



RESEARCH ARTICLE

NEW DATA for SPHECIDAE (HYMENOPTERA: APOIDEA) FAUNA of TÜRKİYE

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ABSTRACT

This study is based upon material from subfamilies Ammophilinae, Sceliphrinae, and Sphecinae of the family Sphecidae collected from different localities of Türkiye between 2000 and 2021. A total of 27 species belonging to nine genera of three subfamilies have been presented. New provincial and regional records for some species have been given.

Keywords: *Sphecidae, fauna, locality records, solitary wasp, Türkiye*

1. INTRODUCTION

The Sphecidae family, which is in the Apocrita suborder and the Aculeata group, generally includes medium to large sized solitary wasps. The family comprises about 810 species belonging to five subfamilies in all zoogeographical regions of the world [1]. Most of the species belonging to this family are important to ecosystems for two reasons. Firstly, they control insect and spider populations by hunting them in order to gather food for their larvae and secondly, they contribute to the pollination of flowering plants as they feed on nectar [2].

In Türkiye; over the last decade, a number of studies have been conducted on the biodiversity of this family, including new and important findings [2-10]. According to recent contributions, the family Sphecidae contains 79 species and subspecies in Türkiye [2, 11]. But Sphecidae fauna of Türkiye is still incomplete, because most probably, so many species remain unknown. It is expected that the species number of Sphecidae will increase with future studies due to geographical location of Türkiye, its habitat and climate diversity.

We aimed in this study to contribute to the distribution knowledge of Sphecidae fauna in Türkiye.

2. MATERIALS and METHODS

The samples of Sphecidae were collected from different localities of Türkiye between 2000 and 2021.

Geyras, 750 m, 06.VII.2013, ♂; Central district, Kömeç, 580 m, 06.V.2013, ♂; Niksar, Çamiçi, 1350 m, 21.VI.2013, ♂.

Distribution in Türkiye: It is widespread in all geographical regions.

Remark: New record for fauna of Denizli, Eskişehir and Kocaeli provinces.

***Ammophila hungarica* Mocsáry, 1883**

Material examined (3 ♂♂): TOKAT: Almus, 940 m, 07.VII.2011, ♂; 08.V.2012, ♂; Central district, 660 m, 01.V.2012, ♂.

Distribution in Türkiye: It is widespread in all geographical regions [2].

Remark: New record for fauna of Tokat province.

***Ammophila pubescens* Curtis, 1836**

Material examined (1 ♂): KIRŞEHİR: Çiçekdağı, 1050 m, 20.VII.2000, ♂.

Distribution in Türkiye: It spreads in Eastern and Central Anatolia regions [2].

Remark: New record for fauna of Kırşehir province.

***Ammophila sabulosa* (Linnaeus, 1758)**

Material examined (11 ♀♀, 40 ♂♂): AMASYA: Central district, 554 m, 07.VII.2013, 7 ♂♂; Central district, Ziyaret, 1050 m, 07.VII.2013, ♂; **ÇANKIRI:** Central district, 800 m, 30.VII.2000, 2 ♂♂; Çerkeş, 1000 m, 26.VI.2001, ♂; Ilgaz, Yenice, 1160 m, 30.VII.2000, ♂; **İĞDIR:** Kağızman, Kötek, 1400 m, 04.IX.2009, ♂; **KIRŞEHİR:** Çiçekdağı, 1050 m, 20.VII.2000, ♀, 4 ♂♂; **TOKAT:** Almus, 940 m, 14.V.2013, 7 ♂♂; Central district, 900 m, 15.IX.2012, ♀; Central district, Pınarlı, 760 m, 24.VIII.2013, 5 ♀♀, 6 ♂♂; Erbaa, 250 m, 25.IX.2012, ♀; Niksar, Akıncı, 765 m, 13.V.2014, 4 ♂♂; Niksar, Canpolat, 1095 m, 24.VI.2013, ♀; Niksar, Çamiçi, 1350 m, 21.VI.2013, ♀, 5 ♂♂; Niksar, Gökdere, 800 m, 04.VII.2013, ♂; Pazar, Akdağ, 1560 m, 16.IX.2012, ♀.

Distribution in Türkiye: It is widespread in all geographical regions [2].

Remark: New record for fauna of Kırşehir province.

***Ammophila terminata* F. Smith, 1856**

Material examined (1 ♀): SİVAS: İmranlı, 1830 m, 20.VII.2020, ♀.

