

NEW TAXA FROM EAST ANATOLIA

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ABSTRACT. Five new species in four different families are described and illustrated from East Anatolia: *Potentilla buchneri* Kit Tan & Sorger (Rosaceae), *Campanula seraglio* Kit Tan & Sorger, *C. aghrica* Kit Tan & Sorger (both Campanulaceae), *Limonium vanense* Kit Tan & Sorger (Plumbaginaceae) and *Origanum munzurense* Kit Tan & Sorger (Labiatae).

***Potentilla buchneri* Kit Tan & Sorger, sp. nov.** (Subgen. *Potentilla* sect. *Tanacetifoliae* (Wolf) Juz.). Fig. 1.

P. tanacetifoliae Willd. ex Schlecht. similis sed distincte indumento glanduloso omnino absenti, foliolis multo maioribus, segmentis epicalycis quam sepalis longioribus et petalis integris non emarginatis differt.

Perennial herb with thick rootstock covered with brown stipular remains. Flowering stems leafy, ascending, 30-75 cm, tomentose-pubescent to sericeous, eglandular. Basal and lower cauline leaves long-petioled, imparipinnate with 3-4 pairs of lateral leaflets or sometimes appearing nearly digitate with adjacent decurrent leaflets. Leaflets oblong- to ovate-elliptic, 3-7 cm, acutely incised-serrate, terminal leaflet shortly petiolulate or sessile, longer than the neighbouring and lower pairs, upper surface adpressed-pubescent, dingy green, lower surface white-tomentose or sericeous when young, later canescent. Flowers 5-merous, 10-13 mm diam., in lax corymbose panicle. Calyx green, sericeous to tomentose; epicalyx segments lanceolate, 4-7.5 × 0.5-1.5 mm, longer than the ovate, 3.5-6.5 mm, acute sepals. Petals yellow, obovate, 6.5-7 × 3 mm, entire. Anthers ovate, 0.6-0.7 mm. Style subterminal, conically thickened at base, c. 1.4 mm (\pm as long as ripe achenes), deciduous in fruit; stigma undilated. Achenes numerous, ovoid, 1.3 mm, smooth, glabrous. *Fl. and fr.* Jul.

Type: Turkey. A9 Kars: nr Ardahan, open meadow with tall perennial herbs, between rock boulders, 1700-1800 m, 30 vii 1982, *F. Sorger & Buchner* 82-94-99 (holo. E, iso. Hb. F. Sorger).

TURKEY. A8 Erzurum: c. 70 km NW of Erzurum, steep rocky slopes, 2200 m, 12 viii 1982, *F. Sorger & Buchner* 82-122-66 (Hb. F. Sorger).

NE Anatolia. Euro-Siberian element. A distinctive species which probably occurs in Caucasia. Although in habit and floral characters resembling *P. tanacetifolia* Willd. ex Schlecht. from C Asia, *P. buchneri* differs in the complete absence of glandular indumentum, much larger leaflets, epicalyx segments longer than sepals and entire, non-emarginate petals.

It is a pleasure to name this species after Peter Buchner from Austria who helped to collect it from Erzurum and Kars.

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Campanula seraglio Kit Tan & Sorger, *sp. nov.* (Sect. *Symphyandriiformes* (Fomin) Charadze). Fig. 2A–B.

C. troegerae Damboldt affinis a qua, inter alia, corollis multo minoribus (ad dimidium maxime, non ad duas tertias partes divis) facile distinguenda.

Densely pubescent perennial. Stems ascending-erect, flexuous, 35–40 cm, simple, leafy. Leaves broadly ovate, acute, serrate to biserrate, dark greenish-pubescent above, greyish-pubescent beneath; basal leaves with petiole at most to 2.5 cm; median leaves largest, to 4 × 3.5 cm, with petiole 1–2 cm. Stems 1–3-flowered; flowers erect, terminal and axillary, on 0.6–1.2 cm pedicels. Calyx lobes spreading-erect, triangular to broadly triangular, 20 × 8–12 mm, acuminate, pubescent. Appendages lanceolate, 5–7 mm. Corolla white, broadly campanulate, 2–2.3 × 3 cm, divided at most to $\frac{1}{2}$, lobes 9–10 mm, obtuse, pubescent and ciliate. Ovary 3-locular. Style long-exserted, to 23 mm. Stigmas 3, c. 3–5 mm, recurved. Capsule dehiscent by basal pores. Seeds flattened-ellipsoid, 0.8 mm, pale brown. *Fl. and fr.* Jul.

