



Notes on *Onobrychis* sect. *Heliobrychis* (Fabaceae) in Iran

Authors: Ranjbar, Massoud, Amirabadizadeh, Hassan, Karamian, Roya, and Ghahremani, Mohammad Ali

Source: *Willdenowia*, 34(1) : 187-190

Published By: Botanic Garden and Botanical Museum Berlin (BGBM)

URL: <https://doi.org/10.3372/wi.34.34116>

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

doi:10.3372/wi34.34116 (available via <http://dx.doi.org/>)

MASSOUD RANJBAR, HASSAN AMIRABADIZADEH, ROYA KARAMIAN & MOHAMMAD ALI GHAHREMANI

Notes on *Onobrychis* sect. *Heliobrychis* (*Fabaceae*) in Iran

Abstract

Ranjbar, M., Amirabadizadeh, H., Karamian, R. & Ghahremani, M. A.: Notes on *Onobrychis* sect. *Heliobrychis* (*Fabaceae*) in Iran. – Willdenowia 34: 187-190. – ISSN 0511-9618; © 2004 BGBM Berlin-Dahlem.

Onobrychis aurea, confined to W Iran (Prov. Azarbaijan) and known from only two localities, is described as a species new to science and illustrated. *O. heterophylla* is reported for the first time from Iran.

The tribe *Hedysareae* comprises all papilionoid legumes with segmented and flattened pods: *Taverniera* DC., *Stracheya* Benth., *Eversmannia* Bunge, *Hedysarum* L., *Ebenus* L., *Corethro-dendron* Basiner, *Alhagi* Adans. and *Onobrychis* Mill. (Thulin 1985, Polhill 1981). The last genus includes c. 130 species and is mainly distributed in the northern temperate regions but with centres of diversity in the E Mediterranean and W Asia; a few taxa are cultivated as fodder or ornamentals (Lock & Simpson 1991, Yakovlev & al. 1996, Mabberley 1997). Rechinger (1984) treated 77 species under nine sections, viz. *Dendrobrychis* (7 species), *Lophobrychis* (5), *Onobrychis* (14), *Laxiflorae* (3), *Anthyllium* (7), *Afghanicae* (3), *Heliobrychis* (21), *Hymenobrychis* (12), *Insignes* (3), with two species remaining unassigned.

Investigations on species in the field and on herbarium specimens of *Onobrychis* in Iran revealed two novelties of *O.* sect. *Heliobrychis* from the province of Azarbaijan. One is a species new to science, the other is the first record of *O. heterophylla* C. A. Mey. for Iran.

Specimens have been examined of the Herbarium of the Ferdousi University in Mashhad (FUMH), the Herbarium of the Research Institute of Forests and Rangelands in Tehran (TARI) and the Herbarium of the Bu-Ali Sina University in Hamadan (BASUH).

(1) *Onobrychis aurea* Ranjbar, Amirabadizadeh & Ghahremani, **sp. nova** – Fig. 1

Holotype: Iran, Prov. Azarbaijan, 31 km from Tabriz to Ahar, 7 km NE of Khajeh, 1530 m, 12.7.1998, Amirabadizadeh, Ghahremani & Imani 6082 (TARI; isotype: BASUH).

Differt ab *Onobrychide heterophylla* C. A. Mey. foliolis (10-)30-55 × (10-)20-34 mm (nec 12-18 × 6-11 mm), ovario saepius uniovulato (nec nervatione saepius biovulato), leguminibus suborbicularibus (nec subreniformibus), corolla nervatione concolore (nec nervatione purpureo-nervosa) et ab *O. szovitsii* Boiss. caulibus et foliis pilis albis appressis dense obtectis (nec glabris), vexillo 12-14 mm (nec 18-23 mm) longo, foliis vulgo unifoliolatis vel rarius 3-5-foliolatis (nec trijugis), foliolis (10-)30-55 × (10-)20-34 mm (nec 15-30 × 10-20 mm), nervatura pinnata (nec indistincta).

