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MORE NEW ASTRAGALI FROM TURKEY

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ABSTRACT

Nine new species of *Astragalus* representing four sections of the genus are described from central, south and east Anatolia and illustrated.

Key words: Leguminosae (Papilionoideae), *Astragalus*, new taxa, *Flora of Turkey*.

INTRODUCTION

The third volume of *Flora of Turkey and the East Aegean Islands*, which dealt entirely with the Leguminosae, was published in 1970 (Davis 1970) with the accounts of various sections of *Astragalus* prepared by D. Chamberlain and V. Matthews. Since then much new herbarium material of *Astragalus* from Turkey and adjacent areas had accumulated. An additional 12 taxa will be included in the Supplement volume (now in preparation); in this paper a further nine new species are described based on recent study. All specimens cited have been seen and are deposited in the herbaria as indicated.

TAXONOMY

Section Hypoglottis

***Astragalus hartvigii* Kit Tan, sp. nov.**

Fig. 1A

Ab *A. hypoglottide* L., cujus *A. purpureus* Lam. synonymus est, habitu naniore, florum partibus omnibus minoribus et praecipue calycis dentibus tubo plus quam 4-plo brevioribus differt.

Semiprocumbent to ascending, shortly caulescent perennial with a much-branched woody caudex; stems herbaceous, 2-4 cm long. Leaves imparipinnate, (0.5-)1-3 cm long; stipules ovate, 3-5 mm long, connate into sheath below; leaflets 5-9-paired, obovate to broadly elliptic, 2-5 × 1-2 mm, with spreading or adpressed, white, simple hairs on both surfaces or subglabrous, obtuse. Peduncles 3-10 cm long. Flowers subsessile, 5-10 in a contracted ovoid spike. Bracts narrowly ovate to lanceolate, 4-5 mm long. Bracteoles absent. Calyx tubular, 5.8-6.2 mm long, not inflated in flower or fruit although tube splitting at maturity, with black and white, spreading, simple hairs on teeth and tube or tube with white hairs only; teeth linear-triangular, 1-1.5 mm long. Standard stenonychioid, 10 mm long, 5 mm wide at broadest part, tawny blue, glabrous, emarginate; wings and keel a darker lilac, expanded limb 5 mm and 4 mm long respectively, keel

