NOTES ON THE FLORA OF IRAN 6: EIGHT NEW PLANT RECORDS FROM IRAN COLLECTED FROM KHORASAN AND GOLESTAN PROVINCES (N.E. IRAN)*

M.R. JOHARCHI and H. AKHANI**
Ferdowsi University of Mashhad and University of Tehran, Iran

Abstract
Based on recent collections from different parts of Golestan Province and former Khorasan Province (now splits into three smaller provinces), following species are reported for the first time from Iran: Acanthophyllum kandaharicum Gilli, A. stenostegium Freyn, Anemone tschernjaewii Regel, Cephalorrhynchus picridiformis (Boiss.) Tuisl., Elatine hydropiper L., Gaillonia dubia Aitch. & Hemsl., Pseudosedum longidentatum Boriss., and Scrophularia nikitinii Gorschk. Furthermore the occurrence of Leptaleum hamatum Hemsl. & Lace in Iran is confirmed. Notes are given on the taxonomy and distribution of most species and a line drawing illustration is provided for Cephalorrhynchus picridiformis and Scrophularia nikitinii.

Key words: Flora of Iran, Golestan, Khorasan, Acanthophyllum, Anemone, Cephalorrhynchus, Elatine, Gaillonia, Leptaleum, Pseudosedum, Scrophularia

* Continued from GHOBADNEJHAD et al. 2004, AKHANI 2003
** Corresponding author
Introduction

The Khorasan and Golestan Provinces with a surface area of 267,893 square kilometre covers 16.2% of the Iranian territory. Large parts of the area are consisted of Irano-Turanian floristic region which replaced by the Hyrcanian Province of the Euro-Siberian Region in North-western parts. Floristically, the area is very rich as was documented by the occurrence of 1362 species in Golestan National Park which is only 0.34% of the surface area of the two provinces (AKHANI 1998, 2005). Based on recent botanical collections by the staff of Herbarium of Ferdowsi University of Mashhad and during preparation of the second volume of “The Illustrated Flora of Golestan National Park” by the second author eight new records for Iran are recognized. The identity of most reported species in this paper have been checked during the second author’s visit to the Royal Botanical Gardens Kew. All specimens were deposited in Herbarium of Ferdowsi University of Mashhad (FMUH) and Herbarium H. Akhani, located in Ferdowsi University of Mashhad and University of Tehran, respectively.

Enumeration of species
Asteraceae

*Cephalorrhyncus picridiformis* (Boiss.) Tuisl, *Ann. Nat. Mus. Wien* 72: 619 (1968) (Fig. 1)

Type: Pakistan: Quetta, Sir-i-ab, Stockes 1075 K!

Material examined:

Khorasan: S.E. Torbat-e Heydarieh, Pir Yahoo, 25.6.2003. 1600 m, Joharchi 34858 (FMUH).

This species was known as endemic in Afghanistan and neighbouring areas in Pakistan (Chitral and Quetta) (RECHINGER 1977). The new locality extends the range of species further westwards to eastern Iran. The identity of the above cited specimen was checked with the type specimen (Stockes 1075) and other identical specimens in Kew.
Fig. 1. The line drawing illustration of *Cephalorrhyncus picridiformis* (Boiss.) Tuisl.
Brassicaceae


Type: Pakistan: Quetta, Sheila Bagh, 1800 m, Lace 3325 (K!).

Material examined:

This species was not known from Iran in *Flora Iranica* (RECHINGER 1968) and additions to the Iranian Cruciferae after *Flora Iranica* (AKHANI 2003). When this paper was in final preparation, we understood that *L. hamatum* is reported by MEHRNIA (2006) from a locality “between Esfahan to Shahreza, 32°26′08″N, 51°46′31″E, 1734 m, Mehrnia (5475 (n.v.).” The identity of above cited specimen was confirmed by comparing with the type specimen. *L. hamatum* differs from its relative *L. linifolium* by presence of glandulose hairs and hooked siliqua. The hairs in *L. linifolium* are branched and the fruits are not hooked at apex. In accordance with MEHRNIA (l.c.), the distinction of both species is well justified by constant characters.

Caryophyllaceae


Material examined:

This species with its characteristic broadly membranous bracts and bracteoles belongs to sect. *Macroste gia* Boiss. (SCHIMAN-CZEIKA 1988). It is characteristic by a number of characters such as having the same deep-green colour of leaves and stems, sparse and very short hairs in the stem but longer and denser hairs in the inflorescence and on calyx. The leaves are triquetrous in section, strongly rigid and arranged horizontally-patent and slightly curved upwards.

