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## THE NEW LOCATIONS FOR SOME WASP FAMILIES IN TÜRKİYE

Emin KAPLAN<sup>1,\*</sup> , Levent EFİL<sup>2</sup> , Metehan UZLU<sup>2</sup> 

<sup>1</sup> Bingöl University, Plant Protection Department, Bingöl, Türkiye

<sup>2</sup> Çanakkale Onsekiz Mart University, Plant Protection Department, Çanakkale, Türkiye

\* Corresponding Author: [ekaplan@bingol.edu.tr](mailto:ekaplan@bingol.edu.tr)

### ABSTRACT

The present paper is based on the material of the seven families Bembicidae, Crabronidae, Pemphredonidae, Philanthidae, Pompilidae, Sphecidae, and Vespidae collected between 2017 and 2024 in various localities of Bingöl, Çanakkale, and Diyarbakır provinces, Türkiye. In total, 36 species belonging to 26 genera and seven families are recorded: Bembicidae (three genera, four species), Crabronidae (six genera, eight species), Pemphredonidae (two genera, three species), Philanthidae (one genus, one species), Pompilidae (eight genera, 12 species), Sphecidae (five genera, seven species), and Vespidae (one genera, one species). Furthermore, new locality records and distributional data for identified species are provided.

**Keywords:** Hymenoptera, Bembicidae, Crabronidae, Pemphredonidae, Philanthidae, Pompilidae, Sphecidae, Vespidae, Fauna, Türkiye.

## 1 INTRODUCTION

The order Hymenoptera, which includes large groups of insects such as sawflies, wasps, bees, and ants, has more than 150,000 described living species in over 90 families [1]. Wasps are a diverse group within Hymenoptera, with well over a hundred thousand described species worldwide, and many more yet to be described [2]. The families Bembicidae, Crabronidae, Pemphredonidae, Philanthidae, Sphecidae, Pompilidae and Vespidae belong to the wasp group of Hymenoptera. The Turkish Bembicidae fauna consists of 136 species in 19 genera [3]. The

Crabronidae family in Türkiye is composed of 254 species and seven subspecies belonging to 27 genera [3]. A total of 33 species in six genera of the family Pemphredonidae are recorded in Türkiye. Sphecidae fauna of Türkiye includes 79 species and nine subspecies in 12 genera [3]. The Pompilidae fauna in Türkiye is represented by 203 species and six subspecies in 35 genera [4], [5]. The family of Philanthidae in Türkiye consist of 70 species and seven subspecies in three genera [3]. Vespidae is a large family of aculeate wasps belonging to the superfamily Vespoidea. In Türkiye, a total of 269 species and 32 subspecies in 53 genera have been recorded to date [6], [7], [8].

## 2 MATERIAL AND METHOD

The specimens were collected with the help of a trap on flowering plants in Bingöl, Çanakkale, and Diyarbakir provinces of Türkiye from March to October between 2017 and 2024 (Figure 1). The materials were pinned, labeled, and prepared for diagnosis in the laboratory. The material is deposited at Bingol University, Faculty of Agriculture, Department of Plant Protection, Bingol, and Çanakkale Onsekiz Mart University, Faculty of Agriculture, Department of Plant Protection, Çanakkale, Türkiye.



*Figure 1. Map of Türkiye showing the provinces where the species were collected.*

### 3 RESULTS AND DISCUSSION

Order: Hymenoptera

Superfamily: Apoidea

Family: Bembicidae

Genus: *Bembecinus* A. Costa, 1859

*Bembecinus innocens* de Beaumont, 1967

Material examined: Bingöl, Genç, Üçgül, N 38° 48' 07.17", E 40° 05' 04.90", 1225 m, 17.V.2024, ♂.

*Bembecinus tridens* (Fabricius, 1781)

Material examined: Bingöl, Ekinyolu, N 38° 54' 00.00", E 40° 34' 17.58", 1036 m, 22.V.2021, ♂; Sarıçiçek, N 38° 55' 28.42", E 40° 35' 44.57", 1040 m, 21.V.2021, ♂; Karlıova, Derinçay, N 39° 07' 14.49", E 40° 52' 54.20", 1695 m, 27.V.2021, ♂. Diyarbakır, Eğil, Yatır, N 38° 48' 21.94", E 40° 33' 16.50", 721 m, 24.IV.2021, ♀.

