

A new species of *Silene* (Caryophyllaceae) from Turkey

Ergin HAMZAOĞLU^{1,*}, Ahmet AKSOY², Ümit BUDAK¹

¹Department of Biology, Faculty of Science and Arts, Bozok University, 66200 Yozgat - TURKEY

²Department of Biology, Faculty of Science and Arts, Erciyes University, 38039 Kayseri - TURKEY

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Abstract: *Silene bayburtensis* Hamzaoğlu & Aksoy sp. nov. is described as a new species from Bayburt province (Turkey). The specimen was collected on a calcareous steppe, in 2 localities, at an altitude between 1700 and 1750 m. The new species is similar to *Silene pharnaceifolia* Fenzl. The differences between the species are discussed.

Key words: Bayburt, *Caespitosae*, *Silene*, systematics, taxonomy

Türkiye'den yeni bir *Silene* (Caryophyllaceae) türü

Özet: *Silene bayburtensis* Hamzaoğlu & Aksoy sp. nov. Bayburt ilinden yeni bir tür olarak tanımlandı (Türkiye). Kalkerli bozkırlar üzerinde 1700-1750 metreler arasında gelişen bitki 2 adresten toplandı. Yeni tür *Silene pharnaceifolia* Fenzle yakındır. Türler arasındaki farklar tartışıldı.

Anahtar sözcükler: Bayburt, *Caespitosae*, *Silene*, sistematik, taksonomi

Introduction

Silene L. is the largest genus in the family Caryophyllaceae. It comprises ca. 700 species and occurs in N temperature regions, Africa, and South America (Melzheimer, 1988). South-west Asia is one of the main centres of diversity for the genus, which is represented by 143 species in Turkey (Coode & Cullen, 1967; Davis et al., 1988, Greuter, 1995; Tan & Vural, 2000; 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).

The authors collected some interesting *Silene* specimens from Bayburt (north-east of Turkey) during a project, supported by TÜBİTAK, to revise Turkey's *Senecio* L. taxa (Asteraceae). These specimens were compared to specimens of related species in the herbarium of BOZOK and to records in the literature (Boissier, 1867; Chater & Walters, 1964; Rechinger, 1964; Zohary, 1966; Coode & Cullen, 1967; Pignatti, 1982; Shishkin, 1985; Melzheimer, 1988; Greuter, 1997). The studies showed that these specimens are representatives of a species new to science (Figure).

