

New species of *Astragalus* L. (Leguminosae) from Iran

by

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Summary: 5 new species of the genus *Astragalus* L. from Iran are described: 1 of sect. *Caprini* DC., 1 of sect. *Glycyphyllos* Bunge and 3 of sect. *Malacothrix* Bunge.

Astragalus urbanus Podl. & Maassoumi, spec. nov. e sect. *Caprini* DC.

differt ab *A. remotijugo* Boiss. & Hohen. foliolis 6-9 jugis (nec 4-5 jugis) legumine complete biloculari, ab *A. segobromus* Boiss. & Hohen. stipulis non alte connatis, bracteis albo-membraceis et stylo sub stigmata nudo, ab *A. ovino* Boiss. foliolis 6-9 jugis (nec 10-16 jugis) anguste albo-marginatis, dentibus calycis brevioribus, legumine distincte minore et complete biloculari.

Plantae perennes, 20-30 cm altae, acaules vel caule ad 5 cm longo suffultae, ovarium fructuque excepto glaberrimae. Stipulae albidae, 8-14 mm longae, acutae, petiolo per 2 mm adnatae. Folia 18-28 cm longa, petiolo 4-8 cm longo. Foliola 6-9 jugs, 11-25 mm longa et 10-20 mm lata, late elliptica vel late obovata vel fere orbicularia, apice rotundata vel leviter emarginata, glauca, anguste albido-marginata. Racemae subsessiles vel pedunculo ad 2 cm longo suffultae, 4-10 florum. Bracteae albomembraceae, 5-8 mm longae. Pedicelli 2-3 mm longi. Calyx ca. 15 mm longus, tubulosus, dentibus 3-4 mm longis. Corolla flava. Vexillum 23-27 mm longum, lamina elliptica, ca. 9 mm lata, incisa. Alae 21-24 mm longae, lamina anguste oblonga, antice rotundata 7-9 mm longa et ca. 2,5 mm lata, auricula 1-1,5 mm longa provisa, ungue 14-17 mm longo. Carina 20-23 mm longa, lamina oblique obovato-triangulari, 6-7 mm longa, ungue 15-17 mm longo. Ovarium subsessile, dense pilosum, stylo glabro. Legumen sessile vel breviter stipitatum, oblongum vel ellipticum, 16-24 mm longum, 8-11 mm altum et 7-10 mm latum, ventre late

carinatus, dorso rotundatus, rostro 3-4 mm longo, valvis coriaceis tenuiter rugulosis, primo dense, demum laxiuscule villosis, complete biloculare. Semina ca. 6 mm longa.

Holotypus: Iran, Prov. Tehran, 14 km S of Damavand near Akhorbadin, 1650-1800 m, 22.6.1985, Mozaffarian 53817 (TARI; Iso: Herb. Podl.).

Astragalus botryophorus Maassoumi & Podl., spec. nov. e sect. *Glycyphyllos* Bunge

Plantae perennes, 70-100 cm altae, subglabrae vel sparse pilis 0,1-0,3 mm longis nigris subappressis oblectae. Caulis singularis, erectus, validus, cavus, ad 10 mm crassus, tenuissime longestriatus, stramineus, glaber vel pilis solitariis provisis, regulariter foliatus. Stipulae albomembranaeae, 8-10 mm longae, glabrae vel sparse pilosae, basi per 2 mm petiolo adnatae, inter se liberae, bipartitae, parte basali angusta acuminata, 3-5 mm longa, horizontaliter caulem adnata, parte apicali triangulari, interdum reflexa. Folia 5-15 cm longa, petiolo brevissimo sicut rachis stramineo, tenuiter striato, sparse piloso, basalia mox evanescentia. Foliola 9-12 juga, 12-30 mm longa et 2-7 (-10) mm lata, in foliis superioribus anguste ovata vel saepe linearia, in foliis inferioribus anguste ovata et partim basin versus distincte dilatata ad 10 mm lata, omnia antice truncata vel leviter emarginata, glabra vel raro pilis solitariis provisa. Inflorescentiae in parte superiore caulis numerosae, pedunculo erecto 6-12 cm longo glabro vel sparse piloso suffultae, racemosae, multiflorae, racema primo densa mox valde elongata ad 16 cm longa. Bractae albo-hyalinae, triangulares, 2-3 mm longae, nigroscillatae. Pedicelli ca. 1 mm longi, erecti, pilosi. Calyx 7-9 mm longus, tubulosus, laxe appresse pilosus, dentibus subulatis vel anguste triangularibus, ca. 2 mm longis. Corolla rosea, glabra. Vexillum 17-19 mm longum, lamina 7-8 mm lata, elliptico-rhomboides apicem versus linguatim attenuata, profunde incisa, basi cuneatim in unguem angustata. Alae 13-14 mm longae, lamina anguste elliptica, antice rotundata, ca. 7 mm longa et 3 mm lata, auricula ca. 1,5 mm longa provisa, ungue 6-7 mm longo. Carina 12-13 mm longa, lamina oblique elliptico-curvata, ca. 6 mm longa et 3 mm lata, antice obtusa, ungue 6-7 mm longo. Ovarium breviter stipitatum, lineare glabrum. Legumen stipite ca. 2 mm longo suffultum, erectum, lineare, leviter curvatum, 20-30 mm longum, 3-3,5 mm altum et 2,5-3 mm latum, ventre carinatum, dorso anguste et profunde sulcatum, apice brevissime acuminatum, valvis tenuibus, tenuiter reticulato-venosis, glabris, fere complete biloculare.