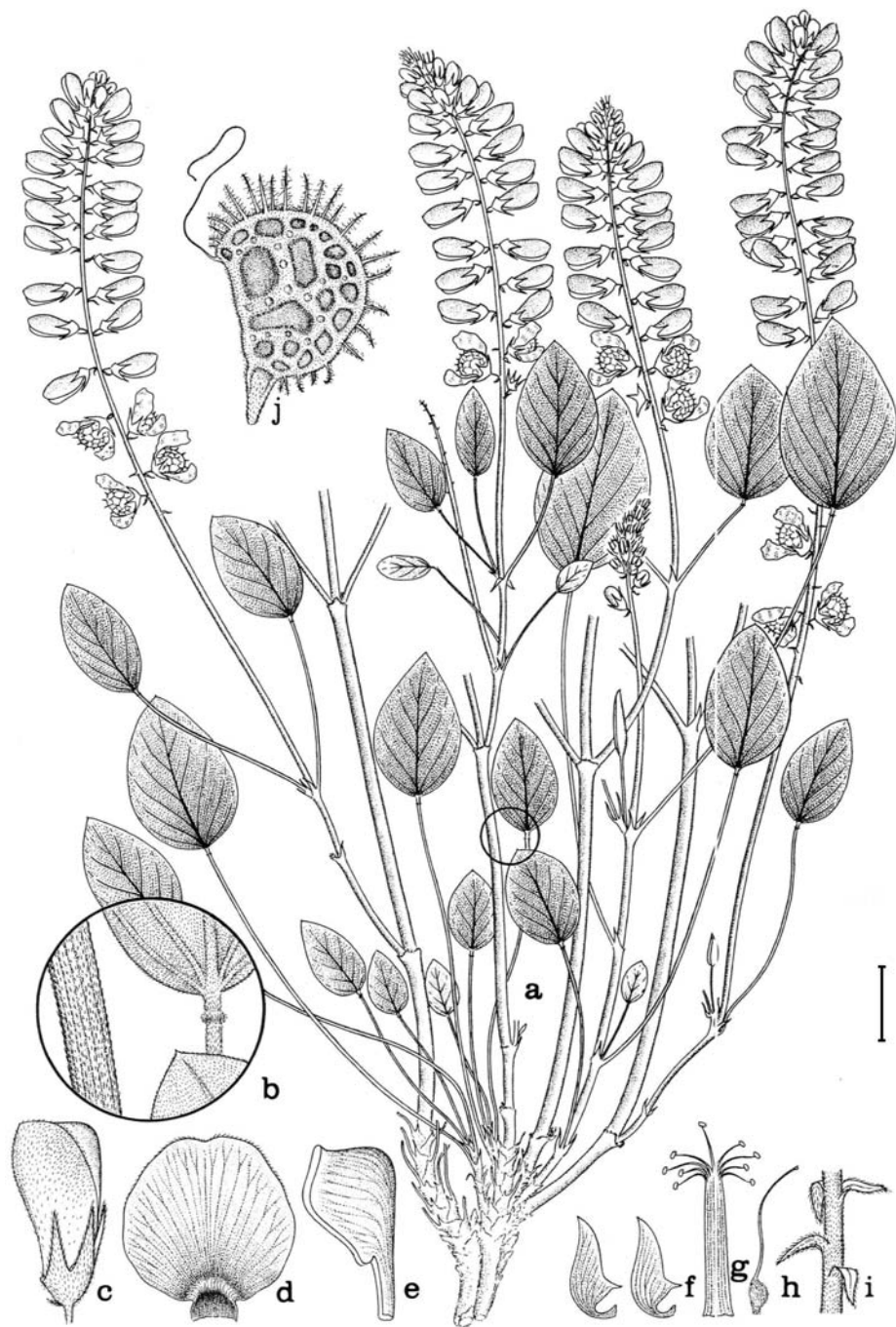


Fig. 1. *Onobrychis aurea* – a: habit; b: leaf (abaxial and adaxial views); c: flower; d: standard; e: keel; f:

wings; g: androecium; h: pistil; i: bracts; j: fruit. – Scale bar for a = 2 cm, b-i = 0.5 cm, j = 0.3 cm.