Type: Turkey. A8 Çoruh: 9 km above Sarigöl, SE of main Kaçkar peak, in rock crevices at valley bottom, 1600 m, 19 vii 1982, *F. Sorger & Buchner* 82-83-2 (holo. E, iso. Hb. F. Sorger).

Endemic to NE Anatolia and only known from the type locality. Euxine element. A white-flowered species closely related to *C. troegerae* Damboldt, also from A8 Çoruh, from which it can, amongst other characters, be easily distinguished by the much smaller corollas which are divided at most to $\frac{1}{2}$, not $\frac{3}{4}$.

In a previous paper (*Notes RBG Edinb.* 40(2):333–336, 1982) we mentioned that we had recently seen material of what we then considered might possibly represent *C. finitima* Fomin, a species treated as conspecific with *C. betulifolia* C. Koch by Damboldt (*Flora of Turkey and the East Aegean Islands* 6:25, 1979). The material we examined was collected in late fruit and without good floral characters. Further study of newly collected material revealed it to be the species now described—*C. seraglio*. This brings the total number of Turkish Campanulas in Sect. *Symphyandriiformes* to four. The differences between *C. troegerae*, *C. betulifolia* and *C. choruhensis* Kit Tan & Sorger, species belonging to this section and all endemic to NE Anatolia, are given in the paper cited above. *C. seraglio* differs from *C. betulifolia* and *C. choruhensis* in having a long-exserted style. The specific epithet is a Latinised anagram of Sarigöl (Sarigoel); the word 'seraglio' also happens to be of Turkish origin, meaning 'palace'.

Campanula aghrica Kit Tan & Sorger, *sp. nov.* Fig. 2C–F.

Species *C. incanescens* Boiss. (florae Iranicae) habitu et characteribus aliquis floralibus similis, sed propter modum dehiscentiae capsulae adhuc ignotum incertae sedis. A *C. incanescens* foliis multo minoribus mediis integris (non crenato-dentatis) corollis minoribus (non 10–20 mm longis) differt.

Greyish retrorsely adpressed-sericeous perennial with thick woody rhizomes. Stems ascending, flexuous, fragile, 10–15 cm, leafy. Basal leaves



FIG. 1. A-E, *Potentilla buchneri* Kit Tan & Sorger: A, habit $\times \frac{1}{2}$; B, flower showing epicalyx and calyx; C, view of flower from above, four petals removed; D, petals; E, immature achene with style and stigma $\times 8$. B-D $\times 5$.

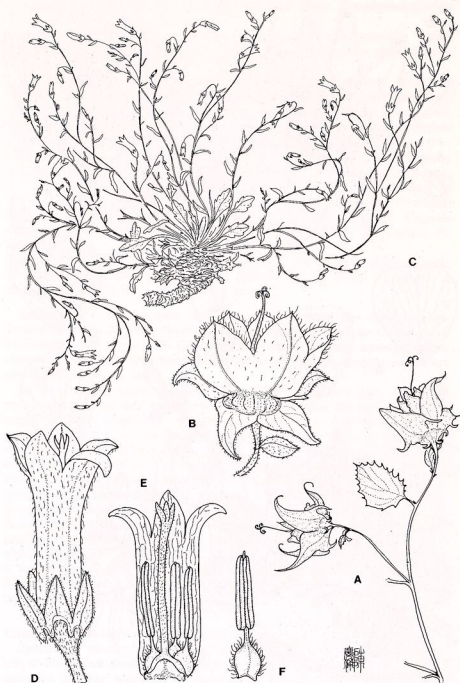
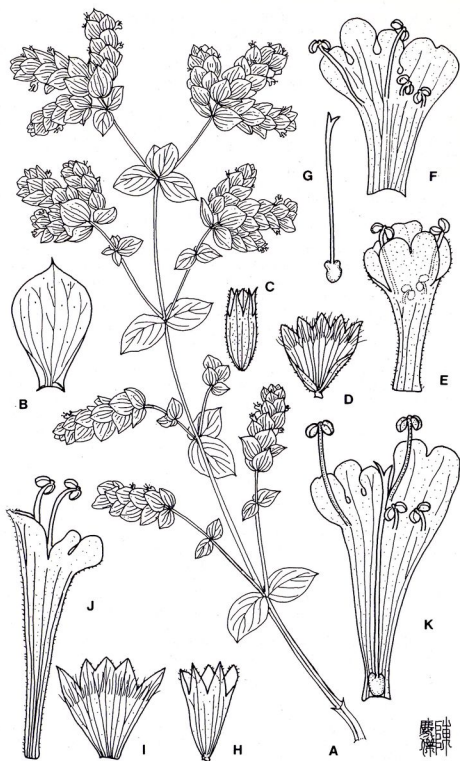


