KSÜ Tarım ve Doğa Derg 28 (3), 793-796, 2025
KSU J. Agric Nat 28 (3), 793-796, 2025
DOI:10.18016/ksutarimdoga.1572378

New Ant (Hymenoptera: Formicidae) Species Discovery for Türkiye: *Emeryopone loebli* (Baroni Urbani, 1975)

Celal KARAMAN[1✉], Kadri KIRAN[2], Volkan AKSOY[3]
[1-3] Trakya University, Faculty of Science, Department of Biology, Balkan Campus, 22030, Edirne/Türkiye
[1]https://orcid.org/0000-0002-2158-5592, [2]https://orcid.org/0000-0001-7983-0194, [3]https://orcid.org/0000-0002-9543-4623
✉: celalkaraman@trakya.edu.tr

ABSTRACT
Emeryopone loebli (Baroni Urbani, 1975) is recorded in Türkiye for the first time in two different localities. These records are the fourth and northernmost documentation of the species. One of these two records was recorded by citizen scientists, thus showing the importance of citizen science.

Entomology

Research Article

Article History
Received : 23.10.2024
Accepted : 01.04.2025

Keywords
Ponerinae
New record
West Palearctic
Faunistic

Türkiye İçin Yeni Karınca (Hymenoptera: Formicidae) türü keşfi: *Emeryopone loebli* (Baroni Urbani, 1975)

ÖZET
Emeryopone loebli (Baroni Urbani, 1975) Türkiye'den ilk kez iki farklı lokaliteden kaydedilmiştir. Bu kayıtlar türün dördüncü ve en kuzeydeki dokümantasyonudur. Bu iki kayıttan biri vatandaş bilim insanları tarafından kaydedilmiş olup, vatandaş biliminin önemini göstermektedir.

Entomoloji

Araştırma Makalesi

Makale Tarihçesi
Geliş Tarihi : 23.10.2024
Kabul Tarihi : 01.04.2025

Anahtar Kelimeler
Ponerinae
Yeni kayıt
Batı Palearktik
Faunistik

Atıf İçin : Karaman, C, Kiran, K., & Aksoy, V (2025). Türkiye için yeni karınca (Hymenoptera: Formicidae) türü keşfi: *Emeryopone loebli* (Baroni Urbani, 1975). *KSÜ Tarım ve Doğa Derg 28* (3), 793-796. DOI: 10.18016/ksutarimdoga.1572378

To Cite: Karaman, C, Kiran, K., & Aksoy, V (2025). New ant (Hymenoptera: Formicidae) species discovery for Türkiye: *Emeryopone loebli* (Baroni Urbani, 1975). *KSU J. Agric Nat 28*(3), 793-796. DOI: 10.18016/ksutarimdoga.1572378

INTRODUCTION
The beginning of studies on the ant fauna of Türkiye dates back more than 170 years (Rigler, 1852). However, despite the contribution of studies of the following period, the most comprehensive data on the country's actual ant biodiversity and species richness originated about five decades ago. Among these studies, the first ant checklist of the country published by Kiran & Karaman (2012) reported 306 taxa (286 species and 20 subspecies). This study presented a figure indicating the number of known ant species from each province, whose analysis clearly showed the incompleteness of this knowledge, especially regarding faunal details in the eastern and southeastern parts of the country. Based on the most recent data on findings of native and foreign researchers, it is currently known that 385 taxa represent the ant fauna of Türkiye. The relatively significant increase in a short period of about ten years is remarkable, but it is clear that there is still a notable lack of data, although the deficiency in the eastern and southeastern parts of the country has decreased to some extent (Kiran & Karaman, 2021).

Therefore, during the research of the ant fauna of Kahramanmaraş and Adıyaman provinces, in order to fill the gap in the knowledge on the ant biodiversity of southeastern Türkiye, a new genus and species, *Emeryopone loebli* (Baroni Urbani, 1975), belonging to the subfamily Ponerinae Lepeletier de Saint-Fargeau, 1835, was identified. It is the very first record of this species for Türkiye, and also the very first nest-based record of the species globally.

MATERIAL and METHOD

During a field study in the Adıyaman province of Türkiye, a thorough sampling was performed from various microhabitats such as under stones, on the ground, in rock cracks, dead wood, on tree trunks and twigs, etc. Ant samples were collected using a direct sampling method via an aspirator and (for preservation before preparations and identifications in the laboratory) put in tubes containing 96% ethanol. The initial evaluation of the samples revealed the presence of *Emeryopone* Forel, 1912. The specimens, considered to be *E. loebli,* were prepared for microscopic evaluation and were identified using the original description of the species, color photos of the species, and the identification key of Varghese (2006). Digital photographs of the specimens were taken using a Nikon D800e camera attached to 3.2× and 8× microscope objectives. The Helicon Focus software (Helicon Soft Ltd., Kharkiv, Ukraine) was used to stack the photographs. The distribution map of the species was prepared with Google Earth. The material is deposited in the Entomological Museum of Trakya University (EMTU), Edirne, Türkiye.

