

**A NEW SPECIES OF *CYNOGLOSSUM*
(*BORAGINACEAE*–*CYNOGLOSSAE*) FROM
EASTERN TURKEY**

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The new species *Cynoglossum vanense* (*Boraginaceae*) from around Lake Van and Hakkâri in eastern Turkey is described and illustrated. Its larger nutlets with relatively long glochids separate it from other known species in subgenus *Cynoglossum*.

Keywords. *Boraginaceae*, *Cynoglossum*, new species, Turkey.

INTRODUCTION

In 1996, while the author was studying the genus *Cynoglossum* L. in the herbarium in Linz (LI), a small part of the inflorescence of a distinct but unidentifiable *Cynoglossum* was found. More complete duplicate material of this collection was later found in Vienna (W). In 1997, well-collected fruiting material of this taxon was then found in St Petersburg (LE). Three further specimens were found in the Van herbarium (VANF) in 2002 when the author also collected two plants in fruit and flower and a third sterile rosette in the wild. In particular, this material differs from other species of *Cynoglossum* in its larger nutlets with long glochids, not unlike those seen in *Solenanthus*. However, its anthers, like other species of *Cynoglossum*, are not exerted as they are in *Solenanthus*.

***Cynoglossum vanense* Sutorý, sp. nov. Figs 1–4.**

Planta biennis, radix crassa, caulis c.60cm altus erectus solitarius albopilosus, e tribus duabus partibus superioribus virgate ramosus, folia basalia petiolata, cum petiolo 18cm longo et lamina ellipsoidea 17cm longa et 7cm lata, folia caulina sessilia lanceolata, c.13cm longa et 3cm lata, utrisque faciebus cum pilis c.0.5mm longis vestita, facie inferiore pilis cum basi distincte tuberculata, inflorescentia paniculam amplam formans, cum ramis 25cm longis bracteolae in parte inferiore ramorum inferiorum plures (–3), sub floribus locatae, bracteolae ramorum altiorum singulares, rami ultimi sine bracteolis, pedicelli fructiferi 5mm longi, lobi calycis elliptici 4mm (in flore), 6mm (in fructu) longi et 1.7–2mm lati, parte exteriori cum pilis 2–5mm longis et rigidis obsita, parte interiore glabra, in apice tantum cum pilis similibus, corolla rosea (in sicco violacea), cum tubo 2.5mm et limbo 2mm longo fornicibus subquadratis atroviolaceis 1 × 1.3mm, antherae 1mm longae cum filamentis 0.5mm longis in media tubo corollae insertae, stylus in fructu 4mm longus, stigma capitatum. Nuculae late ovoideae, suborbiculares vel orbiculares,



FIG. 1A. *Cynoglossum vanense* Sutorý: upper portion of holotype (Schelkovnikov & Schiptschinskij 100-16, LE).

compressae, 9–10mm longae, facie exteriore planae cum glochidiis echinatis gracilibus non densis obsitae, marginibus distinctis non evolutis, glochidiis 1.5–2mm longis, tuberculis parvis non evolutis, cicatrix in pericarpio lanceolata, 4mm longa et 2.5mm lata.

Type: Turkey, C10 Hakkâri: Tureckij Kurdistan [Turkish Kurdistan]; Schamsdinan [Şemdinli]; Cheljane-çaj, 11 vi 1916, A.B. Schelkovnikov & V. Schiptschinskij 100-16, Exeditio Urmiensis Musei Caucasici 1916 (holo. LE) (Figs 1A, 1B, 2B, 2C).