* E-mail: erginhamzaoglu@yahoo.com

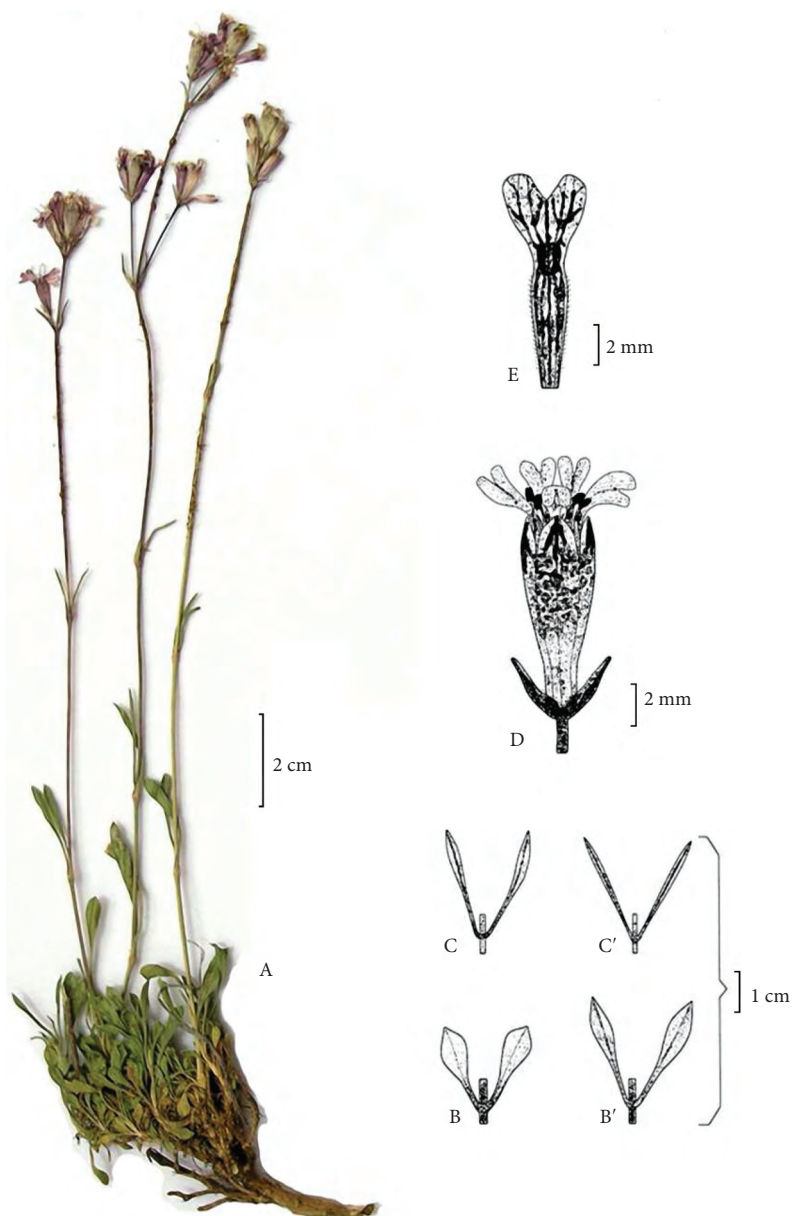


Figure. *Silene bayburtensis*, A-Habit, B & B'-Basal leaves, C & C'-Lower cauline leaves, D-Flower and bracteoles, E-Petal.

Species description

Silene bayburtensis Hamzaoglu & Aksoy sp. nov. (Figure).

(Sect. *Caespitosae* Chowdh.)

Type: Turkey. Bayburt: between Çayır yolu and Kitre villages, 1700 m, rocky slopes on calcareous steppe, 13.vi.2007, *Hamzaoglu 4587, Aksoy & Budak*

(holotype: BOZOK Hb., isotypes: BOZOK Hb., GAZI, ANK, HUB).

Diagnosis: Affinis *Silene pharnaceifoliae* Fenzl sed foliis basalibus lineari-oblongatis ad spatulatis et 14-32 × 1.5-4.5 mm (non linearis ad angustoblongatis et 8-16 × 1-2 mm); inflorescentiis dichasiorum vel subcapitatorum plerumque rigidis, compositis (non racemosiorum vel floribus solitaris);

pedicellis tenuibus ca. 2 mm (non 2-18 mm); petalis lobis profunde (non emarginatis); anthophoriis 2.4-3.1 mm (non 1-2 mm); capsulis calycibus exsertis (non insertis) differt.

Description: Caespitose perennial, with many sterile shoots at the base. Flowering stems 10-30 cm tall, erect, usually simple, slender, 2-4-noded, retrorsely puberulous below, puberulous and viscid above. Basal leaves linear-oblong to spatulate, 14-32 × 1.5-4.5 mm, apex acute, base attenuate into short petiole, both surfaces puberulous, margin ciliate at the base, 1-veined or venation obscure. Cauline leaves similar, but gradually smaller than basal leaves, linear-oblong to linear-lanceolate, few and remote, sessile, sometimes with sterile axillary branches. Inflorescence usually strict compound dichasia to subcapitate, 3-15-flowered, puberulous and viscid. Bracts linear-lanceolate, sparsely to densely puberulous, margin membranaceous and ciliate especially at the base. Peduncles 2-23 mm long, puberulous and viscid. Bracteoles similar, but lanceolate-ovate and gradually smaller than bracts. Pedicels up to 2 mm, puberulous. Calyx 10-nerved, 6-9 mm long, cylindrical-campanulate to campanulate-clavate, whitish-purple, sparsely to densely puberulous; teeth broadly ovate to triangular, ca. 2 × 2 mm, obtuse to ± acute, with broadly membranaceous and densely ciliate margin. Anthophore 2.4-3.1 mm long, glabrous. Petal purplish-pink, 10-12 mm long; limb broadly obovate, 3.5-4.5 mm long, distinctly divided to ca. 2/5; lobes broadly oblong, ca. 2 × 2 mm; claw elliptic-oblong, slightly exserted beyond calyx, 6-7 × 1.5-1.8 mm, pilose, not auricled; coronal scales 2, oblong, 0.5-0.7 mm long, rounded at tip. Stamens and styles slightly exserted from the calyx; filaments usually glabrous or sometimes sparsely pilose. Styles 3.5-7 mm long. Capsules narrowly ovate, 5-7 × 2.5-3.5 mm, exserted from the calyx. Seeds brownish, usually orbicular-reniform or rarely oblong, 1.1-1.6 mm long, flattened, rugulose.

