

Historical Background and Taxonomical Remarks of *Verbascum salgirensis* Soldano (Scrophulariaceae)

Verbascum salgirensis Soldano (Scrophulariaceae) Türünün Tarihsel Geçmişi ve Taksonomik Değerlendirmesi

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ABSTRACT

This study reassesses the taxonomic and nomenclatural history of *Verbascum salgirensis* Soldano in Türkiye and adjacent regions, tracing the species' name lineage back to its early misapplications under the illegitimate name *V. spectabile* M.Bieb. Drawing on extensive herbarium research, historical literature, and morphological data, we clarify the typification of *V. salgirensis*, designate a lectotype, and provide a comprehensive morphological description. Furthermore, our investigation reveals that *V. spectabile* var. *isandrum* Hub.-Mor., previously regarded as an infraspecific variant of *V. spectabile*, represents a distinct species. Accordingly, we propose the new combination and status *Verbascum isandrum* (Hub.-Mor.) Çingay & Demir comb. et stat. nov.

Keywords: *Verbascum*, Scrophulariaceae, Lectotypification, *Verbascum salgirensis*, *Verbascum isandrum*

ÖZ

Bu çalışmada, geniş kapsamlı herbaryum araştırmaları, literatür ve morfolojik veriler doğrultusunda, *Verbascum salgirensis* Soldano türünün taksonomik ve isimlendirme geçmişi yeniden değerlendirilmiştir. Bu kapsamda, *V. salgirensis* türünün tipifikasyonu açıklığa kavuşturulmuş, bir lektotip tayin edilmiş ve kapsamlı bir morfolojik betimi sunulmuştur. Ayrıca, yapılan bu çalışmalar kapsamında daha önce *V. spectabile* türünün bir varyetesi olarak kabul edilen *V. spectabile* var. *isandrum* Hub.-Mor. taksonunun aslında ayrı bir tür olduğu ortaya koyulmuştur. Bu doğrultuda, *Verbascum isandrum* (Hub.-Mor.) Çingay & Demir comb. et stat. nov. şeklinde yeni bir kombinasyon ve statü önerilmiştir.

Anahtar Kelimeler: *Verbascum*, Scrophulariaceae, Lektotipifikasyon, *Verbascum salgirensis*, *Verbascum isandrum*

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INTRODUCTION

Genus *Verbascum* L. (Linnaeus, 1753) (excl. *Celsia* L. [Linnaeus, 1753]) (Scrophulariaceae, vel Plantaginaceae sensu APG 2016 [Chase et al., 2016]) has 540 species (744 with hybrids) from all over the world (WFO, 2024). *Verbascum* is known to grow naturally in the northern hemisphere, particularly in regions such as Anatolia, the southern Balkans, the Middle East, the Caucasus, and northwestern Iran, which exhibit the most remarkable diversity of *Verbascum* taxa (Murbeck, 1939; Zografidis, 2016).

Verbascum is on the top ten list of the species richest genera of vascular plants in Türkiye, containing 261 species and 111 hybrids (Huber-Morath, 1978). *Verbascum* has many endemic taxa (with 199), and the endemism ratio is around 76% in Türkiye (Çeçen et al., 2015; Çeçen, 2024; Çingay & Karavelioğulları, 2016; Çingay et al., 2018; Demir et al., 2021; Duman et al., 2017; Duman et al., 2020; 2021; Duran, 2023; Fırat, 2015; 2017a; 2017b; 2022; Güner et al., 2012; Karavelioğulları, 2015; Karavelioğulları et al., 2014a; 2014b; Ulukuş et al., 2020; Uzunhisarcıklı & Koç, 2020).

V. salgirensis Soldano (synonym: *V. spectabile* M. Bieb. [Marschall von Bieberstein, 1819], non Salisb. [Salisbury, 1796]) is complex and has confused botanists because of its nomenclatural and taxonomic problems. A great deal of attention has been directed towards the taxonomy of this species in Türkiye, Krym, and the Caucasus, partly due to the considerable morphological variability these plants exhibit. This attention could not prohibit numerous specialists from using the illegitimate name of *V. spectabile* instead of *V. salgirensis* (Boissier, 1879; Fedtschenko, 1997; Murbeck, 1925; Grossheim, 1967; Ferguson, 1972; Huber-Morath, 1978; Sotoodeh, Attar, & Civeyrel, 2015; 2016; Çingay et al., 2018; Özler, 2019).

