

A New Record and Additional Contributions to Picture-Winged Flies (Diptera: Ulidiidae) Fauna of Turkey

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ABSTRACT

This study was based on Ulidiidae specimens which were collected different provinces of Turkey between years of 2005 and 2019. Adult fly specimens were collected using insect net from possible host plants and killed in the jar. In the study, *Herina frondescentiae* (Linnaeus, 1758) was recorded for the first time from Turkey. In addition, new localities for 6 species of Ulidiidae were reported for fauna of Turkey and contributed Turkey's biological diversity. The zoogeographic distributions of wing picture of these six species are presented.

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ÖZET

Bu çalışma Türkiye'nin farklı bölgelerinden 2005 ve 2019 yılları arasında toplanan Ulidiidae örneklerine dayanmaktadır. Ergin örnekler atrap kullanılarak muhtemel konukçu bitkiler üzerinden toplanmış ve öldürme şişesinde öldürülmüştür. Çalışmada, *Herina frondescentiae* (Linnaeus, 1758) Türkiye'den ilk kez kaydedilmiştir. İlave olarak, Türkiye Ulidiidae faunası için 6 türe ait yeni lokaliteler raporlanmış ve Türkiye'nin biyolojik çeşitliliğine katkı sağlanmıştır. Bu altı türün zoocoğrafik yayılışları ve kanat resimleri de sunulmuştur.

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INTRODUCTION

The picture-winged flies (Ulidiidae) are moderately small Diptera family with about 700 species and the third largest family of Tephritoidea (Kameneva, 2005). According to Oosterbroek (2006), they are usually small to large (3-11 mm), moderately robust flies, color varying from partially yellow and dark to all black, in some cases grey or metallic. Larvae are found in rotting vegetable matter, leaf litter, fruit, dung, sap exuding from tree wounds, and underneath tree bark; some species are fully phytophagous, feeding on sugar beet, onions, and maize. Adults are found in various habitats ranging from saline biotopes to sandy areas or moist and marshy grounds, on flowers, tree trunks, or on excrement.

In the Palearctic Region, there are 137 species belonging to 19 genera of the family Ulidiidae (Soós, 1984; Kameneva, 2012; Kameneva and Korneyev,

2012; Namin and Kameneva, 2013; Morgulis, 2013; Morgulis et al., 2013; Morgulis and Freidberg, 2014). In the catalogue of Palearctic Diptera, there are 7 species from 2 genera of Ulidiidae known from Turkey (Soós, 1984). These are *Dorycera graminum* (Fabricius, 1794), *Dorycera judea* (Hendel, 1908), *Dorycera maculipennis* (Macquart, 1843), *Dorycera nitida* (Hendel, 1910), *Dorycera persica* (Hennig, 1939), *Dorycera pictipennis* (Hennig, 1939), and *Otites caph* (Loew, 1854). Mesci (2011) were reported 11 species of Ulidiidae from different regions of Turkey and four species of them recorded new for fauna of Turkey. Kameneva and Korneyev (2012) identified *Herina lazi* from as a new species from Trabzon province of Turkey. Koçak and Kemal (2013) reviewed Ulidiidae fauna of Turkey and reported 29 species from different provinces of Turkey. In the recent study, Çerçi (2017) recorded *Otites lamed* (Schrank, 1781) from Istanbul province of Turkey. Thus, 30 species of Ulidiidae were

reported by different authors up to date.

Main purpose of this study, to provide contribution to fauna of Diptera and biological diversity of Turkey. In the study, 6 species of Ulidiidae which were distributed different provinces of Turkey were determined. Also, *Herina frondescentiae* (Linnaeus, 1758) were recorded for the first time from Turkey. In the paper, wing figures and zoogeographic distribution of each species are presented.

MATERIALS and METHODS

Adult specimens of Ulidiidae flies were collected from various climatic conditions and habitats of Turkey using insect net in the years of 2005-2019. The obtained specimens were killed in the killing jars and brought to the laboratory for preparing standard museum materials. Thus all the specimens were made ready for the identification of the species. Specimens were identified by using the keys of Merz (2002), Kameneva and Korneyev (2006), Morgulis et al. (2013), and Mesci (2011). Ulidiidae specimens were deposited in insect laboratory of Gaziantep University (GUGT).