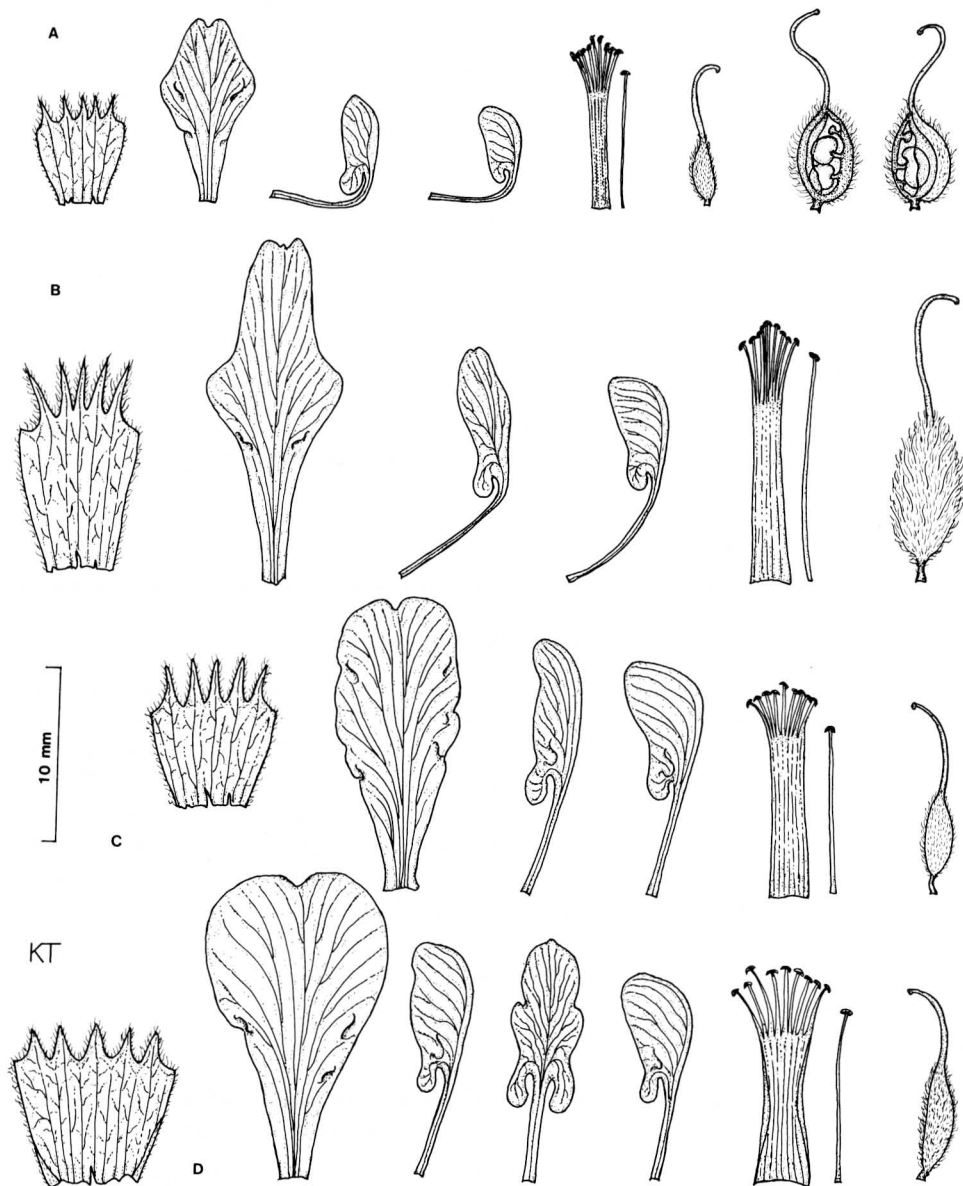


Fig. 1. A. *Astragalus hartvigii*. — B. *A. stridii*. — C. *A. kangalicus*. — D. *A. isparticus* (with teratological wing). (Left to right: calyx, entire or dissected; standard; wing; keel; stamens; ovary or young legume; legume where present.)

petals dorsally coherent. Ovary long white-villous, shortly stipitate, 6-ovulate; style ca. 6 mm long. Legume erect, exerted from calyx, ovoid, ca. 6 mm long, inflated, bilocular, white-villous. Seeds 1–2 per locule, ca. 2 mm long (semimature), smooth, pale brown. *Flowering*: July.

Type. — Turkey C2 Mugla: west side of Ak Dağ, alpine pasture on rocky limestone slopes, 2600–2800 m, 11 vii 1984, P. Hartvig, Ö. Seçmen & A. Strid, Strid et al. 23529 (holotype: C; isotype: E, M).

Southwestern Anatolian endemic. East Mediterranean (mountain) element. The 16 Turkish species referred to Sect. *Hypoglottis* Bunge occur mainly in north-eastern and eastern Anatolia. *Astragalus scholerianus* Bornm. is the exception and is still known only from the type gathering in central Anatolia (B3 Konya); this has no close allies within the section. *Astragalus hartvigii* is thus the first southwestern Anatolian (Lycian) representative and we are more likely to find its affinities among species occurring in southern Europe, perhaps in the Balkans, rather than in the east of Turkey. When the Mediterranean and central European taxa were examined, the closest ally seemed to be the taxon referred to in all Floras as *A. purpureus* Lam. This is a species with a fairly wide distribution, mainly in the mountain ranges of southern Europe from northern Spain and southwestern France to Yugoslavia and Albania. It differs from *A. hartvigii* by its taller stems (10–40 cm long) and larger leaves (4–8 cm long), flowers (calyx 8–10 mm long, standard ca. 18 mm long) and legumes (10–15 mm long). Generally, the calyx teeth are ca. $\frac{1}{2}$ – $\frac{2}{3}$ as long as the tube; specimens from the limestone mountains in the Tyrol, however, have much shorter calyx teeth, less than $\frac{1}{3}$ as long as the tube.

The correct name for *A. purpureus* Lam. (1784) is almost certainly *A. hypoglottis* L. (Mantissa altera 274, 1771). C. C. Lacaite gives a full and interesting account concerning the identity of this problematical species in *Nuovo Giorn. Bot. Ital., n. ser.* 19(3):309–326 (1912) and also in *J. Bot.* 50:217–229 (1912). It is surprising that this paper has not merited wider attention as all recent Floras still refer to the taxon as *A. purpureus* Lam.

The flowering specimens of *Strid et al.* 23529 held at E were severely galled and originally gave the impression that the calyx was inflated; incision with a sharp needle, however, quickly spilled out the wasp larvae and dispelled that illusion.

Section Stereothrix

Astragalus stridii Kit Tan, sp. nov.

Fig. 1B

Intra Sect. *Stereotrichem* Bunge, *A. coodei* Chamberlain & Matthews proximus, a quo inflorescentiae floribus paucioribus, calyce maiore, densius hirto, vexilloque ad partem latissimam duplo latiore differt.

