

MORE NEW TAXA FROM SOUTH AND EAST ANATOLIA

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ABSTRACT. Seven new taxa in four different families are described from South and East Anatolia: *Ranunculus dissectus* Bieb. subsp. *ermenekensis* Kit Tan & Vural (Ranunculaceae), *Gypsophila hakkiarica* Kit Tan and *G. perfoliata* L. var. *araratica* Kit Tan (Caryophyllaceae), *Sedum caroli-henrici* Kit Tan, *S. cilicicum* Kit Tan & Vural and *S. sorgerae* Kit Tan & Chamberlain (Crassulaceae) and *Ajuga xylorrhiza* Kit Tan (Labiatae). *Gypsophila patrinii* Ser. and *G. polyclada* Fenzl ex Boiss. are recorded from Turkey for the first time.

Ranunculus dissectus Bieb. subsp. *ermenekensis* Kit Tan & Vural, subsp. nov.

Ab aliis sex subspeciebus turcicis habitu altiore (30-45 cm non 5-20 cm) et toto combinatione signorum omnium differt.

Perennial, 30-45 cm. *Rhizome* oblique, collar fibrous. *Stems* slender (less than 1 mm thick), erect, flexuous, 1-2-flowered, sparsely adpressed-pilose to glabrous. *Lamina* of radical leaves deeply dissected, suborbicular in outline, 2.5-3 cm, very sparsely pilose at base; laciniae entire, linear to linear-lanceolate, to 2.5 cm, glabrous. *Flowers* 23 mm across, torus white-tomentose. *Sepals* spreading, 6-7 mm, long-villous. *Petals* obovate, 12-13 x 8-9 mm, yellow. *Anthers* oblong-linear, 1.5 mm, yellow. *Achenes* semi-circular, 3 mm, compressed, glabrous, without conspicuous vein parallel to the adaxial margin; beak circinnate, 0.6-0.7 mm. *Fl.* Jun.

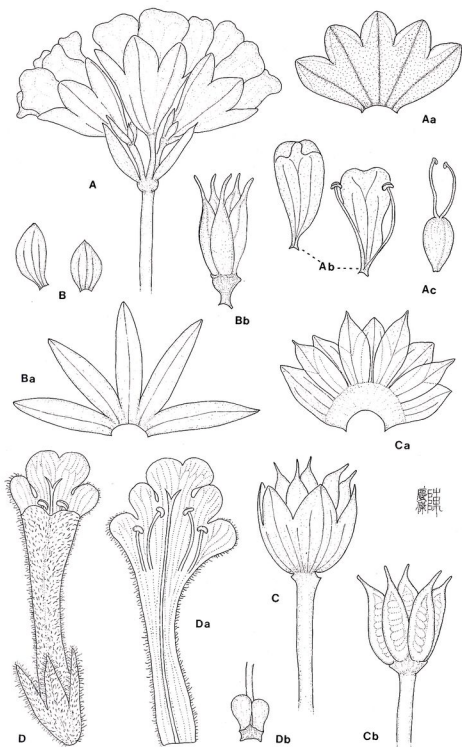
TURKEY. C4 Konya: Ermenek, Damlaçal, in *Cedrus libani* forest, 1700 m, 2 vi 1979, *M. Vural* 1805 (fl.-holo. E, iso. ANK). Ermenek, Damlaçal, 1750 m, 6 vii 1978, *M. Vural* 942 (fr.-para. E, ANK).

S Anatolia, endemic to the Cilician Taurus. Differing from the other six Turkish subspecies by its much taller habit (30-45 cm not 5-20 cm) and total combination of characters. In the key to the *R. dissectus* complex (*Flora of Turkey and the East Aegean Islands* 1:163, 1965) it runs down to subsp. *sibthorpii* Davis but, having very much longer leaf laciniae (25 mm not 3-8 mm), would obviously not be catered for therein. Subspecific rather than specific rank seems more suitable for this taxon.

Gypsophila hakkiarica Kit Tan, sp. nov. Fig. 1.