Holotypus: Iran, Prov. Hamadan, 40 km from Hamadan on road to Malayer, 2000 m, 10.5.1987, Maassoumi 59346 (TARI; Iso: Herb. Podl.)

The plants of this newly described species show some similarity with *A. sulfureus* Boiss. from sect. *Theiochrus* Bunge. They differ from this mainly by their erect, curved fruits, which in fact resembles very much those of *A. glycyphyllus* L. For this reason we put the new species in the sect. *Glycyphyllus* Bunge.

Astragalus chahartaghensis Maassoumi & Podl., spec. nov.
e sect. *Malacothrix* Bunge

differt ab *A. babakhanloui* Maassoumi & Podl. rachidibus pilis fere appressis ad 1 mm longis obtectis, corolla violacea (nec flava) calyce obscure brunneo-viride pilis longioribus rigidis (nec mollibus flexuosis) obtecto, dentibus calycis latioribus et ovario breviter stipitato (nec sessile).

Plantae perennes, breviter caulescentes. Caudex ramosus, caudiculos tenues ramosos emittens. Caulis 1-3 cm longus, densiuscule pilis albis subappressis 0,3-0,5 mm longis obtectus. Stipulae 4-5 mm longae, e basi albo-membranaceo in apicem viridiusculum attenuatae, extus sparse margine densiuscule pilis brevibus albis et interdum nigris immixtis provissae, basi brevissime petiolo adnatae vel superiores subliberae, inter se brevissime connatae. Folia 5-8 cm longa, petiolo 2-4 cm longo, lamina aequilongo vel sublongiore, sicut rachis laxe vel densiuscule pilis rigidis irregulariter patentibus 0,3-1,5 mm longis obtecto. Foliola (2-) 3-4 juga, 10-20 mm longa et 3-6 mm lata, anguste elliptica, antice obtusiuscula vel acutiuscula, supra sparse vel laxe, subtus laxe vel densiuscule appresse pilosa. Inflorescentiae pedunculo 2-3 cm longo saepe flexuoso, sicut rachis piloso suffultae, primo dense capitatae demum laxiusculae, multiflorae. Bractee viridiusculae apices versus obscuriores, 2-2,5 mm longa, anguste ovatae vel lineares, albo-vel albo-nigrociliatae. Flores subsessiles. Calyx 9-12 mm longus, tubulosus vel leviter ventricosus, sub-ruber vel imprimis in parte superiore obscure brunneo-viridis, dense pilis patentibus rigidis ad 1,5 mm longis albis et nigris obtectus, dentibus filiformibus, 5-6 mm longis. Corolla glabra, violacea. Vexillum ca. 12 mm longum, lamina obovato-rhomboides, ca. 5 mm lata, antice late et profunde incisa, basi longe attenuata. Alae ca. 10 mm longae; lamina anguste oblonga, antice oblique leviter emarginata, ca. 6 mm longa et 1,5 mm lata, auricula indistincta provisa, ungue ca. 5 mm longo. Carina 8-9 mm longa, lamina oblique elliptico-triangulare, 3,5-4

mm longa et ca. 2 mm lata, ungue 4,5-5 mm longo. Ovarium brevissime stipitatum, pilosum. Legumen ignotum.

Holotypus: Iran, Prov. Chaharnahal-e Bakhtiari, Sabzev Kuh, Chahartagh, 2350 m, 16.9.1987, Mozaffarian 59966 (TARI, Herb. Podlech).

Astragalus idoneus Maassoumi & Podl., spec. nov. e sect. *Malacothrix* Bunge

differt ab *A. belgheisensis* Maassoumi foliis mollioribus (nec crassis) nervo mediano tenue (nec crasso elevato) densius pilosis, rachidibus appresse pilosis, dentibus calycis longioribus et lamina vexilli elliptica, ab *A. molle* HB. rachidibus appresse pilosis, calyce longiore et lamina vexilli elliptica, ab duobus speciebus leguminis pilis albis longis basi distincte applanatis obtecto.

