES RECORDS FROM IRAN

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Arthraxon hispidus (Thunb.) Makino var. *hispidus* **(***Gramineae*) and *Carex caryophyllea* Latourr. (*Cyperaceae*) are recorded for the first time as new genus and species for the flora of Iran. These taxa have been collected from Kiashahr (Gilan prov.) and Arasbaran Protected Area (Azerbaijan prov.) in N and NW of Iran. Taxonomical characteristics, localities, habitats, geographical distributions and the closest genus and species are discussed here.

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گزارش یک جنس (Arthraxon) از تیره گندمیان و یک گونه جدید (Carex caryophyllea) از تیره جگن برای فلور ایران

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علیرضا نقی‌نژاد، استادیار گروه زیست‌شناسی دانشگاه مازندران.

Arthraxon hispidus (Thunb.) Makino var. *hispidus* به عنوان جنس جدید از تیره گندمیان و *Carex caryophyllea* Latourr. به عنوان گونه جدید از تیره جگن برای اولین بار از ایران گزارش می گردند. جنس و گونه معرفی شده به ترتیب از استان های گیلان (کیاشهر) و آذربایجان شرقی (منطقه حفاظت شده ارسباران) جمع آوری شده‌اند. ویژگی‌های تاگزونومیکی، محل دقیق جمع آوری، رویشگاه و پراکنش جغرافیایی هر یک توضیح داده شده است. همچنین تاگزون‌های فوق با نزدیک‌ترین جنس و گونه مورد مقایسه قرار گرفته است.

Introduction

During floristic studies, a new genus of grass (*Arthraxon hispidus* (Thunb.) Makino var. *hispidus* and a new species of sedge (*Carex caryophyllea* Latourr.) were collected from Kiashahr (Gilan prov.) and Arasbaran Protected Area (Azerbaijan prov.), Iran. The above-mentioned taxa have not been recorded in Flora Iranica area until now (Bor 1970; Kukkonen 1998). They were determined by Grasses of the Soviet Union (Tsvelev 1976) and Flora of Turkey (Mill, 1985 and Nilsson 1985) respectively. *Arthraxon* P. Beauv. (*Andropogoneae*) includes ca. 30 species in the tropical and subtropical countries of Eurasia and Africa and as adventives plants in many other countries of both hemispheres (Tsvelev 1976) but only two species were recognized in Flora Iranica area (Bor 1970). Introducing of this weed can be highlighted due to its possible distribution into the Hyrcanian forest in Iran like another adventives genus of *Andropogoneae* (*Microstegium vimineum* (Trin.) A. Camus) which is widespread species in cleared and open places of the forests. A comparison between *Carex caryophyllea* and its much closed species, *C. umbrosa* Host subsp. *huetiana* (Boiss.) Soo is discussed. Including the current new record, 63 taxa of genus *Carex* occur in the flora of Iran by now (Assadi 1988; Akhani, 1998; Naqinezhad & Ghahreman, 2002; Amini Rad, 2003, 2005a,b, 2006, Naqinezhad et al., 2005; Naqinezhad et al, 2008). All identified specimens are preserved in the TARI and Iran Natural History Museum herbaria.

Arthraxon hispidus (Thunb.) Makino var. **hispidus** - (Fig. 1).

Examined specimens. Gilan province: Astaneh Ashrafieh, Kiashahr, Amir Kiasar, near to Tavakkol Parry, - 25 m, 25.8.2005, A. Naqinezhad, 635-Iran Natural History Museum herbarium, duplicate in TARI.

This plant is mentioned in Flora Iranica (Bor 1970) under the name of *Arthraxon hispidus* but is divided into four subspecies in the Grasses of the Soviet Union (Tsvelev 1976). Based on Flora of Turkey (Mill 1985), this plant is an extremely variable species throughout its immense range and numerous varieties have been described, many of which have been reduced to synonymy. Mill (1985) was in agreement with van Welzen (1981) that these are only minor variants of no taxonomic significance. It seems that the taxonomical characters of our material in Iran have fitness to conclusions of Mill (l. c.), therefore, this plant was named based on Flora of Turkey. *Arthraxon hispidus* var. *hispidus* differs from *Microstegium vimineum* (Trin.) A. Camus by its cordate lanceolate – ovate or broadly lanceolate lamina with bulbous-based spinules and awned sessile spikelets. A short description of the plant is as follows:

Annual, stem ca. 50 cm, nodes pubescent. Leaf blades lanceolate – ovate or broadly lanceolate, slightly cordate at the base with bulbouse - based spinules in lower (1/8) 1/3 (-1/2), ciliate in upper part, surfaces pubescent. Inflorescence ca. 3 cm × 2 - 5 mm, with 2-3 branches bearing numerous sikelets. Sessile spikelets only present, ca. 4 mm long, alternate on spicate branches; pedicellate spikelets reduced to minute pedicels. Glumes spinulate along veins; upper lemma 1- veind, with a geniculate awn. Palea absent. Anthers 2.

General distribution. Caucasus, India, China, Japan, Malaysia, C. & E. Africa, Australia, Iran, introduced in Hawaii and eastern C. & N. America.

