

A new species of *Astragalus* L. sect. *Acidodes* Bunge (Fabaceae) from Iran

by

A. GHAHREMAN & Sh. ZARRE M.

Abstract:

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Astragalus titziae is described newly. The position of the species in sect. *Acidodes* is discussed and it is compared with its next related species.

Astragalus titziae Ghahreman et Zarre, sp. nov. - **Holotypus**: Tehran: 20' SE Firuzkuh, 9000', 1.7.1962, *Furse* 3009 (K!; Iso: Hb. PODLECH!, TUH!, W!).

differt ab *A. leiophyllo* Freyn et Bornm. calyce 12-19 mm longis (nec 8-12 mm) pilis ejus mere albis (nec albi-nigris), foliolis non mucronulatis, bracteis longioribus, 8-13 mm longis (nec c. 7 mm longis).

Fruticulosus, caespitosus, spinosus, c. 20 cm altus, pilis basifixis albis 0,1-1,5 mm, in calycibus ad 4 mm longis vestitus, caulibus breviter ramosis stipulis obtectis. Stipulae membranaceae, e basi semiamplexicaule lanceolariter acuminatae, margine ciliatae, liberae, 5-11 mm longae. Folia 0,8-6,5 cm longa, petiolo 0,2-3 cm longo; rhachides sparse appresse pilosae; foliola 4-6 juga, oblonga, complicata, 3,5 x 1-10 x 3 mm, apice obtusa, obsolete apiculata, utrinque sparse adpresse pilosa vel glabra. Racemi subsessiles, multiflori, floriferi 1,5-2,5 cm longi et lati. Bracteae latiore ellipticae, 8-13 mm longae et 4-8 mm latae, glabrae, ciliatae. Calyx 12-15 mm longus, floriferi tubulosus, mox increscentes, patule villosus, dentibus filiformibus, 7-9 mm longis. Corolla flava. Vexillum 16-19 mm longum, alam superantes; lamina 8-10 mm longa et c. 6 mm lata, oblongo elliptica, apice subrotundata, basi in unguem angustata. Alae 15-17 mm longae, carinam superantes; lamina 7-8 mm longa et c. 3 mm lata, obovatae. Carinae c. 14 mm longae; lamina oblongo triangulari. Ovaria dense adpresse pilosa. Legumina immatura.

Plants dwarf cushion-forming shrublets, about 30 cm in diameter, 15-25 cm tall, very densely branched from the base. Hairs purely white, or just at the old stipules with some black ones, 0,1-1 mm long, at the calyx up to 3,5 mm long, mostly straight, thin, sharply ending. Stem 1-15 cm long, prostrate to ascending, at the base c. 0,8 mm thick, at first year 1-3 mm in diameter, with a growth of 1-7 cm per year, under stipules densely tomentose; old stem grey to dark brown or black, soon glabrescent. Stipules membranous, toward the margins hyaline, yellowish white, 5-11 mm long,

with 1-3 parallel nerves, which are densely branched throughout the surface, lanceolate to oblong, acuminate, at a length of 3-5 mm adnate to the petiole, otherwise basal or up to 1 mm connate, sparsely furnished with long adpressed hairs, glabrescent, ciliate. Leaves 0,8-6,5 cm long; rachises very dense, rigid, \pm thin, sparsely covered with long and short adpressed to semierect hairs, soon glabrescent; petiole (1/4-) 1/3 (-1/2) the rachis; end thorn 1-2 times as long as the most terminal leaflets pair; leaflets light green, 4-6 (-7) pairs, 3,5-10 mm long and 1-3 mm broad, narrowly oblong, strongly complicate, obtuse, often very tiny mucronulate, both sides sparsely furnished with adpressed to semierect hairs to wholly glabrous. Inflorescence simple (in younger plants seem to be compound), 1-4 per shoot, borning at the base of current year shoots, dense, globose, 1,5-2,5 mm in diameter, composed of 5-12 \pm sessile flowers; peduncle 1-6 mm long, thick, densely villose. Bracts membranous, yellow, 8-13 mm long and 5-8 mm broad, elliptic to broadly elliptic, rounded at the tip, shortly appiculate, glabrous, ciliate. Bracteoles absent. Calyx thinly membranous, yellowish green to whitish, at the teeth straw-coloured, tubular, 12-15 mm long and c. 3 mm broad (fruiting calyx unknown), with 12-17 parallel thin nerves, densely to sparse villose; teeth 7-9 mm long, from a short triangulate base filiform, 1,2-1,5 times as long as the tube. Corolla creamy, limbs toward the margins pink, the claws of wings and the keel c. 2 mm at the base adnate to the staminal tube. Standard 16-19 mm long; limb 8-10 mm long and 6-6,5 mm broad, elliptic, gradually narrowing to the broadly cuneate claw, rounded at the apex, very tiny mucronulate. Wings 15-17 mm long, shorter as the standard; limbs 7-8 mm long and 2,5-3 mm broad, obovate, obtuse, often tiny mucronulate; auricle 0,4-1 mm long; claw 8,5-9,5 mm long. Keel c. 14 mm long, shorter as the wings; limb 5,5-6 mm long and 2,5-4 mm deep, oblong-triangulate, with almost rectangular lower and straight upper edge, very tiny mucronulate; auricle obvious; claw 7,5-8 mm long. Staminal tube 13-14 m long, the free part 3,5-4 mm long. Ovary 13-16 mm long; style 10-11 mm long, up to lower 1/2 hairy. Fruits immature, possibly dorsi-ventrally compressed.

