

A contribution to the fauna of Ulidiidae and Otitidae (Diptera) of Iran Материалы к фауне Ulidiidae и Otitidae (Diptera) Ирана

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Ключевые слова: Diptera, Ulidiidae, Otitidae, провинция Восточный Азербайджан, Иран, новые находки.

Abstract. In a total 14 species from 6 genera of Ulidiidae and Otitidae families (Diptera) were collected from three localities: Qurigol Lake, Kandovan valley and Aynali forests in East Azerbaijan Province (Iran) during 2010. Seven species are reported as new for the Iranian fauna. Biology and habitat preferences of some species are discussed.

Резюме. 14 видов из 6 родов Ulidiidae и Otitidae (Diptera) были собраны в 2010 году в Иране из трех различных местообитаний в провинции Восточный Азербайджан: озеро Кюригол, долина Кандован, лес Айнали. Семь видов отмечены как новые для Ирана. Приведены данные по биологии и местообитаниям некоторых видов.

Introduction

Families Ulidiidae Macquart, 1835 and Otitidae Westwood, 1840 belong to the superfamily Tephritoidea of the acalyptrate Diptera.

Picture-winged flies Ulidiidae (Fig. 1) include about 430 species assigned to about 60 genera. This family occurs almost worldwide, with more than half of the species and 75% of the genera in the Neotropical Region [Kameneva, 2008]. These flies are small to medium-sized (2–13 mm). Ulidiidae consists of diversely colored flies (black or reddish-yellow, often dull grey, sometimes with metallic green or blue shine) with predominantly hyaline wings, often with subbasal and apical dark spots.

Family Otitidae Westwood, 1840 includes about 260 species assigned to 31 genera, distributed mainly in Palaearctic Region and America. Otitids are small to medium sized (3–12 mm) flies. They are diversely colored and their wings could be predominantly hyaline or with a number of dark spots.

The fauna of Ulidiidae and Otitidae of Iran is poorly known.

Ulidiid fauna consisted of 13 species from 3 genera up to date. These species are *Physiphora alceae* (Preyssl, 1791), *Timia beybienkoi* Zaitzev, 1982, *T. pulchra* Röder, 1889, *T. (Empylocera) abstersa* (Loew, 1873), *T. (E.) amoena* (Loew, 1874), *T. (E.) camillae* (Mik, 1889), *T. (E.)*

jakowlewi Hendel, 1908, *T. (E.) persica* Hennig, 1965, *T. (E.) problematica* Hennig, 1965, *T. (E.) xanthaspis* (Loew, 1868), *Ulidia albidipennis* Loew, 1845, *U. melampodia* Loew, 1873, *U. ruficeps* Becker, 1913 [Loew, 1874; Röder, 1889; Becker, 1913; Hennig, 1965; Steyskal, 1977; Zaitzev, 1982, 1984; Kameneva, 2000]. Three species are endemics of Iran: *T. pulchra*, *T. (E.) amoena*, *T. (E.) persica*.

Otitid fauna consisted of 9 species from 3 genera up to date. These species are *Dorycera melanotica* Hennig, 1939, *D. persica* Hennig, 1939, *Melieria (Melieria) limbidipennis* Becker, 1907, *M. (M.) nigratarsis* Becker, 1903, *M. (M.) unicolor* (Loew, 1854), *M. (Hypochra) asiatica* (Hennig, 1939), *Ceroxys (Ceroxys) confusa* (Becker, 1913), *C. (C.) urticae* (Linnaeus, 1758), *C. (C.) hortulana* (Rossi, 1790) [Becker, 1913; Hennig, 1939; Soós, 1971, 1984; Kameneva, 2000; Fazel et al., 2012]. Two species are endemics of Iran: *D. persica* and *C. (C.) confusa*.

The aim of this study is to present new data on the Diptera fauna of Iran.

Material and methods

Materials were collected by sweeping net on side of swamplands, springs, musty materials and on flowers heads of some plants of families Asteraceae, Lamiaceae and Ranunculaceae in seventeen localities (Qurigol lake), on flower heads of some plants of families Asteraceae, Apiaceae and Ranunculaceae in seven localities (Kandovan valley) and in one locality in Aynali forests.

Qurigol (Color plate 24: fig. 2, 3) is a small lake, about 200 hectares expanse, fresh to brackish with associated marshes in the steppe uplands of Northwestern Iran. There are extensive areas of reed beds. It is situated in about 40 km east-southeast of Tabriz city with UTM (Universal Transfer Mercator) coordinate system, X from 648018.93 to 649957.19 E; Y from 4196810.31 to 4198645.34 N and varying latitude from 1833 m to 1950 m a.s.l. The surrounding area is semi-arid, and there is wheat cultivation on the west and damp grasslands on the southwest. This area has rich grass lands with various species of Asteraceae, Cyperaceae, Lamiaceae, Plantaginaceae, Poaceae and Ranunculaceae.

