

THE OBSERVATIONS ON *TEUCRIUM LEUCOPHYLLUM*  
MONTBRET & AUCHER EX BENTHAM (LAMIACEAE)  
ENDEMIC TO TURKEY

TÜRKİYE İÇİN ENDEMİK OLAN *TEUCRIUM LEUCOPHYLLUM*  
MONTBRET & AUCHER EX BENTHAM (LAMIACEAE) TÜRÜ  
ÜZERİNE GÖZLEMLER

Ali KANDEMİR\*

<sup>1</sup>Erzincan University, Education Faculty, 24030 Erzincan, TURKEY

Geliş Tarihi: 27.08.2009

Kabul Tarihi: 06.012.2010

**ABSTRACT:**

*Teucrium leucophyllum* Montbret & Aucher ex Bentham (Lamiaceae) was first collected in 1834 in Upper Euphrates by Montbret and Aucher. It is endemic and only known from this locality. In spite of investigations, it has not been recollected and thus has been evaluated as Extinct. This paper reports the re-discovery of *Teucrium leucophyllum* Montbret & Aucher ex Bentham (Lamiaceae) which was listed as Extinct (EX) according to the World Conservation Union Red List Categories. This study also provides the re-descriptions of this taxon, and presents field observations. In addition, new IUCN category is suggested for it.

**Key Words:** Erzincan, Lamiaceae, *Teucrium leucophyllum*, Turkey.

**ÖZET:**

*Teucrium leucophyllum* Montbret & Aucher ex Bentham (Lamiaceae) ilk olarak 1834 yılında Montbret ve Aucher tarafından Yukarı Fırat Havzasından toplanmış ve sadece bu lokaliteden bilinen endemik bir türdür. Uzun yıllar izine rastlanamayan bu türün yok olduğu kabul edilmiştir. Bu çalışmada, türünün yeniden toplandığı rapor edilmiş, deskripsiyonu yeniden yazılmış ve türe ait bazı gözlemlere yer verilmiştir. Ayrıca tür için yeni IUCN kategorileri önerilmiştir.

**Anahtar Kelimeler:** Erzincan, Lamiaceae, *Teucrium leucophyllum*, Türkiye.

\* Sorumlu yazar: [akandemir@erzincan.edu.tr](mailto:akandemir@erzincan.edu.tr)

## 1. INTRODUCTION

Species that are no longer known to exist in the wild, despite repeated searches of their former localities and other known or likely places, are defined as Extinct (EX) (IUCN, 2001).

*Teucrium leucophyllum* Montbret & Aucher ex Benth was first collected in 1834 in Upper Euphrates by Montbret and Aucher. It is endemic and only known from this locality. In spite of investigations, it has not been collected (Ekim, 1982). So, it was reported as extinct before (Ekim, Koyuncu, Vural, Duman, Aytaç & Adıgüzel, 2000). During an excursion near İlic/Erzincan in June 2009, the specimens of the *T. leucophyllum* were re-found. They were checked as to whether they were *T. leucophyllum* by using Flora of Turkey (Ekim, 1982). The specimens were also confirmed with type specimens in Kew Herbarium (K). The specimens are kept in the herbarium of Erzincan University and İSTE.

*Teucrium leucophyllum* Montbret & Aucher ex Benth (Figure 1-3).

Suffruticose perennial. Stem 10-23 cm, many, ascending to erect, densely adpressed white-tomentose, internodes longer than leaves, sometimes equal to shorter below, Leaves linear-oblongate, 22-9 x 4-10 mm (incl.petiolo), tomentose on both side, discolorous, petiolate, rarely sessile, crenate at base, flat or revolute margined. Inflorescence a raceme; verticillasters 2-4 flowered; flowers sessile at young, distinctly pedicellate later; pedicels glandular hairy, shorter than calyx; bracts tomentose, upper bracts equal to shorter than calyx, entire, narrowly ovate, lower bracts similar to leaves but smaller. Calyx c. 8 mm, tubular-campanulate, canescent-tomentose with glandular hairs outside, long hairy in throat, divided to ¼ into subequal teeth. Corolla pink, 10-13 mm; lobes hairy outside and on midrib inside; tube equal or shorter than calyx, glabrous below, hairy above ; stamens 4, at least as long as upper lateral lobes, glabrous. Fl. 6. Crevices of limestone.

