

## TWO NEW SPECIES OF THE GENUS *ASTRAGALUS* L. (FABACEAE) FROM IRAN

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Among the rich materials collected from different parts of Iran, two new species namely *A. karl-heinzii* from section *Hymenostegis* and *A. juladakensis* from sect. *Dissitiflora* are described.

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دو گونه جدید از جنس گون در ایران

دکتر علی اصغر معصومی

نمونه‌های جمع‌آوری شده هرباریوم مرکزی ایران نامگذاری شدند. از میان نمونه‌های جمع‌آوری شده گونه‌های *A. karl-heinzii* Maassoumi و *A. Juladakensis* Maassoumi به عنوان گونه‌های جدید شرح داده می‌شوند. گونه‌های جدید به همراه دیاگنوز و شرح گیاه ارائه می‌شوند و با نزدیک‌ترین خویشاوندان خود مقایسه می‌گردند. نمونه‌های تیپ در هرباریوم مرکزی ایران نگهداری می‌شوند.

### Introduction

The sect. *Hymenostegis* Bunge seems to be a disagreement section with its number of species in the genus *Astragalus*. The first revision of this section with 26 species established by Bunge (1868). Later on, present author during the local revision for *Astragalus* in Iran increased the number of species to 35 distinct taxa (Maassoumi 1995). This critical work was not also confidence for specialists, in this reason the section was revised again (Zarre & Podlech 1996), unfortunately, these authors without studying of the type of recent species, unreasonably reduced the number of taxa. Finally for preparing Flora Iranica treatment (Podlech & Maassoumi 2001) revised the section again with new collections. In this work with describing more new taxa, the number of species increased to about 40 distinct species. Recently three more new species were described (Podlech 2003; Ghahremani nejad 2004). Finally, another new species is described by the author. So, with this short historic introduction it seems that with new collections, the number of taxa will be increased. Recently the new molecular analysis of the section on some species, showed that this section is a monophyletic and homogenous section in the genus.

The sect. *Dissitiflora* DC. for flora Iranica area was recently revised (Podlech, unpublished). This work covered a great number of species in which the majorities belong to Afghanistan territory. According to Fl. USSR sect. *Corethron* Bunge is closely related to sect. *Dissitiflora* DC. But the shape of fruit with having oblong elliptic pods and long spreading hairs seems to be a distinct section, but new molecular analysis (Kazempour & Maassoumi, unpublished) with using *A. dendroproselius* Rech. f. in cladogram nested with other species of sect. *Dissitiflora* DC. So, it will be reasonable to reduce sect. *Corethron* as a synonymous of sect. *Dissitiflora* DC. as Podlech treated.

### New species

***Astragalus karl-heinzii* Maassoumi, sp. nov**  
e sect. *Hymenostegis*

Inter speciebus ab sect. *Hymenostegis* Bunge sed differt inflorescentia laxa multiflora c. 8-9 cm longa insigni. Differt ab *A. rubrostriatus* Bunge stipulis c. 17 mm longis ad basi c. 7 mm petiolis adnatis (nec 7-12 mm longis et c. 5 mm petiolis adnatis), pedunculo c. 2-3 cm longo dense patenter longe et brevissime piloso (nec

usque ad 15 cm longo et appresse brevissime et longe patenter piloso), foliolo rachisque dense patenter vel subpatenter piloso (nec appresse piloso), calycis c. 21 mm longis, partim atropurpurea nervosis (nec 11-16 mm longis).

