

## *Astragalus assadabadensis* (Fabaceae), a new species from Iran

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Received 18 Oct. 2004, revised version received 1 Dec. 2004, accepted 2 Dec. 2004

Ghahremaninejad, F. & Podlech, D. 2005: *Astragalus assadabadensis* (Fabaceae), a new species from Iran. — *Ann. Bot. Fennici* 42: 207–209.

*Astragalus assadabadensis* F. Ghahremani. & Podlech, endemic to Alvand Mt., Hamadan province, Iran, is described as a new species and illustrated. The new species belongs to *Astragalus* section *Hymenostegis* and is related to *A. bradosticus*.

Key words: *Astragalus*, Fabaceae, *Hymenostegis*, new species, taxonomy

In terms of species numbers, *Astragalus* is the largest genus in the flora of Iran. In this paper a new species is described of *Astragalus* section *Hymenostegis* from Hamadan province, Iran. This section was originally established by Bunge (1868). The section belongs to *Astragalus* subg. *Astragalus*, which is characterized by the presence of basifixed (simple) hairs (Podlech 1982).

### ***Astragalus assadabadensis* F. Ghahremani. & Podlech, sp. nova (Fig. 1)**

HOLOTYPE: Iran. Prov. Hamadan: Hamadan, Alvand Mt. to Assadabad, 18 km before Assadabad, 34°42'50"N, 48°14'04'E, 2033 m, 13.VI.2001 F. Ghahremaninejad 278 (FAR; isotypes FAR, W).

*Differt ab A. bradostico stipulis 15–20 (nec 8–10) mm longis, foliis 6–10 (nec 4–7) cm longis, petiolo 2–4 (nec 1–1.5) cm longo, foliolis 4–5-jugis (nec 6–7-jugis), 15–25 × 2–2.5 mm (nec 6–10 × 1.5–3 mm), pilis 0.8–1 mm (nec 0.3–0.5*

*mm) longis obtectis, pedunculis ca. 5 cm longis (nec brevissimis vel obsoletis), racemis ovoideis ad breviter cylindraceutis, 4–5.5 cm longis (nec subcapitatis, 2.5–3 cm longis).*

Plants subshrubby, caespitose, spiny, 15–25 cm tall, nearly acaulescent. Stems up to 15 cm long, branched at base, in older parts densely covered with greyish black remnants of old leaves, parts of current year 2–3 cm long. Stipules thinly hyaline-membranous, pale-yellowish, 15–20 mm long, adnate to petiole for 5–8 mm, connate behind stem for 3–4 mm, free tips narrowly triangular-acuminate, glabrous or sparsely ciliate at margins. Leaves 6–10 cm long; petiole 2–4 cm long, like rachis rather densely to densely covered with subappressed to partly slightly ascending hairs 0.2–0.5 mm long and sometimes with few, slightly longer ascending hairs, spiny. Leaflets in 4–5 pairs, narrowly linear-elliptic, 15–25 × 2–2.5 mm, acuminate-aristate, pungent, with a yellowish cusp 1–2 mm long, on both sides rather densely to



**Fig. 1.** *Astragalus assadabadensis* (from holotype). Scale = 2 cm.

densely covered with appressed to subappressed hairs 0.8–1 mm long. Peduncles ca. 5 cm long, stout, very densely covered with ascending to spreading, tangled hairs 1–2 mm long. Racemes ovoid to shortly cylindrical, 4–5.5 cm long and ca. 2.5 cm in diameter, densely many-flowered. Bracts mostly persistent, chartaceous, 14–18 mm long and 7–10 mm wide, ovate to widely ovate, long acuminate, with a cusp 5–7 mm long, rather densely appressed-hairy, ciliate at margins. Calyx during anthesis tubular, slightly inflated, 14–17 mm long and ca. 4 mm wide, whitish-yellow,



**Fig. 2.** Geographic locality of *Astragalus assadabadensis*.

loosely covered with ascending to spreading hairs 0.3–0.5 mm long and densely with ascending hairs 1.5–3 mm long; teeth subulate, 6–7 mm long, hairy on inner side. Petals pale-yellow. Standard ca. 18 mm long; limb ca. 7 mm wide, obovate, slightly emarginate, at base gradually narrowed. Wings ca. 18 mm long; limbs narrowly elliptic, obtuse, 8–8.5 × 3 mm; auricle ca. 0.3 mm long, claw ca. 10 mm long. Keel ca. 16 mm long; limbs obliquely obovate, subulate, ca. 6 × 3 mm; auricle indistinct, claw ca. 10 mm long. Ovary sessile, ca. 4 mm long, densely subappressed hairy; style hairy in lower half. Legumes (unripe) sessile, ovoid, ca. 8 mm long, rounded ventrally, shallowly grooved dorsally; valves densely covered with white hairs. Flowering and fruiting May–June.

*Astragalus assadabadensis* is endemic to Iran and known only from the type locality at more than 2000 m altitude (Fig. 2).

The closest relative of the new species is *A. bradosticus* Maassoumi & Podlech (holotype TARI!). It differs from *A. bradosticus* in having the stipules 15–20 mm (vs. 8–10 mm) long, longer leaves (6–10 vs. 4–7 cm long), longer petiole (2–4 vs. 1–1.5 cm long), 4–5 pairs of leaflets (vs. 6–7 pairs), longer leaflets (15–25 vs. 6–10 mm long), longer hairs (0.8–1 vs. 0.3–0.5 mm long), much longer peduncles (5 cm long vs. with extremely short peduncle or peduncleless), an ovoid to cylindrical inflorescence (vs. subcapi-

tate), bracts chartaceous, 14–18 mm long and 7–10 mm wide (*vs.* thinly membranous, 8–15 mm long and 4–5 mm wide), and in being rather densely appressed-hairy all over (*vs.* glabrous or sparsely hairy, especially near the base and along the mid-line).

All species, except *A. sosnoveskyi*, of the section *Hymenostegis* grow in Iran. That country, with 44 species, of which 32 are endemic, is clearly the center of its diversity. The species of the section *Hymenostegis*, numbering 45, are distributed in Iran, Turkey (nine species), Iraq (six species), Armenia (three species), Azerbaijan and Transcaucasia (two species each). Only Iran has endemic species in this section.

The majority of the endemic species in Iran are narrow endemics; some of them are known

only from the type specimens, e.g. *A. bashmaghensis*, *A. demonstratus*, *A. dianat-nejadii*, and *A. qoturensis*.

### Acknowledgements

We thank Raheleh Jomaepour for preparing the illustration.

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