Genus: *Gorytes* Latreille, 1805

*Gorytes albidulus* (Lepeletier, 1832)

Material examined: Bingöl, Genç, Meşedalı, N 38° 47' 51.80", E 40° 38' 13.05", 1004 m, 08.IV.2021, ♂.

Genus: *Hoplisoides* Gribodo, 1884

*Hoplisoides craverii* (A. Costa, 1869)

Material examined: Bingöl, Arıcılar, N 39° 03' 15.65", E 40° 18' 41.02", 1560 m, 09.V.2024, ♀.

Family: Crabronidae

Genus: *Ammatomus* A. Costa, 1859

*Ammatomus coarctatus* (Spinola, 1808)

Material examined: Çanakkale, Lâpseki, Çavuşköy, N 40°20'39.28", E 26°54'20.84", 178 m, 31.07.2024 ♂.

Genus: *Ectemnius* Dahlbom, 1845

*Ectemnius continuus* (Fabricius, 1804)

Material examined: Bingöl, Garip, N 38° 47' 14.85", E 40° 33' 30.91", 997 m, 27.V.2022,

♀.

*Ectemnius meridionalis* (A. Costa, 1871)

Material examined: Bingöl, Çeltiksuyu, N 38° 52' 36.38", E 40° 35' 05.64", 1015 m, 05.VI.2021, ♂.

Genus: *Entomognathus* Dahlbom, 1844

*Entomognathus brevis* (Vander Linden, 1829)

Material examined: Bingöl, Çavuşlar, N 38° 56' 04.55", E 40° 47' 24.76", 1454 m, 02.VI.2024, ♂.

*Entomognathus dentifer* (Noskiewicz, 1929)

Material examined: Bingöl, Çavuşlar, N 38° 55' 03.54", E 40° 46' 25.78", 1455 m, 21.V.2024, ♂.

Genus: *Lestica* Billberg, 1820

*Lestica subterranea* (Fabricius, 1775)

Material examined: Bingöl, Çavuşlar, N 38° 54' 04.55", E 40° 47' 26.77", 1455 m, 22.V.2024, ♂; Çevrîmpınar, N 38° 54' 44.53", E 40° 23' 13.18", 1315 m, 01.VI.2024, ♂; Gökçeli, N 38° 54' 02.84", E 40° 45' 43.30", 1348 m, 20.V.2024, ♂; Kırkagıl, N 38° 55' 47.07", E 40° 23' 43.69", 1732 m, 25.V.2024, ♂; Yukarıpınar, N 38° 52' 12.46", E 40° 29' 08.47", 1471 m, 01.VI.2024, ♂.

♀.

Genus: *Lindenius* Lepeletier & Brullé, 1835

*Lindenius ibex* Kohl, 1883

Material examined: Bingöl, Çevrîmpınar, N 38° 54' 45.52", E 40° 23' 13.16", 1317 m, 20.V.2024, ♂; Yukarıpınar, N 38° 51' 11.45", E 40° 28' 07.48", 1470 m, 01.VI.2024, ♂. Diyarbakır, Lice, Ergin, N 38° 31' 08.95", E 40° 33' 22.34", 1016 m, 26.V.2021, ♂.

Genus: *Trypoxylon* Latreille, 1796

*Trypoxylon attenuatum* F. Smith, 1851

Material examined: Çanakkale, Bayramiç, Kazdağ, N 39° 48' 42.69", E 26° 56' 32.00", 602 m, 10.07.2024, ♂.

Family: Pemphredonidae

Genus: *Entomosericus* Dahlbom, 1845

*Entomosericus concinnus* Dahlbom, 1845

Material examined: Bingöl, Elmalı, N 38° 61' 30.18", E 40° 43' 30.29", 1350 m, 31.V.2024, ♀; Çeltiksuyu, N 38° 51' 10.70", E 40° 35' 60.65", 1015 m, 17.V.2024, ♂.

*Entomosericus hauseri* Schmid-Egger, 2003

Material examined: Bingöl, Sancak, N 39° 05' 50.91", E 40° 22' 51.78", 1594 m, 05.VI.2024, ♂.

Genus: *Pemphredon* Latreille, 1796

*Pemphredon lethifer* (Shuckard, 1837)

Material examined: Bingöl, Altınışık, N 38° 50' 42.46", E 40° 29' 36.64", 1517 m, 09.VI.2024, ♂; Genç, Derenköy, N 38° 46' 05.45", E 40° 41' 09.45", 1365 m, 08.V.2021, ♀.