The history of *V. salgirensis* started when M. Bieb (Marschall von Bieberstein, 1819) (Figure 1) published the name *V. spectabile* in the 3rd edition of Flora Taurico-Caucasica where he provided a short diagnosis (*V. foliis cordatis crenatis supra villosis subtus tomentosis: radicalibus petiolatis, racemis elongatis hirsutis, pedicellis subgeminis fructiferis calyce sublongioribus erectis, germinibus lanatis*), a detailed morphological description, and the provenance ("Tauriae") which corresponds to the rugged terrain of Sobla, near the springs of the river Salgir, in the mountains above Ulu-Ufen (Southern Crimea).

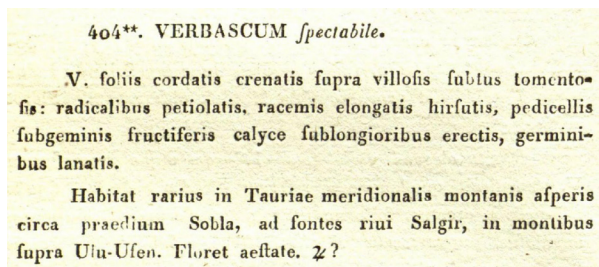


Figure 1. Protologue of the name of *V. spectabile* M. Bieb. (Marschall von Bieberstein, 1819).

V. spectabile Salisb. was first introduced as an accepted name of the *V. thapsus* L. (Salisbury, 1796) (Figure 2). *V. thapsus* L. is the correct name and the earliest legitimate one, holding the same rank as the heterotypic synonym *V. spectabile*, which was indexed in Supplement IV of Index Kewensis, Second Volume (Jackson, 1895).

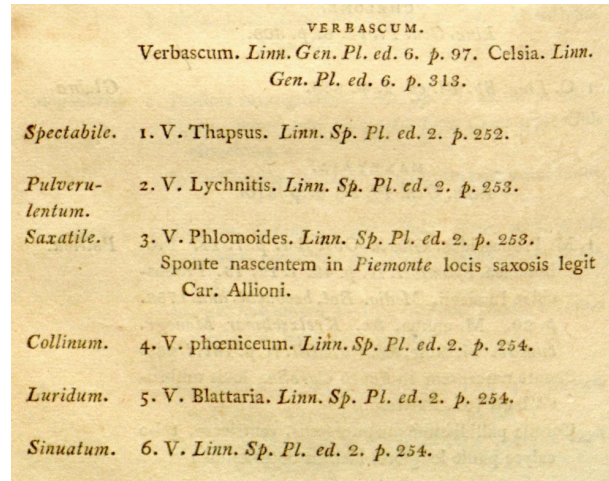


Figure 2. Protologue of the name of *V. spectabile* Salisb. (Salisbury, 1796).

V. spectabile M. Bieb. was deemed illegitimate by Soldano (1991) because it did not meet the requirements for valid publication under Article 33.1 of the International Code of Nomenclature. This rule states that a name must be explicitly accepted, and all conditions for valid publication must be fulfilled at the time of publication, since the earlier name *V. spectabile* Salisb. already existed, and Bieberstein's name was considered illegitimate. To resolve this issue, Soldano (1991) introduced *V. salgirensis* as a new name (nomen novum), referring to the Salgir River region in Crimea, where the species was initially discovered.

Despite resolving the nomenclatural issue, Soldano (1991) did not cite any type specimen for *V. salgirensis* in his study or provide a detailed morphological description of the species. This omission created further ambiguity regarding the taxonomic clarity of the species. In this study, we addressed these gaps by providing an enlarged and comprehensive morphological description to better define the species' diagnostic features. While the primary focus of this investigation was to clarify the historical and taxonomic status of *V. salgirensis*, preliminary examinations revealed that *V. spectabile* var. *isandrum* Hub.-Mor. may represent a distinct species rather than a mere infraspecific variant. Consequently, the scope of this study was extended to include a critical reassessment of *V. isandrum*.

