



***Verbascum ebubekirceylani* (Scrophulariaceae), a newspecies from Turkey**

Faik Ahmet KARAVELİOĞULLARI *¹

¹ Hakkari University, Yüksekova Vocational School, Sümbül Street, Hakkari, Turkey

Abstract

Verbascum ebubekirceylani Karavel. **sp. nov.** is described firstly for science world from Turkey. The diagnostic morphological characters of the this newspecies and the closely related other species *V. cariense* Hub.-Mor and *V. cilicicum* Boiss. are discussed. Moreover, distribution maps of newspecies and the related species of it are given.

Key words: *Verbascum*, Muğla, taxonomy, Turkey

----- * -----

Türkiye’den yeni bir tür *Verbascum ebubekirceylani* (Scrophulariaceae)

Özet

Türkiye’den bilim dünyası için *Verbascum ebubekirceylani* Karavel. tanımlanmıştır. Ayırıcı morfolojik karakterler yakın türlerle *V. cariense* Hub.-Mor. ve *V. cilicicum* Boiss. tartışılmıştır. Ayrıca yayılış haritaları yakın türlerle birlikte verilmiştir.

Anahtar kelimeler: *Verbascum*, Muğla, taksonomi, Türkiye

1. Introduction

The genus *Verbascum* L. (Scrophulariaceae) includes about 360 species in the world (Mabberley, 2008). In Turkey, with the additional 130 hybrids, the genus is represented by 246 species, which are divided into 13 partlyartificial groups. The endemism ratio of the genus is very high [with 195 endemicspecies (80%)] (Karavelioğulları, 2012, 2014a, 2014b).

The genus *Verbascum* have been divided into two sections namely sect. *Aulacospermae* Murb. and sect. *Bothrospermae* Murb. The most diagnostic characters of these two sections are seed morphology. In sect. *Aulacospermae*, the seeds are longitudinal corrugated, while in sect. *Bothrospermae* the are transversal corrugated alveolate. All Turkish species of *Verbascum*, belong to sect. *Bothrospermae* Murb. (Murberck, 1925, 1933; Huber-Morath, 1971).

The first revision of Turkish *Verbascum* was made by Huber-Morath for Flora of Turkey (Huber-Morath, 1978). Fourteen new species, six new hybrids and three new records for Turkey were added (Karavelioğulları 2012, 2014a, 2014b).

2. Mat Materials and methods

In 2004, taxonomic revision of the *Verbascum* group A was completed by Faik Ahmet Karavelioğulları in Turkey (Karavelioğulları and Aytaç, 2008). Then, during the field research studiosto Muğla province in 2006 (within the TÜBİTAK-HD-105T271 project) an unusual population of *Verbascum* was established. At the firstglance, it seemed to be close to *V. cariense* Hub.-Mor. and *V. cilicicum* Boiss. Were observed. The yare formally described here. All specimens were cross-checked with the keys provided by Huber-Morath (1978,1981) and the *Verbascum* accounts given in various relevant literatures such as Ferguson (1972), Fedchenko (1955), Feinbrun-Dothan (1978a, 1978b),

* Corresponding author / Haberleşmeden sorumlu yazar: Tel.: +9053624425 8; Fax.: +905362442598; E-mail: fakverbascum@gmail.com,

Meikle (1985) and Boulos (2009). As well as all specimens of this new species have been cross-checked with the material kept at various herbaria ANK,G and GB (Holmgren *et al.*, 1990). The abbreviations of the authors of plantnames were checked from Brummitt and Powell (1992) and <http://flwww.ipni.org/index.html>. Also, the threat category of the new species was evolved according to IUCN criteria (IUCN 2010).

3. Results

3.1. *Verbascum ebubekirceylani* Karavel. *sp. nov.* (Sect. *Bothrosperma* Murb.) – Figures 1 and 2. Ebubekir sığırkuyruğu.

Type: Turkey: C1 Muğla: Sandras Dağı, 1800-2050 m. 31.05.2006, *Pinus nigra* J.F. Arnold forest, rocky places, FAK 3900 (holo. GAZI, iso ANK).