Family: Philanthidae

Genus: *Philanthus* Fabricius, 1790

*Philanthus triangulum* (Fabricius, 1775)

Material examined: Çanakkale, Kampüs-Bacırgan, N 40° 6'37.59", E 26°25'0.30", 89 m, 24.07.2024, ♂; Bayramiç, Orman Deposu, N 39°49'14.03", E 26°48'28.81", 228 m, 10.07.2024, ♂.

Family: Pompilidae

Genus: *Agenioideus* Ashmead, 1902

*Agenioideus nubecula* (Costa, 1874)

Material examined: Çanakkale, Merkez, Kampüs, N 40° 6' 37.08", E 26° 24' 50.46", 67 m, 09.10.2023, ♀.

Genus: *Anoplius* Dufour, 183

*Anoplius concinnus* (Dahlbom, 1843)

Material examined: Bingöl, Yukarıağaçeli, N 38° 58' 41.65", E 40° 42' 36.45", 1425 m, 31.V.2023, ♂.

*Anoplius infuscatus* (Vander Linden, 1827)

Material examined: Çanakkale, Bayramiç, Evciler, N 39° 47' 34.73", E 26° 45' 39.75", 189 m, 28.04.2024, ♀.

*Anoplius viaticus* (Linnaeus, 1758)

Material examined: Çanakkale, Ezine, Alanar, N 39° 45' 15.09", E 26° 20' 42.14", 57 m, 02.06.2022, ♂; Bingöl, Üçyaka, N 38° 50' 56.04", E 40° 26' 12.46", 1705 m, 02.VI.2024, ♀; Karlıova, Kaşıkçı, N 39° 25' 13.80", E 41° 01' 21.61", 1915 m, 01.VI.2024, ♂.

Genus: *Auplopus* Spinola, 1841

*Auplopus rectus* (Haupt, 1927)

Material examined: Çanakkale, Ezine, A. Etap, N 39° 55' 12.69", E 26° 17' 38.52", 23 m, 05.08.2022, ♀; Bingöl, Kırkagıl, N 38° 54' 48.08", E 40° 22' 42.70", 1731 m, 25.V.2024, ♂; Genç, Dikpınar, N 38° 44' 25.51", E 40° 17' 36.19", 976 m, 17.V.2019, ♂.

Genus: *Ceropales* Latreille, 1796

*Ceropales variegata* (Fabricius, 1798)

Material examined: Bingöl, Genç, Şeyhismail, N 38° 42' 53.38", E 40° 21' 19.65", 1180 m, 15.V.2023, ♀.

Genus: *Cryptocheilus* Panzer, 1806

*Cryptocheilus fischeri* (Spinola, 1838)

Material examined: Çanakkale, Lâpseki, Adatepe, N 40° 23' 46.70", E 26° 46' 24.23", 14 m, 16.06.2024, ♀; N 40° 23' 46.25", E 26° 46' 27.11", 14 m, 12.07.2024, ♀. Diyarbakır, Lice, Kabakaya, N 38° 21' 46.97", E 40° 44' 18.83", 927 m, 11.IV.2019, ♂.

*Cryptocheilus variabilis* (Rossi, 1790)

Material examined: Çanakkale, Lapeski, Adatepe, E 40° 23' 48.05", N 26° 46' 0.62", 48 m, 31.07.2024, ♀.

Genus: *Dipogon* Fox, 1897

*Dipogon erythropus* (Kohl, 1988)

Material examined: Çanakkale, Kampüs, N 40° 6' 45.17", E 26° 25' 8.03", 96 m, 08.05.2023, ♀; Bayramiç, Evciler, N 39° 47' 34.81", E 26° 45' 39.26", 189 m, 28.04.2024, ♀. Diyarbakır, Ergani, Pınarkaya, N 38° 14' 56.65", E 39° 42' 05.86", 860 m, 12.V.2017, ♂.

Genus: *Episyron* Schiödte, 1837

*Episyron albonotatum* (Vander Linden, 1827)

Material examined: Bingöl, Karlıova, Kaynak, N 39° 14' 09.49", E 40° 54' 41.31", 1897 m, 31.V.2019, ♂.

*Episyron candiotum subsp. candiotum* Wahis, 1966

Material examined: Çanakkale, Merkez, Karderesi, N 39° 57' 22.97", E 26° 29' 6.26", 393 m, 29.07.2024, ♂.