Plants suffruticose, caespitose, spiny, 22 cm tall, spherical, c. 35 cm in diameter. Stems 10 cm long, the older parts densely covered with remnants of old leaves, strongly branched, parts of the current year up to 2 cm long. Stipules hyaline-membranous, 17 mm long, at the base c. 7 mm adnate to the petiole, vaginate, connate behind the stem for 3 mm, the free tips narrowly triangular, ca. 6-7 mm long, glabrous, sparsely ciliate at the margins. Leaves 7-8 cm long; petiole 2.5 cm long, similar to the rachis covered with subappressed hairs to 0.4-1.4 mm long. Leaflets 8 pairs, linear to narrowly elliptic, 17 mm long and 3-4 mm wide, at the apex acuminate, pungent, with a cusp 1-1.5 mm long, on both sides densely covered with subappressed hairs to 0.3-0.7 mm long. Peduncles 2-2.5 cm long, shorter than the leaves, densely covered with short and long spreading hairs 0.5-1 mm long. Racemes cylindrical, 9-12 cm long, densely or remotely many-flowered; axis densely covered by ascending to spreading hairs. Bracts permanent, chartaceous, 14-15 mm long, 4-6 mm wide, narrowly ovate, glabrous, margin remotely ciliate. Calyx tubular, c. 21 mm long, 4-5 mm wide, inflated, violet, mostly with purple nerves, densely covered with short and long ascending to spreading hairs 1.5-2.5 mm long; teeth subulate, purple, 8-9 mm long. Petals purple-violet or pale violet. Standard 23 mm long; blade obovate to oblong, slightly panduriform, 7 mm wide, acute at the apex, slightly constricted below the middle, at the base obtusely angular-hastate, with cuneate claw. Wings 20 mm long; blades narrowly ovate, at the apex rounded, 9 mm long and 3 mm wide; auricle 0.5 mm long; claw 10 mm long. Keel 15 mm long; blades obliquely obovate, 5 mm long and 3 mm wide; auricle minute; claw 10 mm long. Ovary sessile, oblong, densely hairy. Legumes unknown.

*Type.* Azerbaijan: Ardabil, c. 20-30 km from Masuleh to Khalkhal, N: 37,16, 25: E: 48, 44, 17, 2100 m, Assadi 86477 (holotypus TARI).

The new species named in the honor of Prof. Dr. Karl Heinz Rechinger for his survey on the *Astragalus* of Iranian territory and for his monumental scientific work of Flora Iranica.

***Astragalus juladakensis* Maassoumi, sp. nov.** e section *Dissitiflora* DC. –Fig. 1.

Affinis ab *A. aestimabilis* Podlech, sed differt legumine dense albo longe assymetrice patenter immixti, brevissime albo symetrice appresse pilosi (nec albo nigrosque pilosi). Species folioliis filiformis c. 0.2-0.4 (-1) mm latis differt ab *A. dendroproselius* Rech. f. et *A. viridis* Bunge.

Plant suffruticose, c. 30 cm tall, covered in vegetative part with white medifixed appressed hairs, on the stipules mixed with some few appressed black hairs. Caudex much branched, lignose. Stem of current year c. 10-12 cm long. Stipules c. 2-3 mm long, triangular, covered with mixed black and white hairs, at the base shortly adnate to the petiole, behind free from each other. Leaves 6-8 cm long; petioles 3-3.5 cm long, like the rachis slender and densely covered with appressed medifixed hairs; leaflets 5 pairs, linear or filiform, c. 20-23 mm long and 0.2-0.4(-1) mm wide, acute, both sides with appressed medifixed hairs. Peduncle 6-10 cm long, slender, like petiole covered with appressed medifixed hairs. Raceme rather densely 8-10 flowered, elongating, axis covered with appressed to subappressed black and white hairs. Bracts 2-3 mm long, triangular, covered with black and white spreading hairs. Pedicel short, nearly deflexed. Calyx 13 mm long, gibbose at the base, densely covered with long asymmetric white spreading mixed with short subappressed to appressed medifixed white and few black hairs; the teeth subulate, c. 3 mm long, with black and white hairs, inner side white hairy. Standard c. 22 mm long, middle part c. 7 mm wide, obtuse at apex, toward base minutely hastate; claw c. 6 mm long. Wings c. 22 mm long, the limb c. 10 mm long, acute at apex, at the base auriculate; auricle c. 2 mm long; claw c. 12 mm long. Keel c. 17.5 mm long, the limb c. 7 mm long, triangular; claw c. 12 mm long. Ovary pilose. Pods bilocular, ellipsoid (immature) c. 20 mm long, 5 mm high and wide, densely covered with long spreading asymmetric hairs mixed with short white symmetrical ones.

*Typus.* Ghazvin: Juladak, alpine area, 2400 m, 2007, Rashvand s.n (holotypus TARI; Iso: Ghazvin Research Center Herbarium).