Diagnosis: It differs from *V. cilicicum*, with oblong-lanceolate, acute, glandular calyx lobes (not oblong-linear, acute, sometimes sparse glandular); inflorescence with clusters only one flower. (not 1-4 flower); corolla glandular and eglandular hairy outside (not glabrous); stamens 4-5 (not 5); capsule glandular hairy (not stellate-tomentose). It differs from *V. carriense* with oblong-lanceolate, acute, glandular calyx lobes (not spatulate, obtus, glandular); inflorescence with clusters only one flower. (not with clusters 1-3 flower); corolla glandular and eglandular hairy outside (not glabrous); stamens 4-5 (5); capsule glandular hairy (stellate-tomentose, glabrescent)

Description: Biennial; 30-60 cm; numerous floccose-tomentose hairy below, densely glandular-eglandular hairy above. Basal leaves ovate to orbicular, 4-6 x 3-5 cm, irregular crenate, obtuse, with petiole 3-5 cm. Stem branched at base. Cauline leaves ovate, ovate-oblong, 2-3 x 1-2 mm, irregular crenate, obtuse. Inflorescence raceme, with clusters only one flower. Bracts oblong-lanceolate, crenate, acute, 2-3 x 1.5-2.5 mm. Pedicels 7-10 mm, ebracteolate. Calyx 2.5-3.5 mm, almost divided to the base, lobes oblong-lanceolate, acute, glandular. Corolla 10-15 mm diam, yellow, with pellucid glands, glandular and eglandular hairy outside; tube 1-2 mm length. Stamens 4-5, 2-3 mm. Filaments 1-2 mm, whitish yellow woolly, two anterior glabrous near apex. Anthers reniform, 0.5-1 mm. Ovary globose, 1-2 x 0.5-1 mm. Style filiform, 4-5 mm, capitate, stigma 1 mm. Capsule ovate, 3-4 x 2-3 mm, stellate and glandular hairy.

3.2. Phenology

Flowering from May to early July. Capsules ripening from the beginning of August.

3.3. Habitat

Rockly place, screen of *Pinus nigra* forest, 1800-2050 m.

3.4. Examined representative specimens

Verbascum carriense Hub.-Mor.

Type: [Turkey C2] **Denizli:** *Quercus*-macchie an der Strasse Kale Tavas-Muğla, 7 km Südlich von Kale Tavas, 1100 m, 5 vi 1938, *Reese* (Huber-Morath 5493!), holo. Hb. Hub.-Mor. !iso. Hb. Basler Bot. Ges. !); 25 km from Kale to Muğla, 1100 m, *Hub.-Mor.* 5594! (G!). **Antalya:** 13 km E. of Kalakn, 980 m, *Hub.-Mor.* 16529 (ANK!). **C1 Muğla:** 14 km from Milas to Yatağan, 450 m, *D.* 35024! *ibid.*, *Hub.-Mor.* 16527 (ANK!); Sandras Da., 1900 m, Fitz & Spitz. 751, *ibid.* 1600-1700 m. 31.05.2006, FAK 3940 (GAZI!).

Verbascum cilicicum Boiss.

Type: [Turkey C5 İçel] circaruinas castelli Gulek Boghas (Gülek boğazi), in Tauro Cilicico [a 10 lieues au nord de Tarsus, 25 vi 1855], *Balansa* 963 (holo. G!); *ibid.* 1000 m, *Siehe* 1896: 410; Niğde: Çiftehane to Alihoca, 1000 m, *Hub.-Mor.* 11802!, Adana: Pozanti to Osmancik Y., 1090-1250 m, *Hub.-Mor.* 15127! (ANK!).

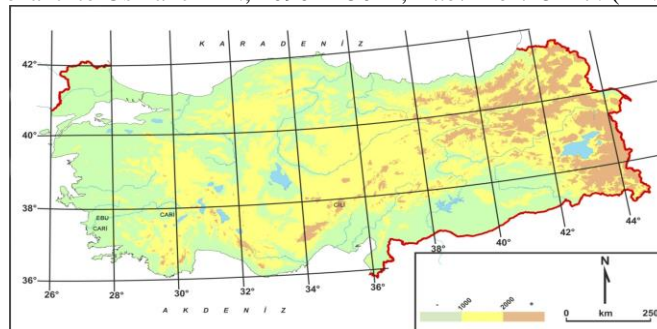


Figure 1. Distribution map of *V. Ebubekirceylani* (EBU), *Verbascum cilicicum* (CİLİ), *Verbascum carriense* (CARİ) in Turkey



Figure 2. *Verbascum ebubekirceylani* Karavel

3.5. Red list assessment

The extent of occurrence was nearly as 20 km². There two new species are distributed in a single location. *V. ebubekirceylani* grows on rocky place, *Pinus* forest. Its habitat continues to decline due to agricultural activities and other local uses (criteria B1ab (iii) under CR). The threat category of *V. Ebubekirceylani* is suggested as CR [B1ab (iii)].

3.6. Etymology

This is one of the new species named in honour of the eminent veterinarian and Rector of Hakkari University Prof. Ebubekir CEYLAN.