Carex caryophyllea Latourr.

Examined specimens. Azerbaijan: Arasbaran Protected Area, Ilankosh, 2050 m; Hamzeh'ee & Asri, 81844-TARI; scattered on meadows.

This plant was not recorded from Iran (Kukkonen 1998). Closest locality to the Iranian collection is in Talish, Azerbaijan. This species is considered as two other separated species in Flora of USSR, i.e. *C. scabriscuspis* V. Krecz. and *C. verna* Chaix (Kreczetovicz 1935).

Caespitose. Stem 15-20 cm high, subterete, scabrous above, leafy only at base. Leaves 1.3-2.5 mm broad, keeled, flat, c. 1/3-1/2 of stem length, erect or slightly falcate; ligule ca. 0.2 mm long. Male spike 1, obovoid or oblong-clavate. 8-12 x 3 mm. Female spikes 1 - 3, ovoid to oblong, partly overlapping each other and male spike, 9-11 x 4 mm; lowest bract glumaceous, setaceous, clasping or with sheath to 5 mm long, nearly equaling its spike or shorter. Female glumes equaling utricles, or slightly shorter, ovate, acute or mucronate-aristate; arista to 0.5 mm long. Utricles obovoid, 2.5-3 mm long, puberulent, shortly stipitate, rather abruptly contracted into a 0.3–0.5 mm long, emarginated to bifid beak. Nut 1.5-1.7 x 1-1.2 mm, annulate, finely papilose.

Carex caryophyllea is similar to *C. umbrosa* Host subsp. *huetiana* (Boiss.) Kük, but laxly caespitose, stem slightly scabrid above and with shortly aristulate glume (Nilsson 1985). This species is also related to *Carex depressa* Link, but there are some distinct differences between them. The occurrence of longer lowest bract, longer utricule and nut and a stem based-originated female spike are most important distinguishing characters of the latter species. It seems that another *Carex* species on the herbarium sheet (81844-TARI) is *Carex depressa* Link subsp. *translivanica* (Schur) Egor.

General distribution. Pyrenees, Balkans, Caucasus and Turkey.

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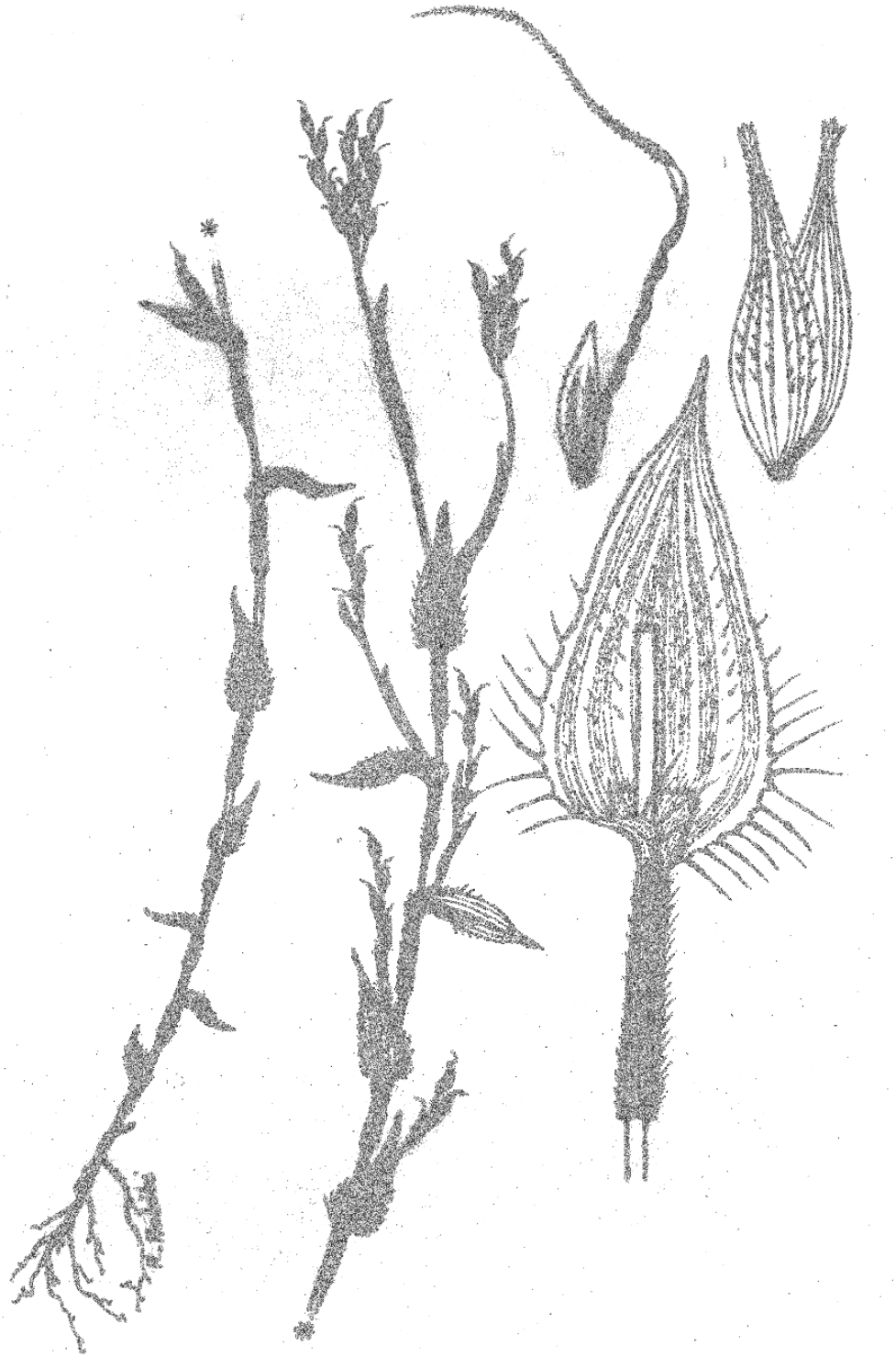

