THREE NEW SPECIES OF ASTRAGALUS (FABACEAE) FROM IRAN

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Three new species of Astragalus, including A. (Caprini) chamanbidensis, A. (Craccina) kelishomensis and A. (Hymenostegis) rijabensis are described from different parts of Iran. Line drawings and affinities of these species with their related species are given.

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Key words: Astragalus; Sect. Caprini; Sect. Craccina; Sect. Hymenostegis; Iran

INTRODUCTION

The genus Astragalus comprises about 2627 taxa in the Old World (Maassoumi 1998, Unpublished Data 2016) including 841 distinct species in Iran (Unpublished Data 2016), of which 125 species belong to the largest sect. Caprini DC. and 70 species of sect. Hymenostegis Bunge have been recorded from Iran (Podlech, Zarre & Maassoumi, 2001). Based on new available materials with using the recent literatures (Podlech, Zarre & Maassoumi, 2001, no,175; Podlech, Maassoumi & Zarre, no. 178; Podlech & Zarre 2013), some new species from sections Caprini, Hymenostegis and Craccina are described. Astragalus (Caprini) chamanbidensis Maassoumi & Mozaff., A. (Craccina) kelishomensis Maassoumi, Mozaff. & Moradi and A. (Hymenostegis) rijabensis Maassoumi, Mozaff. & Bagheri

Plant stemless, c. 15-17 cm long, at the base loosely covered with c. 3 mm long ascending hairs; other vegetative parts glabrous. Stipules glabrous, brownish, c. 5-7 mm long, at the base c. 2 mm connate to the petiole, others sides free from each other. Leaves
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c. 17 cm long; rachis very loosely covered with sparse c. 2.5 mm long hairs; petiole c. 4-5 cm long, more densely covered with ascending long hairs. Leaflets 11-13 pairs, ovate to elliptic, completely glabrous, c. 8-15 mm long and 5-9 mm wide, retuse to emarginate at apex. Inflorescence basal, many flowered. Bracts linear, lanceolate, pilose, c. 10 mm long. Peduncle c. 1-1.5 cm long, hairy like petiole, with 2-3 flowers. Calyx tubular, c. 13 mm long, glabrous; teeth c. 2-3 mm long, hairy. Corolla yellow, changing to brownish. Standard c. 33 mm long; limb narrowly elliptic, c. 7 mm long. retuse at apex, at the base gradually passing to a narrow and long claw. Wing 32 mm long; limb narrowly elliptic, c. 10 mm long and 2.5-3 mm wide; auricle c. 2 mm long; claw 22 mm long. Keel 29 mm long; limb oblique elliptic, c. 12 mm long, c. 5 mm wide; auricle short. Ovary pilose, stipitate, stipe c. 4-4.5 mm long, glabrous. Pods elliptic, glabrous, at the base stipitate, stipe c. 4 mm long, ventrally carinate, dorsally sulcate, incompletely bilocular; valves thin, straw color. Seeds reniform, pale brown, c. 8 mm long and 5 mm wide.

Type: Chaharmahal-e Bakhtiari: Lordegan, Kuh-e Rig from S. of Rig village, deep gorge Chaman Bid, 3.6.2009, 31, 22N: 51, 00 E, 2295 m., Mozaffarian 97107, TARI.

Fig. 1. Astragalus chamanbidensis.
**Astragalus (Craccina) kelishomensis** Maassoumi, Mozaff. & Moradi, **sp. nov.** (fig. 2)

Differ from *Astragalus brevifructus* Podlech, in leaflets that are 5-7 pairs (not 2-3), calyx mostly covered with appressed white hairs, very rarely with some scattered short black hairs bellow the teeth (not black and white hairs or predominantly black hairs), leaflets narrowly elliptic (not linear), ovary hairy, legumes covered with short appressed white hairs (not glabrous). It differs from *A. huthianus* Freyn & Bornm., in calyx that is 4.5-5 mm long (not 3.5-4 mm), standard c. 15 mm long (not 9-10 mm), elliptic (not rhomboid).

Plant c. 30-40 cm high. Stem densely covered with short symmetrical bifurcate appressed hairs, c. 0.2 mm long on the calyx; bracts mixed with few scattered black appressed hairs. Stipules hyaline, c.4-5 mm long, at the base shortly connate to the petals, other side vaginate, connate to each other, sparsely to loosely covered with appressed white hairs. Leaves 2.5-5 cm long; petiole c. 1-1.5 cm long, hairy; leaflets 5-7 pairs, narrowly elliptic to linear, c. 10 mm long and 4 mm wide, upper side loosely, lower side more densely covered with short appressed hairs. Inflorescence c. 8-12 cm long, with many remote flowers. Bracts ovate, c. 1 mm long, sparsely pilose or otime mixed with few isolated black hairs. Pedicel c. 1-2 mm long, densely hairy. Calyx c. 5 mm long, tubular, covered with white appressed hairs, on the teeth with a few black hairs, c. 0.2 mm long; teeth subulate, c. 0.5 mm long. Corolla purplish, later changing to yellow. Standard rhomboid, c. 15 mm long and 7 mm wide, retuse to emarginated at the apex. Wing c. 12 mm long; limb oblong to elliptic, c. 7 mm long and 2.5 mm wide; auricle c. 0.7 mm long; claw 4.5 mm long. Keel c. 10 mm long; limb elliptic, c. 5 mm long and 1.5 mm wide. Ovary sparsely pilose, sessile. Pods glabrous, oblong to elliptic, glabrous, erect, c. 13 mm long and 3 mm wide, ventrally carinate, dorsally applanate to shortly sulcate; beck curved, with few seeds.

**Type:** Gilan, Rudbar, margin of the road to Tarom, 12.3.2013, 280 m, V. Mozaffarian 102604, TARI.

**Paratype:** Gilan: rudbar, margin of the road to Tarom, 28.4.2014, 280 m, V. Mozaffarian 102628 (Holotype: TARI).

**DISCUSSION**

*Astragalus chamanbidensis* shows a special habitat on the calcareous rocky mountains in Bakhtiari Province. This species grows in the cliff of the rocks along with some lithophilous species such as: *Campanula incana*, *Astragalus fragiliformis* Boiss. & Hausskn., *Dionysia caespitosa* (Duby) Boiss., *Silen chlorifolia* Sm., *Peltaria angustifolia* and *Ferula haussknechtii* Wolf ex Rech. f.. *Astragalus kelishomensis* usually grows on stabilized soil, mostly gravely with some therophyte species. *Astragalus rijabensis* growing in gravely hills in the eastern part of the country together with some therophyte plants mixed with *Stachys kermanshahensis* Rech. f.
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Fig. 2. *A. kelishomensis*. 
Fig. 3. *Astragalus rijabensis*. 