

NEW TAXA AND RECORDS FROM TURKEY

M. VURAL* & KIT TAN

ABSTRACT. Four new species in three different families are described from Turkey: *Gypsophila baytopiorum* Kit Tan, *Silene ermenekensis* Vural & Kit Tan (both Caryophyllaceae), *Dorycnium sanguineum* Vural (Leguminosae) and *Cynoglottis chetikiana* Vural & Kit Tan (Boraginaceae). New combinations are published in: *Cynoglottis barrelieri* (All.) Vural & Kit Tan, *C. barrelieri* (All.) Vural & Kit Tan subsp. *serpentinicola* (Rech. fil.) Vural & Kit Tan and *C. chetikiana* Vural & Kit Tan subsp. *paphlagonica* (Hausskn. ex Bornm.) Vural & Kit Tan. The status of *Cynoglottis* is assessed and as a result the taxon is raised to generic rank - *Cynoglottis* (Güzuleac) Vural & Kit Tan. The following taxa are recorded as new for Turkey: *Rumex palustris* Sm., *Chenopodium ambrosioides* L., *Atriplex micranthum* C. A. Meyer, *Aellenia glauca* (Bieb.) Aellen subsp. *glauca*, *Euphorbia condylocarpa* M. Bieb. and *Phoenix theophrasti* Greuter.

***Gypsophila baytopiorum* Kit Tan, sp. nov.** (Sect. *Rokejeka* (Forssk.) A. Braun). Fig. 1A-E.

G. perfoliatae affinis, sed foliis subcarnosis (venis invisibilibus) amplexicaulibus late ovato-orbicularibus glaberrimis, pedicellis quam calyce brevioribus vel aequantibus, lobis calycis acutis vel apiculatis, petalis multo brevioribus differt.

Herba perennis. *Caules* erecto-ascendentes, usque ad 70cm alti, virides vel parum pruinosi, inferne pilis glandulosis, superne glabri; nodi purpurascens, paulo ventricosi. *Folia* amplexicaulia, late ovato-orbicularia, 2.5-4 × 1.5-3.5cm, subcarnosa (venis invisibilibus), glauca vel purpureo-suffusa, glaberrima, obtusa vel latissime acuta. *Inflorescentia* panicula laxa, glabra. *Bracteae* 1mm longae, scariosae, costa viride. *Bracteolae* nullae. *Pedicelli* 1-2mm longi, ad anthesim quam calyx breviores vel aequantes, non plus quam 5mm accrescentes. *Calyx* campanulatus, 1.8-2.3mm longus, ± ad dimidium lobatus, crystallis prominentibus dense instructus; lobi virides margine lato hyalino, ovati, 0.8mm longi, acuti vel apiculati. *Petala* 5, oblonga, 2.3-3mm longa, recurvantia, alba, leviter constricta sed sine lamina distincta vel ungue, obtusa vel paulo retusa. *Stamina* 10, in verticillos duos disposita; filamenta quam petala breviora, 1.5mm longa; antherae 0.3mm longae. *Styli* 2, tenues, 0.8mm longi. *Capsula* obconico-globosa, 2-2.5mm longa, flavo-viridis, glabra, in valvas quattuor findens. *Semina* reniformi-compressa, tuberculis obtusorotundatis provisa. *Fl.* Jun.-Jul.

TURKEY C9 Hakkari: 4km from Hakkari to Uludere, in rock crevices, 1350m, 22 vi 1981, A. & T. Baytop ISTE 46744 (holotype ISTE; iso. E). 10km from Hakkari to Uludere, rocky places, 1350m, 5 vii 1980, T. Baytop ISTE 45349 (ISTE, E).

Apparently endemic to Turkey, absent from *Flora Iranica* region. The closest ally is *G. perfoliata* L. which differs in having distinctly 3-7-veined, linear-lanceolate to elliptic-ovate, glandular-pubescent leaves, pedicels which are always much longer (2-15mm) than the calyx, obtuse calyx lobes and much longer (3-5mm) petals.

