

## *Verbascum yurtkuranianum* (Scrophulariaceae), a new species from northwest Anatolia, Turkey

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*Verbascum yurtkuranianum* Kaynak, Daşkın & Yılmaz *sp. nova* is described and illustrated from northwest Anatolia, Turkey. It is closely related to *V. bugulifolium*, from which it differs mainly in the shape of leaves, color, corolla diameter and capsule shape.

Key words: new species, Scrophulariaceae, taxonomy, *Verbascum*

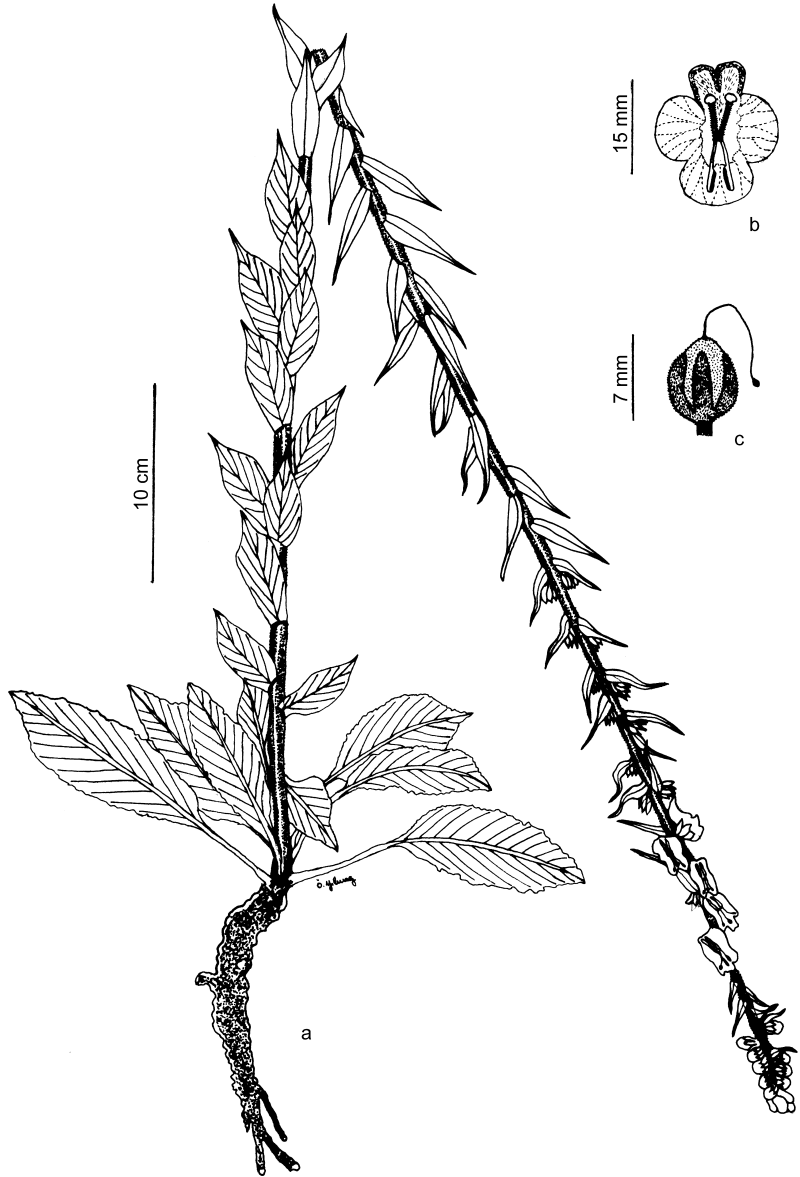
Anatolia is one of the main centers of diversity for the genus *Verbascum* (Scrophulariaceae). It is represented with 235 species and 126 hybrids in Turkey, and 198 of the species are endemics. The endemism percentage is thus approximately 84%.

Huber-Morath (1978) revised *Verbascum* for the *Flora of Turkey*. Since then five new species have been described from Anatolia: *V. basivellatum*, *V. pumiliforme*, *V. transolympicum*, *V. gypsicola* and *V. tuna-ekimii* (Davis *et al.* 1988, Ekim 2000, Karavelioğulları *et al.* 2004). *Verbascum alpigenum* was later added to the flora and seven new hybrids have been described from the country (Davis *et al.* 1988, Ekim 2000, Sutory 2004).

*Verbascum* is taxonomically difficult and has included *Celsia* and *Staurophragma*. The number of stamens, whether the placenta is sessile or stipitate, the shape of capsules, and the number of flowers in each bract have been used as diagnostic characters among the genera *Staurophragma*, *Celsia* and *Verbascum* (Murbeck 1925, Huber-Morath 1971). According to Huber-Morath (1978), however, *Celsia* and *Staurophragma* should be included in *Verbascum*.