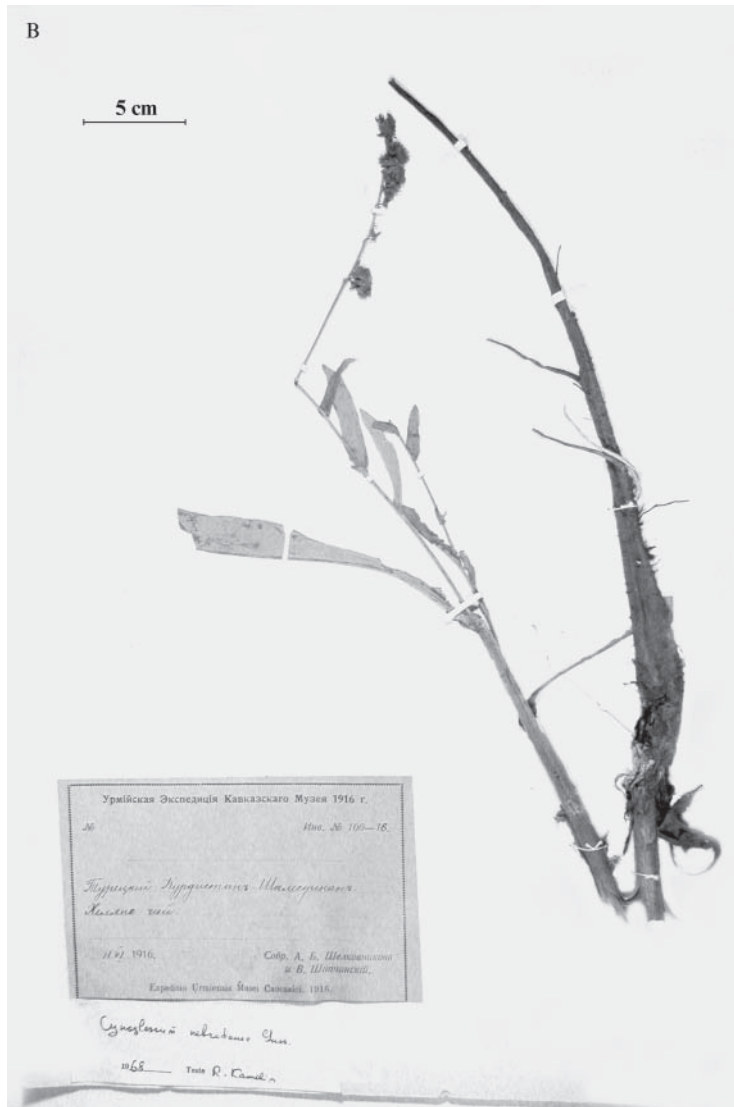


FIG. 1B. *Cynoglossum vanense* Sutorý: lower portion of holotype (Schelkovnikov & Schiptschinskij 100-16, LE).

The type specimen is a well-developed plant with ripe nutlets, but lacking flowers and basal leaves. It is divided into two parts because of its height, and each is mounted on a separate sheet. Both sheets have original pre-printed collectors labels with handwritten data. There is a determination label from R. Kamelin in 1968 naming this plant as *C. nebrodense* Guss. The type locality is no. 1 on Fig. 4.

Plant biennial. *Stems* erect, c.60cm tall, root stout. *Indumentum* white-pilose, hairs near stem-base c.3mm long, shorter towards apex. *Rosette leaves* with petiole to