Fl. & Fr. 6-7, rocky slopes on calcareous steppe, 1700-1750 m.

Specimens examined: *Silene bayburtensis* – A8 Bayburt: Demirözü, between Gökçedere and Bizgili villages, 1750 m, calcareous steppe, 15.vi.2007, *Hamzaoğlu 4652, Aksoy & Budak* (BOZOK Hb.); Bayburt: between Çayryolu and Kitre villages, 1700

m, rocky slopes on calcareous steppe, 04.vii.2007, *Hamzaoğlu 4720, Aksoy & Budak* (BOZOK Hb.). *Silene pharnaceifolia* – C5 Niğde: Ulukışla, Maden, north of Karagöl, 37°24'30"N – 34°33'32"E, 21.vi.2009, *M.Koç 354, Hamzaoğlu & Budak* (BOZOK Hb.).

Conservation status: The species is currently known from 2 populations. The distance between these 2 populations is approximately 5 km and each of them occupies an area of maximum 10 km². Both locality populations in both are vulnerable to anthropogenic impact. Informal grazing and land-use changes could have a detrimental impact in the future. For this reason we consider *Silene bayburtensis* to be "Critically Endangered (CR)", and recommend that the World Conservation Union (IUCN) conservation status of "CR (B1)" be allocated to this species (IUCN, 2001).

Distribution and ecology: *Silene bayburtensis* was collected in 2 different localities in Bayburt. In these localities, steppe formation is pre-dominant, growing on calcareous rocks. In Bayburt and vicinities, Continental-Mediterranean transition climate is pre-dominant (Akman & Daget, 1971). *Silene bayburtensis* is adapted to this habitat and climatic conditions and grows together with the taxa of *Thymus pubescens* Boiss. & Kotschy subsp. *pubescens*, *Astragalus lagopodioides* Vahl, *Festuca oreophila* Markgr.-Dann., *Achillea schischkinii* Sosn., *Koeleria macrantha* (Ledeb.) Schult., *Bromus tomentellus* Boiss., *Stachys lavandulifolia* Vahl subsp. *lavandulifolia*, and *Astragalus microcephalus* Willd.

Etymology: The city of Bayburt is in the north-east of Turkey near the Çoruh River and it is a settlement area. The name of the city is given to the plant described here as a species.

Discussion and conclusion

Silene bayburtensis is closely related to *Silene pharnaceifolia*. It differs from *S. pharnaceifolia* by its basal leaves linear-oblong to spatulate and inflorescence usually strict compound dichasia to subcapitate. More differentiating characters are given in the Table. *Silene pharnaceifolia* is distributed in Mersin, Konya, and Adana, and is endemic (Coode & Cullen, 1967).

Table. Diagnostic characters of *Silene bayburtensis* and *S. pharnaceifolia*.

	<i>S. bayburtensis</i>	<i>S. pharnaceifolia</i>
Basal leaves	linear-oblongate to spatulate, 14-32 × 1.5-4.5 mm	linear to narrowly oblongate, 8-16 × 1-2 mm
Inflorescence	usually strict compound dichasia to subcapitate	racemose or flowers solitary
Pedicel	up to 2 mm long	2-18 (-23) mm long
Anthophore	2.4-3.1 mm long	1-2 mm long
Petal	distinctly divided to ca. 2/5	emarginate
Capsule	exserted from the calyx	included in the calyx

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