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A new species of *Silene* (Caryophyllaceae) from East Anatolia (Turkey): *Silene gevasica* Hamzaoğlu sp. nova

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Abstract: *Silene gevasica* Hamzaoğlu sp. nova is described as a new species from Gevaş district (Van province). The specimen was collected from calcareous rocks, at an altitude between 2100 and 2200 m from Artos mountain. The new species is similar to *Silene araratica* Schischk. The differences between these 2 taxa are discussed.

Key words: *Auriculatae*, Van, *Silene*, systematics, taxonomy

Doğu Anadolu'dan (Türkiye) *Silene* cinsinin (Caryophyllaceae) yeni bir türü: *Silene gevasica* Hamzaoğlu sp. nova

Özet: *Silene gevasica* Hamzaoğlu sp. nova, Gevaş ilçesinden (Van) yeni bir tür olarak tanımlandı. Bu tür Artos dağından kalkerli kayalar üzerinde, 2100-2200 metreler arasından yetişir. *Silene gevasica* türü *Silene araratica* Schischk. türüne yakındır. Bu iki takson arasındaki farklar tartışıldı.

Anahtar sözcükler: *Auriculatae*, Van, *Silene*, sistematik, taksonomi

Introduction

Silene L. is the largest genus in the family Caryophyllaceae. It comprises ca. 700 species that are mainly found in N temperature regions, and Africa and South America (Melzheimer, 1988). South-west Asia is one of the main centres of diversity for the genus, which is represented by 147 species in Turkey (Coode & Cullen, 1967; Davis et al., 1988, Greuter, 1995; Tan & Vural, 2000; Vural & Dönmez, 2002; Duran & Menemen, 2003; Deniz & Düşen, 2004; Genç et al., 2007; Bağcı et al., 2007; Bağcı, 2008; Tugay

& Ertuğrul, 2008; Aksoy et al., 2008; Kandemir et al., 2009; Yıldız & Dadandı, 2009; Hamzaoğlu et al., 2010; Yıldız & Erik, 2010; Yıldız et al., 2010).

The authors collected some interesting *Silene* specimens from Gevaş district (Van province). These specimens were compared to the specimens of related taxon in the herbarium of ANK, and to the records in the literature (Rechinger, 1964; Chater & Walters, 1964; Zohary, 1966; Coode & Cullen, 1967; Pignatti, 1982; Shishkin, 1985; Melzheimer, 1988; Greuter, 1997; Özçelik & Kılıç, 2009; Özhatay et al., 2009). The results

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of this study showed, for the first time, that these specimens are representatives of a new species (Figures 1-2).

Species description

Silene gevasica Hamzaoğlu sp. nova (Figures 1-2)
(Sect. *Auriculatae* Boiss.)

Type: Turkey. B9 Van: Gevaş, north slopes of Artos mt., 2100-2200 m, calcareous rocks, 38°16'N, 43°07'E, 14.vii.2009, M.Koç 673, Hamzaoğlu & Budak (holotype: Bozok Univ. Biology Dept. Herb., isotypes: Bozok Univ. Biology Dept. Herb., ANK, GAZI).

Diagnosis: Affinis *S. araraticae* sed inflorescentiis 3-11-floribus (non 1-3-floribus), calycibus 13-21 mm longis (non 21-31 mm longis), anthophoris 4-5.5 mm longis (non 14-20 mm longis) differt.

Description: Caespitose perennial, completely glandular-hairy, with many sterile shoots at the base.

Flowering stems 10-17 cm tall, ascending to erect, usually simple, 2-4-noded. Basal leaves linear-ob lanceolate, 10-65 × 1-8 mm, apex acute, base attenuate into short to long petiole, margin ciliate at base, 1-3-veined or venation obscure. Cauline leaves sessile, smaller than basal leaves, 3-5-veined, linear-lanceolate to ovate, 2-3-paired. Inflorescence usually lax compound dichasia, 3-7(-11)-flowered. Bracts similar to cauline leaves, lanceolate to ovate, ciliate at the base. Peduncles 9-21 mm long. Bracteoles similar to bracts, gradually smaller than bracts. Pedicels up to 8 mm. Calyx 10-nerved, 13-21 mm long, cylindrical-clavate in flower, elliptic-clavate and slightly constricted around the base of the capsule in fruit, greenish, densely glandular-hairy; teeth linear-lanceolate, 3-4 × 1.5-2 mm, apex acuminate, with broadly membranaceous margin. Anthophore 4-5.5 mm long, densely glandular-hairy. Petal yellowish-green, 13-19 mm long; limb broadly obovate, 5-6 mm



Figure 1. *Silene gevasica*; A-Habit, B-Flower, C- Petal, D-Fruit and anthophore. (Scale bar: A-D = 1 cm).

