

New Records for Stratiomyidae (Diptera) from Ordu and Hatay Provinces in Turkey

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ABSTRACT

In this study, new or rarely collected species of Turkish Stratiomyidae has been recorded. *Beris kovalevi* Rozkošný and Nartshuk, 1980 and *Pachygaster leachii* (Curtis, 1924) species are recorded the first time for the Turkish Fauna. *Pachygaster atra* (Panzer, 1798) was recorded for the first time in Ordu, while *Chloromyia formosa* (Scopoli, 1763) was recorded for the first time in Ordu and Hatay provinces. All species were photographed as to be seen with their important morphological characters and the distributions of these species were briefly discussed.

Key words: *Beris kovalevi*, *Pachygaster leachii*, fauna, biodiversity, zoogeography.

INTRODUCTION

Soldier flies (Stratiomyidae) with almost 2.700 species in the world are one of the important families of Diptera. This family has been spread throughout the world, especially in the temperate and tropical regions (Woodley, 2001; 2011). Beridinae includes only 33 Palaearctic species (Khaghaninia & Kazerani, 2014; Üstüner & Hasbenli, 2011; Woodley 2011). But until now, the only *Beris chalybata* (Forster, 1771) and *Beris clavipes* (Linnaeus, 1767) species have been recorded so far in Turkey (Üstüner & Hasbenli, 2003; 2011). Only three species of Pachygastrinae were known from Turkey: *Pachygaster atra* (Panzer, 1798), *Pachygaster emerita* Krivosheina & Freidberg, 2004 and *Eupachygaster tarsalis* (Zetterstedt, 1842) (Üstüner, 2012). When the previous studies were taken into account, *Chloromyia formosa* (Scopoli, 1763) which is one of the species out of two of the *Chloromyia* genus belonging to the Sarginae has been to be recorded only in the provinces of Bursa and Erzurum till this study is being conducted (Rozkošný, 1982; Hurkmans, Hayat, & Özbek, 1997). During our entomological investigation that is done to the north-east Black Sea coast and the eastern Mediterranean coast of Turkey in 2015, we have found two new and a new local records for these subfamilies of Stratiomyidae for Turkey.

MATERIALS AND METHODS

All specimens were collected by a sweeping net. Most specimens were collected on the Black Sea coasts in Northeast of Turkey in 2015. One specimen of *Chloromyia formosa* was collected on the Mediterranean coasts in southern Turkey in 2015. All specimens are deposited in the collection of the Selçuk University, Department of Biology in Konya, Turkey. Illustrations of the specimens were made with Leica EZ4 D stereomicroscope and then imported into Adobe Photoshop CS9 for labeling and plate composition.

RESULTS

Subfamily Beridinae

Genus *Beris* Latreille, 1802

Key to The Turkish Species of *Beris* Latreille, 1802

The following key (Based on Rozkošný, 1983) has been prepared according to the three species of *Beris* in Turkey.

- 1- Thorax black and ground-colour of abdomen orange....*B. clavipes* (Linnaeus, 1767)
- Thorax metallic green and Ground-colour of andomen brown or black2
- 2- The upper half of the last flagellomere is as thin as 1/3 of the lower half. Legs yellow with darkened tarsi, especially fore tarsi contrastingly dark. Female*B. chalybata* (Forster, 1771)
- Last flagellomere subconical. Legs dark brown, only knees and basal 1/3-1/2 on fore and mid-tibiae yellowish. Hind basitarsus long and swollen. Male*B. kova/levi* Rozkošný and Nartshuk, 1980

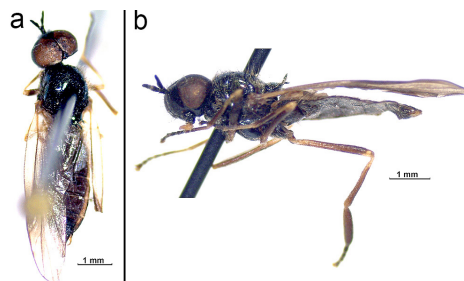
***Beris kovalevi* Rozkošný and Nartshuk, 1980 (Fig. 1).**

Fig. 1. *Beris kovalevi*; a) Male in dorsal view, b) Male in lateral view.

General distribution

The species is known from Armenia, Georgia, Russia (Rozkošný & Nartshuk, 1980; Rozkošný, 1982; Woodley, 2011) (Fig. 2).