Species nova inter *G. briquetianam* Schischkin et *G. nabelekii* Schischkin aliquantum intermedia est. A *G. briquetiana* habitu altiore, foliis latioribus haud scabridis, inflorescentia congestiore pauciflora et calyce maiore facile distinguitur. A *G. nabelekii* caulibus paucioribus herbaceis, foliis caulinis lineari-lanceolatis planis subflaccidis et floribus breviter pedicellatis differt.

Glabrous perennial herb woody at base. *Flowering stems* erect-ascending, 12-15 cm, minutely papillose. *Leaves* green, flat in upper half, elliptic-linear to linear-lanceolate, 15-35 x 1.5-2.5 mm, margins and midrib minutely papillose, mucronulate, those subtending inflorescence subfleshy, triquetrous, 3.5-4 cm. *Inflorescence* terminal and axillary, of 3-6-flowered



dichasia. *Bracts* lanceolate-acuminate, 2.5–3 mm, with pink mid-vein and scarious margins. *Pedicels* 1.5–3 mm, never longer than calyx. *Calyx* campanulate, 4.5–5 mm; teeth ovate, 2×1.8 mm, greenish-purple with broad hyaline margins, obtuse, calcium oxalate crystals numerous, minute. *Petals* rose-pink, oblong-cuneate, attenuating into very short claw, 5.5–6 mm, truncate or shallowly emarginate. *Stamens* 10, \pm as long as petals. *Ovary* ovoid, 12–14-ovulate; styles 2, shorter than petals. *Seeds* compressed, with obtuse tubercles. *Fl.* late Aug.

Type: Turkey C10 Hakkâri: Sat Da., above Yüksekova, dry river bed above melt-water lake near permanent snow, flowers pink, 2900 m, 28 viii 1967, Duncan & Tait 83b (holo. E).

SE Anatolia. Irano-Turanian element. *G. hakkiarica* is somewhat intermediate between *G. briquetiana* Schischkin (Syn.: *G. rosea* Bark.) and *G. nabelekii* Schischkin. It can be easily distinguished from the former which is endemic to E Anatolia (grid squares B7 & B8: Erzincan, Tunceli and Erzurum) by its taller habit, broader, non-sabrid leaves, more congested few-flowered inflorescences and larger calyx. *G. nabelekii* from E Anatolia, Transcaucasia and N Iraq differs in having numerous, rigid stems, stiff, triquetrous cauline leaves and longer-pedicelled flowers.

Barkoudah (*A Revision of Gypsophila, Bolanthus, Ankyropetalum and Phryna* in *Wentia* 9:1–203, 1962) did not examine any material of *G. briquetiana* in 1962 and described *G. rosea*, collected from the Munzur Da., Tunceli, as a separate species, placing it in sect. *Exscapae* Williams. He allied *G. briquetiana* with *G. nabelekii* in sect. *Paniculaeformes* Williams subsect. *Suffruticosae* Boiss. (a subsection characterized by 4–8 ovules) on the basis of the supposedly fewer ovules in *G. briquetiana*. It is anomalous, however, in this subsection as the ovules are 16, not 8, in number. In his account of *Gypsophila* (*Flora of Turkey and the East Aegean Islands* 2, 1966), Huber-Morath realised *G. rosea* was conspecific with *G. briquetiana*, having examined type material of the latter in Geneva. He then transferred *G. briquetiana* to sect. *Exscapae* but mentioned it was allied to *G. nabelekii* and somewhat intermediate between sects. *Exscapae* and *Rokejeka* (Forssk.) A. Braun (Syn.: sect. *Paniculaeformes* Williams). In my opinion, *G. briquetiana* is rather distinct from the other species of sect. *Exscapae*, furthermore, *G. nabelekii* (ovules 12) does not seem closely allied to other members of sect. *Rokejeka*. These two taxa, together with the new species *G. hakkiarica*, should perhaps occupy a position between sects. *Exscapae* and *Gypsophila*.

***Gypsophila perfoliata* L. var. *araratica* Kit Tan, var. nov. (Sect. *Rokejeka* (Forssk.) A. Braun).**

Ab aliis varietatibus huius speciei in toto (foliis et parte inferiore caulis inclusis) perfecte glaberrima differt.

