

Astragalus ovabaghensis (Fabaceae), a new species from Turkey

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Astragalus ovabaghensis Akan & Aytaç *sp. nova* (Fabaceae) from Turkey is described and illustrated. It is closely related to *A. erythrotaenius* and tentatively placed in section *Alopecuroidei*.

Key words: *Astragalus*, Fabaceae, new species, taxonomy

In terms of species number, *Astragalus* (Fabaceae) is the richest genus of vascular plants on Earth, represented by a total of ca. 2500 taxa (Maassoumi 1998). In Turkey, *Astragalus* has ca. 445 species in 62 sections; 210 of the taxa are endemic (Chamberlain & Matthews 1969, Davis *et al.* 1988, Aytaç 2000, Ekim *et al.* 2000, Akan & Civelek 2001, Ekici & Aytaç 2001, Podlech 2001, Ergin & Kurt 2002, Duman & Akan 2003). The majority of its species are found on high mountains of the Irano-Turanian steppe region. According to Chamberlain and Matthews (1969) the section *Alopecuroidei* was represented by 21 taxa in Turkey, and those authors suggested that it should be revised. After about 30 years, the section was revised again by Akan (2000) and the number of taxa was increased to 22. When that work was going on, some peculiar specimens were collected around Diyarbakır, SE Turkey, in 1998. That material and other members of section *Alopecuroidei* were examined in the herbaria GAZI, ANK, E, G, ESSE, ISTF, DUF, and W. Some undetermined specimens were encountered in ESSE, ISTF and DUF, collected around

Diyarbakır province and they matched with our collections. At the end of the study and after checking the literature cited above and Becht (1978), we realized that these specimens belong in a single species that differs from the other taxa in this section in several characters. This species was collected again in the same locality in 1999 by the senior author.

The section *Alopecuroidei* is closest to *Grammocalyx* and *Argeus*. The members of *Alopecuroidei* are caulescent, the stipules are free from one another and from the petioles, and the calyx is not inflated in flower, whereas in sect. *Grammocalyx* the stipules are joined at the base and the calyx becomes inflated. In sect. *Argeus* the stipules adnate to the petiole. The present specimens are erect-caulescent and completely with free stipules, which is characteristic of section *Alopecuroidei*. After comparison with the fairly similar taxa *Astragalus erythrotaenius*, *A. ponticus*, *A. maximus*, and *A. ocephalus* of sect. *Alopecuroidei*, it was concluded that the present specimens represent a hitherto undescribed species.