Fig. 2. General distribution of *Beris kovalevi*

In Eastern Europe, *B. kovalevi* was recorded only from Ciscaucasia (Nartshuk, 2009). In this study, it was recorded in the Black Sea coast of northeastern Turkey, located west of the Caucasus. The distribution of the species appears Caucasia and Black Sea coast. It can be characterized as Caucasian-Anatolian geo-element (Nartshuk, 2009). This record is the first for the Turkish fauna.

Distribution in Turkey

This is a new record for Turkey.

Material examined: Turkey, Ordu, Gökçöy, İçyaka Köyü, Kavaslar Mevki, Harmanyeri, 40°43'47"N, 37°38'47"E, elev. 950 m, 15.07.2015, 1♂ (leg. E. Demirel) (Fig. 3).

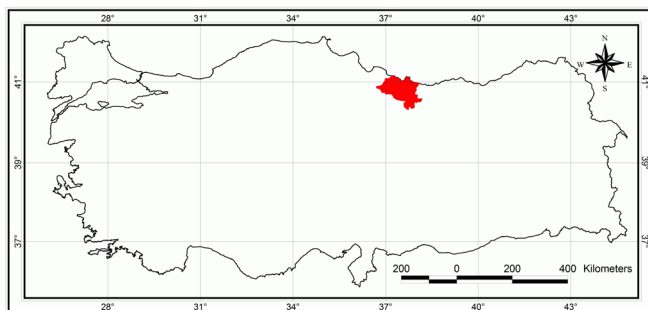


Fig. 3. Local distribution of *Beris kovalevi*.

Subfamily PACHYGASTERINAE

Genus *Pachygaster* Meigen, 1803

Pachygaster atra (Panzer, 1798) (Fig. 4)

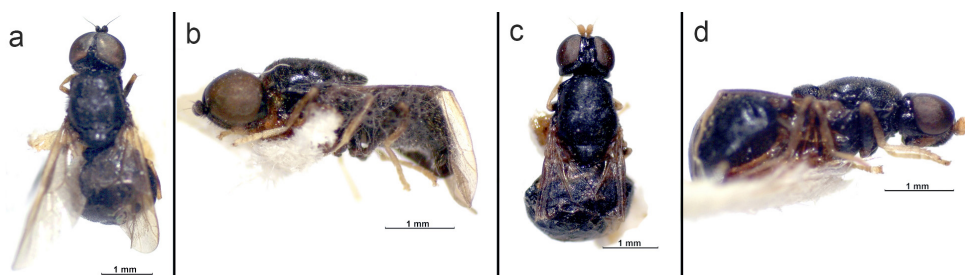


Fig. 4. *Pachygaster atra*; a. Male in dorsal view, b. Male in lateral view, c. Female in dorsal view, d. Female in lateral view

General distribution

Euro-Caucasian species ranging from Austria, Belgium, Bulgaria, Czech Republic, England, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Rumania Scotland, Slovakia, Spain, Sweden, Switzerland, Wales, Yugoslavia in the western Palaearctic Region, and Northern Caucasus (Georgia), Russia, Ukraine, Turkey and Israel (Dubrovsky, 2004; Krivosheina, 2004; Lindner & Freidberg, 1978; Nartshuk, 2009; Rozkošný, 1983; Rozkošný & Nartshuk, 1988; Üstüner, 2012; Woodley, 2001) (Fig. 5).

P. atra has been recorded from the Atlantic coast of Europe to the Balkan and Caucasus and from the southern end of Scandinavia to Caucasus to the Mediterranean coast of Europe, including Turkey and Israel. The species has been known from the Marmara Sea in northwestern Turkey (Balıkesir (Bandırma-Erdek), Kocaeli (İzmit)) (Rozkošný, 1983; Üstüner, 2012) (Fig. 6). The species was recorded for the first time from Ordu province.