Type: B7 Erzincan in regione Euphratis-superioris, [1384, Montbret (W); Aucher 1592 (K!); Montbret 1836 (K!) ].

Examined specimens: *Teucrium leucophyllum* Montbret & Aucher ex Benth: B7 Erzincan: İlic, from İlic to Divriği, opposite

side of Bağıstaş, GPS record: (UTM) 37 451854 E, 4366315 N, 1200 m, 25.vi.2009, Kandemir 10112.- Type specimen of *Teucrium leucophyllum* Montbret & Aucher ex Bentham: Aucher 1592 (K); Montbret 1836 (K).



Figure 1. The type photo of *T. leucophyllum* (K) Figure 2. The photo of *T. leucophyllum* in nature

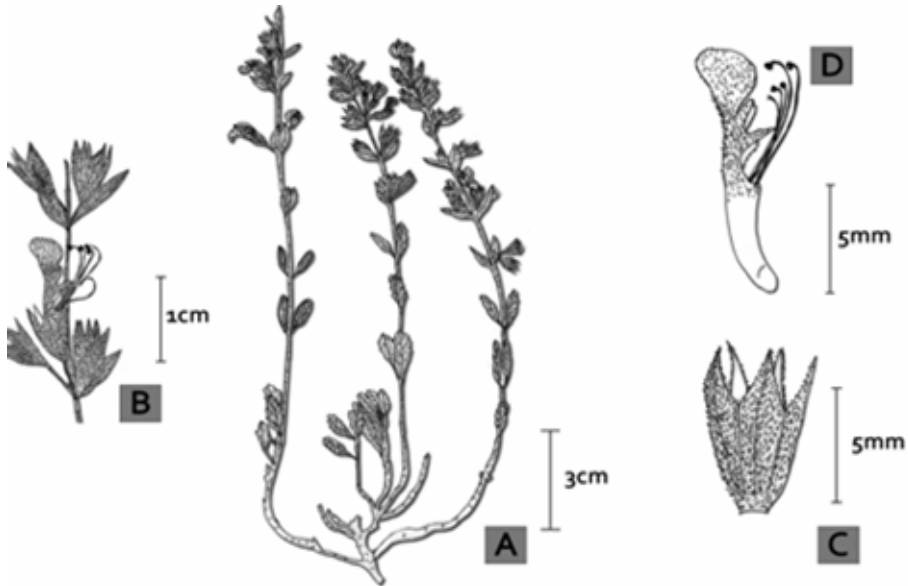


Figure 3. *T. leucophyllum* - A. general habit; B. verticillasters; C. calyx; D. corolla

Sixteen taxa were evaluated as Extinct in Turkey (Ekim et al., 2000; Özhatay et al., 2005). Seven of these taxa, namely *Barbarea auriculata* Hausskn. ex Bornm. var *auriculata*, *Centaurea psephelloides* Freyn & Sint., *Onobrychis nitida* Boiss., *Onosma affine* Hausskn. ex H.Riedl, *Onosma discedens* Hausskn. ex Bornm., *Silene oligotricha* Hub.-Mor. and *Verbascum calycosum* Hausskn. ex Murb. were collected in previous studies (Neydegger, 2000; Kandemir & Makbul, 2002; Aytac et al., 2005; Kandemir, 2009).

*T. leucophyllum* was re-discovered in the present study. The subsessil calyx had been used distinctive characteristic for the species in Flora of Turkey. In addition to this, the corolla is unknown; the leaves are concolorous and subsessil (Ekim, 1982). Our specimens have discolorous leaves and the leaves are petiolate to subsessil. The calyx is subsessil in young flowers and has distinctive pedicels in mature. The corolla is pink and 10-13 mm long. In this paper, when the species was re-identified, many specimens of the population were investigated. It is thought that quite few specimens were investigated when the species was identified in Flora of Turkey.