Ascending herbaceous perennial with a woody caudex; stems 15–40 mm tall. Leaves imparipinnate, 5–9 cm long; leaflets elliptic, 3–8 × 1–3 mm, with adpressed, canescent, simple hairs (indumentum denser on abaxial surface and young leaves), 8–15-paired; stipules connate below, narrowly ovate-lanceolate, 4–8 mm long. Peduncles 7–12 cm long. Inflorescence a ±dense, ovoid, 15–20-flowered spike. Bracts linear, 5–6 mm long. Bracteoles absent. Calyx tubular, 11–12 mm long, not inflated in flower or fruit, with dense, spreading, simple, black or white hairs; teeth linear-lanceolate, 3–3.5 mm long. Corolla fading dark bluish-purple; standard stenonychioid, 18–19 × 6.5–6.7 mm, retuse, glabrous, cream-colored at anthesis; wings and keel lilac-purple, expanded limb 8.5 mm and 5.5 mm long respectively. Ovary long white-sericeous; style ca. 9 mm long. Legume immature. *Flowering*: July.

Type.—Turkey C5 Niğde: Narpiz valley, NW part of Aladağ, ca. 6 km SE of Demirkazik köyü, limestone scree and rock, 2800–3000 m, 23 vii 1984, G. Görk, P. Hartvig & A. Strid, *Strid et al.* 23923 (holotype: C; isotype: E, M).

South Anatolia (Anti-Taurus). Endemic. Within Sect. *Stereothrix* Bunge, closest to *A. coodei* Chamberlain & Matthews. The latter, which was described from north and central Anatolia (in *Notes RBG, Edinb.* 29:290, 1969, sphalm. *A. coodie*), is a plant of much lower altitude (1300–1600 m), growing in *Pinus nigra* forest. It differs from *A. stridii* in its many (20–50)-flowered spike, smaller and sparsely hairy calyx and narrow, almost linear standard, which at most is only half as broad as that of *A. stridii*.

Delimiting some sections in *Astragalus* is always a problem. Leaflet indumentum is generally considered to be a key character in *Astragalus*, with the genus conveniently split on the basis of simple versus bifurcate leaflet hairs. Practically all Turkish species fall into one category or the other. Yet, in facies *A. stridii* (with simple \pm basifixed hairs) could well be fitted into Sect. *Onobrychium* Boiss., which differs from Sect. *Stereothrix* in having leaflets with bifurcate hairs. The shape of the standard and length of the calyx teeth also point to a position in Sect. *Malacothrix* Bunge; this section is very closely related to Sect. *Stereothrix* but differs mainly in calyx characters.

This and the preceding species are named after their joint collectors Prof. Arne Strid and Dr. Per Hartvig at the Botanical Laboratory, University of Copenhagen.

Section *Onobrychium*

Sect. *Onobrychium* Boiss. includes several closely related species occurring in Turkey and Caucasia. It is not a difficult section but because so many representatives occur in Caucasia, it should certainly be studied outside Turkey before the relationships between species become clear. We believe “true” *A. onobrychis* L. does not occur in Turkey at all; this species is characterized by legumes with white, bifurcate hairs.

***Astragalus robertianus* Kit Tan & Sorger, sp. nov.**

Fig. 2A

Ab *A. canescenti* DC. foliis pedunculisque longioribus, stipulis maioribus, spica in statu fructifero non elongata, floribus paucioribus, corolla intense indico-violacea (non pallide purpurea) differt.

Shortly caulescent perennial to 25 cm tall, with a branched woody caudex; stems herbaceous, erect-ascending, short, to 5 cm long. Leaves imparipinnate, long-petiolate, 6–12 cm long; leaflets 8–10-paired, narrowly elliptic, 5–10 \times 1–2 mm, mucronulate, densely sericeous when young; hairs white, adpressed. Stipules free from petiole, triangular, 6–8 mm long. Peduncles slender, 12–17 cm long, with white or black, adpressed, bifurcate hairs. Spike up to 10-flowered, ovoid, ca. 2.5 \times 3 cm, not elongating in fruit. Bracts triangular-caudate, 3–6 mm long; bracteoles absent. Calyx tubular-campanulate, not inflated in flower or fruit, 8–10 mm long (incl. the 1.5–2 mm-long teeth), greenish-yellow, with adpressed, bifurcate, black or white hairs. Corolla deep bluish-violet, drying yellow; standard stenonychioid, glabrous, 18–20 \times 6–7 mm, emarginate; expanded limb of wing and keel petals to 8 mm and 6 mm long respectively. Ovary densely white sericeous-villous; style slender, ca. 10 mm long. Legume exserted from calyx, erectopate, ovoid, (8.5–)10–12 \times ca. 4 mm (excl. 3–4 mm-long curved beak), with densely spreading, bifurcate, black or white hairs arising from tubercles. *Flowering*: July–August.