Distribution in Türkiye: It is distributed in all geographical regions except for Southeastern Anatolia region [2].

Remark: New record for fauna of Sivas province.

Genus *Hoplammophila* de Beaumont 1960

***Hoplammophila armata* (Illiger, 1807)**

Material examined (1 ♀, 3 ♂♂): TOKAT: Central district, Pınarlı, 760 m, 24.VIII.2013, ♀; 05.VIII.2015, 3 ♂♂.

Distribution in Türkiye: It is distributed in Eastern Anatolia, Central Anatolia and Black Sea regions [2].

Genus *Podalonia* Fernald, 1927

***Podalonia affinis* (Kirby, 1798)**

Material examined (5 ♀♀, 5 ♂♂): KARS: Central district, 1850 m, 25.VI.2006, ♀; 10.VIII.2006, ♂; 16.VII.2008, ♂; 25.VIII.2007, ♂; 30.VIII.2009, ♀, ♂; Central district, 2100 m, 26.VIII.2009, ♀; Central district, University campus, 1750 m, 05.VII.2009, 2 ♀♀; **TOKAT:** Nifkar, Efkerit valley, 350 m, 21.VI.2013, ♂.

Distribution in Türkiye: It is distributed in all geographical regions except for Aegean and Southeastern Anatolia regions [2].

***Podalonia fera* (Lepelletier de Saint Fargeau, 1845)**

Material examined (3 ♀♀): KIRŞEHİR: Çiçekdağı, 1400 m, 20.VII.2000, ♀; **TOKAT:** Central district, 680 m, 28.VII.2014, ♀; Central district, University campus, 620 m, 05.X.2012, ♀.

Distribution in Türkiye: It is widespread in all geographical regions [2, 10].

Remark: New record for fauna of Kırşehir province.

***Podalonia hirsuta* (Scopoli, 1763)**

Material examined (3 ♀♀, 2 ♂♂): KARS: Central district, 1850 m, 25.VI.2006, ♀; **TOKAT:** Erbaa, Karayaka, 250 m, 12.VII.2015, ♀; Niksar, Çamiçi, 900 m, 21.VI.2013, ♀, 2 ♂♂.

Distribution in Türkiye: It is widespread in all geographical regions [2].

***Podalonia luffii* (Saunders, 1903)**

Material examined (7 ♂♂): KARS: Central district, 1850 m, 25.VI.2006, 3 ♂♂; 10.VIII.2006, ♂; 25.VIII.2007, ♂; 16.VII.2008, 2 ♂♂.

Distribution in Türkiye: It shows limited distribution in Central and Eastern Anatolia [2, 10].

Remark: New record for fauna of Kars province.

***Podalonia tydei tydei* (Le Guillou, 1841)**

Material examined (3 ♀♀, 3 ♂♂): SİVAS: Suşehri, 975 m, 18.VII.2017, ♀; **TOKAT:** Central district, 680 m, 30.IX.2012, 2 ♀♀; Central district, Kömeç, 580 m, 06.V.2013, 3 ♂♂.

Distribution in Türkiye: It is widespread in all geographical regions [2].

Subfamily Sceliphrinae Ashmead, 1899

Genus *Chalybion* Dahlbom, 1843

***Chalybion flebile* (Lepelletier de Saint Fargeau, 1845)**

Material examined (1 ♀, 3 ♂♂): SİVAS: Koyulhisar, 1150 m, 13.VII.2017, 2 ♂♂; **TOKAT:** Central district, University campus, 680 m, 20.V.2016, ♀; Erbaa, Tepekışla, 230 m, 03.VI.2017, ♂.

Distribution in Türkiye: It is widespread in all geographical regions [2].

***Chalybion omissum* (Kohl, 1889)**

Material examined (4 ♀♀, 1 ♂): DENİZLİ: Honaz, 800 m, 24.VI.2010, ♂; **TOKAT:** Central district, University campus, 660 m, 11.VII.2011 ♀; 12.VI.2012, 2 ♀♀; 19.VI.2014, ♀.

Distribution in Türkiye: It is distributed in all geographical regions except for Black Sea region [2].

Remark: New record for fauna of Tokat province.

Genus *Sceliphron* Klug, 1801

***Sceliphron curvatum* (Smith, 1870)**

Material examined (1 ♀): KOCAELİ: Gölcük, İhsaniye, 100 m, 16.VI.2020, ♀.