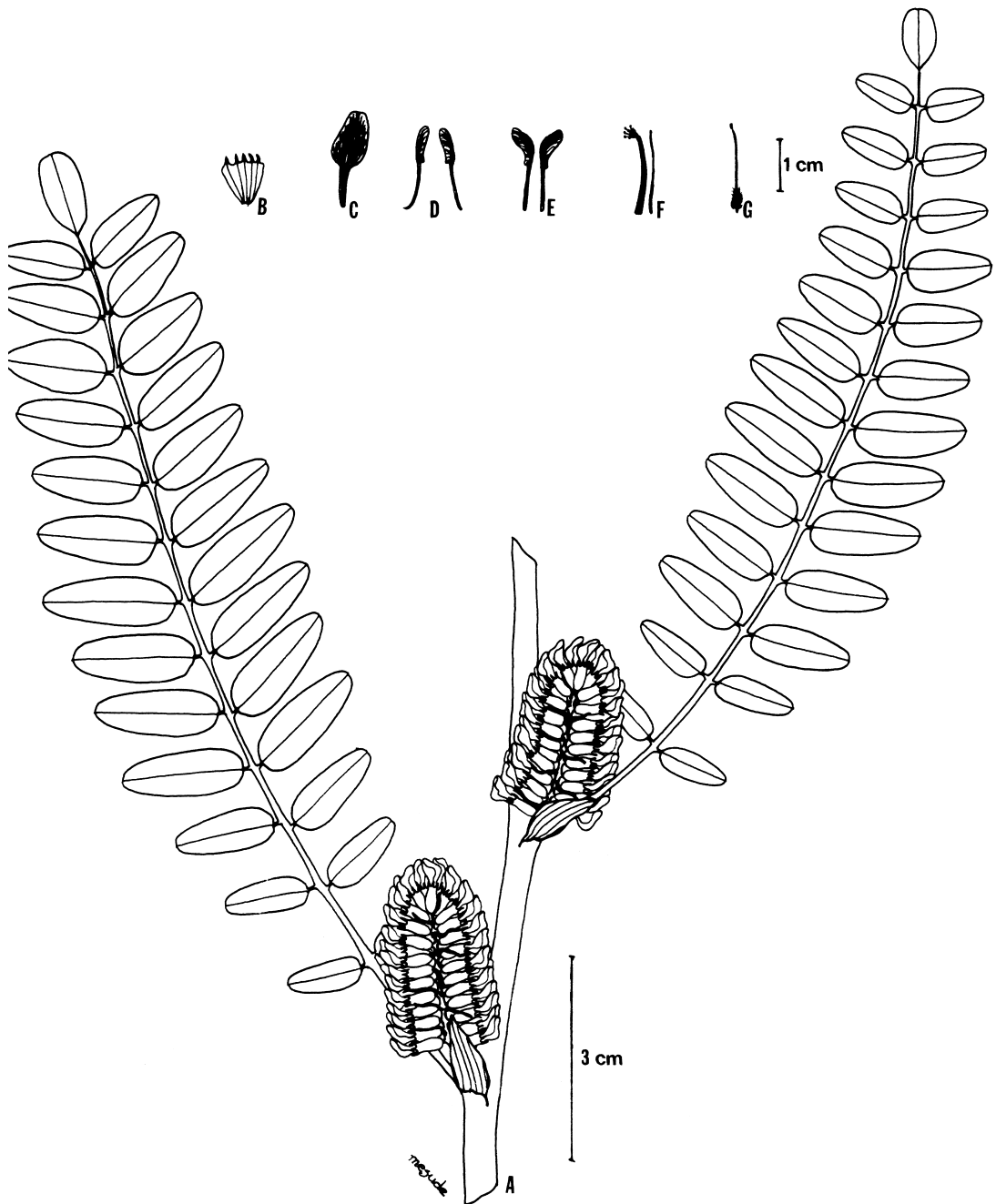


Fig. 1. *Astragalus ovabaghensis* (from holotype). — A: Habit. — B: Calyx. — C: Standard. — D: Wings. — E: Keel. — F: Stamens. — G: Ovary.

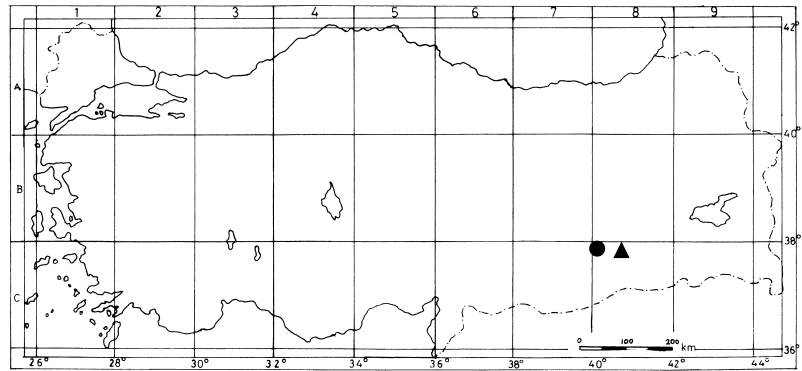
Astragalus ovabaghensis Akan & Aytaç,
sp. nova (Figs. 1 and 2)

foliola et calycis glaber (non pubescentis) differt.

Affinis A. eryhtroteanio, sed folia 18–30 cm (non 10–19 cm), foliola 9–14-juga (non 13–24-juga),

TYPE: Turkey. C8 Diyarbakır: Diyarbakır–Ovabağ 13 km, 800–1000 m, fields, 28.V.1999, Akan 1592 (holotype GAZI; isotype ANK).

Fig. 2. Localities of *Astragalus ovabaghensis* (●) and *A. erythrotaenius* (▲).



Erect, caulescent perennial, 50–90 cm. Leaves 25–30 cm, petiole 3–6.5 cm; leaflets 25–50 × 12–15 mm, elliptic–narrowly oblong, obtuse or acute, glabrous on both surfaces, 9–14 paired. Stipules triangular-lanceolate, 18–30 mm, membranaceous, purple, glabrous. Inflorescence sessile, 3–5 × 1.5–2 cm, oblong to cylindrical, flowers sessile. Bracts 7–16 mm, linear, membranaceous, ciliate. Bracteole absent. Calyx 7–11 mm, tubular to campanulate, tube inflated in fruit, purple-striped, glabrous; teeth 1–4 mm, linear, glabrous. Flowers yellow; standard 18–20 × 3–4 mm, stenonchoid, glabrous; keel 16–17 × 2–3 mm, wings 15–16 × 2–3 mm. Filaments 14–16 mm long, glabrous, white to yellowish; anthers yellow, dorsifixed. Ovary 4–6 mm long, ovoid, densely white hairy; style 10–11 mm, hairy at base; stigma capitate. Legume 10–12 × 3–4 mm, oblong, included within calyx, sparsely pilose, bilocular; beak 2–3 mm long, curved. Seeds 3 × 1.5–2 mm, reniform, light brown and smooth. $2n = 16$. Flowers and fruits May–June.