The species named after the name of Jula race, who occupied the mountain area of Elburz ranges since long time.

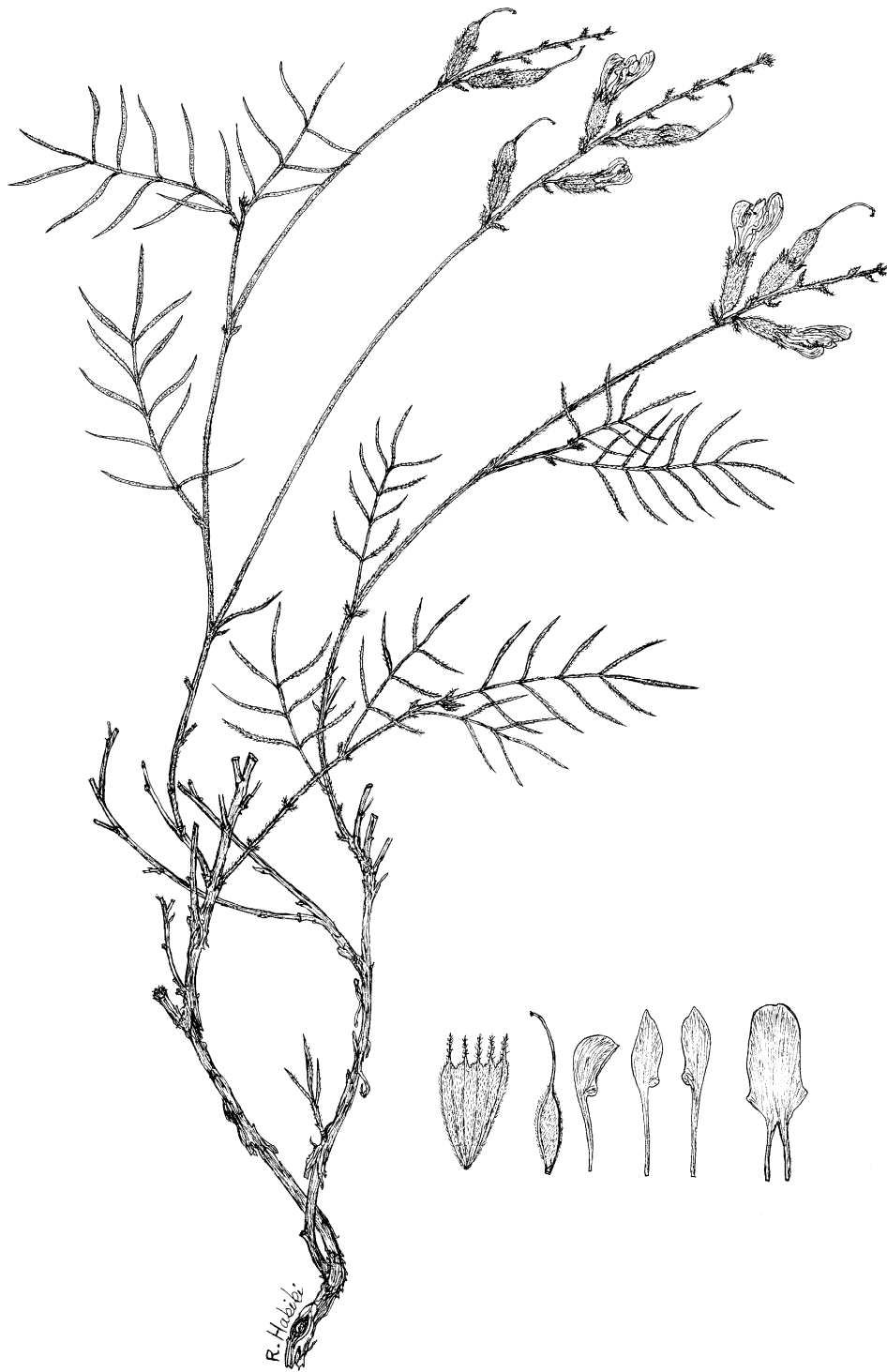


Fig. 1. *Astragalus juladukensis* ( $\times 0.6$ ); detail of flower ( $\times 1.2$ ).

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