RESULTS and DISCUSSION

Emeryopone loebli (Baroni Urbani, 1975) (Figure 1A-C)

Material: 12 workers, **TÜRKİYE-Adıyaman**-Derinsu Vill.; 37°52.094' N, 38°24.381' E; 911 m a.s.l.; 30.v.2024; leg. Karaman, C. & Aksoy, V.; EMTU, 24/0851. 2 workers, **Gaziantep**-Şahinbey; 37°00.2677' N, 37°21.1167' E; 900 m a.s.l.; 30.iv.2024; leg. Söylemez, T.B. & Özalp, K.; EMTU.

Remarks: The genus *Emeryopone* was first described by Forel in 1912 from Indonesia (Sumatra). Today, the genus is represented by five species (*E. buttelreepeni* Forel, 1912; *E. franzi* Baroni Urbani, 1975; *E. loebli*, *E. melaina* Xu, 1998; *E. narendrani* Varghese, 2006) distributed in Israel, Iran, Saudi Arabia, India, Nepal, Southern China, Indonesia, and Malaysia (Schmidt & Shattuck, 2014; Khalili-Moghadam et al., 2023). Among these five species, *Emeryopone loebli* is the only one with a distribution in the Palaearctic region (Figure 2).

Emeryopone loebli was first described from Israel by Baroni Urbani in 1975 as *Belonopelta loebli* Baroni Urbani, 1975, which is also a member of the subfamily Ponerinae. The first record of the species is based on four workers, which were collected from an arid habitat characterized by *Eucalyptus* sp. and *Opuntia* sp. (Baroni Urbani, 1975). Collingwood (1985) recorded the species, with a single worker, from Saudi Arabia, which was collected from a habitat characterized by palm. The third record of the species was from Iran by Khalili-Moghadam et al. (2023). Khalili-Moghadam et al. (2023) also recorded a single worker in a rotting oak log from a habitat characterized by oaks. In the present study, the species was recorded from a 25-30-year-old, humid oak forest in Adıyaman and from a barren land in Gaziantep. These two recent records correspond to the northernmost record of the species, showing that the species is more widespread than is known.

The petiole of the specimen on which the Iranian record of Khalili-Moghadam et al. (2023) was based is conspicuously longer not only than the specimens included in this study but also than the paratype of the species, which can be reached on www.antweb.org with the number CASENT0915184. The Iranian record is based on only one worker, making it unclear if this longer petiole corresponds to a variation in the population of the species or if the record belongs to a different species. The Turkish records are morphologically similar to the paratype of the species except for the ommatidia number. Turkish samples have four ommatidia, while it was reported in the original description of the species that the type has only one ommatidium (Baroni Urbani, 1975). The different numbers of ommatidia of the ant material obtained in this study from the type material are thought to be a variation within the species. More records and specimens are needed to make a definitive judgment about the diversity and abundance of the species in the western Palearctic region. However, it can be said from the records in this study that the species may be much more widespread in the region and is still waiting to be discovered.

The record of *E. loebli* from Gaziantep is based on a record by citizen scientists. Such a record of an *Emeryopone* specimen, which is very rare and hard to find, highlights the importance of the work done by amateurs, in addition to professionals. It is believed that citizen scientists can detect more new records, especially in the eastern and southeastern regions of Türkiye, where the ant fauna has not been extensively studied.

Figure 1. *Emeryopone loebli* worker. A. Head, B. Habitus, C. Dorsal view.
Şekil 1. Emeryopone loebli *işçisi. A. Baş, B. Habitus, C. Üstten görünüm.*