DISTRIBUTION AND SUGGESTED CONSERVATIONAL STATUS: A review of the floras of neighbouring countries (Townsend & Guest 1974, Podlech 1999), revealed that the new species is endemic to Turkey, more precisely to SE Anatolia, and is of Irano-Turanian element. The species is known from two localities ca. 1–1.5 acres in area. The population is not in good condition and there are about 75–100 specimens. It is threatened by grazing, by agricultural activities and traffic on nearby roads. Therefore, it should be placed in CR category (IUCN 2001).

ECOLOGY: *Astragalus ovabaghensis* grows between fields and roadsides with some characteristic plants such as *Astragalus asterias*, *A. hamosus*, *A. suberosus* subsp. *suberosus*, *Vicia*

cracca subsp. *stenophylla*, *V. noeana* var. *meg-alodontia*, *V. anatolica*, *Lens culinaris*, *Lathyrus inconspicuus*, *L. cicera*, *Pisum sativum* var. *arvense*, *Trifolium campestre*, *T. purpureum* var. *purpureum*, *Trigonella monantha* subs. *monantha*, *T. velutina*, *Medicago lupulina*, *M. polymorpha* var. *vulgaris*, *Salvia multicaulis*, *Convolvulus arvensis*, *Senecio vernalis*, *Sinapis arvensis*, *Malva sylvestris*, *Papaver argemone*, *Reseda lutea*, *Anchusa azurea* var. *kurdica*, *Cichorium intybus*, *Poa bulbosa*, *Centaurea virgata*, *Gladiolus italicus*, *Geranium tuberosum*, etc.

Astragalus ovabaghensis resembles *A. erythrotaenius* of the same section. The type specimen of *A. erythrotaenius* (W) was examined by us and after checking the information in Becht (1978), Maassoumi (1998), and Maassoumi and Ranjbar (1996), it became clear that *A. erythrotaenius* differs from the present specimens (Table 1).

Other species to be considered in connection with *Astragalus ovabaghensis* are *A. ponticus*, *A. maximus*, *A. oocephalus* and *A. erythrotaenius*.

Table 1. Differences between *Astragalus erythrotaenius* and *A. ovabaghensis*.

Characters	<i>Astragalus erythrotaenius</i>	<i>Astragalus ovabaghensis</i>
Leaves	10–19 cm long	25–30 cm long
Leaflets	7–20 × 1.5–5 mm, pilose below, 13–24-paired	25–50 × 12–15 mm, glabrous on both surfaces, 9–14-paired
Stipule	12–20 mm long	18–30 mm long
Peduncles	0.5–10 mm	absent
Calyx	pubescent	glabrous

The new species can be distinguished by the following key.

Partially revised key to *Astragalus* sect. *Alopecuroidei* in Turkey (H. Akan unpubl. data)

1. Inflorescence ovoid-cylindrical, cylindrical especially during fruiting 2
1. Inflorescence globose or oblong, not cylindrical 4
2. Leaflets hairy below, glabrous above .. *A. erythrotaenius*
2. Leaflets glabrous on both surfaces 3
3. Calyx glabrous; calyx teeth 1–5 mm ... *A. ovabaghensis*
3. Calyx hairy; calyx teeth 4–15 mm *A. ocephalus*
4. Bracts 2–7 mm; calyx teeth 1–3 mm; beak 4–5 mm *A. ponticus*
4. Bracts 7–21 mm; calyx teeth 2–7 mm; beak 1–3 mm *A. maximus*

ADDITIONAL SPECIMENS EXAMINED. — *Astragalus ovabaghensis* (paratypes). **Turkey.** C8 Diyarbakır: Havaalanı, çayır, 29.V.1976, H. Demiriz, G. Kaynak & H. Mısırdalı 503 (DUF, ISTF, ESSE); Diyarbakır–Ovabağ 11 km, Eşref Ağa köyü batısı, 37°46′51″N, 40°10′50″E ca. 900–1000 m, yol kenarı, tarla içi, 9.VI.1998, Akan 1412 (GAZI). — *Astragalus erythrotaenius*. **Turkey.** C8 Diyarbakır: prope Diyarbakır, 26.VI.1841, Kotschy 265 (G photo, K photo, W); Ovabağ ve Harami arası, 1000 m, güneybatı yamaçlar, 1984, taşlık, Kaynak 662 (Uludağ University, Biology Dept. Herb.; Karacadağ, 1410 m, 7.VI.1983, taşlık, yol kenarı, Kaynak 759 (ANK).

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