

THREE NEW ASTRAGALUS (FABACEAE) SPECIES FROM IRAN

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Abstract

Mostafa Assadi, the main editor of Flora of Iran, is preparing a supplement to the Flora. The author of this paper prepared the treatment of the genus *Astragalus*. In this draft, three new species, *A. sefidkuhensis*, *A. inordinatus*, and *A. dideganensis*, were described but remained unpublished. Following the passing away of Prof. Dr. A.A. Maassoumi on May 4, 2026, Mostafa Assadi, his colleague of more than 50 years, compiled and prepared these new species for publication in his memory. His name will remain forever in Iranian botany and plant taxonomy.

Keywords: *Astragalus* sect. *Alopecuroidei*, sect. *Malacothrix*, sect. *Incani*, new species, Iran

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سه گونه جدید از جنس گون *Astragalus* (Fabaceae) از ایران

علی اصغر معصومی: استاد، موسسه تحقیقات جنگلها و مراتع کشور، سازمان تحقیقات، آموزش و ترویج کشاورزی، ایران

گردآورنده: مصطفی اسدی، استاد، موسسه تحقیقات جنگلها و مراتع کشور، سازمان تحقیقات، آموزش و ترویج کشاورزی، ایران

چکیده: مصطفی اسدی، ویراستار ارشد فلور ایران، در حال تهیه متممی برای فلور ایران است. مرحوم پروفیسور دکتر علی اصغر معصومی بخش مربوط به جنس *Astragalus* را برای این متمم تهیه کرده بود. در این پیش‌نویس، سه گونه جدید شامل *A. sefidkuhensis*، *A. inordinatus* و *A. dideganensis* ذکر شده که تاکنون منتشر نشده بودند. پس از درگذشت مرحوم پروفیسور دکتر علی اصغر معصومی در ۱۴ اردیبهشت ماه ۱۴۰۵، مصطفی اسدی، همکار بیش از ۵۰ ساله ایشان، این گونه‌های جدید را گردآوری و برای انتشار در قالب این مقاله، به یاد و خاطره آن استاد فقید، تنظیم نمود. نام و یاد ایشان همواره در گیاه‌شناسی و تاکسونومی گیاهی ایران ماندگار خواهد بود.

INTRODUCTION

The compiler of this paper, M. Assadi, has been preparing a supplement to the Flora of Iran (Assadi & al. 1989–2023; Assadi & Heydarnia 2024) to document newly described taxa and new records reported from Iran after the Flora's publication. Late Prof. Dr. A.A. Maassoumi prepared the treatment of *Astragalus* L. for this supplement. In that draft, three new species were described but remained unpublished. In memory of Prof. Dr. A.A. Maassoumi, who passed away on May 4, 2026, after a period of illness, M. Assadi, his colleague and friend of more than 50 years, compiled these new species for publication. Through his outstanding contributions to Iranian plant taxonomy, Prof. Maassoumi's legacy will endure.

MATERIALS AND METHODS

In the draft given to the compiler of this paper by late A.A. Maassoumi, a list of rather incomplete taxa published or recorded from Iran after *Astragalus* parts of Flora of Iran was included (Maassoumi 2003; Maassoumi 2016; Maassoumi 2018). Among the taxa, 3 new *Astragalus* species had been described but not published. After the death of Professor Dr. A.A. Maassoumi, these new species were compiled together and prepared as a paper to be published in his memory by the compiler. The description of the species was modified as little as possible, except for corrections to specific words or phrases that were identified by the referees during the review process.

RESULTS AND DISCUSSION

New species

Astragalus sefidkuhensis Maassoumi **sp. nov.** e sect. *Alopecuroidei* DC.

Type: Iran, Lorestan Province: Khoramabad, Sefid Dasht elevation, 06.03.2011, Tavakoli 3727 (holotype TARI).

Description: Plant perennial, herbaceous, c. 35–40 cm tall, with a caudex much divided at the base, sparsely covered with short, subappressed, basifixed white hairs. Stipules linear to lanceolate, c. 4 mm long, white hairy, at the base shortly adnate to the petioles and free from each other. Stem slender, sparsely covered with subappressed hairs. Leaves 10–12 cm long; petioles 1–2 cm long. Leaflets 17–18 pairs, linear to narrowly elliptic, obtuse to retuse at the apex; upper side glabrous; lower side with appressed to subappressed

hairs. Bracts linear, c. 2 mm long, covered with spreading hairs. Inflorescence, capitate, sessile, 5–7 flowered. Calyx campanulate, c. 8 mm long; teeth linear, c. 3 mm long, densely covered with long, spreading hairs. Corolla yellow. Standard 9 mm long; limb oblong-elliptic, c. 6 mm wide, emarginate at the apex, abruptly narrowed to a short claw, minutely shorter than the keels. Wings c. 11 mm long and 3.5 mm wide. Keels longer than wings and standard; claw c. 4 mm long. triangular, c. 11.5 mm long and 3.5 mm wide, curved, at the base with a triangular auricle c. 3.5 mm long.