*Verbascum* was divided by Huber-Morath in artificial groups A to M, and all the species belong to sect. *Bothrospermae* (Huber-Morath 1971, 1978). Group A comprises the species with four stamens, including *Celsia* and *Staurophragma*. Our new species also belongs in group A.

In 2003, we collected some unusual specimens of *Verbascum*, during a study of the flora and the vegetation of Katırlı Mountains to the north of Bursa province. After a careful examination of this material in the herbarium ANK and GAZI, we noticed that the material differed from all known Turkish *Verbascum* species in having a violet corolla. In addition, we checked descriptions of *Verbascum* species in *Flora of Turkey* (Huber-Morath 1978, Davis *et al.* 1988, Ekim 2000), *Flora Europaea* (Ferguson 1972), *Flora of Cyprus* (Meikle 1985), *Flora Palaestina* (Feinbrun-Dothan 1978) and *Flora Iranica* (Huber-Morath 1981) and some other relevant publications (Murbeck 1925, 1939, Karavelioğulları 2004). Thorough studies and comparison with the material of similar taxa showed that our specimens represented a species new to science.



**Fig. 1.** *Verbascum yurtkuranianum* (from the holotype). — **a:** Habit. — **b:** Corolla. — **c:** Capsule.

***Verbascum yurtkuranianum* Kaynak, Daşkın & Yılmaz, sp. nova (Fig. 1)**

*Affinis V. bugulifolio*, sed *foliis basalibus ovatis vel ovato-oblongis*, 6–15.5 × 2–6.5 cm (non 2.5–8 × 1–3 cm); *foliis caulinis ovato-oblongis, basi cuneatis, apicem acuminatis*, 3–6 × 1–2 cm (non 1.7–2 × 0.4–1.3 cm); *corollis violaceis*, 15–20 mm diam. (non *luteolis ad caerulea-viridibus*, 20–35 mm diam.) *differt*.

TYPE: Turkey. [A2] Bursa: Gürsu, Gürsu-Ericek, entrance of Ericek village, 40°19'01''N, 29°15'35''E, 689 m, 4.VI.2003 G. Kaynak, R. (Günay) Daşkın, Ö. Yılmaz, E. Erdoğan 16079 (holotype BULU; isotypes ANK, GAZI).

Biennial, 90–107 cm, glabrous below, densely covered with long glandular hairs above. Stem solitary, erect, simple or branched, robust, angular, sulcate. Basal leaves long petiolate, lamina ovate-oblong to broadly ovate, 6–15.5 × 2–6.5 cm, crenate, upper and lower surfaces gla-

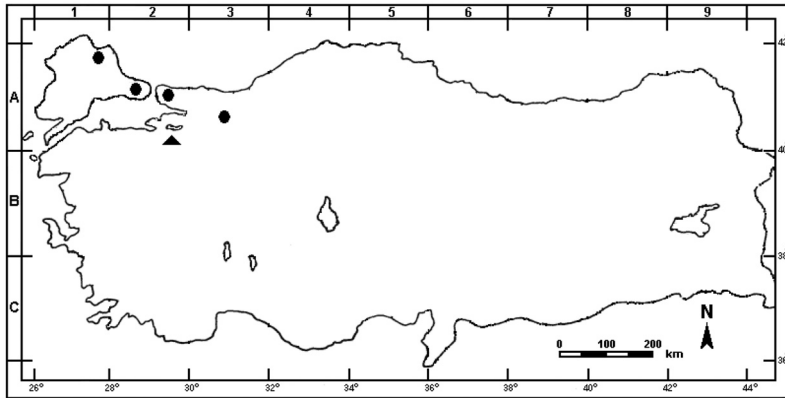


Fig. 2. Distribution map of *Verbascum yurtkurianum* (▲) and *V. bugulifolium* (●) in Turkey.

brous, petiole 3–12.5 cm. Cauline leaves ovate to oblong, sessile, cuneate or broadly cuneate at base, prominently long acuminate, 3–6 × 1–2 cm, entire, upper and lower surfaces densely glandular hairy. Inflorescence unbranched or branched, lax, cylindrical, 60–70 cm, many-flowered, densely glandular hairy. Bracts similar to cauline leaves but smaller, 10–50 × 1.5–10 mm, long-acuminate, entire, upper and lower

surfaces with glandular hairs. Each bract with a single flower, ebracteolate. Pedicels glandular hairy, ascending to erect, up to 6 mm. Calyx 6–13 mm, asymmetrically divided almost to base into 2 ovate-lanceolate and acute lower lobes, others narrower, with dense glandular hairs outside and inside. Corolla violet, rotate, 15–20 mm diam., tube 2 mm, sparsely glandular hairy outside, lobes unequal, lower lobe white with

Table 1. Morphological comparison of *Verbascum yurtkurianum* and *V. bugulifolium*.