Distribution in Türkiye: It spreads in Black Sea, Eastern Anatolia and Marmara regions [2].

***Sceliphron destillatorium* (Illiger, 1807)**

Material examined (3 ♂♂): **ESKİŞEHİR:** Osmangazi University campus, 830 m, 25.VI.2014, 2 ♂♂; **KARS:** Central district, 2000 m, 16.VIII.2009, ♂.

Distribution in Türkiye: It is widespread in all geographical regions [2].

***Sceliphron funestum* Kohl, 1918**

Material examined (3 ♀♀): **ANTALYA:** Kalkan, 450 m, 22.VII.2021, ♀; **MUĞLA:** Seydikemer, 775 m, 20.VII.2021, 2 ♀♀.

Distribution in Türkiye: It spreads in Aegean, Mediterrenian, Central and Southeastern Anatolia regions. For provincial distribution, see Can and Gülmez [2].

***Sceliphron spirifex* (Linnaeus, 1758)**

Material examined (2 ♀♀): **ANTALYA:** Kalkan, 450 m, 20.VII.2021, ♀; **KARS:** Central district, 1850 m, 10.VI.2007, ♀.

Distribution in Türkiye: It is distributed in all geographical regions except for Eastern Anatolia region [2].

Remark: New record for fauna of Kars province.

Subfamily Sphecinae Latreille, 1802

Genus *Isodontia* Patton, 1880

***Isodontia splendidula* (Costa, 1858)**

Material examined (1 ♀, 4 ♂♂): **TOKAT:** Central district, University campus, 10.VII.2013, 3 ♂♂; 19.VI.2014, ♂; Erbaa, Karayaka, 250 m, 12.VII.2014, ♀.

Distribution in Türkiye: It is distributed in all geographical regions except for Southern Anatolia region [2].

Genus *Palmodes* Kohl, 1890

***Palmodes occitanicus* (Le Peletier & Serville, 1828)**

Material examined (3 ♀♀, 1 ♂): **AMASYA:** Central district, Ziyaret, 1050 m, 07.VII.2013, ♀; **ESKİŞEHİR:** Osmangazi University campus, 830 m, 25.VI.2014, ♂; **TOKAT:** Central district, 680 m, 15.VII.2014, 2 ♀♀.

Distribution in Türkiye: It is widespread in all geographical regions [2].

Remark: New record for fauna of Amasya and Eskişehir provinces.

***Palmodes strigulosus* (Costa, 1861)**

Material examined (1 ♀): **ÇANKIRI:** Central district, 700 m, 29.VII.2000, ♀.

Distribution in Türkiye: It is widespread in all geographical regions [2].

Remark: New record for fauna of Çankırı province.

Genus *Prionyx* Vander Linden, 1827

***Prionyx kirbii* (Vander Linden, 1827)**

Material examined (7 ♀♀, 5 ♂♂): **AMASYA:** Taşova, Güngörmüş, 350 m, 31.VIII.2014, ♀; **ÇANKIRI:** Central district, 800 m, 29.VII.2000, ♀, ♂; **KARS:** Central district, 1850 m, 10.VI.2007, 3 ♂♂; **TOKAT:** Central district, 680 m, 07.X.2012, ♀; Central district, Pınarlı, 755 m, 24.VIII.2013, 2 ♀♀; 26.VIII.2013, ♀; 30.VIII.2013, ♀, ♂; Central District, University campus, 670 m, 15.VII.2013, ♀.

Distribution in Türkiye: It is distributed in all geographical regions except for Southern Anatolia region [2].

***Prionyx lividocinctus* (Costa, 1861)**

Material examined (2 ♂♂): **TOKAT:** Central district, 700 m, 15.VII.2015, 2 ♂♂.

Distribution in Türkiye: It is widespread in all geographical regions [2].

Remark: New record for fauna of Tokat province.

***Prionyx nudatus* (Kohl, 1885)**

Material examined (3 ♀♀, 5 ♂♂): **AMASYA:** Taşova, Boraboy, 970 m, 05.IX.2015, ♂; **ÇANKIRI:** Çerkeş, 1000 m, 26.VI.2001, ♀, ♂; **KARS:** Central district, 1850 m, 10.VI.2007, ♂; 15.VIII.2008, ♀; **TOKAT:** Central district, 700 m, 15.VII.2015, 2 ♂♂; Reşadiye, Zinav, 970 m, 17.VIII.2014, ♀.