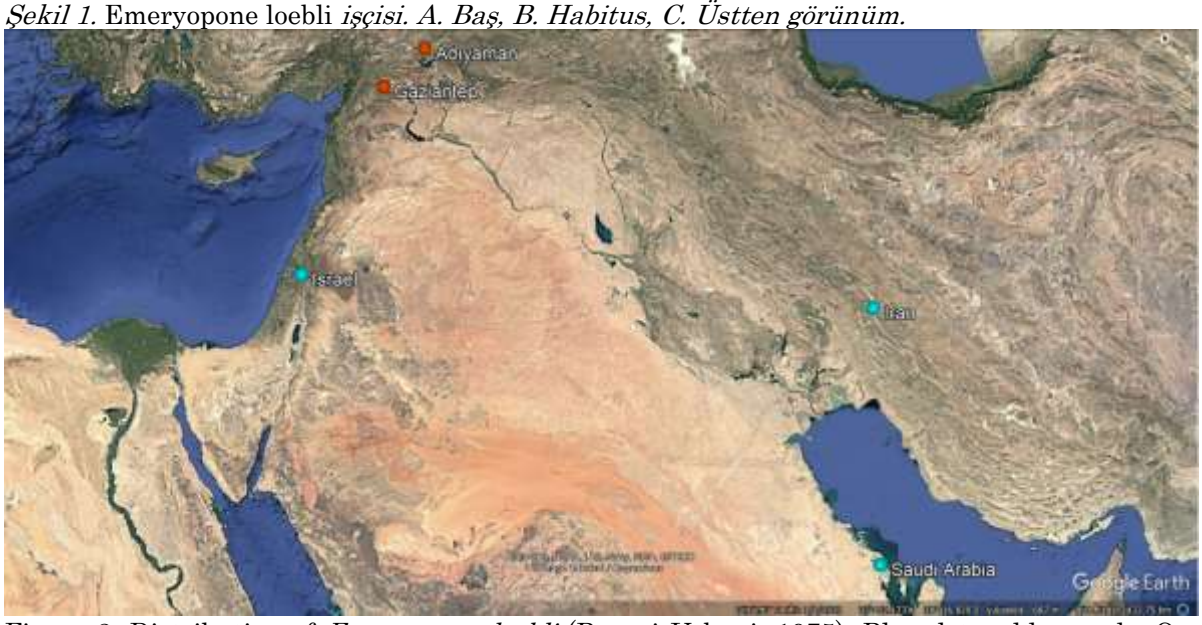

Figure 2. Distribution of *Emeryopone loebli* (Baroni Urbani, 1975). Blue dots: old records, Orange dots: recent records of the species.
Şekil 2. Emeryopone loebli *(Baroni Urbani, 1975)'nin dağılımı. Mavi noktalar: türün eski kayıtları, Turuncu noktalar: türün son kayıtları.*

ACKNOWLEDGMENTS

This study is supported by Trakya University Scientific Research Projects Coordination Unit with Project Number: 2022-122. We would also like to thank Tarık Barış Söylemez and Kerem Özalp for sharing the *Emeryopone* material from Gaziantep. This study does not require ethics committee approval and/or legal/special permission.

Contribution Rate Statement Summary of Researchers

The authors declare that they have contributed equally to the article.

Conflict of Interest

Authors have declared no conflict of interest.

Ethic Statement

The authors declare that they have complied with Research and Publication Ethics in their work.

REFERENCES

AntWeb. Version 8.112. California Academy of Science, online at https://www.antweb.org. Accessed 22 October 2024.

Baroni Urbani, C. (1975). Contributo alla conoscenza dei generi *Belonopelta* Mayr e *Leiopelta* gen. n. (Hymenoptera: Formicidae). *Mitteilungen der Schweizerischen Entomologischen Gesellschaft*, *48,* 295-310.

Collingwood, C.A. (1985). Hymenoptera: Fam. Formicidae of Saudi Arabia. *Fauna of Saudi Arabia 7*, 230-302.

Khalili-Moghadam, A., Salata, S. & Borowiec, L. (2023). *Emeryopone loebli* (Baroni Urbani, 1975) (Hymenoptera: Formicidae) – an ant species new to the fauna of Iran. *Annals of the Upper Silesian Museum in Bytom, Entomology 32,* 1-4. 10.5281/zenodo.10053142

Kiran, K. & Karaman, C. (2012). First annotated checklist of the ant fauna of Turkey (Hymenoptera: Formicidae). *Zootaxa 3548*, 1-38.

Kiran K. & Karaman C. (2021). Ant fauna (Hymenoptera: Formicidae) of Central Anatolian Region of Turkey. *Turkish Journal of Zoology 45*(3), 161-196.

Rigler, L. (1852). Die Turkei und deren Bewohner in ihren naturhistorischen, physiologischen und pathologischen Verhaltnissen vom Standpunkte Constantinopel's, Wien, Verlag von Carl Gerold.

Schmidt, C.A. & Shattuck, S.O. (2014). The higher classification of the ant subfamily Ponerinae (Hymenoptera: Formicidae), with a review of ponerine ecology and behavior. *Zootaxa 3817*(1), 1-242. 10.11646/zootaxa.3817.1.1

Varghese, T. (2006). Description of a new species of the ponerine ant genus, *Emeryopone* (Hymenoptera: Formicidae) from Karnataka, India. *Biospectra 1*, 89-92.