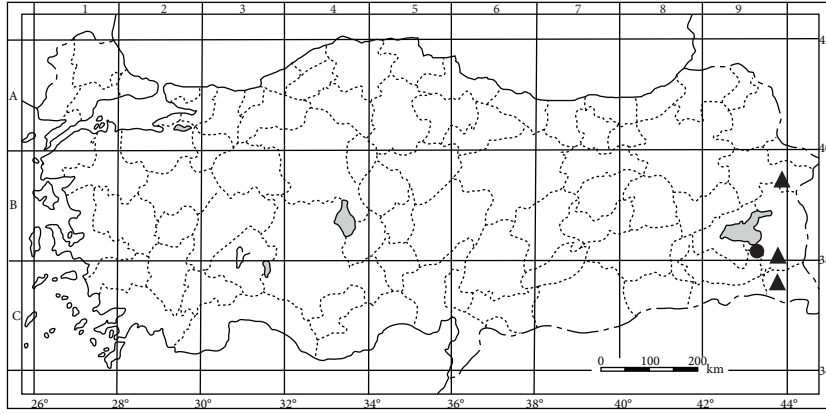


Figure 2. Distribution of *Silene gevasica* (●) and *Silene araratica* (▲) in Turkey.

long, divided to ca. 1/5; lobes oblong, ca. 1 × 1 mm; claw elliptic, slightly exerted beyond calyx, 10-13 × 2-3 mm, densely glandular-hairy, auricled; coronal scales absent. Stamens not exerted from the calyx; filaments glabrous. Styles 14-18 mm long. Capsules ovate, 11-12 × 5.5-6 mm, included in the calyx. Seeds brownish, usually orbicular-reniform or rarely oblong, 0.6-0.9 mm long, flattened, rugose.

Fl. & Fr. 6-8, calcareous rocks, 2100-2200 m.

Specimens examined: *Silene araratica* – Turkey. **B9** Ağrı: Doğubeyazıt, Tendürek pass, 2590 m, 30.vii.2007, Hamzaoğlu 4998 (Bozok Univ. Biology Dept. Herb.); Van: Muradiye, 2000-2250 m, 25.vi.1983, Ekim 7731 (ANK); *ibid.*, side of Zernek Dam, 16.vi.2000, Yurdakulol & Demirkuş s.n. (ANK); *ibid.*, Ereğ Mountain, 2438 m, 18.vii.1954, P.H.Davis 22944 (ANK); **C9** Hakkari: Cilo Mountain, 1670 m, 06.viii.1954, P.H.Davis 23918 (ANK).

Conservation status: *Silene gevasica* is an endemic species known only through the type gathered in East Anatolia (Van), and is an Irano-Turanian element. This species must be classified as critically endangered

[CR (B1a)] according to the World Conservation Union (IUCN) categories (IUCN, 2001).

Ecology: *Silene gevasica* grows on calcareous rocks at 2100-2200 m with *Minuartia lineata* Bornm., *Salsola canescens* (Moq.) Boiss., *Astragalus lagopodioides* Vahl, *Minuartia juniperina* (L.) Maire & Petitm., *Inula montbretiana* DC., *Dianthus* sp., *Salvia* sp., and *Arenaria* sp.

Etymology: In eastern Turkey, the town Gevaş is situated on the southern side of Lake Van. The name of the town is given to the plant described here as a species.

Discussion and conclusion

Silene gevasica is closely related to *Silene araratica* Schischk. It differs from *S. araratica* by its anthophore and petal claw densely glandular-hairy. More differentiating characters are given in the Table shown below. *Silene araratica* is distributed in East and S.E. Turkey, Iran, and N. Iraq (Coode & Cullen, 1967; Melzheimer, 1988; Özçelik & Kılıç, 2009) (Figure 2).

Table. Diagnostic characters of *Silene gevasica* and *S. araratica*.

	<i>Silene gevasica</i>	<i>Silene araratica</i>
Calyx	13-21 mm long	21-31 mm long
Anthophore	4-5.5 mm long, densely glandular-hairy	14-20 mm long, glabrous to shortly puberulous
Petal	13-19 mm long; limb divided to 1/5; claw densely glandular-hairy	12-15 mm long; limb divided to 1/2; claw glabrous

Because *Silene gevasica*'s petal claws are glandular-hairy, this species is similar to *Silene porandica* Gilli, *Silene paghmanica* Gilli, and *Silene joerstadii* Wendelbo. These 3 species are located in Afghanistan and Pakistan. However, the calyx of these species is apparently inflated and they are located in the section *Infiletea* Boiss. (Melzheimer, 1988).

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