

## NEW FINDINGS ON THE GENUS *ASTRAGALUS* IN IRAN

**A. A. Maassoumi**

Maassoumi: A. A 1998 05 25: New findings on the genus *Astragalus* in Iran. -*Iran. Journ. Bot.* 7 (2) 221-226. Tehran.

The new species *A. ahmad-parsai* from the Sect. *Campylanthus* is described. On the basis of the collected materials and the literature some new collections and new records are treated. *A. dipelta* according to the ecological needs and *A. sorkhabadensis* Sirj. & Rech. f. based on the morphological characters are excluded from the genus *Astragalus*.

*Ali Asghar Maassoumi, Research Institute of Forests and Rangelands, P. O. Box 13185-116. Tehran, Iran.*

یافته‌های جدید درباره جنس گون در ایران

علی اصغر معصومی

گونه جدید *A. ahmad-parsai* از بخش *Campylanthus* همراه با اطلاعات بیشتر معرفی می‌شود. بر پایه نمونه‌های جمع‌آوری شده و منابع تعدادی جمع‌آوری جدید و گزارش جدید ارائه می‌گردد. *A. dipelta* براساس مطالعات انجام شده در خصوص نیاز اکولوژیک و *A. sorkhabadensis* براساس صفات مورفولوژیک از جنس گون خارج می‌شوند.

## INTRODUCTION

In spite of the presence of several monographic revisions on the large parts of the genus *Astragalus*, based on the new herbarium materials, several discrepancies are observable. In few cases due to the lack of herbarium materials or untraceable specimens more collectings are needed. Among the herbarium specimens, a new species was recognized and based on the new studies some taxonomic problems were cleared. The new species is described and taxonomic problems are discussed. All the materials are preserved in the herbarium of TARI.

## NEW SPECIES

***Astragalus ahmad-parsai*** Maassoumi, **sp. nov.** e sect *Campylanthus* Bge.

Fruticulosus, spinosus, ca. 60 cm altus, erectus, caulis valde ramosus. Stipulae membranaceae, hyalinae, late ovatae, ca. 12-15 mm longae, basi per 4 mm petiolo adnatae, inter se connatae, glabrae vel sparse pilosae, margine longe ciliatae. Folia ca. 6-8 cm longa, spinosa, petiolo ca. 2-3 cm longo cum rachides dense brevissime

patenter piloso; foliola 5-7 juga, nervosa, elliptica, ca. 10-18 mm longa et 3-6 mm lata, apicem versus abrupte attenuata, longe apiculata, utrinque dense subpatenter pilosa. Inflorescentiae pedunculatae, multiflorae, pedunculo ca. 1-3 cm longo, dense longe et sparse brevissime patenter piloso; racemi floriferi elongati, elliptici, ca. 5-7 cm longi et 2.5-3 cm lati. Bracteae lanceolatae, membranaceae, ca. 12-15 mm longae, glabrae, margine longe ciliatae. Calyx campanulatus, ca. 16-18 mm longus, dense albo-sericeo pilosus, manifeste inflatus; dentibus setaceis, purpurescens, ca. 15 mm longis, florem partis subaequilongis. Vexillum ca. 14 mm longum; lamina elliptica vel orbicularis, 10 mm longa, attenuata. Alae ca. 16 mm longae; lamina elliptica, ca. 10 mm longa, curvata, ca. 3 mm lata. Ovarium dense pilosum, sessile, latero compressum. Legumen dense pilosum, sessile, ca. 6 mm longum et 3 mm latum, basi attenuatum, apicem versus abrupte curvato-gibbosum, dorso-ventro carinatum, uniloculare. Semina immatura, 2-3 mm longa.

Species with a long inflorescence and filiform calyx teeth is distinguishable and named in the honour of Prof. Dr. Ahmad. Parsa, who was the first Iranian botanist

and the author of the Flore de l'Iran.

*Typus.* Chaharmahal-e Bakhtiari: Lordegan, Monj. Badamestan, Kuh-e Badamestan, N. of Bon-e Gerd, 1500-2350 m, 30.5.1986, Mozaffarian 54689 (hol. TARI).