Paratype: Iran, Lorestan Province: Sefid Dasht, Tavakoli, 106229 (TARI).

Astragalus inordinatus Maassoumi, **sp. nov.** e sect. *Malacothrix* Bunge, **Fig. 1.**

Type: Azerbaijan: Ardabil, Sabalan Mt. from Alvares village, Alvares ski piste, 35° 12' 21" N; 47° 50', 00" E, 3600–3800 m, 31.07.2016, Jalil Noroozi 3947 (holotype TARI).

Description: Plant perennial, shortly caulescent, c. 3–4 cm tall. Rootstock slender, much divided, with short subterranean brown branches (stoloniform with remnants of old brownish stipules), c. 2 cm long, and often several short flowering stems on the soil surface. All vegetative parts covered with rigid, unequal, basifixed white spreading hairs, and bracts and calyx covered with unequal, spreading black and white hairs. Stipules triangular, acuminate, c. 1.5 mm long, in early-stage hairy but in fruiting time glabrescent, at the base 0.3 mm adnate to the petiole, behind vaginate. Leaves c. 2 cm long; petioles c. 1 cm long, both petioles and rachis densely covered with unequal short and long rigid hairs, up to 0.5 mm long; leaflets 10–11 pairs, folded, both sides densely covered with appressed to spreading hairs, acute to obtuse at the apex. Calyx tubular, c. 4–5 mm long, attenuated toward the base, covered with black and white long hairs; teeth subulate, c. 1 mm long, inner side glabrous. Bracts lanceolate, c. 2.5 mm long. Inflorescence capitate, with 8–10 flowers, violet to purplish; peduncle c. 1 cm long, covered with white, spreading, rigid hairs. Standard c. 12 mm long; limb rhomboid, c. 6 mm wide, emarginate at the apex, abruptly attenuate toward the claw; Wings 5–6 mm long; limb oblong, dilated toward the apex, c. 1.5 mm wide; claw 3 mm long; auricle c. 1 mm long. Keels 5 mm long; limb ovate; claw 3 mm long. Stamens diadelphous. Ovary linear, sessile, pilose. Pods unknown.



Fig. 1. *Astragalus inordinatus* (scale bar =2cm): a, flower; b, stipules; c, calyx; d, standard; e, wings; f, keel (scale bar =5 mm).

Astragalus dideganensis Amini, Kazempour Osaloo & Maassoumi, **sp. nov.** e sect. *Incani* DC.

= *A. mercklinii* Boiss. & Buhse subsp. *farsicus* Podlech, Sendtnera, 6: 152(1999).

Type: Iran, Fars Province, Shiraz: Khoram Bid, Didegan area, 2100 m, Teyebi E140 (holotype TARI).

Description: Plant perennial, stemless, c. 8-15 cm, densely covered with medifixed appressed white hairs. Stipule membranous, c. 2 mm long, hairy. Leaves 6-12 cm long; petiole 2-6 cm long, like rachis covered with medifixed appressed hairs. Leaflets 6-7 pairs, ovate, upper side with purple dots, c. 12 mm long and 6 mm wide, attenuated toward the apex. Peduncle 3-9 cm long, appressed hairy. Inflorescence 5-6 flowered. Bracts narrowly ovate, c. 2 mm long, white hairy. Bracteoles small, at the base of the calyx. Calyx tubular, 10-12 mm long, covered with appressed black and white hairs; teeth linear, 2-7 mm long, inner side covered with black asymmetric medifixed to basifixed hairs. Standard c. 22 mm long; limb rhomboid, emarginate at the apex, c. 18-20 mm long. Keel 17 mm long. Ovary sessile, pilose. Pods 4-4.5 cm long, densely covered with flattened appressed to ascending hairs, ventrally carinate, dorsally applanate to sulcate.

A. mercklinii Boiss. & Buhse subsp. *farsicus* Podlech was regarded as a synonym of *A. mercklinii* by Podlech & al. (2010) and Maassoumi (2018). A bulk of elements in section *Incani* were phylogenetically analyzed by Amini & al. (2019). In this work *A. mercklinii* subsp. *farsicus* was nested far from *A. mercklinii*. Moreover, the two taxa differ morphologically; therefore, the former subspecies is described as a new species, and the name of the locality "didegan" was used to introduce the epithet *dideganensis*. Worth mentioning the combination *A. farsicus* Sirj. & Rech.f. has been previously used for another taxon and therefore, it may not be possible to raise the epithet subsp. *persicus* to species rank.

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