

NEW NAMES AND NEW SYNONYMS OF ASTRAGALUS SPECIES

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During checking the herbarium identified materials and consulting with existing data bases, four new names for the invalid names and 8 new synonyms were recognized which will be introduced.

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نام‌ها و مترادف‌های جدید برای گونه‌ها

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برای گونه‌های چاپ شده غیر معتبر، نام‌های جدید انتخاب شده‌اند و با مطالعه مجدد نمونه‌های نامگذاری شده، تعدادی به‌عنوان مترادف تشخیص داده شده و نام‌های معتبر نیز انتخاب شده‌اند.

INTRODUCTION

In spite of the two new monument works, "Flora Iranica" (Podlech 1990; Podlech & al. 2001; 2008; 2010; 2012) and "Taxonomic Revision of the Genus *Astragalus* in the Old World" (Podlech & Zarre 2013), the investigation on the taxonomy and phylogeny of the genus emphasizing to achieve a realistic number of its species has been continued. In this paper, all of the newly described species names were precisely checked through available checklists (Lock & Simpson 1991; Yakovlev & al. 1996; Maassoumi 1998; Kumar & Sane 2003; Breckle & al. 2013) and other data bases such as Plant List, IPNI (<http://www.theplantlist.org/browse/A/Leguminosae/Astragalus/http://www.ipni.org/pni/plantname-search-page.do>). Finally, I was convinced that some species were invalidly published and thus, the new names should be given for these species. Another part of this work comes back to the new synonyms, for which the isotypes of a number of species were available. For the remaining species, there is a rich collection of specimens deposited in TARI which were compared with the correct identified materials and finally these names were reduced to the synonyms.

New names and new synonyms

During a nomenclatural review on the genus *Astragalus* some invalidly published names were noticed which

are renamed and their subsequent homonyms are given. Furthermore the herbarium materials of some species were studied and compared. There were similarities in their morphological characters as shown in table 1, therefore new synonyms are introduced.

***Astragalus insularis-ashkii* Maassoumi & Podlech, nom. nov.**

= *A. insularis* Maassoumi & Podlech, Feddes Repert. 114: 325. 2003, later homonym, non Kellogg, 1884.

Typus: Azarbeyjan, Tabriz, Jazireh-e Islami, 15 km from Sarag to Agh-Gombad village, 1310 m, 21.04.1996, Kasebi & Imani 5624 (holotype TARI!; photo MSB!).

= *A. podlechii* R. Kottaimuthu & N. Vasudevan, Feddes Repertorium 2015, 126, 5, non *A. podlechii* I. Deml, Boissiera 21: 140. 1972. nom. superflu., **syn. nov.**

The epithet *A. podlechii* previously was used for species belonging to section *Aegacantha* which is endemic to Afghanistan, so this is a later homonym.

***A. allectus* Maassoumi, *Astragalus* in the Old world: 166 (1998), nom. nov.**

= *A. alienus* Podlech, Mitt. Bot. Staatss. München 25: 221. 1988, later homonym, non A. Gray, 1854.

Type: Iran, Lorestan, Baghbana, 55 km SE Khorramabad versus Safid Dasht, 1950 m, 12.6.1974,

K.H. Rechinger 47846 (holotype W!: photo MSB!; isotypes E!, G!, IRAN!).

***A. latusioides* Maassoumi & Zarre, nom. nov.**

= *A. latus* zarre, Fl. Iranica (ed.: K. H. Rechinger) 177: 35. 2008, later homonym, non M. E. Jones, Cont.5:272 (1893).

Type: Iraq, Distr. Erbil (Kurdistan), Mons Helgurd ad confines Persiae, in declivibus occidentalibus summi montis, c. 3000–3800 m, 10–14.8.1957, K.H. Rechinger 11458 (W!: iso: MSB!, TUH!).

***A. Brulloi* Maassoumi, nom. nov.**

= *A. hubermorathii* Brullo, Giusso & Musarella, Bocconeia 24: 34. 2012, later homonym, non Agerer-Kirchhoff, Boissiera 25:1975. **Nom. superflu.**

***A. inquilinus* Maassoumi, Iran. J. Bot. 4: 132. 1988.**

Type: Iran, Hamadan, Avadj, Sultan-bulag mts., 2000–2400 m, 12.5.1987, A.A. Maassoumi & Mirhosseini 59383 (holotype TARI!; isotypes MSB!: photo LE!).