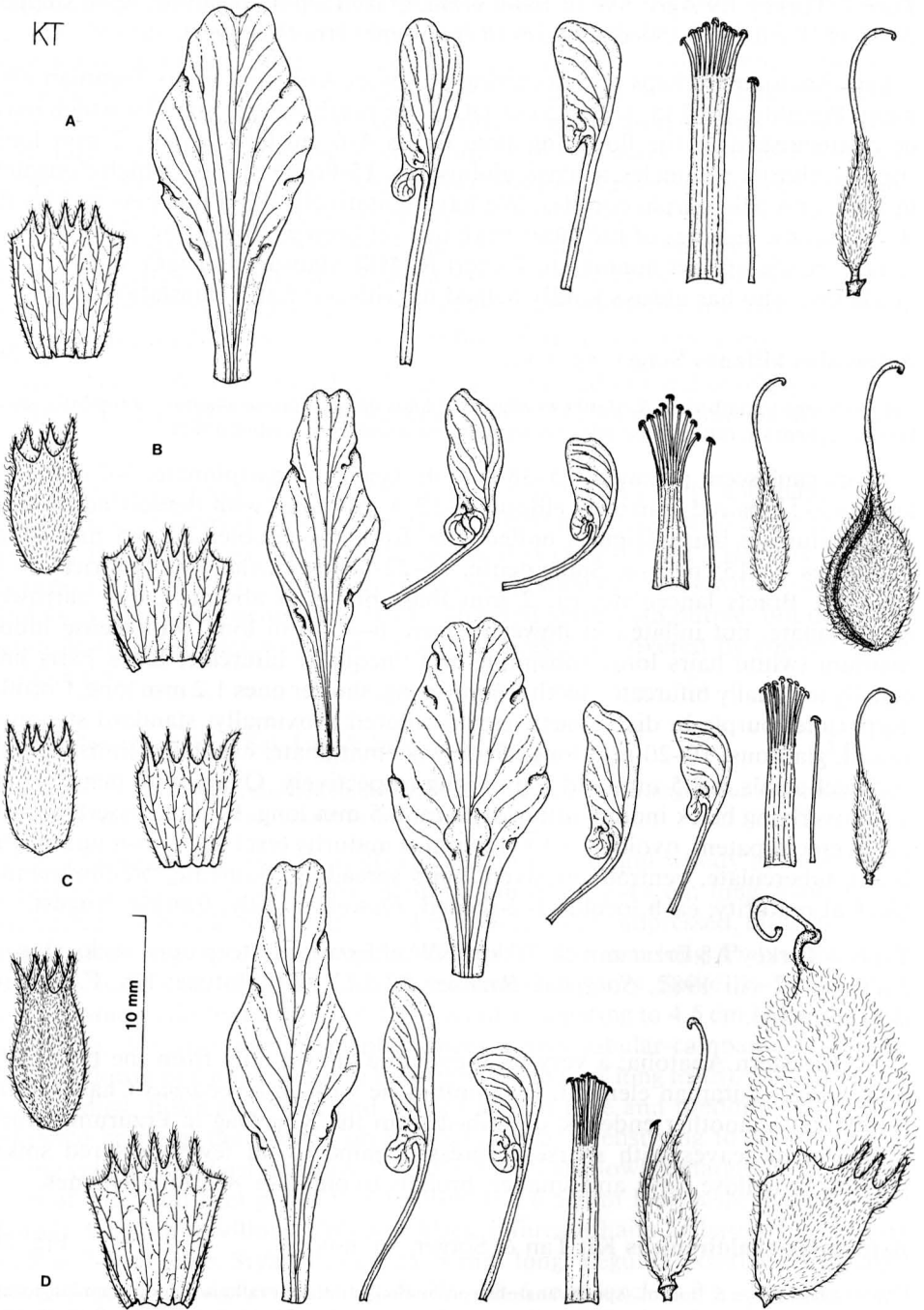


Fig. 2. A. *Astragalus robertianus*.—B. *A. kitianus*.—C. *A. chaldiranicus*.—D. *A. eliasianus*. (Left to right: calyx entire or dissected; standard; wing; keel; stamens; ovary or young legume; legume where present.)

Type. — Turkey B9 Ağrı: SW of Balik Gölü, grazed alpine meadow, open steppe, 2400 m, 4 viii 1983, *Sorger 83-36-18* (holotype: Hb. F. Sorger).

East Anatolia; perhaps also occurring in Soviet Armenia. Irano-Turanian element. Possibly allied to *A. canescens* DC. from northeastern Anatolia which may be distinguished in the flowering state by its 4–6 cm-long leaves, 3 mm long stipules, shorter peduncles, a dense, globose, ca. 15-flowered spike which elongates in fruit, and pale purple corollas. We have tentatively allied this new species to *A. canescens*; legumes of the latter have not yet been examined by us.

The specific epithet honors Dr. Robert R. Mill, stalwart assistant on the *Flora of Turkey*, who has always kindly helped us with our Latin translations.

***Astragalus kitianus* Sorger, sp. nov.¹**

Fig. 2B

A. atrocarpo Chamberlain & Matthews affinis sed foliis dense adpresse albobifurcato-pilosis, spica breviter cylindrica, calyce dense piloso et leguminibus ovoideis maioribus differt.