Genus: *Priocnemis* Schiödte, 1837

*Priocnemis diyarbakirensis* Schmid-Egger et al., 2021

Material examined: Çanakkale, Değirmendere, N 40° 3' 13.56", E 26° 28' 34.47", 102 m, 06.04.2024, ♂; Bayramiç, Ayazma, N 39° 45' 17.03", E 26° 48' 23.84", 348 m, 30.03.2024, ♂; Ezine, N 39° 55' 15.46", E 26° 17' 11.04", 22 m, 16.05.2023 ♂; Lâpseki, Çavuşköy, N 40° 20' 44.23", E 26° 54' 12.20", 166 m, 19.04.2024, ♀. Diyarbakır, Bismil, Güroluk, N 38° 01' 38.44", E 40° 35' 18.97", 647 m, 19.III.2019, ♂.

Family: Sphecidae

Genus: *Hoplammophila* de Beaumont, 1960

*Hoplammophila armata* (Illiger, 1807)

Material examined: Çanakkale, Merkez, Karderesi, N 39° 57' 23.23", E 26° 29' 5.96", 392 m, 29.07.2024, ♂.

Genus: *Podalonia* Fernald, 1927

*Podalonia hirsuta mervensis* (Radoszkowski, 1887)

Material examined: Bingöl, Gökçeli, N 38° 53' 02.86", E 40° 45' 43.30", 1347 m, 12.V.2024, ♀; Sarıçiçek, N 38° 54' 32.80", E 40° 36' 07.49", 996 m, 02.IV.2024, ♀.

Genus: *Prionyx* Vander Linden, 1827

*Prionyx kirbii* (Vander Linden, 1827)

Material examined: Çanakkale, Bayramiç, Evciler, N 39° 47' 34.70", E 26° 45' 39.25", 189 m, 06.06.2024, ♀.

Genus: *Sceliphron* Klug, 1801

*Sceliphron curvatum* (F. Smith, 1870)

Material examined: Çanakkale, Merkez, Oda, N 40° 6' 34.20", E 26° 24' 56.46", 75 m, 18.07.2024 ♀, ♂.

*Sceliphron spirifex* (Linnaeus, 1758)

Material examined: Çanakkale, Merkez, Oda, N 40° 6' 34.20", E 26° 24' 56.46", 75 m, 03.07.2024, ♂.

Genus: *Sphex* Linnaeus, 1758

*Sphex funerarius* Gussakovskij, 1934

Material examined: Çanakkale, Merkez, N 40° 6' 37.59", E 26° 25' 0.30", 89 m, 24.07.2024 ♂, ♀, 09.08.2024 2♀♀.

*Sphex pruinus* Germar, 1817

Material examined: Çanakkale, Merkez Kampüs-Bacırgan, N 40° 6' 37.59", E 26° 25' 0.30", 89 m, 22.07.2024 ♂, 23.07.2024 ♂, 09.08.2024 ♂, 06.08.2024 ♂, 09.08.2024 ♂, 06.08.2024 ♂, 22.07.2024 ♂.

Family: Vespidae

Genus: *Stenodynerus* Saussure, 1863

*Stenodynerus bluethgeni* Vecht, 1971

Material examined: Çanakkale, Merkez, Kampüs-Ahlat, N 40° 6' 39.63", E 26° 25' 9.70", 114 m, 27.03.2025, 3♀♀.

#### 4. CONCLUSION AND SUGGESTIONS

This study is based on 36 species belonging to 26 genera from seven families—Bembicidae, Crabronidae, Pemphredonidae, Philanthidae, Pompilidae, Sphecidae, and Vespidae—collected from various localities in the provinces of Bingöl, Çanakkale, and Diyarbakır, Türkiye, between 2017 and 2024. In this study, conducted in three cities, 19 species were identified in Bingöl, 19 in Çanakkale, and five in Diyarbakır. All of the species recorded in Çanakkale constitute new records for the fauna of the province. As a result, this study has revealed new locality records in Türkiye for species belonging to seven Hymenoptera families.

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## Conflict of Interest Statement

There is no conflict of interest between the authors.

## Statement of Research and Publication Ethics

The study is complied with research and publication ethics.

## Artificial Intelligence (AI) Contribution Statement

This manuscript was entirely written, edited, analyzed, and prepared without the assistance of any artificial intelligence (AI) tools. All content, including text, data analysis, and figures, was solely generated by the authors.

## Contributions of the Authors

**Emin KAPLAN's contributions:** Collection and identification of material, conceptualization, methodology, writing, analysis of paper.

**Levent EFIL's contributions:** Collection of material, methodology, analysis of paper.

**Metehan UZLU's contributions:** Collection of material.

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