Ascending-erect perennial, 25-35 cm tall, with thick woody rootstock, branched at the base; stems and leaves densely silvery appressed-pilose. *Stipules* free, chartaceous, 4-8 × 2-3 mm, triangular, acuminate. *Leaves*, including the petiole of 1/3-1/5 (3-9 cm) their length, 8-15 cm long, straight or curved-ascending, with a single, terminal leaflet of 30-55 × 20-30 mm, broadly ovate to rhombic-ovate or nearly orbicular, rarely elliptic, rounded at base, rarely truncate, acute to obtuse at apex, on both sides densely hairy, greyish green; rarely some leaves additionally with 1-2 pairs of leaflets, 10-38 × 10-34 mm, otherwise similar to the terminal leaflet. *Inflorescence* narrow, oblong before anthesis, many-flowered, elongating in fruit. *Pedicel* c. 2 mm long. *Bracts* papery, yellowish, 2-3 × 1-1.5 mm, oblong-lanceolate, acute to acuminate. *Bracteoles* narrowly linear, 1-1.5 mm long. *Calyx* 5-9 mm long, densely appressed-pilose, greyish, rupturing along a single longitudinal line at fruiting time, teeth 3-5 mm long, linear or subulate. *Corolla* yellow, brownish on drying; *standard* 12-14 × 11-12.5 mm, suborbicular, distally somewhat emarginate, appressed-pilose; *wings* with the limb 5-6 × 1.5-2 mm, oblong, acuminate and the filiform claw c. 2 mm long; *keel* longer than wings, 11-13 mm long, limb 7-8 × 5-7 mm, claw 3-4 mm long. *Filaments* 15-17 mm long, the free portion 2-4 mm long. *Pod* with a narrowly triangular stipe up to 3 mm long, semiorbicular, pendent, 10-12 × 6-9 × 2.5-3 mm, hirtulous and foveolate on the disc, with setose crest along the margin, setae 1-1.5 mm long.

Further material seen. – IRAN: PROV. AZARBAYJAN: 47 km along road from Ahar to Tabriz, 1550 m, 24.6.1986, *Maassoumi & Abouhamzeh* (TARI 56969).

Distribution. – *Onobrychis aurea* is known only from the dry submontane steppe NE of Tabriz in the province of Azarbaijan (Fig. 2).

Relationships. – The new species is closely related to *Onobrychis szovitsii* and is also compared with *O. heterophylla* (Table 1).

(2) *Onobrychis heterophylla* C. A. Mey.

Onobrychis heterophylla has been described from Talyshshiy Gory (Talysh Mts) in the border area between Iran and the Republic of Azerbaijan. Our records are the first of this narrow endemic from the Iranian territory (Fig. 2).

Specimens examined. – IRAN, PROV. AZARBAYJAN: Meshkinshar toward Ardebil, 10 km after Meshkinshar [38°24'N, 47°40'E], 1120 m, 14.7.2003, *Ranjbar & Karamian* 5533 (BASUH); 20 km from Razi to Germe [39°01'N, 48°03'E], Histi-kuh, E of Seyedlar village, 1600-2000 m, 21.6.1980, *Mozaffarian & Nowrozi* (TARI 34695); 14 km from Namin to Chulandarreh Sofla to Germe after Anbaran [38°29'N, 48°27'E], 1600 m, 20.6.1980, *Mozaffarian & Nowrozi* (TARI 34515).

Table 1. Diagnostic characters of *Onobrychis heterophylla*, *O. szovitsii* and *O. aurea*.