= *A. avajensis* Podlech, Sendtnera 6: 145. 1999.

Type: Iran, prov. Hamadan, 10 km from Razan to Avaj, on the neck, 2200–2300 m, 10.7.1994, Chehregani & Sh. Zarre 17893 (holotype MSB; isotype TARI!), **syn. nov.**

***A. pseudoutriger* Grossh., Izv. Azerbajdzhansk. Fil. 1: 43. 1941.**

Type: Pag. Avan prope Erivan, 28.4.1936, W. Tranzschel (holotype LE!: photo K! & MSB!).

= *A. diversipilosus* Podlech, Sendtnera 6: 145. 1999.

Type: Persia, Kurdistan, ad versus 33 km NW Divandarreh versus Saqqez, 2100 m, 29.6.1974, K.H. Rechinger 48610b (holotype M), **syn. nov.**

***A. zangoonianus* Maassoumi, Safavi & Nasseh, Iran. J. Bot. 9 (1): 64 (2001).**

Type: Iran, Khorasan, 55 km from Kashmar to Neyshabur, 1850 m, 11.5.1991, Joharchi & Zangooei 20083 (holotype TARI!: photo MSB!; isotype FUMH).

= *A. attarae* Podlech, Ann. Naturhist. Mus. Wien 105 B: 568 (2004).

Type: Iran, Prov. Khorasan: 10 km from Mashhad toward Kalat-e Naderi, 1500 m, 9.5.2001, A. Ghahreman, F. Attar & al. 27520 (holotype TUH!: photo MSB!; isotype MSB!), **syn. nov.**

***A. confusus* Bunge, Mém. Acad. Imp. Sci. Saint Pétersbourg 15(1): 216 (1869).**

Type: in subalpinis montis Siah-chaneh inter Astrabad et Schahrud, Bunge & Bienert (holotype P!).

= *A. minuticalycinus* Podlech & Zarre, A taxonomic Revision of the genus *Astragalus* in the Old World III:

2257(2013). Type: Iran, prov. Semnan, above road-gard station, 35 km from Sorkheh to Firuzkuh, near the Bashm pass, Kavdeh Protected Area, 1250 m, 35°43'256" N, 53°01'80" E, 25.5.2009, S. Zarre, Y. Salmaki & A. Ebrahimi 38027 (holotype MSB; isotype TUH!), **syn. nov.**

= *A. hamadryadis* Podlech, Feddes Repert. 116: 65 (2005).

Type: Iran, Prov. Mazandaran, after Firouzkuh, 2250 m, 17.6.2003, Maassoumi, Jalili & Rezaei 83512 (holotype MSB; isotype TARI!), **syn. nov.**

***A. senilis* Bornm., Bull. Herb. Boiss., sér. 2, 5: 755 (1905).**

Lectotype: PODLECH, Sendtnera 6: 187 (1999): Iran, inter Rescht et Kaswin, in trajectu Charsan, 2000 m, 13.5.1902, Bornmüller 6729 (B!: sheet marked as lectotypus, photo K & MSB!; isolectotype B!).

= *A. semitarius* Zarre & Podlech, Feddes Repert. 116: 76 (2005).

Type: Iran, Prov. E. Azarbaijan, Maragheh dam towards Sahand mountains, 12 km NW Maragheh, near Tazeh Kand village, 1900 m, 21.6.2004, F. Taeb 35305 (holotype MSB!; isotype TUH!;TARI!), **syn. nov.**

This species was described as member of sect. *Platyglottis*, but it is surprisingly synonym with *A. senilis* belonging to sect. *Malacothrix*.

***A. davisii* Chamb. & Matthews, Notes R.B.G. Edinb. 29: 308 (1969).**

Type: Turkey B9 Van: N. side of Dağ, above Değirmenköy, 3200 m, rocky igneous slope sand meadows, 6.vi.1966, Davis44465 (E; photo K & MSB).

