

Astragalus crispus (Fabaceae), a new species from SE Iran

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A new species *Astragalus crispus* F. Ghahremani. (Fabaceae), is described from Iran and illustrated. It belongs to *Astragalus* sect. *Craccina* (Steven) Bunge, which contains species with bifurcate hairs, and is related to *A. austriacus*.

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

Iran is one of the most important centers of diversity of the genus *Astragalus*. Here I describe a new species with bifurcating trichomes in *Astragalus* sect. *Craccina* (Steven) Bunge from Sistan & Baluchestan province, Iran. The previous new species described in this section from Iran was *A. huthianus*, published more than a century ago by Freyn (1897). The section, originally established by Bunge (1868) with ten species, now comprises 23 species (Tutin *et al.* 1968, Davis 1970, Lock & Simpson 1991, Kuntsun *et al.* 1993, Yakovlev *et al.* 1996, Ghahremani-nejad 2000). It belongs in *Astragalus* subg. *Cercidothrix* Bunge (Bunge 1868).

***Astragalus crispus* F. Ghahremani.,
sp. nova** (Fig. 1)

Species A. austriaci affinis, sed differt pilis mere albis (nec nigrisque), calyce 6–7 (nec 2–2.5) mm longo, vexillo 14–15 (nec 6–9) mm longo, leguminibus glabris (nec pilosis).

TYPE: Iran. Sistan & Baluchestan Province: Khash, 1455 m, 7.V.1997 A. Heydari 37343 (holotype FAR; isotype FAR).

Perennial, 25–40 cm tall including inflorescence, furnished with bifurcate (medifixed) white hairs. Stems 18–27 cm long, in lower parts loosely appressed, in upper parts usually glabrous. Stipules 2.5–4 mm long, hyaline, ± adnate to petiole at base, lower ones connate up to 3/4 length, upper ones connate up to 1/4 length, free portion lanceolate, ciliate, abaxially usually glabrous or sometimes with few hairs on midrib. Leaves 4–9 cm long, petiole and rachis loosely covered with appressed hairs; petioles 1/5 to 2/5 as long as rachis; leaflets 3–4 pairs, remote, shortly petiolulate, linear, rarely elliptic, acute, 7–30 mm long, 0.5–1.5 mm wide, loosely to moderately hairy. Peduncles 8–12 cm long, longer than the leaves, glabrous to sparsely hairy. Inflorescence very loose, 8–14-flowered, long-cylindric, 6–12 cm long, becoming looser at fruit stage. Bracts membranaceous with hyaline margin to hyaline, lanceolate to lanceolate-ovate, 1.2–1.8 mm long,



Fig. 1. *Astragalus crispus* (from holotype). — **A:** Habit. — **B:** Standard. — **C:** Wing. — **D:** Keel. — **E:** Stamens. — **F:** Pistil. — **G:** Calyx. Scale: **A** = 2 cm; **B–G** = 1 cm.