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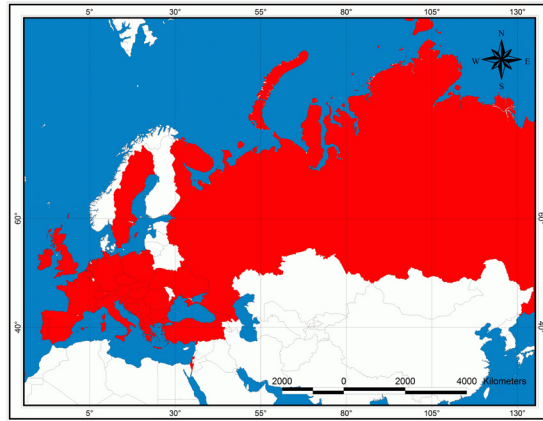


Fig. 5. General distribution of *Pachygaster atra*

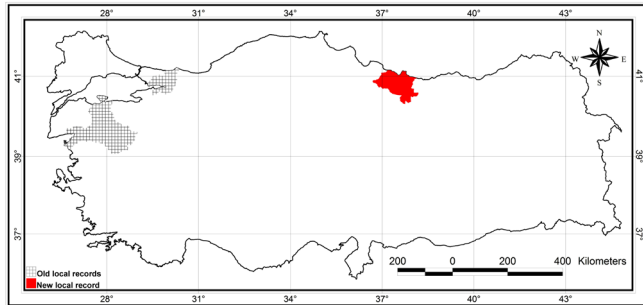


Fig. 6. Local distribution of *Pachygaster atra*.

Subfamily PACHYGASTERINAE

Genus *Pachygaster* Meigen, 1803

***Pachygaster leachii* (Curtis, 1924) (Fig. 7)**

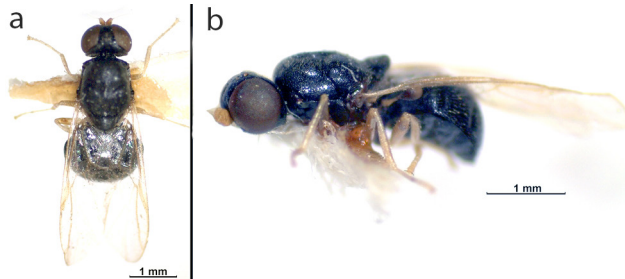


Fig. 7. *Pachygaster leachii*; a) Female in dorsal view, b) Female in lateral view

General distribution

This species known as the Euro-Caucasian species occurs from Ireland, southern Wales and England, southern Sweden and the St. Petersburg area in Russia to Portugal, Spain, Italy, Bulgaria and Ukraine, and to Azerbaijan and Georgia in Caucasian area (Dubrosky, 2004; Krivosheina, 2004; Mason, Rozkošný, & Hauser, 2009; Nartshuk, 2009; Rozkošný, 1982; Woodley, 2001) (Fig. 8).

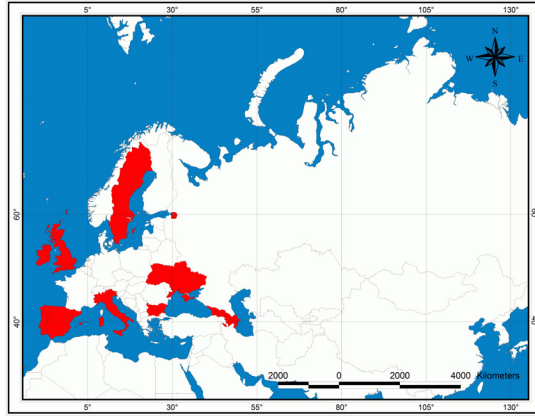


Fig. 8. General distribution of *Pachygaster leachii*.

This is the first record of this species for Turkey, and it expands the range of its distribution into the south east.

Distribution in Turkey

This is a new record for Turkey.

Material examined: Turkey, Ordu, Gökçöy, İçyaka Köyü, Kavaslar Mevki, Harmanyeri, 40°43'47"N, 37°38'47"E, elev. 950 m, 15.VII.2015, 3♀♀ (leg. E. Demirel) (Fig. 9).

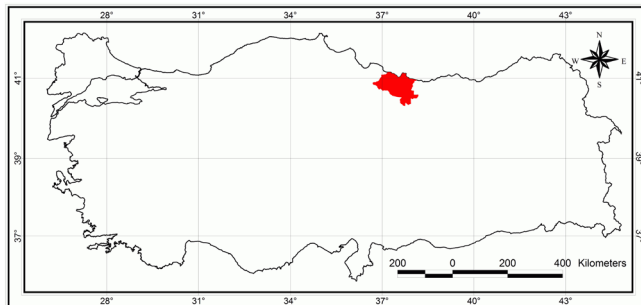


Fig. 9. Local distribution of *Pachygaster leachii*.

