

## **A taxonomic revision of the genus *Astragalus* L. (Fabaceae) in Zanzan province, Iran and describing a new species**

**Ali Bagheri<sup>1</sup> Ali Asghar Maassoumi<sup>2\*</sup> and Farrokh Ghahremaninejad<sup>1</sup>**

<sup>1</sup> Department of Biology, Faculty of Sciences, Tarbiat Moallem University, Tehran, Iran  
<sup>2</sup> Research Institute of Forests and Rangelands, Tehran, Iran

### **Abstract**

Zanzan province in NW Iran, with diverse climatic and topographic conditions includes a considerable part of *Astragalus* gene pool. From 2007 through 2009, a collection as complete as possible was made in this area by the authors. As a results of this study, we added 41 species to the already 75 known species for this province. Furthermore, 9 new species were described for the area from which one new species (*Astragalus fausicola* Podlech ex Bagheri, Maassoumi & F. Ghahrem. from sect. *Incani* DC.) is introduced.

**Key words:** *Astragalus*, Fabaceae, New species, Taxonomy, Zanzan province

### **Introduction**

The genus *Astragalus* L. with nearly 3000, species is probably the largest genus among the flowering plants (Lock and Simpson 1991). Iran, possessing nearly 800 species, is one of the most important centre of diversity for this genus (Maassoumi, 1998). This study following previous investigations which focused on the genus *Aastragalus* in Iran (Maassoumi, 1986-2005; Podlech, 1999 and 2010; Podlech *et al.*, 2001; Zarre *et al.*, 2008) aims to increase our knowledge about the Mega genus in Zanzan area. Based on previous local revision, this province with about 75 species belonging to 25 sections (Maassoumi, 1986-2005; Podlech, 1999 and 2010; Podlech *et al.*, 2001; Zarre *et al.*, 2008) was distinguished as an important area with respect to the genetic diversity of this genus. According to this new collection, the realistic number of *Astragalus* species occurring in Zanzan province was increased to 116 belonging to 28 sections.

### **Material and Methods**

Zanzan province is situated in the NW Iran, with an approximate area of 2,216,400 hectares. The province with seven other provinces make a rich floristic zone presenting high number of endemic species. Climate of this province usually is cold and snowy in the mountain areas and moderate climate in the plains in winter. This province belongs to Irano-Turanian floristic region (Zohary, 1973) and presents its specific geographic,

---

\* Corresponding Author: maassoumi@rifr-ac.ir

topographic and climate variation, also possesses suitable condition for the growth of several *Astragalus* sections including *Hymenostegis* Bunge, *Incani* DC., *Malacothrix* Bunge, and *Caprini* DC. (Podlech *et al.*, 2001; Maassoumi, 1986-2005; Maassoumi, 2001; Bagheri, 2009; Ghahremaninejad and Bagheri, 2009; Ghahremaninejad *et al.*, 2011; Bagheri *et al.*, 2011; Maassoumi *et al.*, 2011). This study was focused on the genus *Astragalus* especially sections *Hemenostegis*, *Incani* and *Malacothrix*. All materials are deposited in TARI and FAR herbaria. In this research, more than 1200 herbarium specimens were collected within about 40 localities as demonstrated in table 1 (Figure 1).