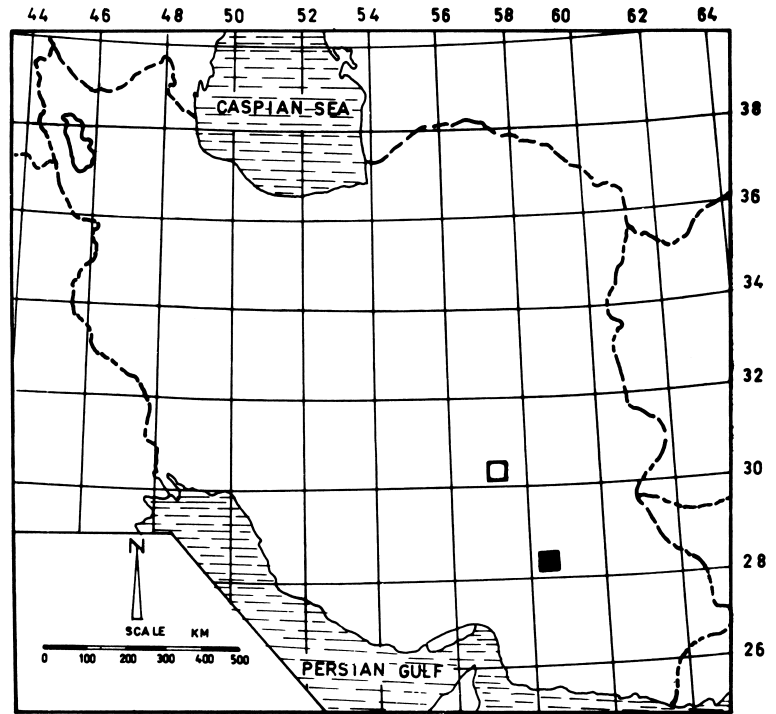


Fig. 2. Localities of *Astragalus crispus* (black square) and *A. huthianus* (white square).

0.6–0.8 mm wide, glabrous to ciliate. Bracteoles wanting. Pedicel 1–1.3 mm long, covered with appressed hairs. Calyx campanulate, 6–7 mm long, non-inflated, densely covered with appressed hairs; calyx teeth linear, 1.5–1.8 mm long, 1/3 of tube length. Corolla drying violet to purple, glabrous; standard 14–15 mm long, limb elliptic, 6 mm wide, obtuse, non-ligulate; wing 13 mm long, limb oblong, obtuse, 7–8 mm long, longer than the claw, 1.7 mm wide, auricle 0.7 mm long; keel 10–10.5 mm long, limb 4.5–5 mm long, 2 mm wide, ligule 0.2–0.3 mm long. Stamens 11–12 mm long, free portion 4 mm long,

anther 0.5 mm long. Pistil 12–13 mm long, glabrous; ovary 6–6.5 mm long, linear 0.3–0.5 mm wide, sessile. Pod (immature) linear-oblong, glabrous, longer than calyx. Flowering and fruiting in April–May.

Astragalus crispus is known only from the type specimen collected in the SE of Iran (Fig. 2). Its closest relative is *Astragalus austriacus*, from which it differs in having an indumentum of merely white hairs (vs. white and black), a longer calyx (6–7 vs. 2–2.5 mm), a longer standard (14–15 vs. 6–9 mm), and a glabrous fruit (vs. hairy; cf. Table 1).

Table 1. Morphological comparison of *Astragalus crispus*, *A. austriacus*, and *A. huthianus*.

	<i>A. crispus</i>	<i>A. austriacus</i>	<i>A. huthianus</i>
Calyx length	6–7 mm	2–2.5 mm	4 mm
Standard length	14–15 mm	6–7 mm	7.5 mm
Fruit	glabrous	hairy	hairy
Hair color	white	white & black	white & black
Peduncle length	8–12 cm	2.5–7 cm	3–5 cm
Leaf length	4–9 cm	2–5 cm	4.5 cm
Leaflet length	7–30 mm	5–30 mm	13 mm
Leaflets	3–4 pairs	(4)5–10 pairs	3–5 pairs
Stipules	hyaline	membranaceous to chartaceous	hyaline

Astragalus section *Craccina* has a wide distribution in the circumboreal region (Takhtajan 1986) to China (Kuntsun *et al.* 1993, Yakovlev *et al.* 1996). The species of this section are distributed in Middle Asia (excluding Turkmenistan), Middle East, East, North, and West Asia, Caucasus, and Europe.

Twenty-two species of *Astragalus* section *Craccina* have been reported above 40°N (Tutin *et al.* 1968, Davis 1970, Kuntsun *et al.* 1993, Yakovlev *et al.* 1996, Ghahremani-nejad 2000), and only *Astragalus huthianus* and *A. crispus* are known south of that latitude (Fig. 2). *Astragalus crispus* represents the southernmost locality reported for the section (at nearly 28°N).

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