

Notes on *Astragalus* sect. *Hymenostegis* (Fabaceae) from Turkey

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Abstract: *Astragalus rubrostriatus* Bunge and *Astragalus qoturensis* Podlech, belonging to *Astragalus* sect. *Hymenostegis* Bunge, are recorded here for the first time from Turkey. In addition, *Astragalus chrysostachys* Boiss. is excluded from the list of Turkish species of *Astragalus*.

Key words: Taxonomy, Leguminosae, *Hymenostegis*, new record, Turkey, Van

1. Introduction

Possessing some 2900 species, *Astragalus* L. (Fabaceae) is most likely the largest flowering plant genus (Podlech and Zarre, 2013). With a remarkable 202 endemic species the genus includes 478 taxa in Turkey (Aytaç and Ekici, 2012). An area comprising Iran and Turkey is well known as the main center of origin and diversity for the genus *Astragalus* (Maassoumi, 1998). In recent years, the number of species belonging to the genus *Astragalus* has increased in Turkey (Dinç et al., 2013; Karaman Erkul and Aytaç, 2013).

The section *Hymenostegis* from this genus is known for its size, richness, and habit of cushion form growth in this area. This section is delimited by a syndrome of inflated calyx, basifixed hairs, and absence of black hairs, as well as conspicuous bracts. Zarre and Podlech (1996) followed a lamping position in their revision of the section and decreased the number of species to 23 subdivided into 2 subsections: *Hymenocoleus* (Bunge) Podlech & Zarre, a monotypic taxon including *A. vaginans* DC., which is endemic to Turkey and subsection *Hymenostegis*. Their highly reductionist view was not accepted by later astragalogists (Maassoumi, 1995; Podlech et al., 2001; Bagheri et al., 2011; Podlech and Zarre, 2013), who supported the previously determined taxa in this section.

The section *Hymenostegis* is represented in Turkey by 12 species of which 3 are endemics (Chamberlain and Matthews, 1970). The effect of the lamping trend of Zarre and Podlech (1996) resulted in the recognition of 7 species

for Turkey, a number that increased to 13 species during their latest relevant taxonomic revision (Podlech and Zarre, 2013).

2. Materials and methods

During a field expedition conducted by the first author to the Van region, some unknown specimens of *Astragalus* were collected. Based on the *Flora Iranica* treatment of the genus (Podlech et al., 2001) and the last taxonomic revision of the genus *Astragalus* in the Old World (Podlech and Zarre, 2013), these specimens were determined as *Astragalus rubrostriatus* Bunge and *Astragalus qoturensis* Podlech and are reported from Turkey as 2 new records. The new collection from Van Province extended the distribution patterns of these species to Turkey (Figure 1).

3. Results and discussion

3.1. New records

Astragalus rubrostriatus Bunge, Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 7. 11(16): 68 (1868); 15(1): 113 (1869) (Figure 2).

Holotype. Iran, inter Agh-Kent et Bagh, 7.6.1859, A. von Bunge & T. Bienert (P).

Specimen seen. Turkey C9 Van: Gürpınar, between Kırkgeçit and Taşınocak, steppe, 2207 m, 22.06.2011, S. Karaman 2603, Herbarium of Aksaray University; TARI; Gürpınar, between Dikbıyık village and Tırşın plateau, steppe, 2400 m, 03.08.2007, M. Ünal & F. Özgökçe 2371 (VANF).