Table 1: Locality information for *Astragalus* taxa examined

No.	Locality	Elevation(m)
1.	Gheydar, Gheydar Mt.	2000-2500
2.	Gheydar, Paskohan, mountainously area	2100-2200
3.	Gheydar, Yenghikand	2000-2050
4.	10-20 km on the road from Zanjan to Bijar	1900
5.	25-30 km on the road from Dandi to Tekab	2400-2500
6.	33-37 km on the road from Dandi to Tekab, Belgheis Mt.	2400-2600
7.	10-20 km on the road from Abhar to Gheydar	1700-1900
8.	20-35 Km on the road from Abhar to Gheydar	1800-2000
9.	From Gheydar to Hamedan, Pirmarzeban	2050
10.	Sultaniyeh, Arjin, Sheikhsari Mt.	2100-2250
11.	10-15 km on the road from Zanjan to Meianeh	1400-1500
12.	20-40 km on the road from Zanjan to Meianeh	1300-1400
13.	60 Km from Zanjan to Mahneshan, Andabad	1750
14.	From Mahneshan to Pari, Alamkandi	2240
15.	20-50 km on the road from Zanjan to Bijar	1800-2000
16.	20-35 km on the road from Zanjan to Tarom	2105-2280
17.	35-55 km on the road from Zanjan to Tarom	2200-2400
18.	From Gheydar to Gharmab, 2 km before Gharmab	1600
19.	45 km from Gheydar to Khorkhoreh	1500
20.	14 km on the road from Mahneshan to Pari	2120
21.	80-84 Km on the road from Zanjan to Bijar	1550
22.	From Gheydar to Bijar, 2 km after Karasf, Salehabad	1750-1900
23.	Gheydar, from Arghin to Gheydar Mt.	2000-2100
24.	Zanjan, Sohrein, mountainous area	1950
25.	Zanjan, Taham, mountainous area	1900
26.	Gheydar, Dehjalal, mountainous area	2150-2200
27.	Anghuran, Belgheis Mt.	2250-2500
28.	From Gheydar to Zanjan, Mazidabad	1850-1900
29.	Gheydar, Zarand, mountainous area	2100-2200
30.	From Zanjan to Tarom, Badamestan	1850-1900
31.	20-30 km from Mahneshan to Pari	1850-1900
32.	63 km from Zanjan to Mahneshan	1700
33.	Zanjan, Ghavazangh, mountainous area	2200
34.	Gheydar, Akbarabad, mountainous area	2100-2200
35.	From Sultaniyeh to Gheydar	1850-1900
36.	75 km from Zanjan to Mahneshan, mountainous area	2120-2200
37.	45-50 km on the road from Mahneshan to Pari	1900-2000
38.	30-50 km on the road from Dandi to Zanjan	2100-2300
39.	Gheydar, Kahla, mountainous area	1850-1900
40.	From Zanjan to Mahneshan, Sheikhlar	1950-2000

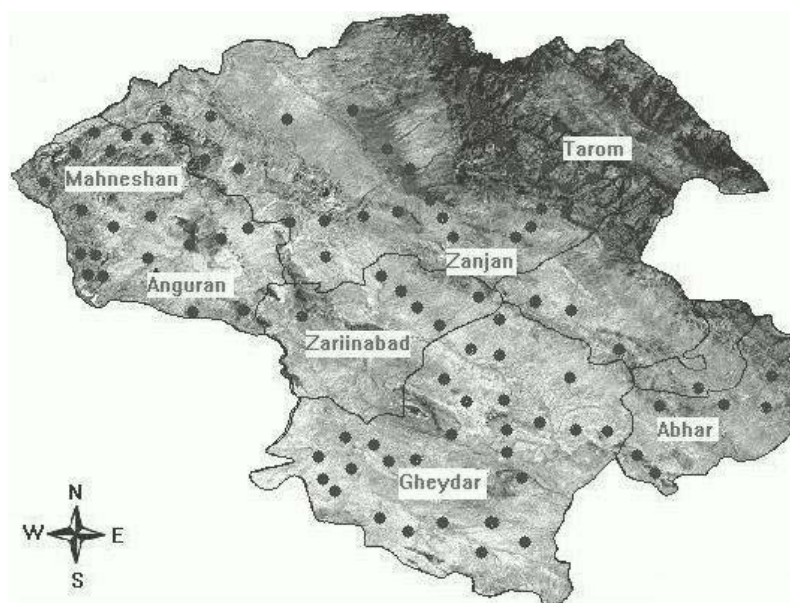


Figure 1: Geographical map of Zanjan province with main localities

## Results

**Abbreviations:** **A** (Annuals species); **H** (Perennial herbaceous species); **WO** (Perennial woody species); **EP** (Endemic of Zanjan province); **SP** (Share with other province); **SC** (Share with other countries); **NC** (Not collected in this research, but have been reported in published literatures for Zanjan province); **D** (species which were recently described); **RP** (New record for Zanjan province); **RI** (New record for Iran).

### Annuals species

Annual species grow on limited parts of the province.