RESULTS and DISCUSSION

Results

In this paper, six species belonging to three genera of Ulidiidae have been determined from different provinces of Turkey. In the paper, wing figures, specimens examined and zoogeographic distribution of each species have been presented. Also, adult figures of *Herina frondescentiae* (Linnaeus, 1758) have been given in the below. Species listed alphabetical order in the below.

Dorycera caucasica Hendel, 1910 (Figure 1)

Specimens examined: 1 ♀, 1 ♂, **Kars, Sarıkamış**, 40°17'21"N, 42°39'14"E, 2016 m, 08.VII.2018.

Zoogeographic distribution: Azerbaijan, Armenia, Turkey. (Hennig, 1939; Soós, 1984; Mesci and Hasbenli, 2013).

Dorycera graminum (Fabricius, 1794) (Figure 2)

Specimens examined: 12 ♀♀, 10 ♂♂, **Adıyaman, Besni, Tetirli**, 37°29'35"N, 37°42'37"E, 839 m, 17.V.2019.

Zoogeographic distribution: Austria, Britain Is., Corsica, Croatia, French Slovakia, Spanish mainland, Turkey (Kameneva and Greve Jensen, 2013; Koçak and Kemal, 2013).

Dorycera maculipennis Macquart, 1843 (Figure 3)

Specimens examined: 2 ♂♂, **Gaziantep, Oğuzeli, Merkez**, 37°57'11"N, 37°30'52"E, 716 m, 28.VI.2019.

Zoogeographic distribution: Bulgaria, Cyprus, Dodecanese Is., Greek mainland, Italian mainland, Near East, Spanish mainland, Turkey (Kameneva and Greve Jensen, 2013; Mesci and Hasbenli, 2015a).

Herina frondescentiae (Linnaeus, 1758) (Figure 4)

Specimens examined: 3 ♀♀, 2 ♂♂, **Kars, Sarıkamış**, 40°17'21"N, 42°39'14"E, 2016 m, 08.VII.2018.

Zoogeographic distribution: Albania, Andorra, Austria, Belgium, Britain I., Central European Russia, Croatia, Czech Republic, Danish mainland, Estonia, Finland, French mainland, Germany, Greek mainland, Hungary, Ireland, Italian mainland, Lithuania, Near East, Norwegian mainland, Poland, Romania, Slovakia, Spanish mainland, Sweden, Switzerland, The Netherlands, Ukraine (Kameneva and Greve Jensen, 2013).

Remark: This species was recorded for the first time from Turkey.

Herina lugubris (Meigen, 1826) (Figure 5)

Specimens examined: 3 ♀♀, 1 ♂, **Kayseri, Sarız**, 38°16'45"N, 36°23'33"E, 1545 m, 08.VII.2005; 2 ♂♂, **Mersin, Tarsus**, 37°11'35"N, 34°48'55"E, 565 m, 11.VII.2012; **Samsun, Alaçam, Kapaklı**, 41°30'19"N, 35°35'57"E, 801 m, 28.VII.2017.

Zoogeographic distribution: Balearic Is., Belgium, Britain I., Czech Republic, French mainland, Germany, Ireland, Italian mainland, Portuguese mainland, Sardinia, Spanish mainland, Turkey (Kameneva and Greve Jensen, 2013; Mesci and Hasbenli, 2015a).

Myennis octopunctata (Coquebert, 1798) (Figure 6)