= *A. topalanense* Behçet & İlçim, Turk. J. Bot. 39: 1-7 (2015). **syn. nov.**

This species in some characters is similar to the members of sect. *Malacothrix*, in which some species show inflated calyx features in young stage. In flora of Turkey this species was introduced with an uncertain systematic position. Recently a distinct section was described for this unique species, sect. *Davisiana* Podlech & Ekici, Feddes Repert. 119 (1):34 (2008). This section mistakenly was not included in the recent taxonomic revision work (Podlech & Zarre 2013).

***A. inexpectatus* Maassoumi & Podlech, Iran. J. Bot. 4: 77 (1988).**

= *A. ramakianus* Karthik. & V.S. Kumar, Phytotaxa 155 (1): 71–72 (2013). **syn. nov.**

= *A. turgidus* Podlech, Annalen des Naturhistorischen Museums in Wien 105B: 565–596 (2004). nom. illeg., non Rao & Balodi, 475 (1989). **syn. nov.**

Table 1: Comparison of characters in studied taxa and their corresponding synonyms.

species	Leaflets	Stipules	Calyx	Slandard	Wing	Keels	Pods	Distribution
<i>A. inquilinus</i>	18- 20 paris, oblong	12-17mm, glabrous, ciliate	12-15 mm	21-24 mm	18-20 mm	15-16 mm, erect	stipe 2-3 mm	Avaje
<i>A. avajensis</i>	14-20 paris, oblong	6-15mm glabrous, ciliate	15 mm	25-26 mm	16-17 mm	14-15 mm, erect	Stipe 1-2 mm	Avaje
<i>A. zangoioianus</i>	3-6(-8) pairs, orbicular	15 mm	15-17 mm	20-22 mm	20 mm	16 mm, minut teeth	stipe 8 mm	Kashamar, Khorassan
<i>A. attariae</i>	(4-)6-8 pairs, orbicular	5-6 mm	12-13 mm	19 mm	18 mm	16 mm, minut teeth	stipe 5-7 mm	Khorassan
<i>A. confusus</i>	(5-) 9-14 pairs, obovate	6-10 mm, nearly glabrous	6-8 mm black & white hairs	15-20 mm	14-16 mm	11-13mm	10-20 mm, erect, sessile	Firouz kuh
<i>A. minuticalycinus</i>	2-4 pairs, variable	3 mm, hairy	6-7 mm, black & white hairs	20-22 mm	16 mm	14 mm	subsessile	Firouz kuh
<i>A. hamdryadis</i>	9-13 pairs, obovate	6-9 mm, hairy	9-10 mm, black & white hairs	21-22 mm	17mm	13-14 mm	18-25 mm, sessile	Firouz kuh
<i>A. senilis</i>	8-12 pairs	5-12 mm, greenish	10-12 mm	18-22 mm	14-19 mm	13-17 mm	subsessile	Azarbayejan, Tabriz
<i>A. semitarius</i>	5-7 pairs, upper side glabrous	4-5 mm green, ciliate	10-12 mm	20 mm	14 mm	13 mm	stipe 2 mm hairy	Azarbayejan, Sahand
<i>A. pseudoutriger</i>	14-25pairs, upper side glabrous	8-12 mm	12-16 mm	23-28 mm	19-24 mm	19-22 mm	stipe 3-5 mm	Azarbayejan
<i>A. diversipilosus</i>	19-25 pairs, upper side glabrous	10 mm, ciliate	12-14 mm	25 mm	23 mm	23-24mm	stipe 9-10 mm	Kurdistan
<i>A. inexpectatus</i>	8-12 pairs, complicate	2-4 mm, ciliate	10-11 mm, black and white hairs	14 mm	15 mm	12mm	13-15 mm , 7-2 wide, inflate	Bakhtiari
<i>A. turirgidus</i>	14-18 pairs, complicate	3-5 mm, glabrous	11-14 mm black and white hairs	18 mm	15 mm	14mm	20-25 × 10-14 mm	Esfahan
<i>A. davisii (young stage)</i>	15-18 paris, impairpinnate	12-15 mm long white hairy	14-16 mm white hairy	22-26 mm	22 mm	19 mm	without fruit	S. E. Anatoli
<i>A. topalanse</i>	14-25 paris, impairpinnate	34-40 mm long, 5-12 mm adnate to petiole, white, hairy	17-20 mm white, hairy	24-30 mm	20-22 mm	15-17 mm	elliptic 22-24 × 11-12 mm, lateraly compressed, long white hairs.	Turkey, Anatoli

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