#### 1. Section *Ankylotus* Bunge

*A. commixtus* Bunge (18) A, SC

#### 2. Section *Annulares* DC.

*A. campylorhynchus* Fisch. & C.A.Mey. (9, 12, 13, 18, 19, 20, 21) A, SC

#### 3. Section *Heterodontus* Bunge

*A. guttatus* [Soland.] (18) A, SC

#### 4. Section *Oxyglottis* Bunge

*A. crispocarpus* Na'belek A, SC, NC

*A. oxyglottis* Steven ex M.Bieb. (1, 11, 12, 22) A, SC

*A. schmalhauseni* Bunge A, SC, NC

*A. vicarius* Lipsky, (12, 15, 19, 22) A, SC, RP

#### 5. Section *Platyglottis* Bunge

*A. comptoceras* Bunge (7, 17, 22, 24, 30, 35) A, SC, RP

#### 6. Section *Sesamei* DC.

*A. coronilla* Bunge, subsp. *coronilla* (7, 22) A, SC, RP

### Perennial herbaceous species

#### 7. Section *Alopecuroidei* DC.

*A. echinops* Auch. ex Boiss. (1) H, SC, RP

*A. foliosus* Podlech, Maassoumi & Ranjbar H, SP, NC

*A. macrocephalus* Willd. subsp. *macrocephalus* (1) H, SC

*A. megalotropis* C.A.Mey. ex Bunge SP, NC

#### 8. Section *Astragalus*

*A. caraganae* Fisch. & C.A.Mey. (1, 4, 15, 20, 22, 24, 25) H, SC

#### 9. Section *Caprini* DC.

*A. aegobromus* Boiss. & Hohen (1, 22, 23, 29, 34) H, SC, RP

*A. angustiflorus* K. Koch subsp. *angustiflorus* (1, 2, 17, 20, 29, 34) H, SC

*A. apricus* Bunge (1, 15, 23, 32) H, SC, RP

*A. chrysanthus* Boiss. (1) H, SP

*A. citrinus* Bunge subsp. *citrinus* (17) H, SC

*A. kirpicznikovii* Grossh. (24, 30) H, SC, RP

*A. macropelmatus* Bunge subsp. *macropelmatus* (4, 7, 10, 11, 13, 21, 22, 28) H, SC

*A. multijugus* DC. (1, 2, 16, 29) H, SP

*A. ovinus* Boiss. (1, 7, 9, 14, 27, 29) H, SC

*A. pseudoutriger* Grossh. H, SC, NC

*A. semilunatus* Podlech H, EP, NC, RP

*A. shemachensis* Karjagin, (6, 9) H, SC, RP

*A. urmiensis* Bunge (1, 2, 5, 15, 22, 29, 34) H, SC

#### 10. Section *Corethrum* Bunge

*A. dendroproselius* Rech.f. H, SC, NC

#### 11. Section *Dissitiflori* DC.

*A. argyroides* Beck (21, 22, 32) H, SC

#### 12. Section *Erioceras* Bunge

*A. pentanthus* Boiss. (20, 22) H, SP

#### 13. Section *Hololeuce* Bunge

*A. alyssoides* Lam. (1, 2, 4, 7, 16, 19, 22, 23, 28, 29, 32, 34, 35) H, SC

Based on our collection, this species is extensively distributed at high altitude in several localities of the province.

#### 14. Section *Incani* DC.

*A. abharensis* Maassoumi & Podlech (7, 15) H, EP

*A. alavaanus* Podlech (1) H, SP

*A. andabadensis* Maassoumi, Bagheri & F.Ghahrem. (13) H, EP, D

*A. askius* Bunge (1, 5) H, SP, RP

*A. curvirostris* Boiss. (1, 2, 5, 7, 9, 11, 16, 17, 20, 22, 24, 28, 29, 30, 34, 37) H, SC

*A. delutulides* Maassoumi, F.Ghahrem., & Bagheri (6) H, EP, D

*A. delutulus* Maassoumi (23) H, SP, RP

*A. fausicola* Podlech ex Bagheri, Maassoumi & F.Ghahrem., *sp.nov.* e sect. *Incani* DC. (Fig. 2).

**Typus:** Zanjan: Gheidar, Gheidar Mt., 2430m, 2009/07/10, Bagheri 9064. (Holotype, TARI; Isotypes, FAR, MSB).

*Sed differt ab A. askius* Bunge *bracteis glabris vel margin remotiusculi glandulosi vel raro sparse ciliatis (nec manifest ciliatis), foliolis angust ovatis vel rhomboidis, magnis c. 40-50 mm longis apicem versus long acutis vel subaristatis (nec obtusis vel breviter acutis), corolla intense violacea (nec lutea), legumibus dorso manifest rotundatum (nec sulcatum) non purpureo punctato provisum.*