MATERIALS AND METHODS

This study examined the herbarium specimens, type material, and associated literature of *V. salgirensis* Soldano and *V. isandrum* comb. et stat. nov. Herbarium specimens were

reviewed from collections held at the following herbariums: ANK, HUB, ISTE, LE, MW, P, and W. All specimens were examined either in person or through high-resolution digital images obtained from the Global Biodiversity Information Facility (GBIF, 2024) and virtual herbarium platforms.

The descriptions in this study were primarily based on the analysis of herbarium specimens through detailed morphological treatments. Relevant key literature, including Marschall von Bieberstein (1819), Grossheim (1967), Huber-Morath (1978), Soldano (1991), and Fedtschenko (1997), was used to supplement and refine the descriptions.

The selection and designation of the lectotype followed the principles and guidelines of the *International Code of Nomenclature for algae, fungi, and plants* (Shenzhen Code, Turland et al., 2019, ICN hereafter).

RESULTS AND DISCUSSION

***Verbascum salgirensis* Soldano, Atti Soc. Ital. Sci. Nat. Mus. Civico Storia Nat. Milano 131(15): 254 (1991)**

Lectotype:—CRIMEA. In Taurius meridionalis montanis asperis circa praedium Sobla, ad fontes rivi Salgir, in montibus supra Ulu-Ufen, 1816, C. von Steven (LE 01179646[digital image!]) (Figure 3) (*lectotypus hic designatus* / lectotype designated here).

Synonym:—*V. spectabile* M. Bieb. (non Salisb.), Fl. Taur-Caucas. 3: 158 (1819).

Notes: Huber-Morath (1978) cited the syntypes of *V. spectabile* M. Bieb (synonym of *V. salgirensis*) as “[Crimea] in Taurius meridionalis montanis asperis circa praedium Sobla, ad fontes rivi Salgir, in montibus supra Ulu-Ufen, 1807 & 1813, Steven (LE).” However, after consulting Ivan Tatanov, the Curator of the Caucasian Section of the Herbarium LE at the Komarov Botanical Institute, we were informed that only a single specimen collected by C. von Steven in 1816 represents *V. salgirensis* (as *V. spectabile*) at the LE Herbarium. Based on this clarification, we revised the type information and designated this specimen (LE 01179646[digital image!]) as the lectotype.

Description: Biennial. Plant greyish green throughout soft-lanate in the lower part and multicellular glandular hairy or rarely eglandular hairy (the sample of collected A. Huber-Morath (14757) where is the province of Giresun in Türkiye) above. Basal leaves with 2-8(-12) cm long petioles, lamina (5-)-8-20 × (2-)-5-8 cm, lanceolate, oblong or oblong-ovate with cordate base, coarsely crenate or bicrenate, both surfaces green, sparsely covered with branched hairs, obtuse. Stem (33-)-50-125 cm tall, erect, leafy, cylindrical, usually simple, rarely sparsely puberulent towards apex. Cauline leaves alternate, 2.5-6 × 0.5-3 cm (gradually decreasing in size distally); middle cauline leaves sessile or subsessile, lanceolate to linear-lanceolate, crenulate or rarely entire, acute; upper cauline leaves triangular-ovate or lanceolate, crenulate, lower surface usually tomentose, acute. Inflorescence dense



Figure 3. Original specimen of the *V. salgirensis* Soldano (LE 01179646[digital image!]).

cylindrical, inflorescence axis with viscid hairs, glandular as well as simple; flowers solitary in axils. Lower bracts 9-27 × 3-10 mm, linear-lanceolate, entire, acuminate; upper ones 5-10 × 3-8 mm, linear, entire, acute; all covered with glandular and simple hairs. Pedicels slender, 5-9.5 mm long, without bracteoles. Calyx radially symmetric, campanulate, 5-7(-10) mm, linear, divided almost up to base, all lobes viscid-glandular. Corolla yellow, 35-40(45) mm diam, abaxial lobes 3, adaxial lobes 2, broadly obovate to suborbicular, lobes 3-6 mm, pellucid glands almost absent, glandular and stellate-tomentose hairy outside, inside bases of upper lobes of limb reddish brown and covered with violet hairs. Stamens 5, inserted at the base of the corolla, (2.5)3-5 mm. Filaments 2-3 mm, dark violet with purple-violet hairs; Anthers 4-6 mm, anthers of anterior stamens oblong-ovate, long decurrent, two anterior glabrous near apex. Style 8-9 mm, filiform. Stigma 2 mm, spatulate. Capsule dehiscence septicidal, obovoid to elliptic-globose, (6-)-7-9(-10) × 5-7 mm, densely stellate-tomentose hairy, sometimes with a short beak.