Characters	<i>V. yurtkurianum</i>	<i>V. bugulifolium</i>
Plant height	90–107 cm	15–75 cm
Stem	angular, sulcate, simple or branched	terete or subangular, simple or few branches
Basal leaves	ovate-oblong to broadly ovate, crenate, 6–15.5 × 2–6.5 cm	ovate or triangular-ovate, subentire or crenate, 2.5–8 × 1–3 cm
Cauline leaves	ovate to ovate-oblong, cuneate or broadly cuneate at base, prominently long-acuminate, entire, 3–6 × 1–2 cm	much smaller, bract-like, entire or denticulate, 1.7–2 × 0.4–0.8(1) cm
Inflorescence	unbrached or branched, cylindrical, lax	simple, cylindrical, lax, few-flowered
Bracts	similar to cauline leaves but smaller, entire, long-acuminate, prominently longer than calyx, 10–50 mm	oblong to linear-lanceolate, entire, 7–14 mm
Pedicel	4–7 mm, ebracteolate	2–4 mm, ebracteolate
Calyx	6–13 mm, 2 lower lobes ovate-lanceolate, others narrower	4–8 mm, 2 lower lobes oblong to ovate, others narrower
Corolla	purple, 15–20 mm diam., sparsely glandular outside, lower lobes white with purplish lines, emarginate at apex	yellowish to bluish green, 20–35 mm diam., glandular outside, upper lobes with purplish lines
Stamens	2 posterior filaments woolly up to anthers, wool whitish-violet	2 posterior filaments with whitish yellow and purplish violet wool
Anterior anthers	2 anterior filaments woolly at base and half apex glabrous, anthers decurrent, 4.5–5 mm	2 anterior anthers decurrent, 4–5 mm
Capsule	densely glandular, broadly ellipsoid to subglobose, 5–7 × 5–6 mm	densely covered with glandular and eglandular hairs, broadly ellipsoid, 5–8 × 4–6 mm
Flowering time	May–June	April–June

purplish lines, orbicular, emarginate at apex. Stamens 4, 2 posterior filaments with whitish-violet woolly up to anthers, 2 anterior (lower) ones woolly at base, glabrous near apex and anthers of anterior filaments longitudinally decurrent, 4–5 mm. Anthers of 2 posterior filaments medifixed, yellowish woolly, invisible. Ovary 2 mm, densely glandular hairy. Stylus filiform, 0.5–1 cm, curved, sparsely glandular hairy to glabrous; stigma 0.2 mm, almost glabrous. Capsule ovoid to globose, 5–7 × 5–6 mm, densely covered with glandular hairs. Seeds 0.8 mm, angular, rugose, black. Flowering in April–May, fruiting in June–July.

**ETYMOLOGY:** We have named this new species in honor of Prof. Dr. Mustafa Yurtkuran (Rector of Uludağ University), to whom we are grateful for his support in our field study at Katırlı Mountains.

**DISTRIBUTION.** The new species is endemic to northwest Anatolia and known only from the type locality. The population is not in a good condition and approximately 25 stands are present in the distribution area. It is threatened by agricultural activity. *Verbascum yurtkurianum* is closely similar to *V. bugulifolium*. The species have simple hairs, solitary flowers in each bract and four fertile stamens. *Verbascum bugulifolium* is distributed around Kırklareli, Istanbul, Yalova and Adapazari province (northwest Anatolia). It grows in bush land, waste places and maquis, at up to 450 m altitude (Huber-Morath 1978, Kaynak 1997). *Verbascum yurtkurianum* is distributed in the south part of the same region and grows in open places and along roadsides, up to 700 m altitude (Fig. 2). Table 1 provides a morphological comparison of the two species.

**SELECTED EXAMINED SPECIMENS** of *V. bugulifolium*: **Turkey.** A1 Kırklareli: Demirköy-Igneada, Mert Lake-Saka Lake, 20–25 m, around Longoz nursery, *F. Karavelioğulları 3411* (GAZI); Demirköy-Igneada, entrance of Hamam lake road, 40–50 m, *F. Karavelioğulları 3413* (GAZI); Demirköy-Igneada, around Avcılar, 20 m, Longoz forest, *F. Karavelioğulları 3416* (GAZI). A2 Istanbul: Riva, *Tournefort 756* (holotype, P-Tourn., photo); Sariyer, Bogaziçi, *H. Dingler* (ANK); Penpasaköy, around Ömerli dam, 250–300 m, *G. Ertürk* (GAZI). A2 Bursa: Gemlik, between Armutlu-Armutlu thermal spring, 215 m, *G. Kaynak 6914* (BULU). A3 Adapazari: Hendek-Pasaköyü, 50 m, *M. Aydogdu 702* (ANK).

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