Plantae perennes, acaules vel breviter caulescentes. Caulis ad 2 cm longus, pilis albis 0,3-0,8 mm longis appressis obtectus. Stipulae membranaceae, triangulares, inferiores 2-3 mm longae, superiores ad 6 mm longae, pilis brevibus albis et interdum paucis nigris immixtis obtectae, per 2-3 mm petiolo adnatae, inter se brevissime connatae. Folia 8-12 cm longa, petiolo 1,5-4 mm longo, sicut rachis dense, apicem versus laxiore pilis subrigidis ad 0,8 mm longis appressis obtecto. Foliola 8-14 jugs, 5-8 mm longa et 2-4 mm lata, anguste elliptica, antice rotundata vel leviter emarginata, crassiuscula, supra sparse, subtus laxe appresse pilosa, saepissime complicata. Inflorescentiae pedunculo 4-8 cm longo in parte basali dense pilis brevibus apicem versus laxe pilis longioribus ad 1,5 mm longis albis vel paucis nigris immixtis obtecto suffultae, dense racemosae, multiflorae. Bractee viridiusculae, 10-15 mm longae, lineares, albonigropilosae. Pedicelli brevissimi. Calyx 14-16 mm longus, late tubulosus vel leviter ventricosus, densiuscule pilis tenuissimis ad 2 mm longis albis patentibus et in super pilis multo brevioribus partim appressis nigris obtectus, dentibus 5-7 mm longis. Corolla flava, in sicci violacea, glabra. Vexillum 19-20 mm longum, lamina elliptica, 7-8 mm lata, antice incisa, basi sensim in ungue attenuata. Alae ca. 17 mm longae, lamina anguste oblonga, apicem versus leviter dilatata, rotundata, ca. 7 mm longa et 2,5 mm lata, auricula ca. 1 mm longa provisa, ungue ca. 10 mm longo. Carina ca. 16 mm longa, lamina oblique triangulari-curvata, acutiuscula, ca. 6 mm longa et 3 mm lata, ungue ca. 10 mm longo. Ovarium sessile, pilosum. Legumen sessile, dense pilis patentibus longis basin versus applanatis et sparsis pilis brevissimis albis obtectum.

Holotypus: Iran, Prov. Tehran, Tehran to Karadj, Gara-Darreh, 2200 m, 7.5.1978, M. Assadi 27540 (TARI; Iso: Herb. Podl.).

*Astragalus lippertii** Maassoumi & Podl., spec. nov.

sect. *Malacothrix* Bunge

differt ab *A. holopsilo* Bunge in partibus vegetativis sparse pilosus (nec glaber), bracteis multo longioribus, calyce 14-15 mm longo (nec 9 mm longo), ab *A. kabristanicus* Grossh. foliolis 11-13 jugis (nec 15-20 jugis) majoribus subglabris, calyce longiore.

Plantae perennes ad 35 cm altae, caulescentes, sparse pilosae. Caules nonnulli, 10-20 cm alti, sparse pilis brevibus ad 0,3 mm longis appressis obtecti. Stipulae 8-10 mm longae e basi breviter vaginante et inter se connatae abrupte lineari-subulatae, basi petiolo breviter adnatae, sparse appresse pilosae. Folia 10-17 cm longa, petiolo 4-5 cm longo tenue, sicut rachis sparse brevissime appresse piloso. Foliola 11-13 juga, 6-15 mm longa et 8-9 mm lata, elliptica, apice rotundata vel leviter emarginata, glabra vel subtus in nervo mediano sparsissime appresse pilosa. Inflorescentiae pedunculo 15-18 cm longo, sulcato, pilis brevibus appressis albis apicem versus nigris imixtis obtecto suffultae; racema multiflora, densiuscula, 5-6 cm longa, rachide albo-nigropilosa. Bractee virides, lineari-acuminatae, 8-12 mm longae, pilosae. Pedicelli brevissimi. Calyx 14-15 mm longus, late tubulosus, pilis albis nigrisque ad 1 mm longis appressis vel semipatentibus obtectus, dentibus 5-6 mm longis, anguste linearibus. Corolla intense violacea, glabra. Vexillum ca. 25 mm longum, lamina rhomboidea, ca. 10 mm lata, apice longe ligulata, basi in unguem brevem attenuata. Alae ca. 17 mm longae, lamina anguste oblonga, apice rotundata, basi auricula ca. 2 mm longa provisa, ungue ea aequilongo. Carina ca. 15 mm longa, lamina oblique subtriangulari-elliptica, apice acutiuscula, basi auricula ca. 1,5 mm longa provisa, ungue ea subduplo longiore. Ovarium sessile, pilosum. Legumen sessile, ovoideum, basi late rotundatum, apice acuminatum, 12-14 mm longum, ca. 4 mm latum et 7 mm latum, ventre leviter carinatum, dorso late et distincte sulcatum, complete biloculare, dense pilis albis ad 4 mm longis subpatentibus obtectum.

Holotypus: Iran, Azerbaijan, Rezaiyeh, Serow, 1870 m, 15.6.1972, W. Poroghi 6313 (TARI; Iso: Herb. Podl.).

* Named in honour of Dr. W. LIPPERT, taxonomist at Botanische Staatssammlung München.

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