Erect, caulescent perennial 35–38 cm tall. Leaves imparipinnate, 3–7 cm long; leaflets 7–12-paired, narrowly elliptic, 6–12 × 2–4 mm, with densely adpressed, white bifurcate hairs; stipules united, free from the petiole, 2.5–3.5 mm long. Peduncles 10–15 cm long. Spike dense, 16–22-flowered, shortly cylindrical, to 4 cm long. Bracts lanceolate, ca. 2 mm long; bractoles absent. Calyx narrowly campanulate, not inflated in flower or fruit, 6–7.5 mm long, with dense indumentum (white hairs long, subsimple and unequally bifurcate, black hairs unequally to equally bifurcate); teeth 1.6 mm long, shorter ones 1.2 mm long. Corolla deep violet-purple in distal parts, cream-colored proximally; standard stenonychioid, glabrous, 19–20 mm long, shallowly emarginate; expanded limb of wing and keel petals 8–8.5 mm and 5 mm long respectively. Ovary with dense white hairs overlying black indumentum; style ca. 6.5 mm long. Legume exserted from calyx, erecto-patent, ovoid, 8–10 × 4.5 mm at maturity (excl. 2.5 mm-long straight beak), tuberculate, ventrally grooved; hairs spreading, bifurcate, predominantly black at maturity; each locus 1–2-seeded. *Flowering:* July; *fruiting:* August.

Type. — Turkey A8 Erzurum: ca. 70 km NW of Erzurum, steep open rocky slopes, 2200 m, 12 viii 1982, *Sorger & Buchner 82-122-54* (holotype: Hb. F. Sorger; isotype: RSA).

Northeastern Anatolia; a very local endemic known only from the type gathering. Irano-Turanian element. Its affinities lie with *A. atrocarpus* Chamberlain & Matthews, another endemic described from the Kop Dağ in Erzurum, which differs in its leaves with sparse, adpressed hairs, ovoid fewer-flowered spike, sparsely strigillose calyx and smaller, broadly ovoid, 5–6 × 3 mm legumes.

***Astragalus chaldiranicus* Kit Tan & Sorger, sp. nov.**

Fig. 2C

A. xylobasi Freyn & Bornm. (speciei anatoliae orientalis centralisque) affinis sed foliorum longiorum foliolis 10–12- (non 4–5)-jugis, pedunculis longioribus, spica pluri 35–40- (non 10–15)-flora, floribus in vivo magenteis, leguminibus praecipue nigro-(non albo)-strigillosis rostro recto recedit.

Erect caulescent perennial to 45 cm tall. Stems herbaceous, ca. 20 cm long, with both black and white bifurcate hairs at nodes. Leaves imparipinnate, 7–8 cm long; leaflets 10–12-paired, shortly petiolulate, those from median and lower leaves narrowly elliptic, 15–17 × 2.5–4 mm, obscurely retuse, with white, ad-

pressed, bifurcate hairs on the abaxial surface, glabrous to subglabrous on adaxial surface. Stipules ovate to lanceolate, 2–3 mm long. Peduncles 10–15 cm long, with white and black bifurcate hairs. Spike dense, 35–40-flowered, cylindrical, elongating to 4.5 cm in fruit. Bracts ovate-triangular, ca. 1.5 mm long. Bracteoles absent. Calyx not inflated in flower or fruit, tubular-campanulate, (5–)6–7 mm long (incl. 1.5–2 mm-long teeth), with both black and white, adpressed, bifurcate hairs, or with predominantly rufous-brown indumentum. Corolla deep magenta, drying bluish-purple and cream; standard glabrous, 16–20 × 7–8.5 mm, shallowly emarginate; expanded limb of wing and keel petals to 8.5 mm and 5.5 mm long respectively. Style 4–5 mm long. Legume exserted from calyx, erecto-patent, ovoid, 8–9 × 3–4 mm (excl. straight, 1.5 mm-long beak); hairs bifurcate, black or white, indumentum predominantly black-strigillose at maturity. *Flowering*: July.

Type. — Turkey B9 Van: 2 km S of Çaldıran, wet meadows at foot of gypsum hills, 2200 m, 10 vii 1982, *Sorger & Buchner 82-60-23* (holotype and photo.: Hb. F. Sorger).

East Anatolia. Irano-Turanian element. It was found locally abundant at Çaldıran (where it formed showy clumps 1½ ft tall) and is likely to occur in north-western Iran. Amongst the Turkish species it is closest to *A. xylobasis* Freyn & Bornm. (Sect. *Onobrychium*) which differs by smaller leaves with 4–5 pairs of leaflets, 5–8 cm-long peduncles, 10–15-flowered spike with purple, not deep magenta flowers, legumes with a short curved beak and covered by conspicuously white hairs.

***Astragalus eliasianus* Kit Tan & Sorger, sp. nov.**

Fig. 2D

A. perraro Boriss. affinis, a quo foliis foliolisque maioribus, pedunculis longioribus, racemis ovoideo-cylindricis, atque leguminibus maioribus nigro et albo-pilosis differt.