FIG. 1. A–Ac, *Gypsophila hakkiarica*: A, inflorescence; Aa, dissected calyx; Ab, petals and stamens; Ac, ovary. B–Bb, *Sedum caroli-henrici*: B, sepals; Ba, dissected corolla; Bb, follicles. C–Cb, *S. sorgerae*: C, calyx and carpels; Ca, dissected calyx and corolla; Cb, follicles. D–Db, *Ajuga xylorrhiza*: D, flower; Da, dissected corolla; Db, ovary. All $\times 4.5$, except D & Da $\times 3.5$, Db $\times 6$.

Glabrous perennial with erect-ascending 20–40 cm stems. *Leaves* oblong to oblong-elliptic, 30–45 × 10–15 mm, acute to subacute, glaucous; basal leaves ovate, obscurely 5-veined. *Inflorescence* a many-flowered panicle. *Bracts* lanceolate, 1.5–2.5 mm, with purple midrib and scarious margins. *Pedicels* 3–5 mm. *Calyx* campanulate, 2.5 mm; teeth triangular-ovate, 1 mm, purple with scarious margins, obtuse. *Petals* oblong, 3.6–4 mm, slightly retuse, rose-purple. *Seeds* c. 1.5 mm, tubercles obtuse. *Fl.* Aug. Type: Turkey B10 Ağrı: 11 km from Doğubayazıt to Iğdır, dry loam, c. 1500 m, 11 viii 1970, Hewitt 360 (holo. E).

E Anatolia. Irano-Turanian element. Although *G. perfoliata* L. has a wide geographical distribution from E Europe to C Asia and is very variable in size, leaf shape and indumentum, var. *araratica* is a variety completely glabrous in all its parts, including leaves and lower parts of stem, and as far as known, undescribed. Perhaps occurring in Caucasus and NW Iran.

The following two species are new for Turkey.

Gypsophila patrinii Ser. (Syn.: *G. gmelinii* Bunge). (sect. *Corymbosae* Bark.).

Glabrous perennial with woody rhizome. *Stems* slender, erect-ascending, 20–40 cm. *Basal leaves* linear, 30–40 × 0.6–1 (–1.2) mm, green, acute; cauline leaves similar but shorter. *Inflorescence* a lax open corymb. *Bracts* lanceolate-acuminate, to 1.5 mm, margins scarious. *Pedicels* 7–11 mm, elongating to 16 mm in fruit. *Calyx* campanulate, 3 mm, divided to c. $\frac{1}{2}$, with distinct calcium oxalate crystals; teeth ovate-lanceolate, 1.7 mm, acute, mucronulate. *Petals* white, 5–6 mm, obtuse. *Fl.* Sept.

TURKEY. A8 Erzurum: 8 km above Ispir on Rize–Ikizdere road, in dry gorge, 8 ix 1970, C. F. Jenkins 2347 (BM, E).

E. Anatolia. *G. patrinii* is a rather unexpected and interesting new record for Turkey but there can be no doubt as to its identity although it is previously known from S Ural and C Asia. The late flowering time might account for its absence in many botanical collections from the North East.

Gypsophila polyclada Fenzl ex Boiss. (Syn.: *G. koeii* Rech. fil.) (Sect. *Dichoglottis* (Fisch. & Mey.) Fenzl).

Perennial. *Stems* few, erect, branched nearly throughout, glabrous below, glandular-hairy and \pm viscous above. *Basal leaves* spatulate, 2–7 × 1–2.5 cm, obtuse; cauline leaves lanceolate, 2–3 × 0.5–1 cm, acute. *Inflorescence* a loose dichasium. *Bracts* triangular-acuminate, scarious. *Pedicels* capillary, 10–25 mm. *Calyx* campanulate, 2.5–3 mm, divided to $\frac{1}{2}$; teeth ovate, acute. *Petals* oblanceolate, 4–5 mm, narrowed at base. *Fl.* Jun.

TURKEY. C9 Hakkari: Zab gorge, 23 km from Hakkari to Van, S slopes of gorge, flowers ochroleucous, 1300 m, 24 vi 1966, Davis 45483 (E). C10 Hakkari: Sat Da., between Yüksekova and Vargöz, dry rocky slopes, 1800 m, 30 vi 1966, Davis 45833 (E).