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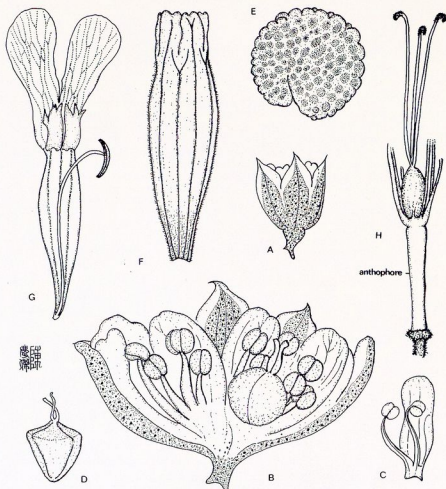


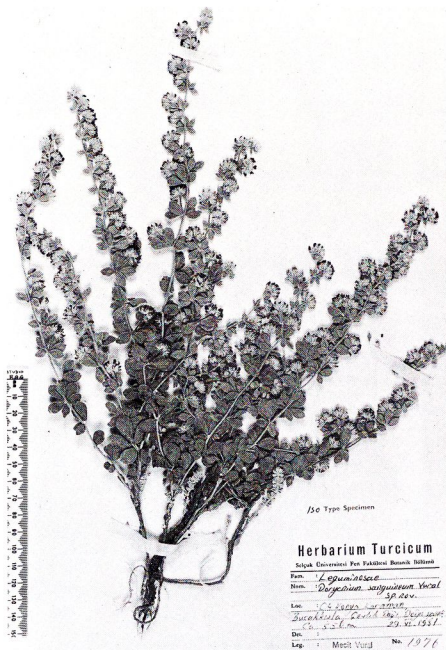
FIG. 1. A-E, *Gypsophila baytopiorum*: A, flower bud $\times 10$; B, dissected bud $\times 20$; C, petal and attached stamens $\times 10$; D, capsule $\times 10$; E, seed $\times 40$. F-H, *Silene ermenekensis*: F, calyx; G, ligulate petal and stamen; H, gynoecium. F-H $\times 4.5$.

The specific epithet is given in appreciation and recognition of the work of Professors Asuman & Turhan Baytop on the Turkish flora, and for their kind help on so many occasions.

***Silene ermenekensis* Vural & Kit Tan, sp. nov.** (Sect. *Caespitosae* Chowdh.). Fig. 1F-H.

Affinis *S. pharnaceifolio* Fenzl sed calyce multo longiore (11-14 non 7-9mm) et anthophoro ad 6mm haud 1mm longo differt.

Herba perennis suffrutescens ad basin effusa. *Caules* floriferi 12-20cm alti, tenues, erecti, teretes, in parte inferiore villosi, superne subglabri et viscido-glandulosi, internodiis 2-4.5cm longis. *Folia basalia* fasciculata, linearia, 10-30 $\times$ 1mm, canaliculata, indumento tomentoso-glanduloso, basi dense villosa marginibus scariosis ciliatis. *Folia caulina* distantia,



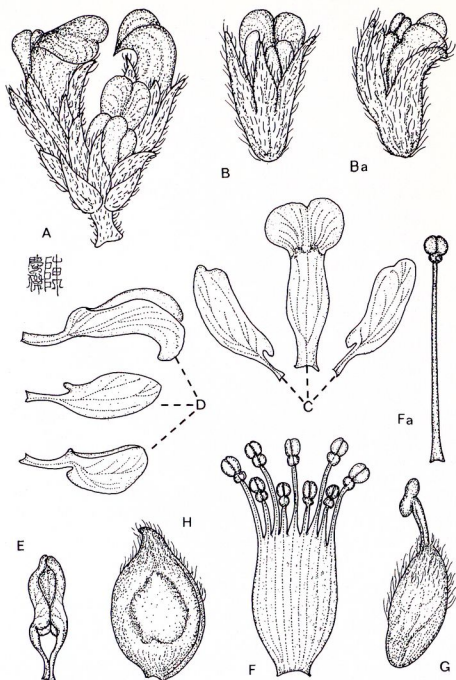


FIG. 3. A-H, *Dorycnium sanguineum*: A, part of inflorescence; B, flower bud in anterior view; Ba, bud in lateral view; C, standard and wings; D, standard, wing & keel petals in lateral view; E, keel petals; F, nine anterior stamens with fused filaments; Fa, free vexillary filament; G, gynoecium; H, legume. All $\times 6$, except F-G $\times 14$.