FIG. 2. A-B, *Campanula seraglio* Kit Tan & Sorger: A, habit; B, flower. C-F, *C. aghrica* Kit Tan & Sorger: C, habit; D, flower; E, L.S. flower; F, stamen. All $\times 5$, except A & C $\times \frac{2}{3}$, B $\times 1$.



FIG. 3. A-I, *Limonium vanense* Kit Tan & Sorger: A, habit $\times \frac{2}{3}$; B, part of spike, corolla omitted, $\times 5$; C, outer bract; D, first inner bract; E, second inner bract; F, innermost bract; G, dissected calyx; H, petal and stamen; I, stamens and gynoecium. C-I $\times 8$.



with petiole to 15 mm, spatulate or narrowly obovate, 8–13 × 4–6 mm, irregularly dentate. Median cauline leaves elliptic-ovate to lanceolate, 3.5–7 × 1.5–2 mm, sessile, entire. Stems 4–6-flowered; flowers solitary on 4–6 mm pedicels, oldest terminal, the rest axillary. Calyx lobes triangular, 2–2.7 mm, acute, green. Appendages reflexed, lanceolate, 1.3 mm. Corolla pale lilac drying cream, sericeous, narrowly cylindrical-campanulate, 7–8 × 3 mm, divided to $\frac{1}{4}$ – $\frac{1}{3}$; lobes suberect, triangular, 2–3 × 2.1 mm, subacute. Stamens 5, filaments free, broadened and ciliate at base; anthers free, linear, 4.3 mm, apiculate. Ovary 3-locular. Style \pm included (as long as corolla), 8 × 0.7 mm, pubescent. Stigmas 3, 1.1 mm, recurved. Capsule obconical, 4.2 mm, dehiscence unknown. Seeds (immature) flattened-ellipsoid, c. 1.5 mm, pale yellowish-brown. *Fl.* Jul.

Type: Turkey. B10 Ağrı: 4 km N of Doğubayazıt, in limestone rock crevices, 1600 m, 24 vii 1978, *F. Sorger* 78-105c-2 (holo. E, iso. Hb. F. Sorger); *ibid.*, *Ehrendorfer et al.* 787-105c-5 (iso. WU).

This species is only known at present from the type gathering collected in easternmost Anatolia, but probably occurs in S Transcaucasia and NW Iran. Irano-Turanian element. Resembling *C. incanescens* Boiss. (Sect. *Rupestres* (Boiss.) Charadze) from Iran in habit and some floral characters but as the mode of capsule dehiscence is at present unknown, the taxonomic position remains unclear. *C. incanescens* has much larger, 25 × 15 mm, crenate-dentate leaves and 10–20 mm corollas.

Two other Iranian endemics, *C. khorasanica* (Rech. fil. & Aellen) Rech. fil. and *C. kermanica* (Rech. fil. et al.) Rech. fil. have a similar habit. *C. khorasanica* can be distinguished by its \pm suborbicular leaves and longer, 4–6 mm, exappendiculate calyx lobes, campanulate corolla and much larger, 5 × 2 mm, seeds. *C. kermanica* has long-appendiculate, 6–10 mm, calyx lobes and also a much longer, 12–15 mm, tubular-campanulate corolla.