Plants 30-50 cm tall, with symmetrically medifixed depressed hairs 0.3-0.5 mm long. Caudex 8-11 mm in diameter, with few short branches, covered with remnants of old leaves and stipules. Stipules triangular to narrowly triangular-acuminate, 8-14 mm long, adnate to the petiole for 5-7 mm, hairy. Leaves 10-25 cm long; petiole 3-11 cm long, like the rachis finely striate, loosely to rather densely hairy, later on glabrescent. Leaflets in 8-13 pairs, narrowly ovate, 10-50 × 4-20 mm, sharply acute to apex. Mostly aristate, sparsely to loosely, rarely rather densely hairy on both sides. Peduncle 15-30 cm long, thick, finely striate, glabrous. Raceme loosely many flowered, 15-20 cm long. Bracts brownish, linear-acute, 3-4 mm long, sparsely ciliate, glabrous, glandulosa or rarely sparsely ciliate on the margin. Pedicels ca. 3 mm long. Flowers erect, later becoming spreading or deflexed. Bracteoles whitish, linear, ca. 1 mm long, at the base of the calyx. Calyx 8-13 mm long, tubular, obliquely acute at the mouth, covered with depressed black hairy; teeth narrowly triangular, acute, unequal, 1-2 mm long. Corolla violet. Standard c. 20 mm long; blade minutely narrowed, 10 mm wide, elliptic, at the base abruptly narrowed into a cuneate claw. Wings 15-17 mm long; blades narrowly oblong, rounded to obliquely retuse, at apex 8 × 3 mm; auricle 1.5 mm long, claw 9-10 mm long. Keel 15 mm long; blades elliptic, acute at the apex, 8 × 4 mm; auricle very short, claw 9-10 mm long. Ovary with a short or distinct stipe up to 4 mm long, linear, scarcely hairy to glabrous. Legume with a 3-4 mm long stipe, pendulous, linear, straight or slightly upcurved, 18-35 mm long, 2-3 mm high and 3-5 mm wide, carinate ventrally, distinctly rotundate dorsally, at the apex narrowed into a straight beak 2-4 mm long; valves yellowish, without dark spots, glabrous. Fruit fully bilocular. Seeds rectangular, 3-5 × 2-3 mm, dark brown.

*A. khadem-kandicus* Maassoumi & Podlech (2) H, SP

*A. montis-queydari* F.Ghahrem., Maassoumi & Bagheri (1) H, EP, D

*A. qeydarensis* Podlech (7) H, EP (ined)