Irano-Turanian element. It is not surprising that this species previously known from Iraq, N & E Iran, should have turned up in SE Anatolia.

***Sedum caroli-henrici* Kit Tan, sp. nov.** (sect. *Epeteium* Boiss.) Fig. 1.

Species *S. nano* Boiss. proxime affinis a quo inflorescentia 14–25 (non 2–10)-flora et petalis duplo longioribus, 6 (non 3) mm longis facile distinguenda.

Small erect herbaceous annual 5–10 cm. *Stems* simple, sterile shoots absent. *Leaves* alternate, oblong-linear, 3.5–10 × 0.4 mm, semi-terete, glabrous. *Inflorescence* corymbose, 14–25-flowered. *Flowers* 5-merous, pedicellate, lemon yellow. *Sepals* narrowly triangular to lanceolate, 1.5 × 0.5–0.7 mm, subacute. *Petals* lanceolate, c. 6 mm, 4 × sepals. *Stamens* 10; anthers broadly ellipsoid, 5–6 mm, yellow, purplish at apex. *Follicles* glabrous, erect. *Fl.* Jul.

Type: Turkey B8 Mus: 40 km W of Bingöl, west-facing rocky volcanic slopes, 1500 m, 1 vii 1975, K. H. Rechinger 53924 (holo. E, iso. W).

Endemic to E Anatolia and only known from the type gathering. Irano-Turanian element. Closely allied to *S. nanum* Boiss. from which it can be easily distinguished by the inflorescence with 14–25, not 2–10 flowers, and the petals twice as long, 6 not 3 mm.

It is a pleasure to name this little *Sedum* after its collector, Professor Karl-Heinz Rechinger from Vienna who had suggested it could probably be new to science—which indeed it is.

***Sedum cilicicum* Kit Tan & Vural, sp. nov.** (Sect. *Epeteium* Boiss.)

Species *S. litoreo* Guss. proxissime affinis a quo foliis anguste ovatis, 3–4 mm longis (non obovato-spathulatis, 10–20 mm longis), inflorescentia 8–9 (non 1–3)-ramosa, sepalis minoribus, 1.8–2 mm (non 3–3.5 mm), petalis albis, roseo-venatis (non pallide luteis nec viridescens) facile distinguenda; indumeto altiore etiam non ad littus maris habitat.

Erect herbaceous annual 6–9 cm, all parts glabrous, tinged reddish-pink. *Stems* simple, sterile shoots absent. *Leaves* sessile, alternate, distantly spaced, subterete, fleshy, narrowly ovate, 3–4 mm, obtuse, spurred. *Inflorescence* an 8–9-branched, erect-ascending cyme; each branch appearing spicate, 5–9-flowered. *Flowers* 5-merous, sessile. *Sepals* ovate, 1.8–2 mm, obtuse, fleshy, glabrous. *Petals* ovate-lanceolate, 2.6–4 mm, acute, white with a pink mid-vein. *Stamens* 5, alternating with petals; anthers bright yellow. *Follicles* glabrous, erect-patent, each with 4–5 pyriform, 1 mm, pale brown seeds. *Fl.* Mai.

Type: Turkey C4 Konya: Kuruseki, 2–3 km SE of Ermenek, in open *Quercus coccifera* scrub, c. 1100 m, 27 v 1978, M. Vural 614 (holo. ANK).

S Anatolia (Cilician Taurus). Mediterranean element. Its nearest affinities are with the widespread *S. litoreum* Guss. from which it can be readily distinguished by its narrowly ovate, 3–4 mm long, not obovate-spathulate, 10–20 mm leaves, its inflorescence which is 8–9- not 1–3-branched, the smaller, 1.8–2 mm not 3–3.5 mm sepals, the white, veined pink not pale yellow or greenish petals, and also by the habitat and higher altitude, quite remote from the seashore.

***Sedum sorgerae* Kit Tan & Chamberlain, sp. nov.** (sect. *Epeteium* Boiss.) Fig. 1.

Sepalis magnis connatisque distinctissimum. Sine affinitatibus proximis ut videtur intra sectionem.