2-4-binata, suprema bracteatiformia, albo-marginata. *Inflorescentia* subracemosa, 1-3-flora. *Calyx* 11-14mm longus, tubulo-clavatus, glanduloso-puberulus, rosaceus, distincte 10-nervosus, supra capsulam constrictus; dentes oblongo-ovati, 2-3mm longi, retusi, margine albo-membranacei, ciliolati. *Petala* 13-15mm longa, unguis 7-9mm longus, exauriculatus, glaber; limbus bifidus, cuneatus, 5-7.5mm longus, lobis obovato-oblongis 3-5mm longis; ligulis 2-2.5mm longis bipartitis ad apicem denticulatis. *Filamenta* 10-11mm, glabra. *Styli* 3, 8-9mm longi. *Anthophorum* ad 6mm longum, glabrum. *Capsula* immatura ovoideo-oblonga, 3mm longa, in calyce inclusa. *Fl.* Mai-Jun.

TURKEY C4 Konya: Ermenek to Tekeçati, rocky and stony places, 1600m, 2 vi 1979, *M. Vural* 1808 (holotype ANK, photo. E; iso. Selçuk Üniv. Konya). Ermenek, Damlaçal, stony places in open *Juniperus excelsa* forest, 1600m, 26 v 1979, *M. Vural* 1776 (para. E, Selçuk Üniv. Konya).

Allied to *S. pharnaceifolia* Fenzl from which it differs by its much longer calyx (11-14 not 7-9mm) and anthophore (to 6mm, not 1mm long).

***Dorycnium sanguineum* Vural, sp. nov.** (Sect. *Dorycnium*). Figs 2 & 3.

Herba perennis, basi lignescens, subcaespitosa, caules floriferos et steriles emittens. *Caules steriles* foliati, ad 6cm alti. *Caules floriferi* laxi, diffusi, 20-40cm alti, herbacei, paulo flexuosi, albido-villosi, superne ad 20 umbellas ferentes, internodiis 1-2 (-2.5)cm longis. *Folia* 5-foliolata, rhachides 1-4mm longae. *Foliola* obovato-elliptica vel elliptica, 5-20×3-10mm, mucronata, utrinque dense villosa, foliolis veteribus magnisque interdum subglabris, foliolis caulium sterilium obovatis, c.4×2mm, canescentibus. *Umbellae* congestae, subcapitatae, 4-8-florae. *Pedunculi* 0.5-2cm longi; bractee involucrales numero floribus aequalia, lanceolatae, 2.5-4mm longae, virentes. *Flores* subsessiles vel pedicelli 1mm longi. *Calyx* ± curvatus, basi leviter gibbosus, 5mm longus, albido-villosus, laciniis anguste triangulari-lanceolatis tubo paulo longioribus apice atropurpureis; tubus stramineus, pallide purpureo-suffusus. *Corolla* in vivo sanguineus; vexillum 5-7mm longum, limbo 90° reflexo, alis apice cohaerentibus 5mm longis, carina c.4mm longa. *Ovarium* 8-13-ovulatum, breviter stipitatum, 2-2.5mm longum, dense villosum, stylo 1mm longo leviter curvato. *Legumen* 1 (-2)-spermum, ovoideum, c.5×3mm (rostrum c.1.5mm longo excluso), hirsutum baso glabro excepto; valvae grosse reticulato-rugosae, maturitatem haud contortae nec undulatae. *Semen* 2.5-3mm longum, laeve, virens. *Fl. & fr.* Mai-Jul.

Type. TURKEY C4 Konya: Karaman, Bucakkişla, east slopes of Çevlik Da., in open *Pinus brutia* forest, calcareous substrate, 550m, 29 vi 1981, *M. Vural* 1976 (holo. ANK; iso. E, G, Selçuk Üniv. Konya).

Endemic, E Mediterranean element. *D. sanguineum* is without any close Turkish allies; it has been placed in Sect. *Dorycnium* on account of its apically cohering wing-petals and few-seeded legumes. It is known only from the type gathering which is from a little-botanised area.

CYNOGLOTTIS

While trying to identify some recently collected Boraginaceae from S Anatolia we discovered some anomalies in *Anchusa barrelieri* (All.) Vitman as described in *Fl. Turkey and the East Aegean Islands* 6: 389, 400 (1979). This species has two varieties (var. *barrelieri* and var. *orientalis* Guşuleac) and is described in the account and key as having, in both varieties, an annual habit and a corolla tube shorter than the lobes. We found, however, that all specimens examined, including all those cited in the Flora, were clearly perennial, and that those of var. *orientalis* have a corolla tube as long as, or longer than, the lobes. Furthermore we found that the diagnostic character of entire leaves in var. *barrelieri* versus crenulate-undulate leaves in var. *orientalis* was inconstant. We also noted that in map 28 (*Fl. Turkey* 6: 397) the S Anatolian distribution of var. *barrelieri* (C5 Içel and C5 Adana) has either been omitted or confused with the distribution of var. *orientalis*.