*A. kandaharicum* is an endemic species in S. Afghanistan with one reported locality in N. Pakistan (SCHIMAN-CZEIKA 1988). The species is newly recorded from Iran (Fig. 2).
Acanthophyllum stenostegium Freyn, Bull. Herb. Boissier Sér. 2, 3: 866 (1903)

Material examined:

A characteristic species with 4-5 cm long herbaceous leaves which are horizontally patent. The species differs from other species of Acanthophyllum by loosely and herbaceous habit and umbel-like inflorescences.

Ecologically, it is restricted to sand dunes over its range from Turkmenistan (Kara-Kum desert), Afghanistan to Iran (Fig. 2). The previously known localities in Turkmenistan are located close to the Iranian border (SCHIMAN-CZEIKA 1988).

Crassulaceae


Materials examined:
Khorasan: S.E. Ghaen, between Dozg and Ahangaran, 1500 m, 15.5.1989. Joharchi & Zangooei 17363 (FMUH); Between Ghaen and Gonabad, near Khezri, Pir-mardan Shah, 19.5.1986, Ayatollahi & Zangooi 14385 (FMUH); S Birjand, Omar Shah dam (Band-e Omar Shah), 18.5.1986, Ayatollahi & Zangoei 14301 (FMUH).

A first record from Iran; Pseudosedum longidentatum is distinguished from the widespread P. multicuale by petals which are connate at 1/3 to the middle of corolla length. Geographically two species seem to be vicariant. The main distribution range of P. longidentatum is Central Asia (Tien Shan, Pamir-Alaj) and Afghanistan (JANSSON & RECHINGER 1970).

Elatinaceae

Elatine hydropiper L. Sp. Pl. 367 (1753)

Material examined:

An interesting discovery, being a new genus record for Iran and the Flora Iranica area (RECHINGER 1966). This is seventh aquatic new records which were

**Ranunculaceae**

*Anemone tschernjaewii* Regel, *Acta Horti Petrop.* 8: 690 (1884)


The finding of *A. tschernjaewii* in Iran is not surprising, as the species was commonly recorded in Afghanistan and from Kopet-dagh mountains in Turkmenistan near the Iranian border (Rechinger 1992, see also distribution map of species in ZIMAN et al. 1996, Fig. 1, p. 61). The species was also known from Tian Shan, Pamir, Altai and territories of Tadistikstan, Uzbekistan and Pakistan (RECHINGER l.c., ZIMAN et al. 1996).

The most important distinguishing features of this species from closely related *A. biflora* DC. are the ternate basal leaves which their segemnts are not deeply lobed but are shallowly crenate-dentate, radical leaves solitary, with sessile primary segments, and sessile involucral leaves (ZIMAN et al. 1996).

**Rubiaceae**


Material examined:


This species was recorded as endemic from various localities in N.W. and West Afghanistan by EHRENDORFER & SCHÖNBECK-TEMESY (2005). The new locality from Iran is also not very far from localities in Afghanistan (Fig. 4). The species is characteristic with 3-4.5 cm internodes, mostly 3-na leaves, which are 17-23 mm long and 1-2 mm broad and pedicellate basal flowers.
Scrophulariaceae
Scrophularia nikitinii Gorschk., Not. Syst. Leningrad 16: 333 (1954) (Fig. 3)
Material examined:

Scrophularia nikitinii Gorschk. is easily distinguishable by broad ovate and petiolate leaves which are slightly denticulate at the margin (Fig. 3). The species shows a habit like Digitalis with a spike-like inflorescence. The flowers are green with equal lobes and capsules are glabrous.

The species was originally known from Turkmenistan, Badhys, Jugum Gjas-Gjadyk, in Rachmatar mount. (GRAU 1981). It is known from several localities in the lower mountain zone in N.W. of Afghanistan (Fig. 4).

Fig. 2. Distribution map of Acanthophyllum kandaharicum (triangle) and A. stenostegium (dot) and. The new records in Iran are indicated by arrows.
Fig. 3. Line drawing illustration of *Scrophularia nikitii* Gorschk.
Fig. 4. Distribution map of *Gaillonia dubia* (triangle) and *Scrophularia nikitinii* (dot). The new records in Iran are indicated with arrows. The type location of *S. nikitinii* is indicated by a question mark.

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Addresses of authors: M.R. JOHARCHI, Ferdowsi University of Mashhad,
Botanical Research Institute, Herbarium, Mashhad, Iran and Dr. H. AKHANI,
School of Biology, College of Science, University of Tehran, P.O. Box 14155-6455,
Tehran, Iran (E-mail: akhani@khayam.ut.ac.ir).