Distribution and Habitat: Its native range is Krym, N. & NE. Türkiye to Caucasus. Rocky limestone slopes, *Quercus* scrub, pastures, 300-1990 m.

Phenology: May to August.

Additional specimens of *V. salgirensis* examined

—CRIMEA. Shebetovka, eastern slope of Papas-Tepe, deciduous forest, 20 v 1990, N. Shvedchikova (MW 0625559[digital image!]).

—CRIMEA. Alushta, Tuvaq (Рыбачье), 300 m, on the side of the highway, a steep bare slope, 19 v 1963 P. Smirnov (MW 0625547[digital image!]).

—CRIMEA. Nikitskaya Yayla, Southwestern part of the Nikitskaya Yayla, 1450 m, the slope of the crater has a northern exposure, the substrate is strongly stony 21 vi 1951, I. Krylova et T. Derviz (MW 0625574[digital image!]).

—CRIMEA. Chatyrdag, on the side of the road among beech-hornbeam forests, 6 vi 1960, G. Grosset (MW 0625540[digital image!]).

—CRIMEA. Karadag, in the plantings of the Crimean pine, 24 v 1990, N. Shvedchikova (MW 0625560[digital image!]).

—CRIMEA. Tauria, 1875, [s.n.] (P 03416378[digital image!], 03416379[digital image!]).

—RUSSIA. Krasnodar Krai, Primorsko-Akhtarsk, 18 vi 1963, Koroleva et Gluhova (MW 0714296[digital image!]).

—RUSSIA. Krasnodar Krai, Tuapsinskii, 100 m, 7 v 1991, Chernovol 1172 (MW 0714299[digital image!]).

—RUSSIA. Krasnodar Krai, t.p.g. Sochi, 30 v 2019, E.M. Gun'ko (MW 1008757[digital image!]).

—TÜRKİYE. Giresun: Tamdere Village, 2000 m, Mgf 10803 (ANK!).

—TÜRKİYE. Gümüşhane: Kürtün, Çıkrıküzü Plateau, 1930 m, forest upper-boundary, alpine meadow, 17 vii 2012, S. Yüzbaşıoğlu 3734 (ISTE 98096!).

—TÜRKİYE. Kastamonu: Tosya, Sekiler Village, Seki Stream, under the Gavunum Farm, Tilki Pınarı, 1500 m, 18 vi 1975, M. Kılınç 3474 (ANK!).

—TÜRKİYE. Giresun: 40. km of Giresun-Suşehri road, Dereli, 1700 m, fir forest, 2 viii 1977, M. Nydegger 12948 (P 03836032[digital image!]).

—TÜRKİYE. Giresun: Pastures near Tamdere Village, 1620 m, 6 vi 1958, A. Huber-Morath 14757 (HUB!).

***Verbascum isandrum* (Hub.-Mor.) Çingay & Demir comb. et stat. nov.**

Type:—TÜRKİYE. Karabük (Zonguldak with old name): Baklabostan to Yenice, 24 v 1970, H. Bozakman 769 et W.V. Fitzgerald (W[digital image!]).

Basionym:—*V. spectabile* var. *isandrum* Hub.-Mor., Notes Roy. Bot. Gard. Edinburgh 36: 22 (1978).

Notes: *V. spectabile* var. *isandrum* Hub.-Mor. was initially considered a variety of *V. spectabile* M.Bieb (a synonym of *V. salgirensis* Soldano). However, our detailed examination reveals that this taxon should be recognized as a separate species due to its distinct morphological characteristics. As a result, we have re-evaluated the ICN frameworks regarding *V. spectabile* var. *isandrum* Hub.-Mor. Moreover, we have proposed a new classification: *Verbascum isandrum* (Hub.-Mor.) Çingay & Demir, comb. et stat. nov.