***Limonium vanense* Kit Tan & Sorger, sp. nov. Fig. 3.**

L. gmelinii (Willd.) O. Kuntze affine a quo foliis, bracteis interioribus secundis calycibusque multo minoribus recedit.

Perennial herb, 25–30 cm, base clad with petiolar remains. Leaves in a basal rosette, entire, elliptic to oblong-obovate, 3–6 × 0.7–1.5 cm, tapering into a narrow petiole, coriaceous, apiculate, green with narrow hyaline margin, glabrous. Scapes terete, branching above middle, paniculate, without sterile branches in lower part, glabrous, green or suffused purple above. Spikes rather short, to 2 cm, subscorpioid. Spikelets 4–5 mm, 1–2-flowered. Bracts glabrous, greenish flushed magenta. Outer bract keeled, broadly ovate, 1.8 mm, upper part hyaline, mucronate; first inner bract \pm hyaline, 2–2.2 mm, concave; second inner bract obovate-orbicular, 2–2.5 mm, concave, emarginate, scarious-margined; innermost bract

FIG. 4. (Opposite) A–G, *Origanum munzureense* Kit Tan & Sorger; A, habit; B, bract; C, calyx in lower lip view; D, calyx dissected through lower lip; E, corolla in upper lip view; F, dissected corolla; G, style. H–K, *O. acutidens* (Hand.-Mazz.) Ietswaart: H, calyx in lower lip view; I, calyx dissected through lower lip; J, corolla in lateral view; K, dissected corolla. All × 5, except A × 1.

membranous-hyaline. Calyx obconical to infundibular, 4.5 mm, pale lilac, tube straight, pilose on veins in lower part; limb shallowly 5-10-lobed, primary lobes rounded, obtuse to subacute. Corolla bluish-violet. Anthers oblong, 0.7-1 mm, yellow. *Fl.* Jul.

Type: Turkey. B9 Van: 3 km SW of Çaldıran, wet depressions, 2200 m, 12 vii 1981, *F. Sorger* 81-39-5 (holo. E, iso. Hb. F. Sorger); 2 km SW of Çaldıran, wet depressions, 2200 m, 10 vii 1982, *F. Sorger & Buchner* 82-60-20 (Hb. F. Sorger).

Endemic. Irano-Turanian element. Related to *L. gmelinii* (Willd.) O. Kuntze from which it differs in its much smaller leaves, second inner bract and calyx.

Origanum munzurens Kit Tan & Sorger, *sp. nov.* (Sect. *Brevifilamentum* Ietswaart). Fig. 4A-G.

O. acutident (Hand.-Mazz.) Ietswaart (in Anatolia orientale habitans) affinis sed spiculis tenuibus cylindricis bracteis multo minoribus, labio superiori calycis in dentes \pm aequales partito, corollaque minori labio inferiori quam superiori longiore facile distinguendum.

Subshrub. Stems ascending or erect, to 50 cm, brown, glabrous. Leaves sessile or subsessile, entire, ovate, to 3×1.5 cm, coriaceous, glandular-punctate, glabrous, broadly acute. Verticillasters of 2 subsessile 3-flowered cymes, terminal flower developed, lateral ones abortive. Inflorescences (spicules) slender, cylindrical, to 3×1 cm, erect or patent. Bracts imbricate, 8-10-paired, obovate, $7.5-8 \times 4.2-7$ mm, yellowish-green, glabrous, rounded mucronate or acute. Flowers hermaphrodite. Calyx 13-veined, 2-lipped, 4.7-5 mm, pubescent, throat with ring of hairs; upper lip divided into 3 subequal, broadly triangular 1.5×1 mm teeth; lower lip consisting of 2 equal, triangular 1.5×0.7 mm teeth. Corolla 2-lipped, to 9 mm long, white, not saccate, pubescent; upper lip 2.5×3 mm, shortly bilobed; lower lip 3-lobed, middle lobe c. 2×2 mm, laterals smaller, c. 1.2 mm. Stamens 4, very unequal, upper 2 short, included, filaments c. 1 mm; lower 2 exserted, filaments c. 4 mm; anther-thecae divergent. Style shortly exserted, c. 9 mm at anthesis, later elongating. *Fl.* Aug.

Type: Turkey. B7 Tunceli: 30 km SE of Ovacik, steppe slopes, 1700 m, 19 viii 1982, *F. Sorger & Buchner* 82-129-17 (holo. E, iso. Hb. F. Sorger).

Endemic. Only known from the type gathering. Irano-Turanian element. Related to *O. acutident* (Hand.-Mazz.) Ietswaart (Fig. 4H-K) from East Anatolia, but readily distinguished by its slender cylindrical spicules with much smaller bracts, \pm equally divided teeth to the upper lip of the calyx and also, the shorter corolla with a lower lip longer than the upper.

We should like to thank Dr R. R. Mill and Mr Fitz for checking our Latin diagnoses.