We discovered that part of this confusion has been brought about by the complete absence of typical *Anchusa barrelieri* from Turkey and by the occurrence of two previously unrecognised taxa in the Turkish material—one is described below as a new species, *Cynoglottis chetikiana* Vural & Kit Tan; the other, *Anchusa serpentinicola* Rech. fil., was previously thought to be restricted to Macedonia. The relationship of *Anchusa barrelieri* var. *orientalis* to the new species is so strong that we have now treated it as a subspecies of the latter while we treat *A. serpentinicola* as a subspecies of *Cynoglottis barrelieri*.

Our work has also thrown light on the status of *Anchusa* subgen. *Cynoglottis*, a monotypic grouping consisting of *A. barrelieri* proposed by Guşuleac (1923, 1927). We found that it is indeed taxonomically distinct from the rest of the Turkish *Anchusas*, partly on account of its corolla tube being $\pm$ as long as or shorter than the calyx when in flower and also in its possessing very small dumb-bell shaped pollen resembling that of *Brunnera* Steven and *Pentaglottis* Tausch. In the other five Turkish subgenera—*Anchusa*, *Limbata* Chamb. & Mill, *Lycopsis* (L.) Guşuleac, *Hormuzakia* (Guşuleac) Chamb. and *Phyllocara* (Guşuleac) Chamb.—the corolla tube is always exerted when in flower, being much longer than the calyx, and the pollen twice as large (see Table 1). These characters have remained constant with the examination of a wide range of material.

Cynoglottis has previously been recognised only at subgeneric level but we consider the above mentioned features sufficiently marked and consistent to warrant the treatment of *Cynoglottis* as a genus separate from *Anchusa* and therefore propose to accord it generic status typified by *A. barrelieri*, the sole species recognized by Guşuleac in 1923 and 1927. Recent studies by Dr R. R. Mill (unpublished data) also confirm that it should indeed be treated as an independent genus. *Cynoglottis* is undoubtedly the 'link' between *Brunnera* and *Anchusa*; in fact, it has more characters in common with *Brunnera* than with *Anchusa*, e.g., the very short rotate corolla and a similar pollen and nutlet type, but the bracteate cymes and non-rhizomatous habit clearly distinguish the two. Brief descriptions of the genus and its two species are now provided.

TABLE 1

Pollen size in *Anchusa*, *Brunnera* and *Pentaglottis*

	Equatorial view length × breadth (μm)	Polar axis (μm)
<i>Anchusa</i> subgen.		
I. <i>Anchusa</i> *	(30–)38(–42.5) × (22.5–)27.5(–35)	(23–)27.5(–30)
II. <i>Limbata</i>	37.5 × 25	25
III. <i>Lycopsis</i>	25 × 19–20	20
IV. <i>Cynoglottis</i>	(7.5–)13.5–15(–16.5) × (7–)10–12.5	10.5–12.5
V. <i>Hormuzakia</i>	30 × 25	25
VI. <i>Phyllocara</i>	42.5 × 25	34
<i>Brunnera</i>	12–12.5 × 7.5–8	7.5–8
<i>Pentaglottis</i>	12.5 × 10	10

*Within subgen. *Anchusa*, *A. stylosa* Bieb. is unusual in possessing 5-colporate pollen grains (Fig. 4c).

***Cynoglottis* (Guşuleac) Vural & Kit Tan, gen. & stat. nov.**

Syn.: *Buglossum* Gärtn., Fruct. 1: 322 (1753), pro parte.

Anchusa subgen. *Cynoglottis* Guşuleac in Publ. Soc. Nat. Bucar. 6: 87 (1923); Bul. Fac. Ştiinţe Cern. 1: 77, 295 (1927).

Perennial herbs. Stems erect, simple or branched, tuberculate-setose. Inflorescence terminal, cymes bracteate. Calyx divided to base. Corolla actinomorphic, rotate, blue or bluish-violet; tube ± as long as or shorter than calyx in flower; faucal scales oblong-rectangular. Style included, stigma capitate. Nutlets erect, oblong-obovoid, non-stipitate, attachment scar basal. Pollen radially symmetrical, 4-colporate, prolate, slightly constricted at equator, 7–16 × 7–12 μm, polar diameter c. 1 μm.—Ditypic.

