

# A NEW ISOLATED SPECIES OF THE GENUS ASTRAGALUS FROM AZERBAIJAN, IRAN

R. Sheikh Akbari Mehr, M. Ghorbani Nohooji & A. Saidi

Received 17.05.2011. Accepted for publication 16.11.2011.

Sheikh Akbari Mehr, R., Ghorbani Nohooji, M. & Saidi, A. 2011: 31: A new isolated species of the genus *Astragalus* from Azerbaijan, Iran. -*Iran. J. Bot.* 17 (2): 178-180. Tehran.

During investigation on the genus *Astragalus* L., in various geographical regions of Iran, a new species (*A. montismishoudaghi*) was recognized and thus described here. This new species is closely related to *A. ledinghamii*, with some morphological differences and a great geographical disjunction.

Reza Sheikh Akbari Mehr, (correspondence < reza.sheikhakbari@gmail.com >), Majid Ghorbani Nohooji < m.gh.nahooji@gmail.com > PhD students, Department of Botany, Biological Sciences Faculty, Shahid Beheshti University G. C., Tehran, Iran. -Abbas Saidi < abbas.saidi@gmail.com >, Department of Agricultural Biotechnology, Energy Engineering and Modern Technologies Faculty, Shahid Beheshti University G. C., Tehran, Iran.

*Key words.* *Astragalus*, *Fabaceae*, new species, Iran.

گونه جدید *Astragalus montismishoudaghi* از جنس گون از شمال غرب ایران

رضا شیخ اکبری مهر، دانشجوی دکتری دانشکده علوم زیستی دانشگاه شهید بهشتی.

مجید قربانی نهوجی، دانشجوی دکتری دانشکده علوم زیستی دانشگاه شهید بهشتی.

عباس سعیدی، دانشیار زیست فناوری کشاورزی، دانشگاه شهید بهشتی.

در حین شناسایی نمونه های جمع آوری شده مربوط به جنس گون از نقاط مختلف ایران، گونه *Astragalus montismishoudaghi* به عنوان گونه جدید برای فلور کشور شرح داده می شود. شرح تشخیصی، شرح کامل و تصویر گونه جدید ارائه شده و با نزدیکترین خویشاوند خود (*A. ledinghamii*) مقایسه می گردد. نمونه تیپ در هرباریوم موسسه تحقیقات جنگلها و مراتع ایران (TARI) نگهداری می شود.

## INTRODUCTION

*Astragalus* L. (*Fabaceae*) is probably the largest genus of flowering plants containing up to 3000 species (Lock & Simpson, 1991). This genus is the largest genus in Iran, and its species are distributed throughout most areas of the country. Iran is considered a major center of diversity for *Astragalus*, having approximately 36% of the Old World species (Maassoumi, 1998). In the present paper a new species namely *A. montismishoudaghi* from the section *Stereothrix* Bunge is described.

## RESULTS

### New species

*Astragalus montismishoudaghi* Sheikh Akbari Mehr, Ghorbani & Maassoumi, **sp. nov.** e Sect. *Stereothrix* Bunge. -Fig. 1.

*Diagnosis.* Similis ab *A. ledinghami* Barneby sed differt pilis calyci dentibus albo-nigrosque insignis (nec albo pilosis), stipulis basi distincte libra (nec leviter connata), internodiis brevissimis.

*Description.* Plant ca. 10-13 cm tall, densely covered with subrigid appressed white hairs ca. 0.5-1.5 mm long, much divided at the base. Stem ca. 4-7 cm long, prostrate, densely covered with white appressed hairs. Stipules ca. 4.5 mm long, free portion narrowly lanceolate, densely covered with white appressed hairs, at the base minutely adnate to the petioles and other side free from each other. Leaves dimorphic; basal leaves very short with 2-pairs of oblong leaflets; stem leaves 6-8 cm long with 3-5 pairs of leaflets. Leaflets linear to narrowly lanceolate, ca. 15-30 mm long and 2-2.5 mm wide; both sides densely covered with appressed flattened hairs. Peduncle ca. 3-10 cm long, like the rachis densely covered with appressed white