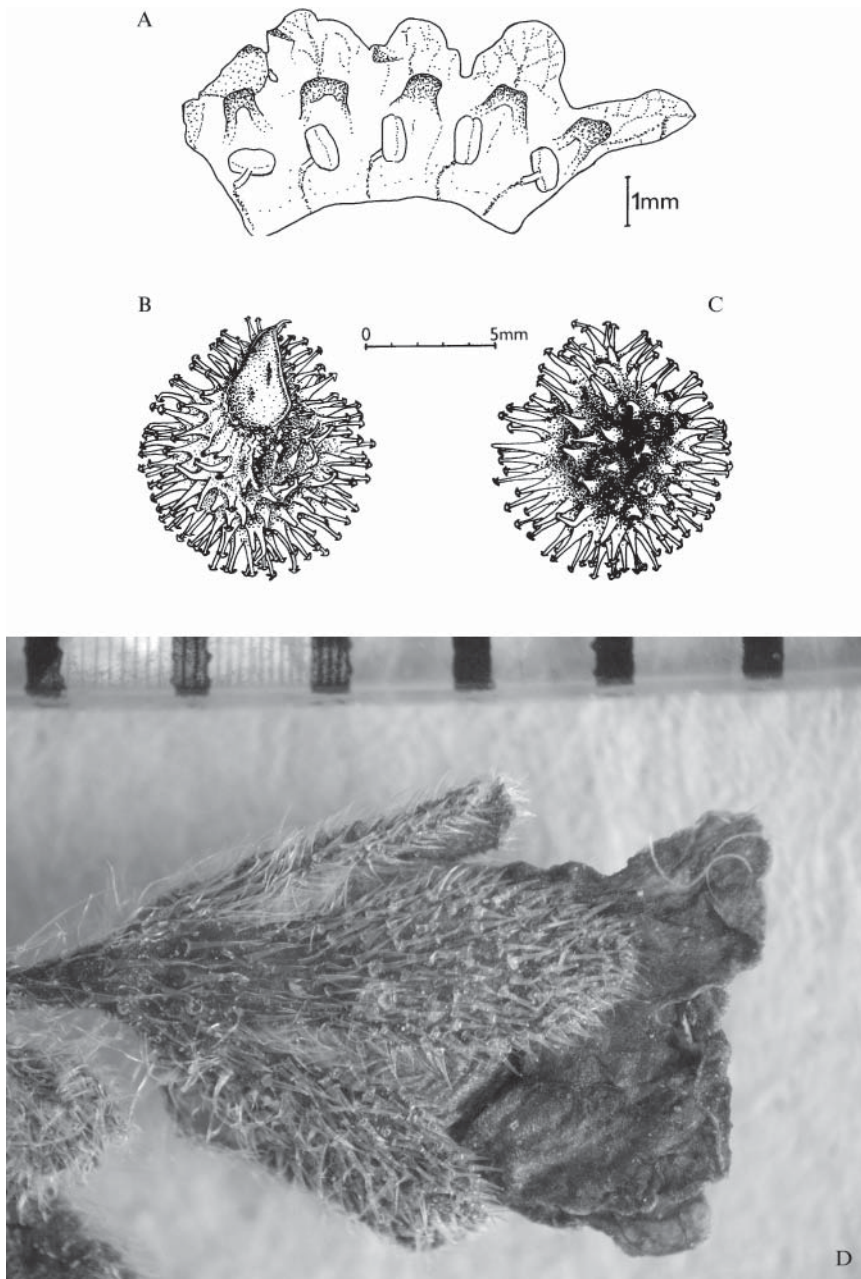


FIG. 2. *Cynoglossum vanense* Sutorý. A, dissected corolla (Sutorý s.n., 15 vi 2002). B, nutlet, ventral view (Schelkovnikov & Schiptschinskij 100-16, LE). C, nutlet, dorsal view (Schelkovnikov & Schiptschinskij 100-16, LE). D, dried calyx and corolla (Sutorý s.n., 15 vi 2002), scale in mm. A drawn by K. Sutorý; B & C drawn by S. Kubešová.



FIG. 3. *Cynoglossum vanense* Sutorý, first year leaf-rosette (Sutorý s.n., 15 vi 2002).

18cm long, and lamina to 17×7 cm. *Cauline leaves* sessile, lanceolate, c. 13×3 cm, covered in c.0.5mm trichomes, adaxially arising from groups of sclerified cells. *Inflorescence* occupying upper 2/3 of plant, forming a wide panicle. *Bracteoles* up to 3 on lower branches, fewer towards apex, absent above. *Pedicels* c.0.5cm long. *Calyx lobes* elliptic, 4mm long in flower, 6mm long in fruit, 1.7–2mm wide, abaxially with 2–5mm long firm trichomes, adaxially glabrous but with trichomes at apex. *Corolla* rose (dark blue when dry), tube 2.5mm, limb 2mm; throat scales 1×1.3 mm, subquadrate, dark violet. *Anthers* 1mm long, filaments 0.5mm, borne in middle of tube, hidden under throat scales. *Style* shorter than corolla tube, 4mm long in fruit; stigma capitate. *Nutlets* depressed ovoid, suborbicular to orbicular, 9–10mm, less densely glochidiate on dorsal surface than laterally and ventrally, without prominent margin; glochids c.1.5–2mm long, without small tubercles. Attachment scar narrowly ovate, 4×2.5 mm, ending in thin, 2mm long awn.

