Some remarks on the genus Oxytropis (Fabaceae) from Iran

M. Ranjbar

Abstract:
Ranjbar, M.: Some remarks on the genus Oxytropis (Fabaceae) from Iran. – Sendtnera 6: 193–196. 1999. ISSN 0944–0178.

The Iranian representatives of the genus *Oxytropis* DC. are examined. Altogether 32 species are recognized. *O. Aellenii* and *O. shirkuhi* are treated as synonyms of *O. iranica* and *O. chrysocarpa* respectively. *O. khorasanica* is proposed as a new name for *O. gracillima* and 8 species are excluded from Iran. The species occuring in Iran are keyed out.

Zusammenfassung:
Die iranischen Vertreter der Gattung Oxytropis DC. werden revidiert; 32 Arten werden anerkannt. *O. Aellenii* und *O. shirkuhi* werden als Synonyme von *O. iranica* bzw. *O. chrysocarpa* aufgefaßt. *O. khorasanica* ist ein neuer Name für *O. gracillima*; 8 Arten werden aus der iranischen Flora ausgeschlossen. Die im Iran vorkommenden Arten von *Oxytropis* werden geschlüsselt.

Introduction

Oxytropis is a large genus of small herbs, mainly present in high pastures and rocky places. It is separated from *Astragalus* largely by tradition and for convenience; the main difference is in the shape of the keel (Lock & Simpson, 1991). According to the most recent morphological classification of the papilionoid tribe Galegeae (Polhill, 1981), the closest relatives of *Oxytropis* include *Meristotropis* Fisch. & C.A.Mey., *Astragalus* L., *Caragana* Fabr., *Chesneya* Lindl. ex Endl., and all members of the subtribe Astragalinae.

The genus *Oxytropis* is one of the most complex genera in the Fabaceae. For the most part this genus was introduced as a sister group of the genus *Astragalus*. Boissier (1872) in Flora Orientalis placed 8 species under two sections, namely *Phacoxytropis* and *Euoxytropis* and Vassilczenko (1984) in Flora Iranica placed 40 species under two subgenera, namely *Oxytropis* and *Euoxytropis*. These species and records were introduced only by one specimen and differential characters between them were very artificial.

Recent taxonomic studies were carried out by Ranjbar (submitted) on the Iranian herbarium specimens of *Oxytropis* in the herbarium of the Research Institute of Forests and Rangelands (TARI). The author has also identified the materials of this genus in the herbaria of Plant Pests

Diseases Research Institute (IRAN) and University of Hamadan (HUH). Some of the species were considered to be synonyms, and thus some records were excluded from the Flora of Iran. Now *Oxytropis* is represented by 32 species in Iran. The identification of the species of the genus is very complex, difficult and often confused. In spite of that the work on plants of genus *Oxytropis* done by VASSILCZENKO (1984) in Flora Iranica, a new revision for the genus in Iran is still needed. Obviously a complete revision of the genus requires more specialized investigations which would also include species outside of Iran. This article contains 1 new name, 3 synonyms and a new key for the Iranian species of the genus.

Nomenclatural changes and corrections of records

1. New name

Oxytropis khorasanica Ranjbar, nom. nov.
= *O. gracillima* Vassilcz., Fl. Ir. 157: 101–164 (1984), non Bunge in Mém. Acad. Imp. Sci. St.-Pétersbourg ser. 7, 22: 160 (1874).

2. New synonyms

Oxytropis iranica Vassilcz., Nov. Syst. Pl. Vasc. Leningrad 17: 180 (1980).
= *O. Aellenii* Vassilcz., Nov. Syst. Pl. Vasc. Leningrad 17: 195 (1980).

Oxytropis chrysocarpa Boiss., Diagn. Pl. Or. Nov. Ser. 1, 6: 34 (1845).
= *O. shirkuhi* Vassilcz., Bjull. Mosk. Obsc. Isp. Prir., Otd. Biol. 93 (3): 97–102 (1988).

3. Doubtful records

Oxytropis jezdii Vassilcz.
This species was introduced by VASSILCZENKO (1988: 100–101) from central Iran, but no specimen was seen by the author. It may be that the new species was based on an incorrect identification of *O. chrysocarpa* Boiss.

Oxytropis wendelboi Vassilcz.
This species was recorded by VASSILCZENKO (1984: 152) from N of Iran, but no specimen was seen by the author. It may be that the record was based on an incorrect identification of *O. szovitsii* Boiss & Buhse.

4. Incorrect records

Oxytropis immersa (Baker) Bunge ex B.Fedtsch.
This name was recorded by VASSILCZENKO (1984: 129–130) from NE of Iran. The correct name for specimens under this name is *O. iranica* Vassicz, therefore Vassilczenko's record is certainly incorrect.

Oxytropis hirsutiuscula Freyn. and *Oxytropis caraganetorum* Vassilcz.
These species were cited by VASSILCZENKO (1984: 118, 120) from central Iran and specimens were seen by the author. Correct identification of them are *O. heratensis* Bge.

Oxytropis czapan-daghi B.Fedtsch.

This species was cited by VASSILCZENKO (1984: 133–134) from NE of Iran. This specimen has been studied by the author, and the correct name for it is *O. khorasanica* Ranjbar.