Erect caulescent perennial to 40 cm tall, branched and woody at base; stems herbaceous, to 20 cm long. Leaves imparipinnate, 12–14 cm long; leaflets 7–9-paired, narrowly elliptic, 15–25 × 2–4 mm, with white, adpressed, bifurcate hairs, mucronulate; stipules free, triangular-lanceolate, 4–6 mm long. Peduncles 25–28 cm long, with white and black adpressed, bifurcate hairs. Spike 16–20-flowered, dense, ovoid-cylindrical, 3–3.5 × 1.5–1.8 cm, elongating to 4.5 cm in fruit. Bracts lanceolate, 2–5 mm long; bracteoles absent. Calyx tubular-campanulate, not inflated in flower or fruit, 7–8.5 mm long (incl. 2–2.5 mm-long teeth), with adpressed to spreading, bifurcate, black and white hairs on tube and predominantly black bifurcate hairs on the teeth. Corolla rose-purple, intensifying to deeper purple, drying yellow; standard glabrous, 20–22 × 5 mm, shallowly emarginate; expanded limb of wing and keel petals to 10.5 mm and 6.5 mm long respectively. Ovary densely long white-villous with few black bifurcate hairs at base of style; each loculus 7–8-ovulate. Style slender, ca. 8 mm long. Legume exserted from calyx, erecto-patent, oblong-ovoid, (15–)18–20 × 5–6 mm (excl. 3–3.5 mm-long beak), tawny-yellow, with spreading hairs arising from small tubercles, the black hairs subsimple and bifurcate, the white hairs simple. *Flowering*: July.

Type. — Turkey A9 Kars: 10 km S of Sarikamis, open *Pinus sylvestris* forest, 2200 m, 23 vii 1981, *Sorger 81-48-1* (holotype: Hb. F. Sorger; isotype: RSA).

East Anatolia; although known only from the single gathering cited, it probably

also occurs in Caucasia. Irano-Turanian element. With affinities to *A. perrarus* Boriss. (Sect. *Onobrychium*) which can be distinguished by smaller (5–8 cm long) leaves with 4–10 mm-long leaflets, shorter (3–9 cm long) peduncles, globose racemes 2–2.5 cm in diam, and smaller (11–12 × ca. 3 mm), white-hispid legumes. The latter's presence in Turkey requires confirmation; as it grows just over the border in Soviet Armenia, it is very likely to occur in Turkey. The specimen cited in *Flora of Turkey* 3:210 (1970) as representing this species (B10 Van: 3–4 km NE of Başkale, 2300 m, Davis 44514) has no fruits and is a much more slender plant.

Astragalus eliasianus is also allied to another new species described in this paper, *A. kitianus* Sorger (*quod vide*), which also has legumes with hairs arising from tubercles but is much smaller in leaf and floral parts and is easily distinguished by its jet-black legumes half as large.

The kind assistance of Dr. Thomas S. Elias, who is commemorated by this species, is gratefully acknowledged in this paper.

Section Acmothrix

***Astragalus kangalicus* Kit Tan & Sorger, sp. nov.**

Fig. 1C

Ab *A. fragranti* Willd. foliolis paucioribus densius pilosis, pedunculis bracteisque brevissimis et calycis praecipue albo-bifurcato-pilosi dentibus brevibus 1–2 mm longis differt.

Shortly scapose perennial herb to 8 cm tall with a branched woody caudex. Leaves imparipinnate, 2–6 cm long; leaflets 7–13-paired, narrowly elliptic, 3–7 × 1–2 mm, with adpressed, white bifurcate hairs, mucronulate; stipules free from petiole, united in lower 1/3, ovate, 3–4 mm long. Peduncles shorter than leaves, 0.5–1 cm long, with white hairs. Spike 8–10-flowered, lax, broadly ovoid, ca. 1.5 × 2–2.5 cm. Bracts lanceolate, 2–3(–4) mm long. Bracteoles absent. Calyx tubular-campanulate, 5.5–7 mm long, with predominantly white bifurcate hairs, not inflated in flower or fruit; teeth 1–2 mm long, with both white and black bifurcate hairs. Corolla tawny-yellow; standard stenonychioid, glabrous, ca. 15 × 6 mm, shallowly notched; expanded limb of wing and keel petals 8.5–9 mm and 6–7 mm long respectively. Style ca. 6 mm long. Legume immature. *Flowering*: June.

Type.—Turkey B6 Sivas: 40 km E of Kangal, north-facing rocky slopes, 2000 m, 29 vi 1970, *Sorger 70-22-62* (holotype: Hb. F. Sorger).

Central Anatolia. Endemic. Irano-Turanian element. Resembling *A. fragrans* Willd. (also in Sect. *Acmothrix* Bunge) which differs in its 10–20 pairs of subglabrous or very sparsely adpressed-pilose leaflets, 2–5 cm-long peduncles, 6 mm-long bracts, calyces with black bifurcate hairs and 3–4 mm-long teeth.