4. Results and Discussion

Table 1. Diagnostic characters of *Verbascum ebubekirceylani* with the related *V. cilicicum* and *V. caricense*

Characters	<i>V. ebubekirceylani</i>	<i>V. cilicicum</i> *	<i>V. caricense</i> *
Calyx	Lobes oblong-lanceolate, acute, glandular	lobes oblong-linear, acute, sometimes sparse glandular	Lobes spatulate, obtus, glandular
Inflorescence	With clusters only one flower.	With clusters 1-4 flower	With clusters 1-3 flower
Corolla	Glandular and eglandular hairy outside	Glabrous outside	Glabrous outside
Stamens	4-5	5	5
Capsule	Stellate and glandular hairy	Stellate -tomentose	Stellate -tomentose, glabrescent

* Hub.-Mor. 1978.

Acknowledgements

The authors thank to Curators of Herbaria ANK, GAZI who allowed them to study their *Verbascums* specimens, to Karel Sutorý for sending of some papers, to G and GB herbaria for sending some photos of the type specimens of *V. cilicicum* or *V. caricense* (GAZI, ANK).

References

- Boulos, L. 2009. Flora of Egypt Check list. Al-Hadara Publishing, Cairo.
 Brummitt, R.K., Powell, C.E. 1992. Authors of Plant Names. Kew: Royal Botanic Gardens, London.
 Fedchenko, B. A. 1955. *Verbascum* L. In: Schischkin, B.K. and Bobrow, E.G. (eds.), Flora of U.S.S.R. Vol. 22. Leningrad: Izdatel'stvo Akademii Nauk S.S.S.R., 132-197.

- Feinbrun-Dothan, N. 1978a. *Verbascum* L. In: Zohary, M. and Feinbrun-Dothan, N. (eds.), Flora Palaestina (Text). Vol. 3. Jerusalem: Academic Press, 282-302.
- Feinbrun-Dothan, N. 1978b. *Verbascum* L. In: Zohary, M. and Feinbrun-Dothan, N. (eds.), Flora Palaestina (Plates). Vol. 3. Jerusalem: Academic Press, 170-182.
- Ferguson, I.K. 1972. *Verbascum* L. In: Tutin, T.G. (ed.), Flora Europaea. Vol. 3, Cambridge Univ. Press, Cambridge, 775-814.
- Holmgren, P.K., Holmgren, N.H. 1990. Index Herbariorum. New York Botanical Garden, New York.
- Huber-Morath, A. 1971. Die Türkischen Verbasceen. Kommissionsverlag von Gebrüder Fretz A. G. Zurich.
- Huber-Morath, A. 1978. *Verbascum* L. In: Davis, P.H. (ed.), Flora of Turkey and the East Aegean Islands. Vol. 6. Edinburgh: Edinburgh Univ. Press, 461-603.
- Huber-Morath, A. 1981. *Verbascum* L. In: Rechinger, K.H. (ed.) Flora Iranica. Vol. 147. Graz: Akademische Druck-Verlagsanstalt, 1-51.
- IUCN (2010). IUCN RedList of Threatened Species. Version 8.1. IUCN, Gland, Switzerland.
- Karavelioğulları, F.A. and Aytaç, Z. 2008. Revision of the genus *Verbascum* L. (Group A) in Turkey. Botany Research Journal 1(1): 9-32.
- Karavelioğulları, F.A. 2012. *Verbascum* L. In: Güner, A., Aslan, S., Ekim, T., Vural, M. & Babaç, M.T. (eds.). Türkiye Bitkileri Listesi (Damarlı Bitkiler). Nezahat Gökyiğit Botanik Bahçesi ve Flora Araştırmaları Derneği Yayını, İstanbul, 850-870.
- Karavelioğulları, F.A., Yüce, E., Başer, B. 2014a. *Verbascum duzgunabadagensis* (Scrophulariaceae), a new species from eastern Anatolia, Turkey, *Phytotaxa* **181** (1): 047–053.
- Karavelioğulları, F.A., Vural, M., Şahin, B., Aslan, S. 2014b. İç Anadolu Bölgesi'nden (Türkiye) yeni bir tür: *Verbascum aydogdui* (Scrophulariaceae), *Bağbahçe Bilim Dergisi* 1(3): 63–71.
- Mabberley, D.J. 2008. Mabberley's plant-book (3th ed.). Cambridge University Press, Cambridge: XVIII + 1021.
- Meikle, R.D. 1985. *Verbascum* L. In: Meikle R.D. (ed.), Flora of Cyprus. Vol. 2. Kew: Royal Botanic Gardens, 1196-1200.
- Murberck, S. 1925. Monographie Der Gattung *Celsia*. Acta Universitatis Lundensis ser. 22(1): 1-239.
- Murberck, S. 1933. Monographie Der Gattung *Verbascum*. Acta Universitatis Lundensis ser. 29(2): 1-630.

(Received for publication 23 February 2015; The date of publication 15 August 2016)