

Astragalus dumanii (Fabaceae), a new species from Anatolia, Turkey

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Astragalus dumanii M. Ekici & Aytaç, *sp. nova* (Fabaceae) from South Anatolia, Turkey, is described and illustrated in line drawings. It is compared with the closely related *A. cataonicus* Bunge. Both species belong in *Astragalus* sect. *Hololeuce* Bunge.

Key words: *Astragalus*, Leguminosae, taxonomy, Turkey

Introduction

In terms of species numbers, *Astragalus* (Fabaceae) is the largest genus of vascular plants on Earth, represented by a total of ca. 2500 taxa (Maassoumi 1998). It is also the largest genus in Turkey, with ca. 439 species in 62 sections (Chamberlain & Matthews 1970, Özhatay *et al.* 1994, 1999, Podlech 1999).

The species described here was first collected eight years ago by Aytaç and Duman during a Floristic Research of Maraş, which was funded by TUBITAK (Project no: TBAG-940). The specimen was examined and identified by studying the *Flora of Turkey* (Chamberlain & Matthews 1970) and it represents a species new to science.

Material and methods

The material was collected on Berit and Binboğa Mountains (Maraş) in 1992 and 1997 and deposited at GAZI. The specimens were compared with similar species, of which specimens are deposited at GAZI, MSB, ANK and HUB.

The pollen structure was examined with both a light microscope and SEM.

Results

Astragalus dumanii M. Ekici & Aytaç, *sp. nova* (Figs. 1–3)

Foliolis linearibus vel ellipticis, 5–14 × 1–1.5

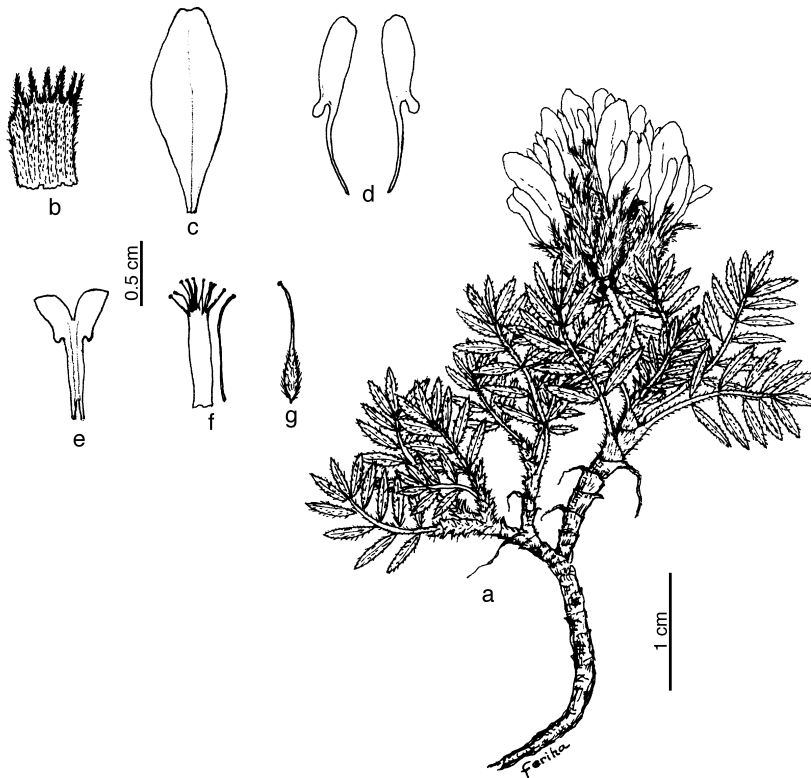


Fig. 1. *Astragalus dumanii* M. Ekici & Aytaç (from the holotype). — **a**: Habit. — **b**: Calyx. — **c**: Standard. — **d**: Wings. — **e**: Keel. — **f**: Stamens. — **g**: Ovary.

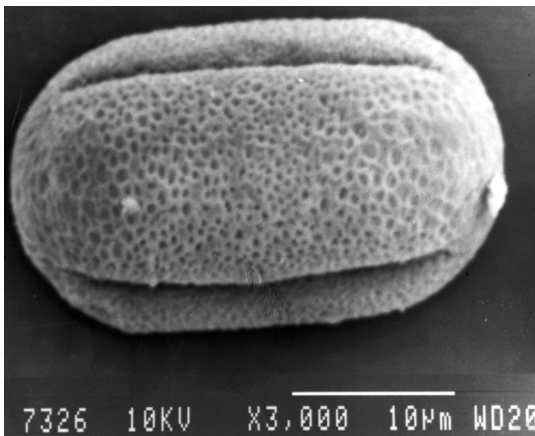


Fig. 2. Pollen grain (SEM) of *Astragalus dumanii* M. Ekici & Aytaç (from the holotype).

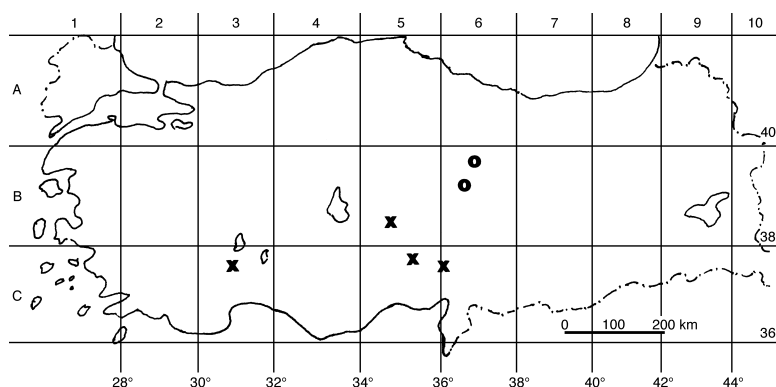
mm longis, calycibus 7–10 mm longis, pilis adpressis albis et nigris, calycis dentibus 2–3 mm longis differt.