Key to the species

1.	Plant caulescent, racemes borne on leafy stems	2
–	Plant acaulescent, racemes arising from leafy base of plant	10
2.	Plant covered with appressed hairs	3
–	Plant covered partly with spreading hairs	4
3.	Pods covered with appressed, short, white and black hairs	***O. heratensis***
–	Pods covered with, soft, long, more or less spreading white and black hairs	***O. thaumasimorpha***
4.	Leaflets in 5–8 pairs	5
–	Leaflets in 9–16 pairs	7
5.	Calyx teeth longer than tube, pod covered with long and white hairs	***O. alavae***
	Calyx teeth 2 to 3 times shorter than tube, pod covered with pubescent hairs	6
6.	Peduncles 2 times longer than leaves, standard 5–7 mm long	***O. sojakii***
–	Peduncles many times shorter than leaves, standard 21–24 mm long	***O. strausii***
7.	Pods erect to horizontal	***O. kotschyana***
–	Pods deflexed	8
8.	Leaflets 9–10 pairs	***O. rechingeri***
–	Leaflets 12–16 pairs	9
9.	Calyx covered with white and black hairs, keel beak 3–4 mm long	***O. kopetdaghensis***
–	Calyx covered with white hairs, keel beak 1.5 mm long	***O. assadliensis***
10.	Pods covered with short appressed hairs	11
–	Pods covered with soft, long and white hairs	16
11.	Pods covered with short, white and black pubescent hairs	***O. savellanica***
–	Pods covered with white pubescent hairs	12
12.	Pods bladder-like, ovate-globular	***O. persica***
–	Pods not bladder-like, oblong-elliptic	13
13.	Pods covered with short, white pubescent hairs	14
–	Pods covered with long, white pubescent hairs	15
14.	Calyx campanulate, teeth calyx linear-lanceolate, 4–6 mm long	***O. bicornis***
–	Calyx tubular, teeth calyx filiform, 2–2.5 mm long	***O. pusilloides***
15.	Peduncles 10–12 cm long, petioles 4–6 cm long	***O. zangolehensis***
–	Peduncles 3–5 cm long, petioles 1–2 cm long	***O. takhti-soleimanii***
16.	Calyx covered with short, white and black pubescent hairs	17
–	Calyx covered with short, white pubescent hairs	24
17.	Pods deflexed	***O. surmandehi***
–	Pods erect	18
18.	Calyx teeth 2–2.5 times shorter than tube	19
–	Calyx teeth equal to or longer than tube	20
19.	Pods covered with semi-appressed white hairs	***O. iranica***
–	Pods covered with soft, long and white hairs	***O. kermanica***
20.	Standard 9–10 mm long	21

–	Standard 12–13mm long	22
21.	Standard oblong-elliptic	***O. hypsophila***
–	Standard orbicular	***O. binaludensis***
22.	Leaflets 5–7 pairs	***O. karjaginii***
–	Leaflets 7–16 pairs	23
23.	Leaflets 7–10 pairs, standard emarginate at the apex	***O. aucheri***
–	Leaflets 12–16 pairs, standard rounded at the apex	***O. szovitsii***
24.	Calyx teeth shorter than tube	***O. khorasanica***
–	Calyx teeth equal to or longer than tube	25
25.	Standard orbicular or obovate or rhomboid	26
–	Standard elliptic or oblongo-elliptic	28
26.	Standard rhomboid	***O. cinerea***
–	Standard orbicular or obovate	27
27.	Standard orbicular, peduncles shorter than leaves	***O. rhodontha***
–	Standard oblong or obovate, peduncles equal to leaves	***O. chrysocarpa***
28.	Standard emarginate at the apex	29
–	Standard rounded at the apex	31
29.	Leaflets 5–8 pairs, calyx teeth equal to tube	***O. masanderanensis***
–	Leaflets 9–14 pairs, calyx teeth 1.5 times tube	30
30.	Calyx teeth 1.5 times longer than tube	***O. suavis***
–	Calyx teeth equal to tube	***O. rudbariensis***
31.	Leaflets 5–10 pairs, peduncles longer than leaves	***O.kuchanensis***
–	Leaflets 10–12 pairs, peduncles shorter than leaves	***O. neo-rechingeriana***

I would like to thank Prof. Dr. Dietrich Podlech (Institute for Systematic Botany, University of Munich) for critical review of the manuscript. I wish to thank the Regius Keeper of the national botanic garden, Iran for making the herbarium facilities available for study. Also I am much in debted to Mrs. R. Karamian for improving the english text.

References

Boissier, E. 1872: Flora Orientalis. Vol. II. Basel.

Bunge, A. 1874: Species Generis *Oxytropis* DC. – Mem. Acad. Imp. Sci. Saint-Petersbourg. Ser 7, 22: 1–166.

Candolle, A.P. de. 1825: Prodromus systematics regni vegetabilis. Vol. 2. Paris.

Lock, J.M. & Simpson, K. 1991: Legumes of west Asia. Royal Botanic Gardens, Kew.

Polhill, R.M. 1981: Galegeae. – In: Polhill, R.M. & Raven, P.H. (eds.): Advances in legume systematics, 357–363. Royal Botanical Garden, Kew.

Ranjbar M. 1997: *Oxytropis*. – In: Assadi, M. et al. (eds.): Flora of Iran (submitted). A revision of genus *Oxytropis* DC. in Iran.

Vassilczenko, I.T. 1984: *Oxytropis*. – In: Rechinger, K.H. (ed.): Flora Iranica. No. 165: 101–164.

– 1988: New Asiatic species of genus *Oxytropis* DC. – Bjull. Mosk. Obsc. Isp. Prir., Otd. Biol. 93(3): 97–102.

Massoud Ranjbar, Department of biology, Herbarium division, University of Buali sina, P.O.Box 65175/4111, Hamadan, Iran. E-mail: Ranjbar@basu.ac.ir