Erect herbaceous annual 12–15 cm. *Stem* simple or sparingly branched above, glabrous, sterile shoots absent. *Leaves* alternate, oblong-linear, 4.5–10 × 0.8–1.2 mm, semi-terete, glabrous, fleshy, *Inflorescence* corymbose, 13–20-flowered, *Flowers* 5-merous, pedicellate. *Sepals* fused for $\frac{1}{2}$ – $\frac{3}{4}$ their length; lobes broadly triangular, 1.8–2 × 1.5–2 mm, obtuse to subacute. *Petals* white with faint pink mid-vein, narrowly triangular, c. 4 × 1.8–2 mm, acute, surpassing sepal lobes. *Stamens* 10, filaments subulate, 3.5 mm, anthers yellow. *Follicles* oblong, 5 mm, glabrous, verruculose, erect. *Seeds* pyriform, c. 1 mm, pale brown. *Fl.* Jul.

Type: Turkey B9 Van: c. 20 km E of Erciş, NW–NE of valley on 25° slope, open vegetation, 1900–2200 m, 6 vii 1982, *Sorger & Buchner* 82-43-199 (holo. E, iso. Hb. F. Sorger).

Endemic to E Anatolia and only known from the type gathering. Irano-Turanian element. Apparently without close allies and most distinctive on account of its large connate sepals. Although the E Mediterranean species, *S. confertiflorum* Boiss. also has sepals connate for $\frac{1}{2}$ – $\frac{3}{4}$ of their length, the latter differs completely by its much smaller stature, the subsessile flowers and small sepals, the *total* length of which is only 1–1.5 mm.

Dr Friederike Sorger has made more than 24 expeditions to Turkey and contributed much to our knowledge of the Turkish flora. She richly deserves to have yet another interesting new species named in her honour.

***Ajuga xylorrhiza* Kit Tan, sp. nov. Fig. 1.**

Species propter caudicem percrassum lignosumque ad 5 cm diam. attingentem valde insignis. *A. vestitae* Boiss. fortasse proxima sed foliis viridibus, hispido-villosis (non densiter breviterque lanatis), verticillastris 6–(non 2-)floris et corolla exannulata, 20–21 mm longa (non annulata, 12–15 mm) differt. Ab omnibus speciebus turcicis generis combinatione formae colorisque corollae et nuculorum foveolatorum distincta.

Strongly perennial herb with stout woody rootstock to nearly 5 cm across. *Stems* ascending, simple, to 14 cm, densely hispid-villous on all sides. *Basal leaves* long petiolate, obovate, apically toothed. *Cauline leaves* green, cuncate-obovate, mostly broadly and obtusely lobed in upper half, with indumentum not entirely obscuring leaf surface. *Lower floral leaves (bracts)* tripartite or similar to cauline leaves. *Inflorescence* 3–4 cm, verticillasters 6-flowered. *Calyx* ± actinomorphic, 6–7 mm; teeth lanceolate, 4.2–4.5 mm. *Corolla* 20–21 mm, white drying cream; tube straight, much longer than lower lip, exannulate; upper lip short, emarginate; lower much longer, with 2 lateral lobes and a 5 mm broad, emarginate middle lobe. *Stamens* 4, exerted from a much reduced upper lip but not exceeding lower lip. *Style* not gynobasic. *Nutlets* foveolate. *Fl.* Jun.

Type: Turkey B7 Diyarbakir: 2 km from Çermik to Çüngüş, in crevices of near vertical rock, flowers white, 900 m, 9 vi 1983, *Kit-Tan & Atalay* 1781 (holo. E, photo DUF).

Endemic to Turkey. Irano-Turanian element. This species is unusual in possessing a very stout and woody rootstock nearly 5 cm across, hence the specific epithet. Perhaps closest to *A. vestita* Boiss. from E Anatolia (Mesopotamia) which is also the only other white-flowered *Ajuga* in

Turkey. *A. xylorrhiza* differs in having green, hispid-villous (not densely and shortly lanate) leaves, 6 (not 2-)flowered verticillasters and 20–21 mm, exannulate (not 12–15 mm, annulate) corollas. The form and colour of the corollas together with foveolate nutlets make a distinctive combination present in no other Turkish species.

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