## NEW RECORDS

Following *Astragalus* species on the basis of herbarium specimens are recorded as new for Iran.

### 1. *A. (Hololeuce) bicolor* Lam.

Azarbayejan: Salmas, W. of Salmas, Pereshkuran, border of Turkey, 2100 m, 8. 7. 1991, Mozaffarian 69941 (TARI).

### 2. *A. (Platyglottis) berytheus* Boiss. & Blanche.

Azarbayejan: Bourah et Jafar Abad, 500 m, 1. 3. 1993 Youssefy 7551 (TARI).

### 3. *A. (Inceni) dolichophyllus* Pall.

Azarbayejan: Arasbaran protected region, western part of Makidi, 2300 m, 8.9.1976 Assadi & Maassoumi, 20244 (det. Assadi).

### 4. *A. (Inceni) federovii* Takht.

Azarbayejan: Urmiyeh, Serow, 1890 m, 15. Jun. 1972, Foroughi 6312 (TARI); W. of

urmiyeh, hills W. of Silvana village, 1550-1800 m, 21. 5. 1976, Runemark & Foroughi 19613 (TARI).

### 5. *A. (Inceni) gudrunensis* Boiss. & Hausskn.

Tehran: between Arak and Khomain, Varche village. 2050 m, 15. 6. 1984, Mozaffarian & Maassoumi 48021 (TARI); Lorestan: 55 km from Arak to Malayer, 2100 m, 15. 6. 1984, Mozaffarian & Maassoumi 48086 (TARI).

### 6. *A. (Macrocystodes) pseudorhacodes* Gontsch.

Khorassan: 70 km from Neyshabur to Kashmar, 1550-1950 m, 11.6.1981, Assadi & Mozaffarian 35472 (TARI); 56 km from Kashmar to Neyshabur, after Rivash, 1850 m, 12. 6. 1981, Assadi & Mozaffarian 35651 (TARI).

Formerly, the sect. *Macrocystodes* was belived to be an endemic of C. Asia, including Turkmenistan, but now its distribution extends to Iran as well.

### 7. *A. (Inceni) tigridis* Boiss.

Kordestan: 8 km N. of Mirabad on the road to Piranshahr, close to a big river, 1300-1400 m, 29.5.1978, Runemark &

Mozaffarin 29165 (TARI).

## NEW COLLECTIONS

Following species after the type specimens, were never collected again, the monographical and revisional studies were exclusively based on the unique specimens. In some cases according to the new collections, the descriptions and the systematic positions of some taxa need more studies.

**1. *A. (Campylanthus) erinifolius* Pau** Khuzestan: Dehdez to Karun river, around Lirsiah, ca. 1000 m, 17. 6. 1986, Mozaffarian 74479 (TARI).

After the first gathering by Pau (Pau 1918), this distinct species according to the Tietz's Monograph (Tietz 1988) was never recollected. On the basis of the new specimens, the habit and given sizes in the description need corrections.

**2. *A. (Laxiflori) phlomoides* Boiss.**

Esfahan: Ghameshloo protected area, Tappeh Khan-Ali, 2200 m, 6. 5. 1996, Uousefi 863 (TARI); Ghameshloo protected area, Hazarmani, 2100 m, 29.5.1996, Uousefi 1298 (TARI);

Ghameshloo area, Shah Mansoor, 2250 m, 5.5.1996, Uousefi 799 (TARI). Chaleh-Seyah to Hoseynabad, 1920-2000 m, 8.4.1989, Nowroozi & Feyzi, s. n. (TARI)

In spite of intensive collections of the sect. *Laxiflori*, this species has never been recollected after the type collection. It seems this species and some taxa of the sect. *Alopeкуроidei* are strongly localized to small areas around the type locality, therefore, treating of *A. baijensis* Townsend as a synonym of *A. phlomoides* needs further investigations (see Agerer Kirchoff & R. Agerer 1997).

**3. *A. (Caprini) pseudokurramensis* Sirj. & Rech. f.**

Khorassan: Hezar-Masjed mts, between Sousan and Farhad, 2600 m, Abbasi & Amirabadi 3415 (TARI).