*A. refractus* C.A.Mey. (14) H, SC, RP

*A. supervisus* Sheld. (1, 28, 29, 32, 35, 40) H, SC

*A. zanjanensis* Podlech & Maassoumi (9, 33) H, EP

#### 15. Section *Laxiflori* Kirchhof

*A. dictyolobus* C.A.Mey. ex Bunge (9) H, SP

*A. tawilicus* C.C.Towns. H, SC, NC

#### 16. Section *Malacothrix* Bunge

*A. beckii* Bornm. (1, 23, 29) H, SP

*A. belgheisicoides* Podlech & Maassoumi (7, 16, 33, 34) H, EP

*A. belgheisicus* Maassoumi (27, 32) H, EP

*A. comosus* Bunge (1, 32) H, SC

*A. singarensis* Boiss. & Hausskn. ex Boiss. (1, 22) H, SP

*A. eriocarpus* DC. H, SC, NC

*A. eriopodus* Boiss. (20, 24) H, SC

*A. hendelanicus* Maassoumi (11, 18) H, SP

*A. iranicus* Bunge (7, 11, 12, 35) H, SC

*A. macrourus* Fisch & C.A. Mey. (1, 2, 23) H, SC

*A. meshkinensis* Podlech H, EP, NC

*A. patrius* Maassoumi (1, 17, 25, 35) H, SP

*A. pileh-khasehensis* Podlech & Maassoumi H, EP, NC

*A. podocarpus* C.A. Mey. (17) H, SC

*A. saccatus* Boiss. (28) H, SP

*A. senilis* Bornm. (1, 2, 4, 8, 11, 15, 20, 22, 23, 28, 32) H, SP

**17. Section *Onobrychoidei* DC.**

*A. aduncus* Willd. H, SC, NC

*A. brevipes* Bunge H, SP, NC

*A. effusus* Bunge H, SP, NC

*A. pendulipodus* Ranjbar & Karamian H, SP, NC

*A. vegetus* Bunge (1, 7, 8, 9, 32, 40) H, SC

**18. Section *Ornithopodium* Bunge**

*A. brachyodontus* Boiss. (1, 7, 8, 9, 12, 15, 17, 18, 19, 27, 30, 38) H, SP

*A. glochideus* Boriss. (1, 2, 4, 9, 10, 13, 16, 17, 23, 24, 27, 32, 33) H, SC

**19. Section *Stereothrix* Bunge**

*A. mahneshanensis* Maassoumi & Mousavi H, EP, NC

**20. Section *Theiochrus* Bunge**

*A. siliquosus* Boiss. subsp. *siliquosus* (1, 8, 15, 35) H, SC

**21. Section *Uliginosi* Gray**

*A. odoratus* Lam. (6) H, SC

**22. Section *Trachycercis* Bunge**

*A. barnasariformis* Maassoumi, F.Ghahrem. & Bagheri (5) H, EP, D

**Perennial woody species**

**23. Section *Adiaspastus* Bunge**

*A. aureus* Willd. WO, SC, NC

*A. caspicus* M. Bieb. subsp. *caspicus* (1, 2, 3, 4, 5, 7, 9, 10, 11, 13, 14, 29, 39) WO, SC

*A. michauxianus* Boiss. (1, 2, 4, 5, 8, 16, 34) WO, SC

*A. polyanthus* Bunge (1, 7, 10) WO, SC, RP

**24. Section *Anthylloidei* DC.**

*A. ebenoides* Boiss. subsp. *ebenoides* WO, SP, NC

*A. halicacabus* Lam. (22) WO, SC

*A. submitis* Boiss. & Hohen. subsp. *submitis* (1, 2, 7, 10, 23) WO, SP, RP

**25. Section *Cremoceras* Bunge**

*A. campylanthoides* Bornm. (7, 10, 32) **WO, SC**

**26. Section *Hymenostegis* Bunge**

*A. anguranensis* Podlech & Maassoumi (6, 27) WO, EP

*A. austromahneshanensis* F.Ghahrem., Maassoumi, & Bagheri (32) WO, EP, D

*A. bounophilus* Boiss. & Hohen. (5, 6) WO, SP

*A. chrysostachys* Boiss. (4, 5, 9, 11, 21, 22, 32, 37) WO, SC

Within the sect. *Hymenostegis*, this species shows a wide-ranging distribution in the major parts of the province from other related species.

- A. demonstratus* Maassoumi (37) WO, EP  
*A. glumaceus* Boiss. (4, 7, 15, 21, 22, 32, 38) WO, SP  
*A. kapherrianus* Fisch. WO, SC, NC  
*A. lagopoides* Lam. (17) WO, SC, RP  
*A. marivanensis* Maassoumi & Podlech (4, 32) WO, SP, RP  
*A. melanostictus* Freyn (4) WO, SC  
*A. nervistipulus* Boiss. & Hausskn. ex Boiss. (1, 3, 4, 7, 8, 9, 17, 22, 35) WO, SP, RP  
*A. paralurges* Bunge (1, 3, 7, 10, 15, 16, 21, 22, 24, 26, 30, 35) WO, SP  
Widely distributed in the mountainous area mixed with Tragacanthic species.  
*A. pauxillis* Maassoumi & F. Ghahrem. (1) WO, SP  
*A. pediculariformis* Maassoumi (1, 3, 7, 23, 29) WO, EP  
*A. qorvehensis* Podlech (1) WO, SP, RP  
*A. qeydarnabiensis* Bagheri, F.Ghahrem. & Maassoumi (1) WO, EP, D  
*A. rubrostriatus* Bunge (1, 7, 9, 10, 17, 24, 25, 29, 33, 35) WO, SP  
*A. sciureus* Boiss. & Hohen. (1) WO, SP  
*A. sosnowskyi* Grossh. (21) WO, SC, RI

Type species previously reported from Iraq, based on new collection, this species as a new record for Iranian territory.

- A. subkohrudicus* Maassoumi, F.Ghahrem. & Bagheri (1) WO, EP, D  
*A. subrecognitus* Bagheri, Maassoumi & F.Ghahrem. (20) WO, EP, D  
*A. tabrizianus* Buhse (16, 17, 30, 32) WO, SP

#### 27. Section *Rhacophorus* Bunge

- A. andalanicus* Boiss. & Hausskn. ex Boiss. (1, 2, 23) WO, SC, RP  
*A. compactus* Lam. (1, 2, 4, 5, 16, 22, 23, 26, 29, 32, 38) WO, SC  
*A. denudatus* Steven WO, SC, NC  
*A. eriosphaerus* Boiss. & Hausskn. ex Boiss. (9, 16, 22, 25, 36, 37, 38, 39) WO, SP  
*A. floccosus* Boiss. subsp. *floccosus* (9) WO, SP  
*A. gossypinus* Fisch. (1, 3, 7, 21, 22, 23, 29, 32, 36) WO, SC  
*A. microcephalus* Willd. subsp. *microcephalus* (1, 2, 3, 7, 10, 11, 12, 15, 16, 17, 22, 23, 29, 32, 36) WO, SC

This species shows a wide-ranging distribution in the mountainous area, up to 1800 m and with other tragacanthic species such as: *A. eriosphaerus*, *A. gossypinus*, and *A. campactus* create a mixed associations.