Distribution in Türkiye: It is distributed in all geographical regions except for Aegean region [2].

***Prionyx songaricus* (Eversmann, 1849)**

Material examined (1 ♂): **KARS:** Central district, 1850 m, 10.VI.2007, ♂.

Distribution in Türkiye: It is distributed in all geographical regions except for Black Sea and Marmara regions [2].

Remark: New record for fauna of Kars province.

Genus *Sphex* Linnaeus, 1758

***Sphex flavipennis* Fabricius, 1793**

Material examined (8 ♀♀, 36 ♂♂): **AMASYA:** Central district, 555 m, 07.VII.2013, 3 ♂♂; Taşova, Gökpınar, 730 m, 04.VII.2015, 2 ♀♀; **DENİZLİ:** Honaz, 800 m, 24.VI.2010, ♀, 4 ♂♂; **SİVAS:** Koyulhisar, 700 m, 27.VI.2015, ♀; **TOKAT:** Central district, 28.VI.2014, 680 m, ♂; Central district, Taşlıçiftlik, 700 m, 10.VII.2013, 14 ♂♂; Central district, Pınarlı, 750 m, 26.VIII.2013, 4 ♂♂; Erbaa, Karayaka, 350 m, 12.VII.2014, ♂; Erbaa, Tepekışla, 230 m, 18.VII.2015, 2 ♀♀, 2 ♂♂; Niksar, Efkerit Valley, 350 m, 21.VI.2013, 2 ♂♂; Niksar, Gökdere, 800 m, 04.VII.2013, ♂; Niksar, Köklüce, 400 m, 04.IV.2015, 2 ♀♀, 3 ♂♂; Reşadiye, Karlıyayla, 1200 m, 28.VII.2017, ♂.

Distribution in Türkiye: It is widespread in all geographical regions [2].

***Sphex funerarius* Gussakovskij, 1934**

Material examined (3 ♀♀, 4 ♂♂): **AMASYA:** Central district, Sarılar, 1120 m, 01.VII.2013, ♀; **ESKİŞEHİR:** Osmangazi University campus, 830 m, 25.VI.2014, 2 ♂♂; **SİVAS:** Koyulhisar, 1150 m, 13.VII.2017, ♂; **TOKAT:** Erbaa, Tepekışla, 230 m, 03.VI.2017, ♂; Niksar, Köklüce, 400 m, 04.IV.2015, 2 ♀♀.

Distribution in Türkiye: It is distributed in all geographical regions except for Southern Anatolia region [2].

Remark: New record for fauna of Amasya province.

***Sphex pruinosus* Germar, 1817**

Material examined (2 ♀♀, 4 ♂♂): **SİVAS:** Koyulhisar, 1150 m, 22.VI.2016, ♀; 13.VII.2017, ♂; **TOKAT:** Erbaa, Karayaka, 350 m, 12.VII.2014, ♂; Reşadiye, Karlıyayla, 1200 m, 28.VII.2017, ♀, 2 ♂♂.

Distribution in Türkiye: It is distributed in all geographical regions except for Southern Anatolia region [2].

1. CONCLUSIONS

According to Can & Gülmez [2, 11], the number of Sphecidae species occurring in Türkiye is 79. A total of 27 species and material belonging to Sphecidae was presented in this study.

According to this study, *Ammophila heydeni* is recorded for the first time from three provinces: Denizli, Eskişehir and Kocaeli. Also, *Palmodes occitanicus* is newly reported from Amasya and Eskişehir provinces. Tokat province has the highest number of new records with 4 species (*Ammophila hungarica*, *Ammophila pubescens*, *Chalybion omissum* and *Prionyx lividocinctus*) followed by Kars province with 3 species (*Podalonia luffi*, *Prionyx songaricus*, and *Sceliphron spirifex*) and Kırşehir province with 2 species (*Ammophila sabulosa* and *Podalonia fera*). *Sphex funerarius*, *Palmodes strigulosus* and *Ammophila terminata* are new records for Amasya, Çankırı and Sivas provinces respectively.

Our knowledge of sphecid wasps in some parts of Türkiye is still limited. Further faunal investigations are necessary to draw a complete list of Sphecidae species of the country.

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