Fig. 1. *Astragalus montismishoudaghi* habit (holotype).

hairs; the hairs are apparently basifixed but with very asymmetrically bifurcate hairs with reduced and short arms. Racemes capitate, spherical or shortly cylindrical, ca. 2.5-4.5 cm long and 2-2.2 cm wide, many flowered. Bracts triangular, 3-4(6) mm long, densely hairy. Calyx ca. 10 mm long, campanulate, densely covered with long spreading hairs ca. 2 mm long; teeth linear, ca. 6 mm long, at the base covered with white hairs, but at the end mixed with few black long hairs. Petals yellowish to pale brown. Standard ca. 9 mm long; the limb oblong, ca. 3.5 mm wide, emarginate at the apex; claw ca. 2 mm long. Wings ca. 7 mm long, the limb ca. 3 mm long; claw ca. 4 mm long. Ovary pilose, stipitate. Legume ovoid, sparsely pilose, ca. 5 mm long and 3 mm wide, with long style, at the base stipitate; stipe glabrous, ca. 1-1.5 mm long; valves dorsally carinate, ventrally deeply sulcate; seeds few.

*Holotype*. Iran: Azerbaijan: Payam, Mishoudagh mountain, 1930 m, N: 38 20.114 E: 45 47.483, 15.07.2009, Sheikh-Akbari Mehr & Ghorbani 92499 (TARI).

The new species is characterized by basifixed hairs. This species is close to *A. ledinghamii*. A comparison between the two species is given in table 1.

### Geographical discussion

Central regions of Iranian plateau is the upper limit of *A. ledinghamii* distribution area (south to center of Iran until Isfahan province), whereas *A. montismishoudaghi* is restricted to Mishoudagh mountain, located in south of Marand at 1930 m altitude (N38 20.114; E45 47) in northwest of Iran. The wonderful disjunction between two regions (more than 1000 kilometers) without any connection is an interesting issue about the new species.

### Molecular evidence

Nucleotide sequences of nrDNA (ITS1-5.8S-ITS2 region) were explored in *A. montismishoudaghi* and it is closely related species to *A. ledinghamii*. Comparison of this region sequences between two species revealed two polymorphic loci which confirm the taxonomical position of the new taxon (Kazempour et al., unpublished data).

Table 1. Comparison between *Astragalus ledinghamii* and *A. montismishoudaghi*.

Morphological characters	<i>A. ledinghamii</i>	<i>A. montismishoudaghi</i>
Calyx Hairs	only white	black and white mixed
Stipule	connected to petiole	free
Basal leaves	1-2 leaflet pairs	4 leaflet pairs
Stem leaves	3-4 leaflet pairs	4-5 leaflet pairs
Stem height (cm)	2-14	2-7
Stipule length (mm)	2.5-7	1.5-5.5
Calyx length (mm)	9.5-13	7.5-9
Calyx teeth (mm)	5.5-10	4-5
Standard (vexillum)	obovate	rhomboid

### ACKNOWLEDGEMENTS

We are grateful to Dr. Sh. Kazempour Osalo for his valuable guidance in the molecular study.

### REFERENCES

- Barneby, C. 1974: *Dragma Hippomanicum*. I. - *Brittonia* 26: 109-114.
- Lock, J. & Simpson, K. 1991: *Legumes of West Asia*, a Check-list. -Royal Botanic Gardens Publication, London.
- Maassoumi, A. A. 1998: *Astragalus of the Old World*, a checklist. -Research Institute of Forests and Rangelands Publication, Tehran, Iran.
- Podlech, D., Zarre, Sh., Maassoumi, A. A., Ekici, M. & Sytin, A. 2010: *Papilionaceae VI* in Rechinger K. H. *Flora Iranica* no. 178. -Akademische druck-u. verlagsanstalt, Gruz-Austria.