	<i>O. heterophylla</i>	<i>O. aurea</i>	<i>O. szovitsii</i>
Indumentum	densely appressed-pilose	densely appressed-pilose	completely glabrous
Leaves	predominantly compound	predominantly simple	predominantly compound
Leaflets [mm]	12-18 × 6-11	(10-)30-55 × (10-)20-34	15-30 × 10-20
Corolla veins	purple	yellow as corolla	yellow as corolla
Standard [length mm]	13-15	12-14	18-23
Stipe of pod [length mm]	c. 4	2-2.5	2-2.5
Shape of stipe	linear-lanceolate	narrowly triangular	narrowly triangular
Pod indumentum	villose and disc surface with scattered long bristles	appressed-villose	glabrous
Shape of pod	subreniform	suborbicular	suborbicular
Marginal setae of pod [length mm]	2.5-3	1-1.5	2.5-3

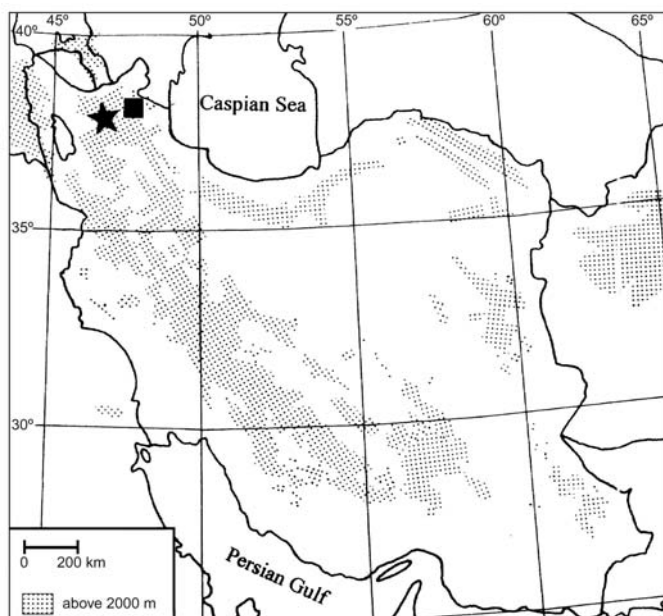


Fig. 2. Distribution of *Onobrychis aurea* (★) and *O. heterophylla* (■) in Iran.

Acknowledgements

We wish to thank the Director of the National Botanic Garden Tehran, Iran (TARI), for making herbarium facilities available to us. We also wish to express special thanks to Prof. Dr M. Assadi for his encouragement, advice and help.

References

- Lock, J. M. & Simpson, K. 1991: Legumes of West Asia. – Kew.
- Mabberley, D. J. 1997: The plant book. A portable dictionary of the vascular plants, ed. 2. – Cambridge.
- Polhill, R. M. 1981: *Hedysareae*. – Pp. 367-370 in: Polhill, R. M & Raven, P. H. (ed.), Advances in legume systematics **1**. – Kew.
- Rechinger, K. H. 1984: *Onobrychis*. – Pp. 389-459 in: Rechinger, K. H. (ed.), Flora iranica **157**. – Graz.
- Thulin, M. 1985: Revision of *Taverniera* (*Leguminosae-Papilionoideae*). – Symb. Bot. Upsal. **25**: 44-95.
- Yakovlev, G. P., Sytin, A. K. & Roskov, J. R. 1996: Legumes of Northern Eurasia, a checklist. – Kew.

Addresses of the authors:

Massoud Ranjbar & Roya Karamian, Department of Biology, Herbarium Division, University of Bu-Ali Sina, P.O. Box 65175/4111, Hamadan, Iran; e-mail: ranjbar@basu.ac.ir

Hassan Amirabadizadeh, Herbarium Research Center of Natural Resources and Animal Affairs, Mashhad, Iran.

Mohammad Ali Ghahremani, Herbarium, Research Centre of Nature Resources and Animal Affairs, Tabriz, Iran.