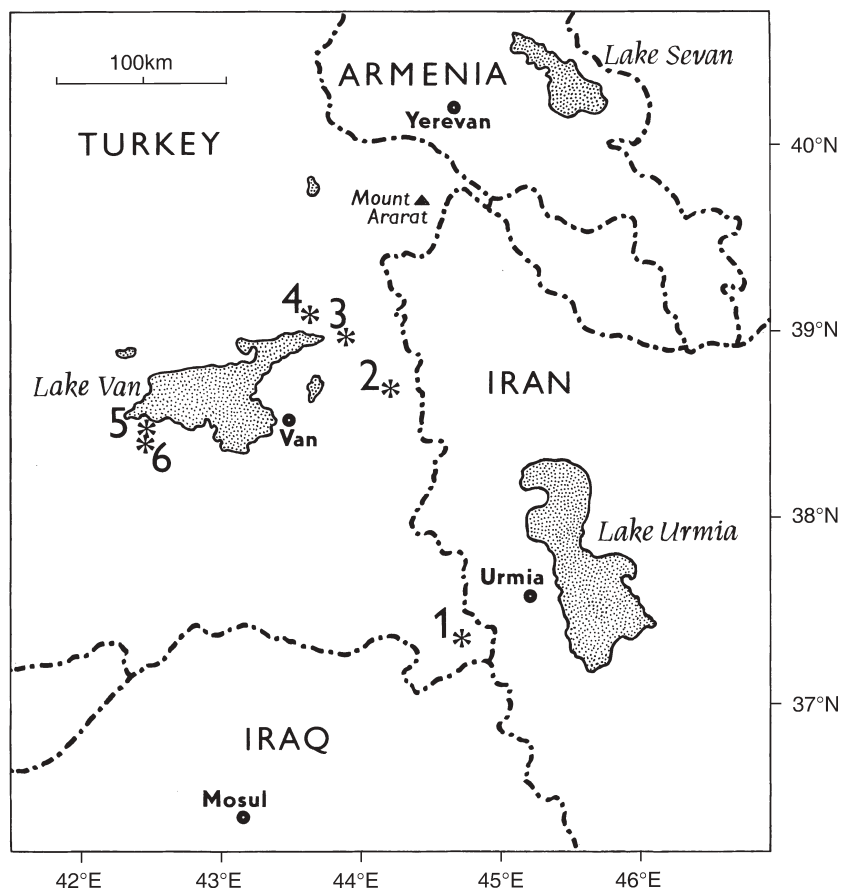


FIG. 4. Map of eastern Turkey and adjoining countries showing the distribution of *Cynoglossum vanense* Sutorý. 1, *Schelkovnikov & Schiptschinskij* 100-16 (LE, holotype). 2, *Özgökçe* 4909. 3, *Ünal* 4533. 4, *Sorger & Buchner* 82-43-9. 5, *Sutorý* s.n., 15 vi 2002. 6, *Behçet* s.n., 1995.

Additional material examined. TURKEY. B10 Van: *Özalp*. Y. Dönerdere Village, Çeşmederesi, steppe, 2058m, 10 vii 1997, *Özgökçe* 4909 (VANF). Fig. 4. no. 2.

B9 Van: Muradiye Adaklı, above the village, 2300m, 22 vii 1998, *Ünal* 4533 (VANF). Fig. 4 no. 3.

B9 Van: c.20km E of Erciş, head of valley, c.25° slope, open vegetation, 1900–2200m, 6 vii 1982, *Sorger & Buchner* 82-43-9 (LI133829, W1992-01550). Fig. 4 no. 4.

B9 Bitlis, Reşadiye (Yelkenli), pastures not far from the road, among *Quercus* bushes (38°27'30"N, 42°32'07"E), c.1835m, 15 vi 2002, *Sutorý* s.n. (BRNM 668683). Fig. 4 no. 5.