Type: *C. barrelieri* (All.) Vural & Kit Tan

Key to species

1. Calyx not strongly accrescent in fruit; corolla tube narrowly campanulate, much shorter than limb 1. *barrelieri*
- + Calyx strongly accrescent in fruit; corolla tube narrowly cylindrical, equal to, or longer than, limb 2. *chetikiana*

1. *C. barrelieri* (All.) Vural & Kit Tan, comb. nov.

1. Plant not caespitose; stem always single, simple or branched, (25–) 30–80 cm; basal leaves (0.5–) 1–2(–3) cm broad subsp. ***barrelieri***
- + Plant small, caespitose; stems 3–many, simple, 7–25 cm; basal leaves narrow, 0.2–0.4 (–0.6) cm broad subsp. ***serpentinicola***

subsp. ***barrelieri***

Syn.: *Buglossum barrelieri* All., Fl. Pedem. 1: 48 (1785).

Anchusa barrelieri (All.) Vitman, Summa Pl. 1: 388 (1789–90).

As diagnosed in generic description and keys.

Type: Italy, secus viam inter Rodavion et Rabelant et in valle Scurae prope Demant, *Bellardi*.

Distribution: Italy, Balkans, S Russia. No material has been seen from Turkey and we believe this subspecies is completely absent from Anatolia.

C. barrelieri (All.) Vural & Kit Tan subsp. *serpentinicola* (Rech. fil.) Vural & Kit Tan, **comb. & stat. nov.** Fig. 4A–Ab.

Syn.: *Anchusa serpentinicola* Rech. fil. in Öst. Bot. Zeitschr. 107: 472 (1960).

As diagnosed in generic description and keys. *Fl. Apr.–Jul. Dry stony screes and slopes, on limestone and serpentine, 900–2500m.*

Type. Greece, Macedonia occidentalis: d. Kozani, in declivibus orientalibus

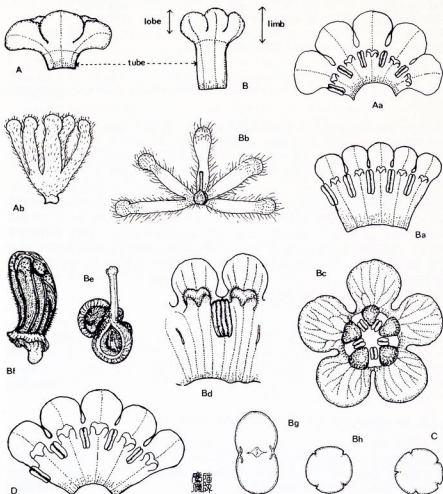


FIG. 4. A–Ab, *Cynoglottis barrelieri* subsp. *serpentinicola*: A, corolla; Aa, dissected corolla; Ab, calyx. B–Bh, *C. chetikiana* subsp. *chetikiana*: B, corolla; Ba, dissected corolla; Bb, dissected calyx; Bc, view of flower from above; Bd, part of dissected corolla showing faucal scales and stamen attachment; Be, gynoecium with two nutlets removed and two aborted; Bf, mature nutlet; Bg and Bh, pollen grains in equatorial and polar views respectively. C, *Anchusa stylosa* pollen grain in polar view (5-colporate). D, *C. chetikiana* subsp. *paphlagonica* dissected corolla. All $\times 4.5$ except Bc–Bf $\times 6.5$. Bg, Bh & C diagrammatic, $\times$ approx. 1400.

saxosis montis Vourinon, substr. serpentine, c.1400m, 5-7 vii 1956, *K. H. Rechinger* 17718 (holo. W).

Macedonia, S Anatolia (Anti-Taurus).

TURKEY. C5 İçel: Tarsus to Namrun, nr Ortaköy, 1000m, *D. 26394* (ANK, BM, E); Ala Da., Çukurbağ to Narpiz Gorge, 1500-2060m, *Parry* 10A(E). Niğde: Ala Da., Emli bogazi, 2500m, *Wood & Gibson* 116 (E). Adana: Karaisali, nr Bürtücek, Pozanti, 1000m, *D. 26137* (E, K).