- A. paralipomenus* Bunge (1, 4, 5, 7, 8, 14, 15, 16, 17, 20, 29, 36) WO, SC  
*A. psilostylus* Bunge WO, SP, NC  
*A. rhodosemius* Boiss. & Hausskn. (23, 40) WO, SP, RP  
*A. verus* Oliver, (16, 27, 34) WO, SC

#### 28. Section *Tricholobus* Bunge

- A. tricholobus* DC.  
subsp. *tricholobus* (1, 2, 5, 7, 9, 10, 16, 17, 20, 22, 23, 26, 27, 29) WO, SP  
subsp. *hohenackeri* (Boiss.) Tietz (16, 27) WO, SC

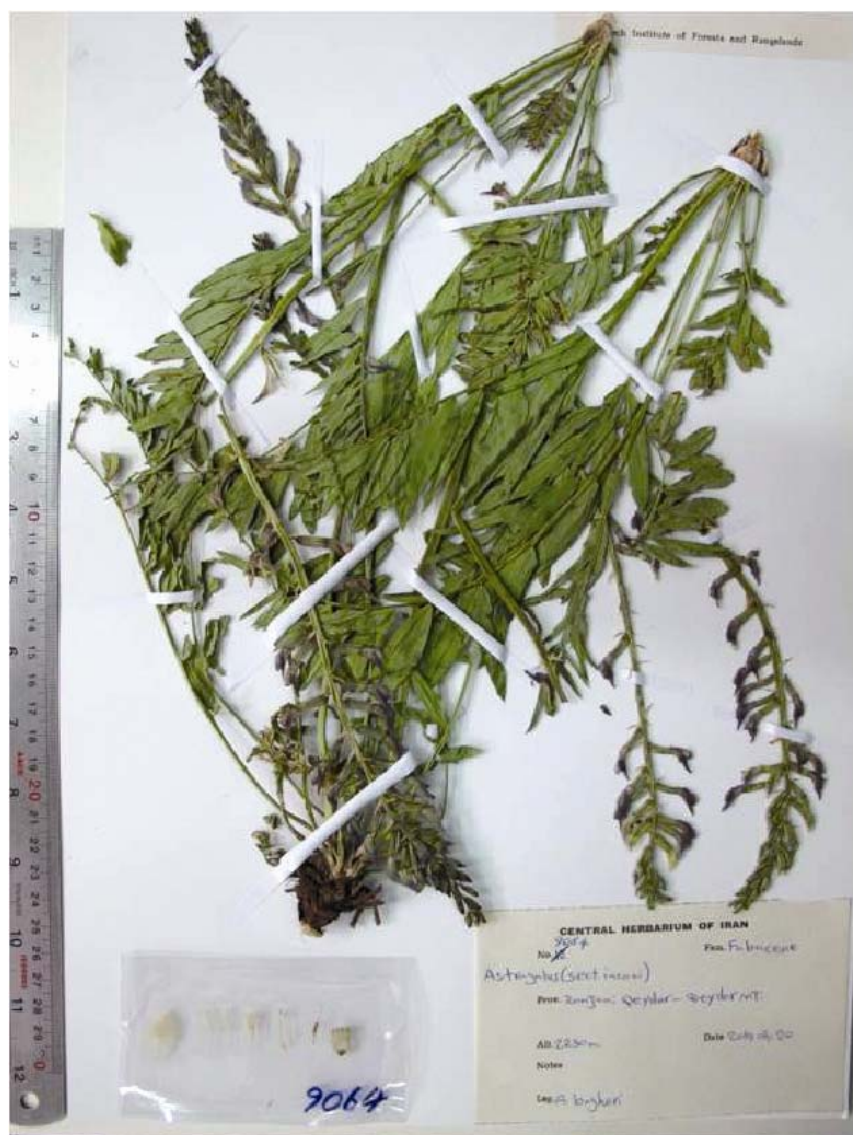


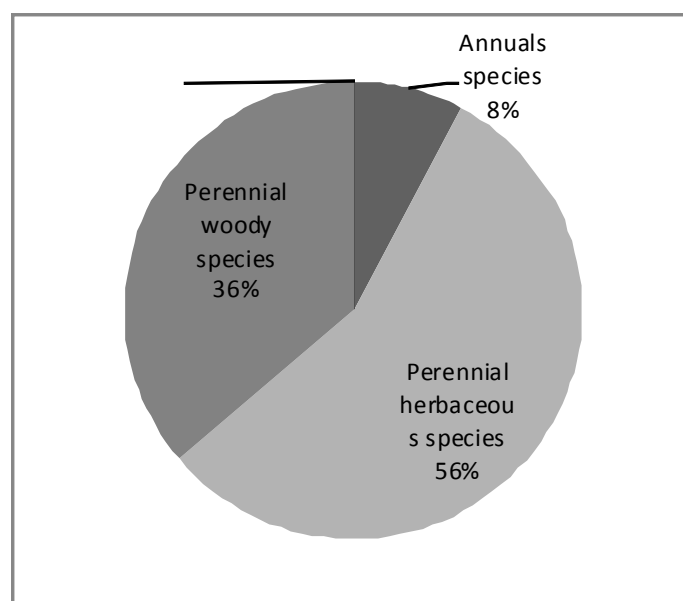
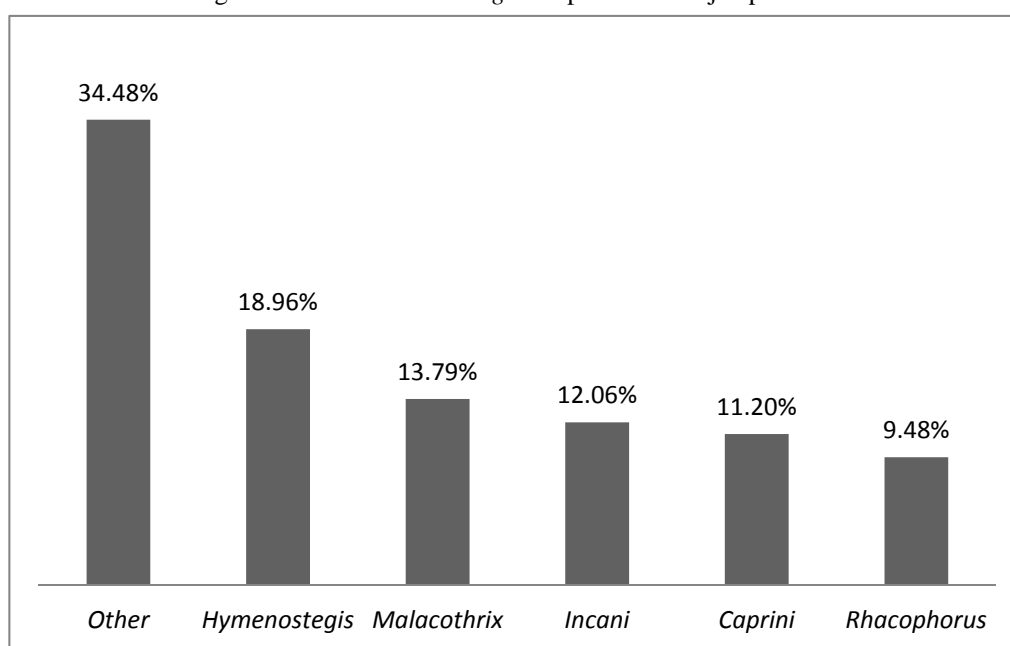
Figure 2: *A. fausicola* Podlech ex Bagheri, Maassoumi, & F.Ghahrem.; (after Holotype, Bagheri 9064)

### Discussion

In total, 116 distinct species of *Astragalus* were recognized in Zanzjan province. They include 9 annual species (7.75%), 65 perennial herbaceous species (56.03%) and 42 perennial woody species (36.20%).

Among 116 species, 22 spp. (18.96%) belong to sect. *Hymenostegis*, 16 (13.79%) species to sect. *Malacothrix*, 14 (12.06%) species to sect. *Incani*, 13 (11.20%) species to sect. *Caprini*, 11 (9.48%) species to sect. *Rhacophorus*, and 40 (34.48%) species belonging to the other sections which are illustrated in fig. 4. In the point of endemism percentage the province are divided into 3 groups: 1- containing 21 spp. (18.10%) are endemics for the province; 32 spp. (27.58%) are shared with other provinces; and 63 spp. (54.31%) are shared with other neighboring countries.