A small plant with yellow flower and verticillate leaflets. After the first collection by Rechinger & Aellen (1948), this is the second gathering from the type locality.

**4. *A. (Anthlloidei) lumsdenianus* Aitch.**

Khorassan: Torbat-e Jam, between Saleh abad and Garmab. 8. 3. 1995, Moussavi & Hamidi 4260 (TARI).

Original description was based on the material from Iran, Khorassan. (Aitchinson 1885), but on the basis of recent revision (Tietz & Zarre 1994) no new collections have been made from Iran. This species is largely distributed in Afghanistan prov. Herat and Badghis (Tietz & Zarre 1994).

## NEW NAME

1. ***A. delutulus*** Maassoumi, **nom. nov.**  
= *A. dilutus* Bornm. Beih. Bot. Centrbl. 27/2:340 (1910) non. Bge. Mem. Acad. Imp. Sci. Saint Petersburg. ser 7, 11 (16): 138 (1868); 15 (1): 236 (1869).

## EXCLUDED FROM ASTRAGALUS

1. ***Dipelta turkestanica*** Reigl. & Smalh  
= *Didymopelta turkestanica*, in Engl. and Prantl, 3 (3) 284 (1894).  
= *Astragalus dipelta* Bge., Acta. Horti Petropolitani 7: 368 (1880).

Annual Astragali on 53 different ecological characters were analyzed, using the statistical and Principal Component Analysis (P.C.A) program. Distribution of the annual Astragali on the ordination show the influence of the factor of altitude. Except of the sect. *Dipelta* all other sections

were distributed in low altitudes with high temperature and semidesert, dry and hot climate. This section morphologically have been studied by several botanists (Nikitin 1973; Podlech, 1991; Maassoumi 1986). The result of ecological studies confirm the taxonomic position of it as a distinct genus, therefore it is excluded from the genus *Astragalus*. The classification of remaining annual Astragali is satisfactory.

## 2. ***Oxytropis kotschyana*** Boiss. & Hohen.

= *Astragalus sorkhabadensis* Sirj. & Rech.f.

On the generic level the genus *Oxytropis* with acute keels is easily separable from the genus *Astragalus*. The original description of *A. sorkhabadensis* is incomplete and the floral characteristics are not mentioned, but the fruit characters with unusual indumentum and the habit compared with *Oxytropis kotschyana* which show the same characters, finally this species is excluded from the genus *Astragalus*.

## REFERENCES

Agerer-Kirchhoff Ch. & R. Agerer 1977:  
Eine neue Sektion der Gattung

226 A. A. Maassoumi

- Astragalus L. Laxiflori* Agerer Kirchhoff.  
-Mih. Bot. Staatsamml. München 13:  
203-234.
- Aitchinson, J. E. 1888: The Botany of  
Afgan Delimitation commision. -Trans.  
Linn. Soc. London, Bot. 3: 1-138.
- Podlech, D. 1991: The systematics of the  
annual species of genus *Astragalus L.*  
(Leguminosae). -Flora et Vegetatio  
Mundi, Band 9: 1-8
- Nikitin, V. V. 1973: Notae de flora  
Badachschanica, 2. -Nov. Syst. Pl. Vas.  
10: 31-: 332
- IRAN. JOURN. BOT. 7 (2), 1998**
- Maassoumi, A. A. 1986: *Astragalus* in Iran,  
annuals vol. 1: 51
- Tietz, S. 1988: Revision von *Astragalus L.*  
Sect. *Campylantus Bge.*, *Microphysa*  
*Bge.*, *Poterion Bge.* -Mitt. Bot.  
Saatssamml. München, 27: 135-380.
- Tietz, S & Sh. Zarre, 1994: Revision von  
*Astragalus L.* Sect. *Megalocystis Bge.*  
(Fabaceae). -Sendtnera, Band 2: 287-363
- Pau, C 1918: Plantas de Persia y de  
Mesopotamia. -Trav. Mus. Nac. Cienc.  
Nat. Madrid, Bot. no. 14: 1-48.