B9 Bitlis, Hizan, 1995, *Behçet* s.n. (VANF 2164). Fig. 4 no. 6.

Özgökçe 4909 consists of the upper part of the plant only; some branches were apparently removed in the field. No precise locality or collection data appear on this sheet but from the number it can be identified with the record published in *Özgökçe*

& Behçet (2001), as *C. montanum*, where more data are given. The sheet of Sorger & Buchner 82-43-9 in LI consists of a damaged specimen of *Cynoglossum creticum* Mill. with three fragments of *C. vanense*, one with nutlets; the sheet in W consists of two branches: one soon after flowering with the last few flowers, the other with almost ripe nutlets. Ünal 4533 is just a fragment.

This new species is named after Lake Van, the most remarkable feature of the region where it was discovered. From the collections seen, this species is endemic to the mountainous areas of easternmost Turkey; it may thus also occur in NW Iran and northern Iraq.

In this area, the following species from subgen. *Cynoglossum* Riedl (*Cynoglossum* L. sensu Popov, 1953) are recorded in the literature (Tchihatcheff, 1860; Boissier, 1875; Béguinot & Diratzouyan, 1912; Riedl, 1979): *C. officinale* L., *C. creticum* Mill., *C. germanicum* Jacq., *C. holosericeum* Steven and *C. montanum* L. Taxonomically, *C. montanum* is the most complicated species in this area, probably consisting of several hitherto poorly distinguished taxa. *Cynoglossum teheranicum* Riedl and *C. parvifolium* C.Koch, as well as old records from this region referring to *C. nebrodense* Guss. and *C. dioscoridis* Vill., almost certainly belong to *C. montanum*. From the adjacent part of Iran, only *C. officinale*, *C. creticum* and *C. teheranicum* (= *C. montanum* according to Riedl, 1979, and Heller & Heyn, 1986) are recorded by Riedl (1967). The recently described *C. semnanicum* Khatamzas (Khatamzas, 1999) from NE Iran, according to its description, differs in its glabrescent cauline leaves, smaller calyx lobes, sky-blue corolla, and the smaller densely glochidiate nutlets with tubercles.

Cynoglossum vanense has no close relatives in subgen. *Cynoglossum*. The most notable distinguishing traits concern the nutlets. Their shape is similar to those of the *C. montanum* group, i.e. they are more or less ovoid and compressed, with glochids on an immarginate areole. The chief difference is in their size. *Cynoglossum montanum* has smaller nutlets, the largest being at least 2mm smaller. The largest in the whole genus are probably those of the Apennine species *C. magellense* Ten. They are as large as or even larger than in *C. vanense* but are marginate and rounded, though the glochids are considerably smaller, being only c.0.5mm long. The North American *C. occidentale* A.Gray also has large nutlets almost 10mm long, though they lack awns and have short glochids, and the habit is quite different. A second characteristic feature of *C. vanense* is the length of the glochids, which reach 1.5–2mm. Glochids of this length do not occur in any previously known species of *Cynoglossum*. The short and rather stout trichomes on the upper surfaces of leaves and calyx lobes are also distinctive (Fig. 2D) and help to differentiate this species.

Similar nutlets with long glochids can also be found in the related genus *Solananthus* Ledeb. which differs from *Cynoglossum* in its exerted stamens. Three Turkish species might be considered: *S. stamineus* (Desf.) Wettst. has no awns on the nutlets; *S. circinatus* Ledeb. has smaller nutlets with marginal glochids considerably longer than the others, and *S. formosus* R.R.Mill has small tubercles among the glochids on the nutlets.

ACKNOWLEDGEMENTS

I am indebted to the keepers of herbaria at LE, LI, VANF and W for making material available for study. I also wish to thank Svatava Kubešová for drawing the nutlet details and Robert Mill, Royal Botanic Garden Edinburgh, for many valuable comments on my manuscript.

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Received 7 March 2003; accepted after minor revision 12 April 2005