Geographic distribution: Iran: endemic to central Elburz (around Firuzkuh).

Flowering- and fruiting-time: V-VII (-?). **Occurence:** dry stony slopes; 1900-2800 m.

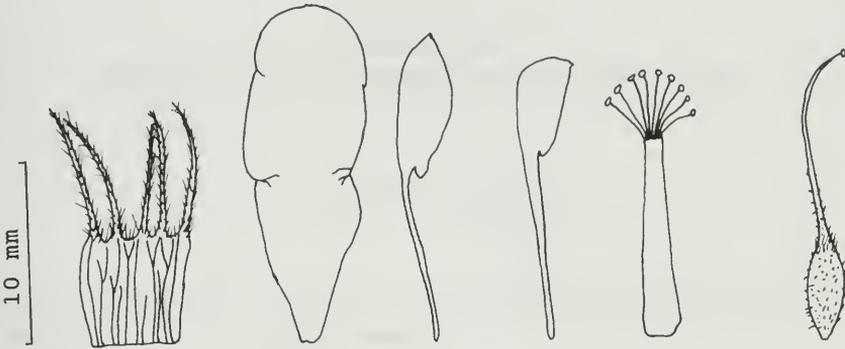
Specimens seen:

Iran: Tehran: 20' SE Firuzkuh, 9000', 1.7.1962. *Furse 3009* (K, Herb. PODL., TUH, W) - 20' SE Firuzkuh, 9000', 1.7.1962. *Furse 3010* (K) - Seyyedabad, road of Firuzkuh, 2500 m, 4.6.1972, *Dini & Arazm 15656* (TARI, W) - Firuzkuh to Tehran, 28 km from Firuzkuh, Kuh-e Velveh, 1950-2200 m, 28.5.1980, *Termeh, Daneshpajuh & Zargani 39850* (W: ex IRAN).

Note:

A. titziae is closely related to *A. leiophyllus* Freyn & Bormm. which is a common species on west of the Zagros range (especially Kordestan). *A. leiophyllus* has a smaller calyx covered with white and black hairs (although black hairs are a few in subsp. *leiophyllus*). Most of the species of the sect. *Acidodes* have mucronate leaflets in contrast to *A. titziae*, whose leaflets are not mucronate. *A. carduchorum* is the next closely related species with only white hairy calyx. However the latter possesses inflorescences congested of 1-3-flowered axillary clusters which are sometimes forming apparently a compound ones, in contrast to *A. titziae* with more than five flowers in each inflorescence. The large bracts of *A. titziae* are unique in the section. The form of bracts reminds of sect. *Hymenostegis*, whose species have auriculate-hastate standards.

The new species is named in honor of Mrs. S. TIETZ who published a revision of a difficult group of the thorny *Astragali* in 1988.



Dissection of a flower (*Furse 3009: W*)

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Address of the authors:

Prof. Ahmad GHahreman & Shahin ZARRE M.: Central Herbarium of Tehran University (TUH), Faculty of Sciences, Tehran University, Tehran, Iran.

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Autor(en)/Author(s): Ghahreman A., Zarre M. Sh.

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