A thorough morphological comparison revealed significant differences between *V. isandrum* and *V. salgirensis*, supporting its recognition as a distinct species. Key differences include glandular features (pellucid glands almost absent in *V. salgirensis* but present in *V. isandrum*) and anther morphology (*V. salgirensis*: anthers 4–6 mm with two anterior anthers decurrent; *V. isandrum*: anthers 1–3 mm, all reniform). Additionally, *V. salgirensis* produces elliptic-globose capsules, while *V. isandrum* has ovate capsules, both densely stellate-tomentose hairy. These distinctions justify the moving of *V. isandrum* to species rank, and we propose a new combination and status.

According to the *International Code of Nomenclature for algae, fungi, and plants* Article 58.1, any infraspecific taxon published under an illegitimate species name is also deemed illegitimate if published after January 1, 1953. Nevertheless, Articles 11.2 and 11.4 indicate that the priority of the epithet can still be upheld when transitioning to a new combination if there are no nomenclatural hindrances (Shenzhen Code, Turland et al., 2019, ICN hereafter). Therefore, despite the illegitimacy of *V. spectabile* M.Bieb. and its variety *V. spectabile* var. *isandrum* Hub.-Mor., the epithet “isandrum” remains available for creating a new species name (see also Art. 6.2 and 58.1).

Description: Biennial. 30–120 cm, articulate hairy below, multicellular glandular hairy or rarely eglandular hairy above. Basal leaves alternate, 10–20 x 5–10 cm, ovate-lanceolate, crenate, bicrenate, obtuse. Stem erect, terete usually simple. Petiole 3–15 cm. Cauline leaves alternate, gradually decreasing in size distally, sessile, 2.5–6 x 0.5–3 cm, lanceolate to linear-lanceolate, crenulate or entire, acute. Inflorescence, flowers solitary in axils at least distally, dense cylindrical. Lower bracts 0.9–16 x 0.3–10 mm, linear-lanceolate, entire, long acuminate. Upper bracts 0.5–10 x 0.3–0.8 mm, linear, entire, acuminate. Pedicels free, 0.5–20 mm, ebracteolate. Calyx radially symmetric, campanulate, 5–10 mm, linear, acute lobes. Corolla radially symmetric, rotate, with petals spreading to slightly deflexed or shallowly cupulate, abaxial lobes 3, adaxial lobes 2, broadly obovate to suborbicular, 30–40 mm diam, yellow, lobes 3–6 mm, with pellucid glands, glandular hairy and stellate-tomentose hairy outside, tube 1 mm length. Stamens 5, inserted at base of corolla, 3–5 mm. Filaments villous, 2–3 mm, purple-violet hairy, two anterior glabrous near apex. Anthers 1–3 mm, all anther reniform. Ovary 2-locular, placentation axile, 1–3 x 0.5–0.7 mm, ovate. Style 8–9 mm, filiform. Stigma 2 mm, spatulate. Capsule symmetric, dehiscence septicidal, ovate, 6–10 x 5–8 mm, densely stellate-tomentose hairy.

Distribution and Habitat: Its native range is Türkiye. Rocky limestone slopes, 100-1950 m.

Phenology: May to August.

Additional specimens of *V. isandrum* examined

—TÜRKİYE. Kastamonu: İnebolu, Özlüce, Cevizliyanı Village, 100 m, 31 v 1978, O. Ketenoglu 700 (ANK!). Özlüce, Cevizliyanı Village, 100 m, 31 v 1978, O. Ketenoglu 701 (ANK!).

—TÜRKİYE. Kastamonu: Tosya-Yağcılar Village, Kasanlık Stream (Yayla Stream), 1500 m, 12 vi 1975, M. Kılınç 3473 (ANK!) (determined as *V. spectabile* var. *spectabile* by Huber-Morath in 1976).

—TÜRKİYE. Karabük: Keltepe, near the top, 1950 m, 12 vii 1984, M. Demirörs 1939 (ANK!).

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