GREECE. Thessalonika: Vermion mts above Zoödhokhos Pighi between Véroia and Kozani on Salonika-Athens highway, c.1200m, *H. E. Moore Jr* 7360 (W); Zoödhokhos Pighi pass between Véroia and Kozani, 1000-1400m, 25 v 1961, *Ball & Wagstaffe* (W).

S YUGOSLAVIA. Macedonia: Nebeud. Pass-Strasse zw. Prespasee v. baličica, c.900m, *G. H. Leute* 192 (W); Galicia Planina, zw. Prespa-u. Ohridsee, 40° 58' N, 38° 30' E [sic] [= 21° E], 1500m, *G. H. Leute* 199(W).

2. *C. chetikiana* Vural & Kit Tan, sp. nov.

Herba erecta perennis tuberculo-setosa. *Caules* pauci ad complures, simplices vel rariore ramosi erecti (8-)15-40cm alti. *Folia* integra vel crenulata, viridis herbaceis utrinque et margine tuberculo-setulis, basalia et caulina inferiora oblanceolata-spathulata, 3-6(-15) × (0.3-)0.6-1.5 (-4)cm, in petiolum 3.5 (-5)cm longum attenuata, late vel subacuta, caulina mediana et superiora subsessilia, semiamplexicaulia, oblongo-elliptica vel anguste oblanceolata, 1.5-6.5 × 0.3-1.5cm, acuta. *Flores* in cincinnis bracteatis, post anthesin et fructiferi ± dense dispositi non laxiusculi. *Bractae* lineari-lanceolatae, 2-5mm longae. *Pedicelli* usque ad 2mm longi. *Calyx* florifer 2-3.5mm longus, fructifer 4-9mm accrescens, albo-strigulosus usque ad basin in 5 lacinias partitus. *Laciniae* erectae lineares rotundato-obtusae vel anguste oblongo-spathulatae truncatae, usque ad 1.2mm latae, virides, apice violaceae. *Corolla* parva actinomorpha rotata, caeruleo-violacea deinde pallida, tubus rectus limbus aequans vel longior, 1.6-2.7mm longus, limbus 1.4-2.6mm longus, lobis patentibus oblongis, 1.1-2.2mm longis, obtusis, glabris. *Fornices* albi e fauce ± exserti, late rectangulares, 0.6 × 0.9-1mm, papillis minutis obsitis apice recurvato excepto, latere villis tecti. *Stamina* leviter supra medio tubi inserta; filamenta 0.7mm longa, antherae inclusae vel paene exsertae oblongo-lineares, 1.2-1.5mm. *Stylus* brevis glaber inclusus, 1.8mm longus, *stigma* capitatum, purpureum. *Nuculae* 4 (plerumque 2 abortae), erectae, 3.5-4.5 × 1.6mm, basi incrassati, minute verrucosae in dimidio apice laeves. *Grana pollinis* quadricolporata prolata, ad equatorem leviter constricta, c.13.5 × 11µm, in diametro polare c.11µm.

1. Corolla tube much longer than lobes or limb. subsp. *chetikiana*
+ Corolla tube ± equalling limb. subsp. *paphlagonica*

subsp. *chetikiana*. Fig. 4B-Bh.

Fl. & fr. Mai-Jun. Deep valleys, rocky limestone scree and slopes, in partial shade of Cedrus libani, Abies, Pinus nigra or Juniperus excelsa forest, 850-1980m.

Type. Turkey C4 Konya: 3km E of Ermenek, 1200m, 27 v 1978, *M. Vural* 640 (holo. Selçuk Univ. Konya, photo E).

S Anatolia (endemic).

TURKEY. C3 Burdur: Bucak, 914m, *P. B. Smith* 152 (E). Isparta: d. Eğridir, Kopuz Da., 2km S of Yaka köyü, 1800m, *Peşmen et al.* 3514 (HUB); Eğridir, Melikler cemetery to Yaka köyü, 1300–1650m, *Peşmen & Güner* 1447 (HUB); Yaka köyü, above Çamova, 1600–1980m, *Peşmen & Güner* 1589 (HUB); d. Sütçüler, Ayvalı to Daribükü, 850–1100m, *Peşmen & Güner* 2148 (E, HUB); d. Sütçüler, Belence to Ibişler, 920–1100m, *Peşmen & Güner* 1181 (HUB). C4 Konya: d. Seydişehir, S of aluminium mine nr Ağac Tepe, 1600m, *H. Ocakverdi* 1163 (Selçuk Üniv. Konya, photo E). C5 Adana: Burujik (Bürücek), Cilician Taurus, 1067m, *E. K. Balls* 1934: 1218A (ANK, BM, E); *ibid.*, *E. K. Balls & Gourlay* 1934: 1239 (BM, K).