Fig. 1. *Arthraxon hispidus* var. *hispidus* (×0.9); leaf (× 9); lemma (× 18); glumes (× 13).

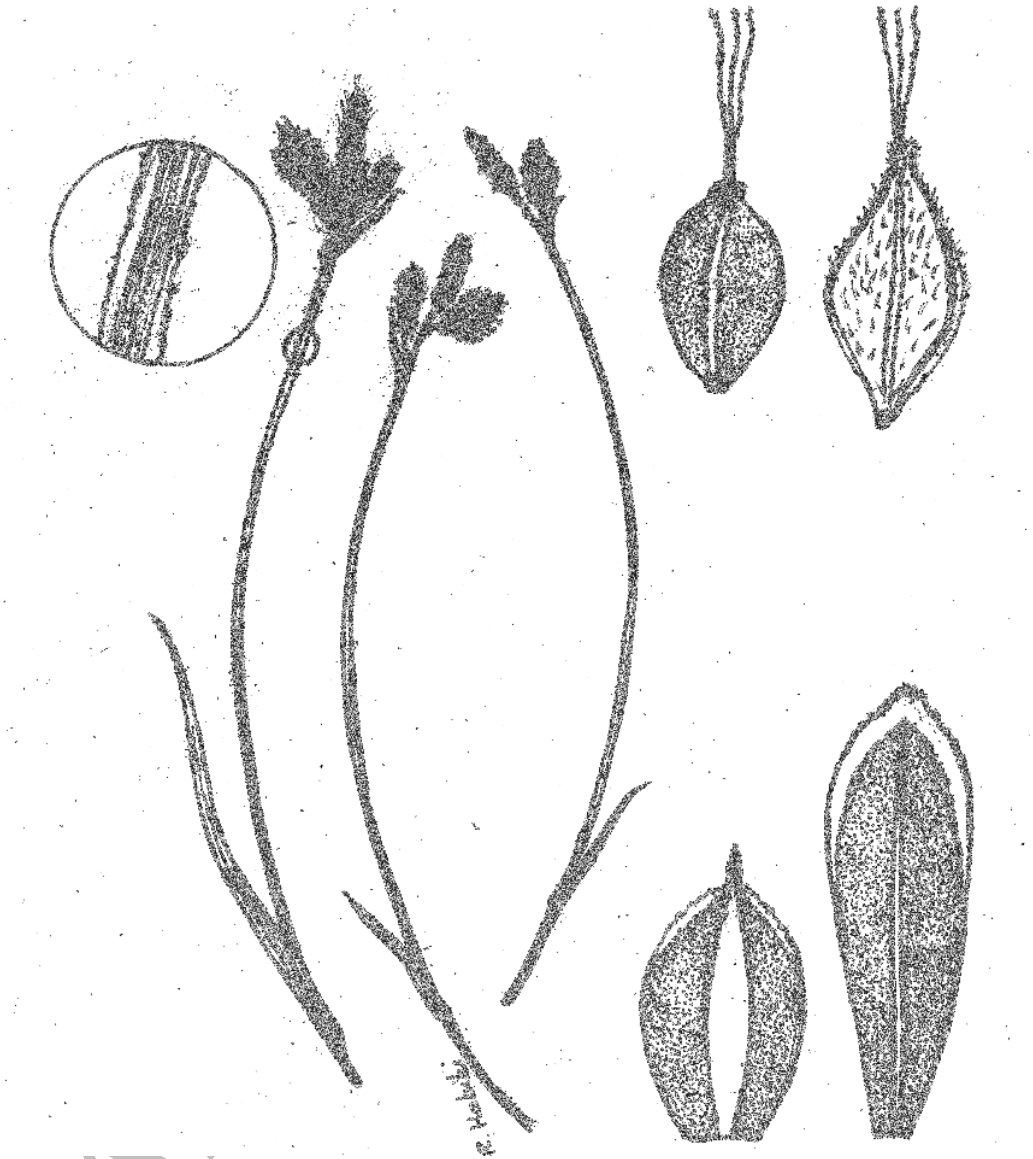

Fig. 2. *Carex caryophyllea* (× 1.2); details (× 18).

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