HOLOTYPE: Turkey, [B6] Maraş: Göksun, Berit Dağı, 2400 m, 8.X.1997 Ekici 2057 & Aytaç (GAZI; isotypes MSB, ANK, HUB, YILDIRIMLI). **Paratype:** Turkey. Kayseri: Bin-

boğa Dağı, between Körkuyu-Sıçak plasure, 2600 m, 21.V.1992 rocky place, Aytaç 5434 & H. Duman (GAZI).

Plant 2–4 cm tall, acaulescent or nearly so, covered with equally to unequally bifurcate hairs. Caudex strong, branched. Stems almost absent or up to 1.5 cm long, erect, sulcate, densely covered with \pm appressed white hairs 0.5–0.7 mm long, concealed by overlapping stipules. Stipules whitish-hyaline, 5–8 mm long, ovate to narrowly ovate, subulate to acuminate at apex, free from petiole, connate behind stem at least for 2/3 of their length, at margins and apex with long, spreading, bifurcate, white hairs, otherwise sparsely hairy to glabrous. Leaves 1–3 cm long; petiole 0.3–1 mm, densely hairy. Leaflets in 3–7 pairs, folded, linear to linear-elliptic, acute at apex, 5–14 \times 1–1.5 mm, densely covered on both sides with subappressed white hairs. Peduncle 0.5–1.5 cm long, sulcate, densely covered with appressed to spreading white hairs. Raceme globose to ovoid, 10–25-flowered, 1–2 \times 1–2 cm, not elongating in fruit. Bracts thinly membranous, whitish-yellow at base, greenish above, triangular, 4–6 mm long, appressed white or white-black hairy.

Fig. 3. Distribution of *Astragalus dumanii* M. Ekici & Aytaç (o) and *A. cataonicus* Bunge (x) in Turkey.



Bracteoles absent. Flowers sessile. Calyx yellowish or greenish, sometimes purplish-suffused, 7–10 mm long, tubular, covered with appressed black and white hairs; teeth linear, acute, 2–4 mm long. Petals lilac. Standard 15–18 × 5–7 mm, elliptic, emarginate at apex, gradually narrowed at base. Wings 12–16 mm long, narrowly oblong, clearly constricted above auricle, obtuse at apex. Keel 9–12 mm long. Stamens 10–12 mm long. Ovary 0.5 mm long with stipe, densely white-villous; style hairy only at base. Fruits narrowly ovate, 13–15 mm long, 5–6 mm high, with a slightly curved beak, ca. 2 mm long; valves villous, with long, spreading and subbifurcate white hairs. Seeds ovoid to globose, light brown, smooth. $2n = 16$. Pollen grains prolate, tricolpate, $P/E = 1.50$. Polar axis 32.93 μm . Equatorial axis 25.86 μm . Aperture colpus narrow and long, margin fairly clear. $Clg/Clt = 5.06 \mu\text{m}$. $Plg/Plt = 0.91 \mu\text{m}$, por oblata sphaeroidea. Exine 1.27 μm thick. Intine 0.68 μm thick. Structure tectate, surface reticulate.

ETYMOLOGY: We dedicate this new species to our friend and colleague, Dr. Hayri Duman, Gazi University, Ankara, Turkey, who has done so much to contribute to our knowledge of Turkish endemic plants. He is also one of the collectors of the type material of this new species.

DISTRIBUTION AND SUGGESTED CONSERVATIONAL STATUS: Endemic to South Anatolia. The species is known from two localities in high alpine steppe. The populations are in good condition. Therefore it could be regarded as VU (vulnerable; IUCN 1994).

ECOLOGY: In calcareous alpine steppe between 2100 and 2600 m, screes, rocky slopes.

Discussion

This new species was collected on Binboğa Mountain (Maraş) and first identified as *A. cataonicus* Bunge. Later, identical material was collected on Berit Mount (Maraş). After collecting *A. cataonicus* in the type locality (*in Tauro cilicico in summis jugus inter Gisyl deppe et Koschan*, 2350 m) and following examination of the type specimen, we compared the two species. After thorough studies and investigation of the references, it was determined that the Binboğa Mountain and Berit Mount specimens represented a species new to science. *Astragalus dumanii* is related to *A. cataonicus* (both belong in sect. *Hololeuce* Bunge), but can be distinguished by the characters given in Table 1.

Table 1. Differences between *Astragalus dumanii* and *A. cataonicus*.

<i>A. dumanii</i>	<i>A. cataonicus</i>
Stipule glabrous or sparsely hairy	Stipule sparsely or densely hairy
Leaflets linear, linear-elliptic, 5–14 × 1–1.5 mm	Leaflets obovate-oblong, 4–7 × 2.5–4 mm
Bracts 4–6 mm, sparsely hairy	Bracts 6–12 mm, densely hairy
Calyx 7–10 mm; teeth 2–3 mm, with appressed black and white hairs	Calyx 10–14 mm; teeth 5–7 mm, with spreading white hairs

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