***Astragalus isparticus* Kit Tan & Sorger, sp. nov. (non *A. compactus* Lam. subsp. *isparticus* Ponert in Feddes Rep. 83:624, 1973).**

Fig. 1D

Ab *A. acmonotricho* Fenzl spica in statu fructifero non elongata, floribus paucioribus, bracteis minoribus late ovatis et calyce multo brevioris differt.

Dwarf, scapose to shortly caulescent perennial, 5–6 cm tall; stems ascending-prostrate, herbaceous, 1–2 cm long. Leaves imparipinnate, 4–5 only, 2–6 cm long;

leaflets 9–14-paired, narrowly elliptic, 2–5 × 0.5–1 mm, with densely appressed, white bifurcate hairs on both surfaces, obtuse-apiculate; stipules free, oblong-ovate, 4–5 mm long. Peduncles 2–2.5 cm long, with both white and black bifurcate hairs. Inflorescence lax, 8–10-flowered, broadly ovoid; ca. 1.5 × 2.5–3 cm, not elongating in fruit. Bracts broadly ovate, 2–3 mm long; bracteoles absent. Pedicels ca. 1.5 mm long. Calyx tubular-campanulate, not inflated in flower or fruit, 6–7 mm long (incl. 1–1.5 mm-long teeth), with predominantly black, bifurcate hairs. Corolla bluish-violet, drying yellow; standard stenonychioid, glabrous, ca. 15 × 8–9 mm, shallowly notched, expanded limb of wing and keel petals to 8.5 mm and 7 mm long respectively. Ovary white-pilose; style ca. 7 mm long. Legume exserted from calyx, erecto-patent, straight, oblong-ovoid, ca. 10 × 3 mm long (excl. straight, 2–3 mm-long beak), nontuberculate, with dense, white, bifurcate and crispate hairs. *Flowering*: June.

Type.—Turkey C3 Isparta: Çiçekdağ, open scree slopes, 1800 m, 17 vi 1967, *Sorger 67-6-15* (holotype: Hb. F. Sorger; isotype: E).

Endemic to south (central) Anatolia. East Mediterranean element. This specimen was cited under *A. acmonotrichus* Fenzl in *Flora of Turkey* 3:225 (1970) but it differs in several important respects as given in the diagnosis. In *A. acmonotrichus*, the calyx is much longer (8–10 mm with 2–3 mm-long teeth) and with sparsely distributed, long black and white bifurcate hairs. The inflorescence is 15–20-flowered and elongates in fruit, the bracts are lanceolate and 4–6 mm long. Although the standard was described as rounded, all material examined has a shallow apical notch.

***Astragalus tuus* Kit Tan, sp. nov.**

Fig. 3

A. acmonotricho Fenzl affinis sed caudice crasso ramoso lignoso, foliis paucioribus (5–9- non 15–20-jugis), minoribus, late ellipticis usque elliptico-ovatis, pedunculis brevioribus, racemo floribus paucioribus, floribus maioribus, (18–)20–25 mm non 14–16 mm longis, bracteis ± glabris differt; pili calycis etiam omnino nigri, adpressi et brevissimi sunt.

Semiprostrate, scapose perennial herb with a thick, branched woody caudex. Leaves 3–5 cm long; leaflets 5–9-paired, broadly elliptic to elliptic ovate, 3–5 × 2–3 mm, acute, with ± densely appressed, white, bifurcate hairs; stipules triangular-ovate, ca. 6 × 2 mm. Peduncles 1.5–2 cm long. Inflorescence a lax, ovoid-globose, 2.5–4 cm in diam, 8–12-flowered spicate raceme, elongating slightly in fruit. Bracts lanceolate, 2.5–3.7 mm long, ± glabrous or sparsely ciliolate at apex and margins. Calyx tubular, 10–12 mm long, with short, appressed, black bifurcate hairs; teeth linear, 1.5–2.2 mm long. Corolla purplish yellow, drying ochre; standard stenonychioid, glabrous, (18–)20–25 mm long, submarginate; expanded limb of wing and keel petals ca. 10 mm and 7.5 mm long respectively. Style slender, ca. 16 mm long. Ovary ± glabrous. Legume immature. *Flowering*: June.

Type.—Turkey C4 Konya: above Korash (Koraş) near Karakuju (Karakuyu), 1900 m, vi 1906, *W. Siehe 1906:367*, sub. *Astragalus armeniacus* Boiss. (holotype: E).