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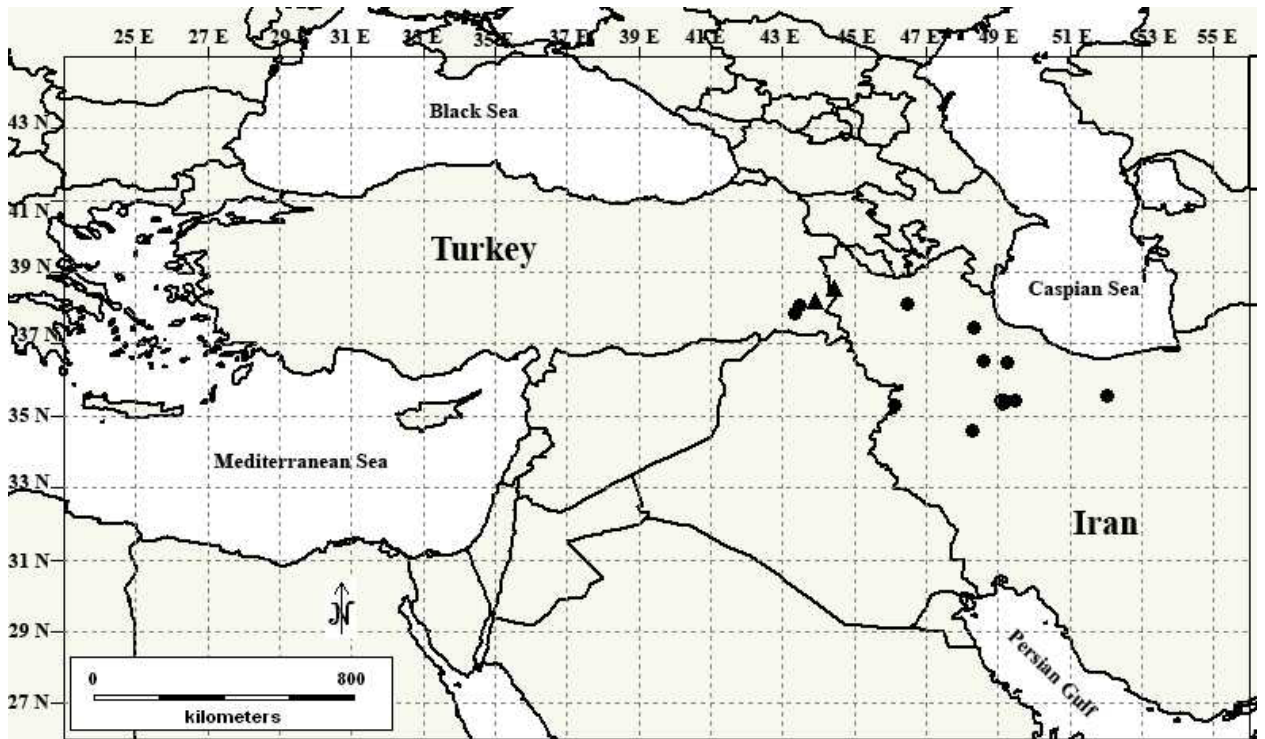


Figure 1. The distribution map of *A. rubrostriatus* (●) and *A. qoturensis* (▲).



Figure 2. *A. rubrostriatus* Bunge.



Figure 3. *A. qoturensis* Podlech.

General distribution. N and NW of Iran, SE of Turkey.
Astragalus qoturensis Podlech, Fl. Iranica [Rechinger]
175: 171 (2001); Sendtnera: 209 (2001) (Figure 3).

Holotype. Iran, Azarbaijan Garbi, Kuh Kani Ziarat N Habashi Bala prope Qotur, 2300–3000 m, 18.7.1974, W. Rechinger & Renz in Rechinger 49644 (M; isotype. TARI, W).

Specimen seen. Turkey B9 Van: Başkale to Hoşap, Güzeldere pass, rocky slopes in sandy soil, 2760 m, 13.07.2011, S. Karaman 2653, Herbarium of Aksaray University; TARI.

General distribution. NW of Iran, SE of Turkey.

Note: The only exceptional species with standard sparse hair on the back side despite the normal form, which is glabrous.

3.2. Species excluded from flora of Turkey

Astragalus chrysostachys Boiss., Diagn. Pl. Orient., ser. 1, 2: 69. 1843.

A. chrysostachys was mentioned for Turkey in a taxonomic revision of the genus *Astragalus* L.

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- (Leguminosae) in the Old World (Podlech and Zarre, 2013) based on a single specimen collected in Erzurum: (A8) Distr. Oltu, 5 km W Sihsor, 1800 m, 26.6.1988, Nydegger 43485 (MSB).
- This species was available to us in MSB. After a detailed study the authors concluded that due to the violet color in the petals (non-yellow) and ascending to spreading hairs in the peduncles and rachis (nonappressed to subappressed hairs), the record of this species from Turkey is a result of misidentification. The species is only growing in Iran.

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