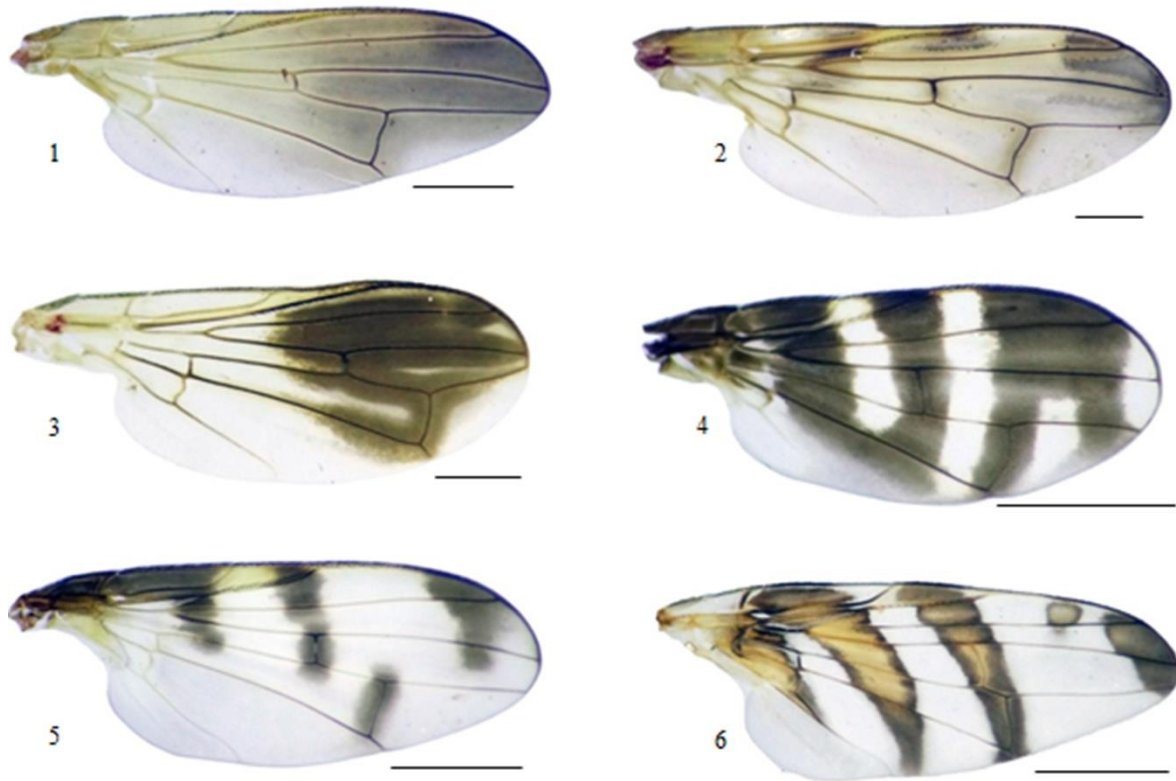
Specimens examined: 1 ♀, 2 ♂♂, **Çorum, Mecitözü, İbek**, 40°20'19"N, 35°14'25"E, 680 m, 28.VII.2015; 1 ♀, **Tokat, Zile**, 40°18'27"N, 35°58'21"E, 810 m, 29.VI.2017; 2 ♂♂, **Gaziantep, Oğuzeli**, 37°57'11"N, 37°30'52"E, 716 m, 28.VI.2019.

Zoogeographic distribution: Andorra, Austria, Belgium, Britain I., Central European Russia, Czech Republic, East European Russia, East Palearctic, Franz Josef Land, French mainland, Germany, Greek mainland, Hungary, Italian mainland, Near East, North European Russia, Poland, Romania, Sardinia, Slovakia, South European Russia, Spanish mainland, Switzerland, Ukraine, Turkey (Kameneva and Greve Jensen, 2013; Koçak and Kemal, 2013).

DISCUSSION

Among the family of Tephritoidea, Tephritidae is the best-known family with reported 169 species in Turkey (Görmez and Kütük, 2020). Families Platystomatidae and Ulidiidae known more than with 20 species in Turkey (Mesci and Hasbenli, 2015 a, b). Also, Family Pallopteridae known with 4 species in Turkey (Yaran, 2019). In this study, we provided some new localities for 6 species of Ulidiidae for current distribution of the Turkish fauna. Also, *Herina frondescentiae* were recorded for the first time from Turkey together with this study. Turkey has a rich biodiversity because of its geographic position and climatic conditions. It is expected that many species will be recorded or

described with new studies.



Figures 1-6. Wing patterns of species: 1) *Dorycera caucasica*, 2) *Dorycera graminum*, 3) *Dorycera maculipennis*, 4) *Herina frondescens*, 5) *Herina lugubris*, 6) *Myennis octopunctata*. (Scale bar: 1 mm)

Şekiller 1-6. Türlerin kanat modelleri: 1) *Dorycera caucasica*, 2) *Dorycera graminum*, 3) *Dorycera maculipennis*, 4) *Herina frondescens*, 5) *Herina lugubris*, 6) *Myennis octopunctata*. (Ölçek çubuğu: 1 mm)

Statement of Conflict of Interest

Authors have declared no conflict of interest.

Author's Contributions

The contribution of the authors is equal.

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