Subfamily SARGINAE

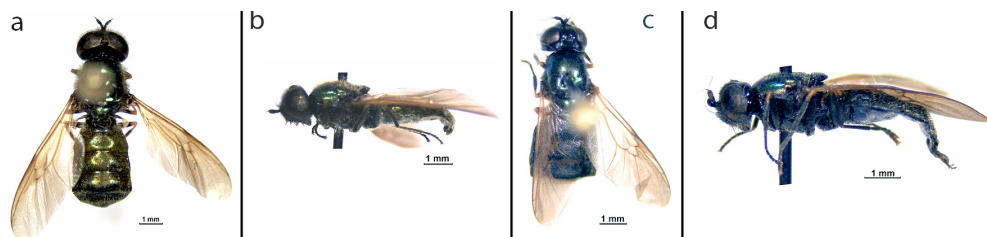
Genus *Chloromyia* Duncan, 1837*Chloromyia formosa* (Scopoli, 1763) (Fig. 10)

Fig. 10. *Chloromyia formosa*; a) Male in dorsal view, b) Male in lateral view, c) Female in dorsal view, d) Female in lateral view.

General distribution

This species is widely distributed over the Western Palaearctic extending from Algeria, Austria, Bulgaria, Czech Republic, England, France, Germany, Greece, Italy, Morocco, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tunisia, Turkey, Yugoslavia (Lindner, 1938; Rozkošný, 1982; Rozkošný & Nartshuk, 1988; Woodley, 2001) (Fig. 11).

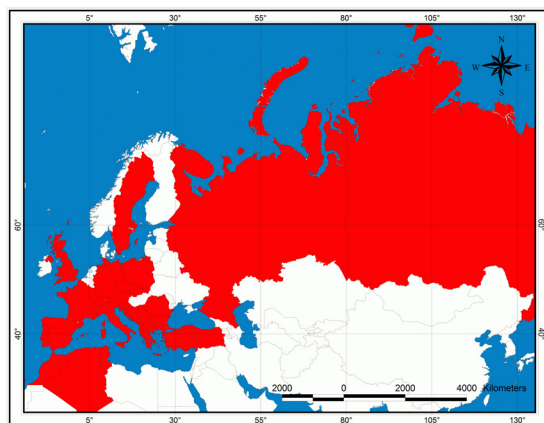


Fig. 11. General distribution of *Chloromyia formosa*.

These records are the first from Ordu and Hatay provinces of Turkey.

Distribution in Turkey

Bursa, Erzurum (Rozkošný, 1982; Hurkmans et al., 1997) (Fig. 12).

Material examined: Turkey, Ordu, Gökçöy, İçyaka Köyü, Kavaslar Mevki, Harmanyeri, 40°43'47"N, 37°38'47"E, elev. 950 m, 15.VII.2015, 8♂♂, 8♀♀ (leg. E. Demirel); Hatay, Yayladağı, Kulaç yolu, 35°52'10"N, 36°12'19"E, elev. 792 m, 17.IV.2015, 1♀ (leg. E. Demirel) (Fig. 12).

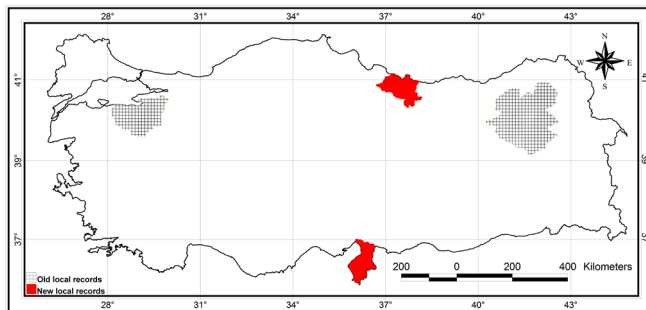


Fig. 12. Local distribution of *Chloromyia formosa*.

DISCUSSION

Two species, *Beris kovalevi* Rozkošný and Nartshuk, 1980 and *Pachygaster leachii* (Curtis, 1924) are new records for the fauna of Turkey. *Pachygaster atra* (Panzer, 1798) and *Chloromyia formosa* (Scopoli, 1763) are additional new records for local regions of Turkey. As a result of these findings, it is seen that expanded the distribution range of the species and that more new records will be found in Turkey.

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Received: March 06, 2018

Accepted: August 09, 2019