South Anatolia (Lycaonia). Endemic; known only from the type gathering. East Mediterranean element. Allied to *A. acmonotrichus* Fenzl but differing by its very thick, branched woody caudex, leaves with fewer (5–9 not 15–20 pairs), smaller,

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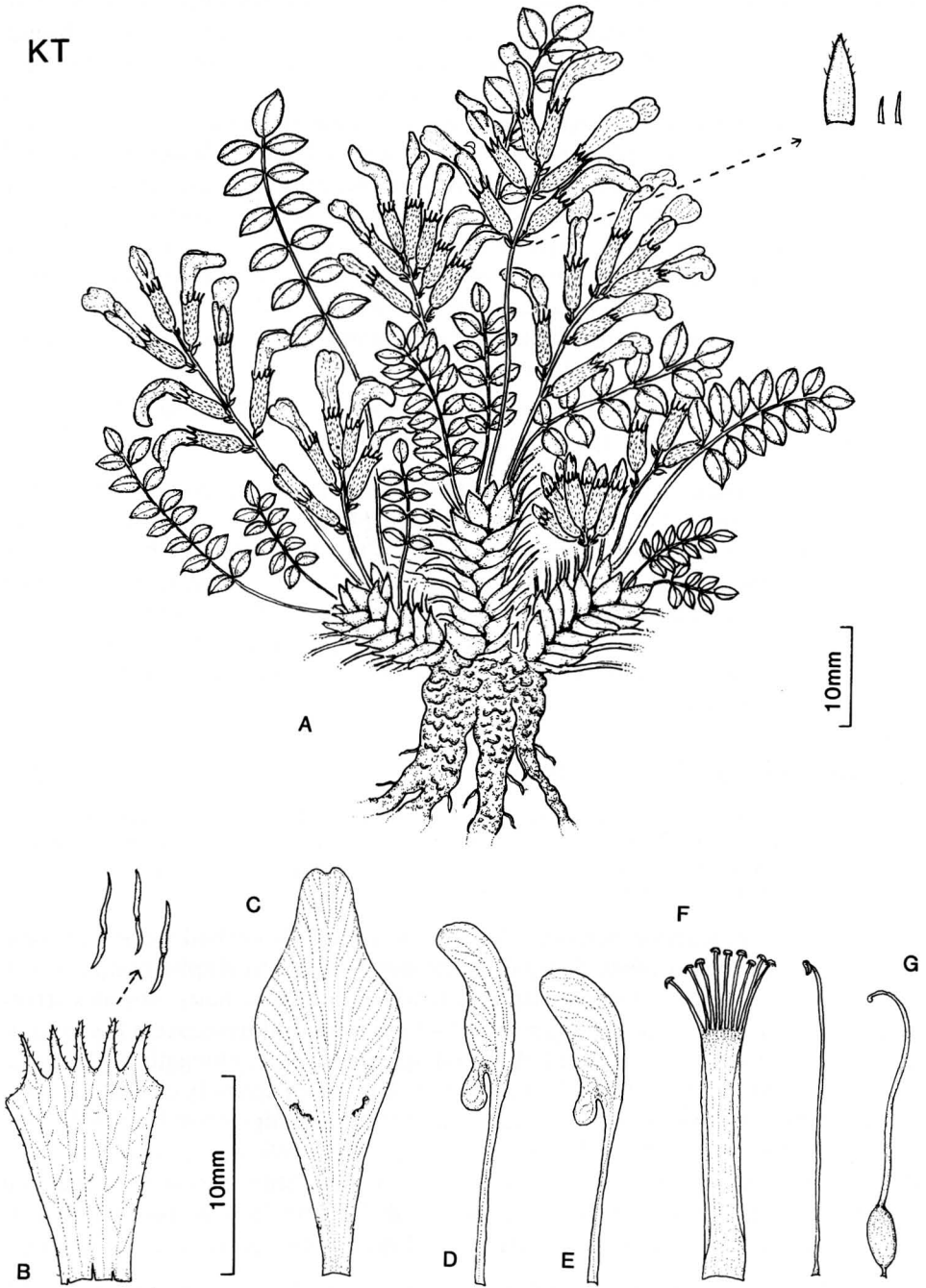


Fig. 3. *Astragalus tuus*.—A. Habit.—B. Calyx.—C. Standard.—D. Wing.—E. Keel.—F. Stamens.—G. Ovary. (A with separate scale as indicated.)

broadly elliptic to elliptic-ovate leaflets, shorter peduncles, fewer-flowered racemes with larger flowers, \pm glabrous bracts and legumes. The adpressed hairs on the calyx are also completely black and very short.

Let you, dear bemused reader, feel honoured at being 'given' an *Astragalus*, the latest in a very long line of over 1500 springing from southwest Asia.

ACKNOWLEDGMENTS

We would like to thank Dr. Robert R. Mill for help with the Latin translations, Prof. Peter H. Davis and Dr. Rupert Barneby for reading the manuscript.

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FOOTNOTE

¹ The second author, Dr. F. Sorger, takes much pleasure in naming this *Astragalus* after Dr. Kit Tan, a co-editor of the *Flora of Turkey*. The species has delightfully black, neat little legumes all covered with indumentum the color of her hair!