Figure 3: Life form of *Astragalus* species in Zanzan provinceFigure 4: Sectional profile of *Astragalus* species in Zanzan province

### Acknowledgment

We are grateful to Dr. Mohammadreza Rahiminejad Ranjbar (University of Isfahan) for editing the English text.

### Reference

- Bagheri, A. (2009): Taxonomical study of the genus *Astragalus* L.(Fabaceae) in the Zanzan Province, Iran. M.Sc. Thesis, Tarbiat Moallem University, Tehran, Iran.
- Bagheri, A., Maassoumi, A. A. and Ghahremaninejad, F. (2011) Additions to *Astragalus* sect. *Hymenostegis* (Fabaceae). Iranian Journal of Botany 17(1):15-19.

- Ghahremaninejad, F. and Bagheri, A. (2009) *Astragalus andabadensis* (Fabaceae), a new species of *Astragalus* sect. *Incani* from Zanjan province, Iran. Iranian Journal of Botany 15(2):175-177.
- Ghahremaninejad, F., Bagheri, A. and Maassoumi, A. A. (2011) Introducing two new species of *Astragalus* sect. *Incani* (Fabaceae) from Iran. Adansonia (In Press).
- Lock, J. and Simpson, K. (1991) Legumes of West Asia, A check list. Royal Botanical Gardens, Kew.
- Maassoumi, A. A. (1986-2005) Genus *Astragalus* in Iran. Vol. 1-5, Research Institute of Forests and Rangeland. Tehran, Iran.
- Maassoumi, A. A. (1998) *Astragalus* in the Old World, Check List. Research Institute of Forests and Rangeland. Tehran, Iran.
- Maassoumi, A. A. (2003) Flora of Iran No.43, *Astragalus* I. Research Institute of Forests and Rangeland. Tehran, Iran.
- Maassoumi, A. A. Bagheri, A. and Ghahremaninejad, F. (2011) A new species of *Astragalus* sect. *Trachycercis* (Fabaceae) from Iran. Rostaniha. (in press).
- Podlech, D. (1999) Flora Iranica Papilionaceae III *Astragalus* I. Akademische erlagsgesellschaft Salzburg, Austria.
- Podlech, D. (2010) Flora Iranica Papilionaceae VI *Astragalus* IV. Akademische verlagsgesellschaft Salzburg, Austria.
- Podlech, D., Zarre, Sh. and Maassoumi, A. A. (2001) Flora Iranica Papilionaceae IV *Astragalus* II. Akademische verlagsgesellschaft Salzburg, Austria.
- Zarre, Sh., Maassoumi, A. A. and Podlech, D. (2008) Flora Iranica Papilionaceae V *Astragalus* III. Akademische verlagsgesellschaft Salzburg, Austria.
- Zohary, M. (1973) Geobotanical foundations of the Middle East, vol. 2, Fischer, Stuttgart.

## بازنگری تاکسونومیکی جنس گون *Astragalus* L. (Fabaceae) در استان زنجان و شرح یک گونه جدید

علی باقری<sup>۱</sup>، علی اصغر معصومی<sup>۲\*</sup> و فرخ قهرمانی نژاد<sup>۱</sup>

<sup>۱</sup> گروه زیست‌شناسی، دانشکده علوم، تربیت معلم تهران، تهران، ایران

<sup>۲</sup> مؤسسه تحقیقات جنگلها و مراتع کشور، تهران، ایران

### چکیده

استان زنجان واقع در شمال غربی ایران، با توجه به موقعیت خاص جغرافیایی، آب هوایی و پستی بلندی خود شرایط مستعدی برای رویش جنس گون دارد. در طول سال‌های ۱۳۸۷-۱۳۸۹ جمع‌آوری وسیعی در خصوص این جنس در استان انجام گرفت. در نتیجه این مطالعات ۴۱ گونه به مجموع ۷۵ گونه قبلی گزارش شده از استان زنجان اضافه گردید، به علاوه تعداد ۹ گونه جدید برای دنیای گیاه‌شناسی معرفی شدند و در این مقاله گونه *Astragalus fausicola* Podlech ex Bagheri, Maassoumi & F.Ghahrem. از بخش *Incani* DC. به عنوان گونه

جدید شرح داده و معرفی می‌شود.

**واژه‌های کلیدی:** گون، خانواده بقولات، گونه جدید، تاکسونومی، استان زنجان