Measuring the level of threat to plant and animal species is very important to conservation efforts. The IUCN Red List categories and criteria, which were designed by The World Conservation Union (IUCN), are used to classify all plant and animal species. The categories of threat to species are especially crucial during conservation planning at the national and international level (IUCN, 2001).

The single population of *T. leucophyllum* in this study was found near the main road. It appears to be known only from the present locality and its estimated area of occupancy is less than 10 km<sup>2</sup> (criterion B). The population is small with less than 100 mature individuals (criterion C). Therefore, it should be classified as Critically Endangered (CR) based on the criteria of the IUCN Red List Categories (IUCN, 2001).

The major threats to biological diversity that result from human activity are habitat destruction, habitat fragmentation, habitat degrading, global climate change, the overexploitation of species for human use, invasion of exotic species, and the increased spread of

disease. Most threatened species face at least two or more of these problems (Primac, 2000). There are many species under threats in Turkey (Ekim et al., 2000). Most of them are restricted small geographic ranges as *T. leucophyllum* and under the major treats. Generally, the species with small geographic ranges tend to maintain less genetic diversity (Sözen & Özaydın, 2009). Small populations are subject to rapid extinction for three main reasons: loss of genetic variability and inbreeding depression, demographic fluctuations, and environmental variation including natural catastrophes. The combine effects to these factors have been compared to a vortex that tends to drive small populations to extinction (Primac, 2000). The investigations on genetic variations of *T. leucophyllum* and the species represented with small populations should be done in Turkey.

Conservation biology has three goals; first, to investigate and describe the biological diversity; second to understand the effects of human activities on species, communities, and ecosystems; and third, to develop practical interdisciplinary approaches to protecting (Primac, 2000). In Turkey, many good studies have been done on understanding the plant diversity. But, the most of them are related to first goal of conservation biology. In the studies in future much importance should be given to the other goals as well as the first.

## REFERENCES

- Aytaç, Z., Karavelioğulları, FA, Ekici, M. (2005). Yok olan (Ex) ve yetersiz veri (DD) basamağında bulunan bazı taksonlar ile ilgili veriler, *Ot Sistematik Botanik Dergisi*, 12, (1), 9-20.
- Ekim, T (1982). *Teucrium* L. In: Davis PH (ed.), *Flora of Turkey and the East Aegean Islands*, Vol. 7: 53-75. Edinburgh: Edinburgh Univ. Press.
- Ekim, T., Koyuncu, M., Vural, M., Duman, H., Aytaç, Z. & Adıgüzel, N. (2000). *Turkish Plants Red Data Book*. Ankara: Doğal Hayatı Koruma Derneği ve Yüzüncüyıl Üniversitesi.
- Kandemir, A (2009) The rediscovery of some taxa thought to have been extinct in Turkey, *Turk J Bot* 33, 113-122
- IUCN Survival Commission (2001). IUCN red list categories and criteria. Approved by the 51st meeting of the IUCN Council, version 3.1 Gland, Switzerland & Cambridge.

- Kandemir, A & Makbul, S (2004). Erzincan yöresinde yayılış gösteren bazı nadir bitki türleri üzerine gözlemler. *Erzincan Eğitim Fakültesi Dergisi*. 6 (2): 37-49.
- Neydegger-Hügli, M (2000). Elfte Ergänzungen zu P.H. Davis' Flora of Turkey and the East Aegean Islands. 1-10 (1965-1988). *Bahunia*. 14: 93-122.
- Özhatay, N, Andrew, B. & Atay, S (2005). *Türkiye'nin 122 Önemli Bitki Alanı*. İstanbul: Doğal Hayatı Koruma Vakfı.
- Primac, R. B. (2000). *A Primer of Conservation Biology*, Sinauer Associates Inc. Publishers, Massachusetts.
- Sözen, E. & Özeydin, B. (2009). A preliminary study on the genetic diversity on critically endangered *Centaurea nivea* (Asteraceae). *Ann Bot Fennici*. 46, 541-548.

\*\*\*\*