This species is named in honour of Prof. A. Rıza Çetık who has done much to encourage phytosociological studies in Turkey.

subsp. **paphlagonica** (Hausskn. ex Bornm.) Vural & Kit Tan, **comb. & stat. nov.** Fig. 4D.

Syn.: *Anchusa barrelieri* (All.) Vitman var. *paphlagonica* [Hausskn. ex] Bornm. in Mitt. Thür. Bot. Ver. 21: 80 (1906).

[*A. paphlagonica* Hausskn. in sched., *nom. nud.*]

A. barrelieri (All.) Vitman var. *orientalis* Guşuleac in Bul. Fac. Ştiinţe Cern. 1: 118 (1927), excl. spp.

As diagnosed in generic description and key. *Fl. Apr.–Oct. Dry rocky slopes, limestone scree and ledges, in Abies, Pinus sylvestris and open P. brutia forest, 400–1700m.*

Type. Turkey, Pontus Galacticus: Amasia in rupestribus, *Bornmüller* 1889: 738.

N, C & S Anatolia (endemic).

TURKEY. A4 Ankara: d. Kızılcahamam, Akdere, 1100–1400m, *Khan et al.* 693 (K). A5 Kastamonu: Kaiseridere (7 km NE of Tosya), 26 vi 1892, *Sint.* (LD); nr Tosya in Paphlagonia, *Sint.* 1892: 4413 (LD); Tosya, Snütschtüdere, *Sint.* 1892: 3654 (B, WU). Amasya: Amasya, nr Tschengelhan, 400–600m, *Bornm.* 1889: 737 (B). A6 Tokat: nr Tokat, 600–700m, *Bornm.* 1893: 3443 (B). B2 Uşak: Ouchak (Uşak), Phrygia, vii 1857, *Bal.* (K). B4 Ankara: Beytepe, Maslak De., 1000m, *Erik* 1263 (HUB). B5 Kayseri: Develi, *D.* 19175b (E). B6 Kayseri: Gemerek, Sızır, 1600–1700m, *Ekim* 4955 (ANK). C2 Antalya: Ebajik (Ibecik), *Forbes* 494 (K). C3 Isparta: d. Sütçüler, Çimen ova on W side of Sarp Da., *D.* 15801 (E, K); d. Sütçüler, Belence to Ibişler, 920–1100m, *Peşmen & Güner* 1157 (HUB). Antalya: 8km from Akseki to Manavgat, 1400m, (*Dudley*) *D.* 35816 (E); Manavgat to Akseki, above Fersinalani, 700m, *D.* 25767 (BM, E); above Ekiz Y., 1550m, *Ayaşlıgil* 1118 (ISTO); Adalia to Burdur, v 1845, *Heldreich* (BM, K, W); Alanya, Koçdavut, 1650m, *Çetık* 3685 (ANK). C4 Konya: Bozkır, 1100m, *Çetık et al.* 904 (ANK). C5 Konya: d. Ereğli, Aydos Da., Delimahmutlu, Karasirt, 1600m, *Erik* 1552 (HUB). İçel: Gusguta valley, 1400m, *Siehe* 1896: 249 (B, E, K, W—lectotype of var. *orientalis* Guşuleac as designated by Chamb. in *Fl. Turkey* 6: 401 (1979); Güzeldere, nr Mersin, *Bal.* 1855: 552 (E, W); above Namrun, *E. K. Balls* 1933: 182 (ANK, E, K); Cilician Taurus, Güllek, 914m, *E. K. Balls & Gourlay* 1934: 1218 (ANK, BM, E). Adana: Karsanti, Karataş above Çamolugu, 1550m, *Yurdakulol* 1013 (ANK). C6 Hatay: Hatay to Iskenderun, Amanos Da., nr Radar station, 1400m, *Akman* 247 (ANK); 1600m, *Akman* 163 (ANK, E).

A specimen from 'Smyrna' [B1 Izmir], *Whittall* 449 (E) is probably wrongly localised; it may have originated from the Cilician Taurus.

TAXA NEW TO TURKEY

POLYGONACEAE

Rumex palustris Sm., Fl. Brit. 1: 394 (1800).

TURKEY. B1 Izmir: Menemen, Seyrek köy, Sazlı lake, 100m, 7 v 1980, *Leblebici et al.* EGE 16864; Ödemiş, Bozdağ, Göluik G., 1050m, 9 vi 1980, *Leblebici et al.* EGE 16865. Europe, W Anatolia.

Prof. K. H. Rechinger (Vienna) kindly confirmed the identification.

CHENOPODIACEAE

Chenopodium ambrosioides L., Sp. Pl. 219 (1753).

TURKEY. Is: Kalymnos, Vathy, roadside by walls, 15 x 1981, *D.* 67901. Native to tropical America, introduced and naturalised in temperate and tropical regions of Old World.

Atriplex micranthum C. A. Meyer in Ledeb., Ic. Fl. Ross. 1: 11 (1829).

TURKEY. B10 Kars: d. Aralik, SE of Iğdır D.Ü.Ç., saline flats, 800m, 21 vii 1966, *D.* 46999. S Russia, Caucasus, C Asia, NE Anatolia.

Aellenia glauca (Bieb.) Aellen in Verh. Nat. Ges. Basel 61: 182 (1950). subsp. *glauca*

TURKEY. A9 Kars: 20–25km from Tuzluca to Iğdır, ±saline dry gravelly hills, 950m, 19 vii 1966, *D.* 46858. B10 Agri: 9–11km E of Doğubayazıt, dry sandy loam, 1067m, 1 viii 1969, *Hewitt* 189; 1.5km from Iranian border to Doğubayazıt, dry rocky soil, 10 viii 1970, *Hewitt* 305. Iran, Transcaucasia, C Asia (excl. Pamir), NE Anatolia.

Only *A. glauca* subsp. *cinerascens* (Moq.) Aellen was previously known from Turkey (one gathering from the banks of the Aras river in the North-East, *Gassner* 1227).

EUPHORBIACEAE

Euphorbia condyllocarpa M. Bieb., Fl. Taur.-Cauc. 1: 377 (1808); Fl. Or. 4: 1102 (1879) (Sect. *Helioscopia* Dumort. emend. Tutin subsect. *Galarhoei* (Haw.) Boiss. ex Pax emend. Radcliffe-Smith).

TURKEY. C3 Antalya: Beşkonak, NW of Bucuk Bıçkı De., *Pinus nigra* woods, conglomerate rock, *Ayaşlıgil* 1486. Konya: Beyşehir, Yeşildağ, Kumiskele, nr Gür Da., 1100m, 22 iv 1981, *Serin* 362; Beyşehir, Yeşildağ, Damla altı, 1100m, 24 v 1981, *Serin* 363; Damla altı, rocky places, 1000m, 8 vi 1981, *Serin* 364; Seydişehir to Susuz, Sultanpinari, rocky places, 1350m, 16 vi 1980, *Ocakverdi* 1370; Seydişehir, Sahin kayasi, open mine in *Abies cilicica* forest, 1450m, 21 vi 1980, *Ocakverdi* 1372.

Caucasus, N Iraq, N Iran, S Anatolia.

Apparently these are the first documented records for Turkey. Radcliffe-Smith (*Flora of Turkey and the East Aegean Islands* 7: 587, 1982) states that *E. condyllocarpa* probably grows in E Anatolia but, surprisingly, these records are for S Anatolia. All previous records of *E. condyllocarpa* from Turkey are misidentifications of the endemic species, *E. cardiophylla* Boiss. & Heldr.

PALMAE/ARECACEAE

Phoenix theophrasti Greuter in Bauhinia 3(2): 243, 244 fig. (1967).

TURKEY. C2 Muğla: 48km from Marmaris to Datça, *Pinus brutia* forest, 100m, *T. Baytop* (ISTE 36264 & photo—sterile); d. Datça, Eksere stream valley, 150–200m, 10 vii 1982, *Boydak & Yaka* (fruiting specimen & photo); Azmaklibük, s.l., 8 xi 1982, *Boydak & Yaka* (fruiting specimen).

Crete (SE coast), SW Anatolia. E Mediterranean element. A record from the island of Nisiros, Mandrakion, *Papatsou* may be referable to this species.

An interesting first record for Turkey since this and *Chamaerops humilis* L. are the only native European palms.

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