Kandovan valley (Color plate 24: fig. 4, 5) is one of the

longest Sahand chain mountains' valleys with about 12 km length, located in southern east of East Azerbaijan Province of Iran. This biosphere reserve is situated in the south of Sultan mountain, one of the Sahand's summits, with about 35.5 km distance of Tabriz city with UTM (Universal Transfer Mercator) coordinate system, X from 609181.42 to 617583.55 E; Y from 4177170.42 to 4183938.80 N and varying latitude from 1860 m to 3110 m a.s.l. This area has rich grass lands with various species of Asteraceae, Apiaceae, Leguminaceae, Poaceae and Ranunculaceae.

Aynali forests (Color plate 24: fig. 6, 7) are located in west of Qaradag forests (Arasbaran forests), a registered biosphere reserve in world heritages by UNESCO since 1976 in East Azarbaijan Province, Iran. This biosphere reserve is situated in the north eastern Tabriz city with a distance of 112.6 km and UTM (Universal Transfer Mercator) coordinate system, X from 654517.66 to 655110.71 E; Y from 4306958.17 to 4308226.18 N and varying latitude from 1271 m to 1336 m. Specimens were collected from wet lands having long reed beds near to wood lands.

The specimens listed in this paper are deposited in the Insect Museum of Tabriz University and in Moscow State University, Russia. Morphological terminology generally follows McAlpine [1981]. The abbreviations of veins and setae used in descriptions follow White et al. [1999].

Family Otitidae Westwood, 1840 *Herina* Robineau-Desvoidy, 1830

This genus occurs in the Palaearctic (20 species), Nearctic (4) and Oriental (4) regions. The New World species assigned to *Herina* are believed to be non-congeneric. The center of its diversity lies in Southern and Central Europe. Flies occur usually on both moderately dry and swampy meadows, near streams, and are apparently associate with plants of the families Poaceae and Cariaceae [Kameneva, 2007].

Herina frondescentiae (Linnaeus, 1758)

Material. 1♀, 1♂, Qurigol, 37°55'N / 46°41'E, 1915 m, 4.08.2010; 1♂, Kandovan, 37°45'N / 46°17'E, 2696 m, 25.06.2010 (S. Khaghaninia, Y. Gharajedaghi leg.; T.V. Galinskaya det.).

Distribution. Sweden, Finland, Denmark, Latvia, British Islands, France, the Netherlands, Germany, Spain, Italy, Hungary, Romania, Albania [Hennig, 1939]; Ukraine, Croatia [Soós, 1957]; Estonia [Elberg, 1969]; European Russia [Soós, 1984]; Poland [Nowakowsky, 1991]; Lithuania [Pakalniskis, Podenas, 1992]; Czech Republic, Slovakia [Martinek, 1997]; Switzerland [Merz, 2002].

Notes. New record for the Iranian insect fauna.

Ceroxys Macquart, 1835

This genus occurs mainly in the Palaearctic Region (15 species), with some species in Nearctic (1) and Neotropic (5) regions.

Ceroxys munda (Loew, 1868)

Material. 1♀, Qurigol, 37°54'N / 46°41'E, 1950 m, 9.07.2010 (S. Khaghaninia, Y. Gharajedaghi leg.; T.V. Galinskaya det.).

Distribution. European Russia, Ukraine, Kazakhstan, Northwest China [Hennig, 1939]; Czech Republic, Hungary, Kyrgyzstan, Tajikistan, Turkmenistan, and Mongolia [Soós, 1984]; Slovakia, Armenia [Kameneva, 2000].

Biology. Synanthropic species, develops in manure, latrines and rubbish pits.

Ceroxys (Engytortalis) robusta Loew, 1873

Material. 4♀, 3♂, Arasbaran forests (S. Khaghaninia, Y. Gharajedaghi, E. Zarghani leg.; T.V. Galinskaya det.).

Distribution. Turkey [Hennig, 1939]; Mongolia [Soós, 1971]; Uzbekistan [Soós, 1984]; Armenia, Azerbaijan, Kazakhstan, Tajikistan, Turkmenistan, Israel, Western China [Kameneva, 2000].

Ceroxys urticae (Linnaeus, 1758)

Material. 1♂, Qurigol, 37°54'N / 46°42'E, 1921 m, 6.06.2010; 1♀, Qurigol, 37°54'N / 46°41'E, 1950 m, 9.07.2010; 2♀, 1♂, Kandovan, 37°45'N / 46°18'E, 2844 m, 24.05. May 2010; 3♀, 2♂, Arasbaran forests (S. Khaghaninia, Y. Gharajedaghi, E. Zarghani leg.; T.V. Galinskaya det.).

Distribution. European Russia, Kazakhstan, Turkmenistan, China, Egypt [Hennig, 1939]; Mongolia [Soós, 1971]; all parts of Europe [Jaroszewski, 1877; Soós, 1984]; Eastern Siberia and the Far East, Kyrgyzstan, Uzbekistan, Israel, Iran [Kameneva, 2000].

Biology. The species is associate with Phragmites and other tall shore or wet meadow grasses [Kabos, van Aartsen, 1984]. Larva of this species is described by Lobanov in 1964. Larvae develop in rubbish pits, landfills and manure [Lobanov, 1964, 1972]. Imago frequents dust-holes, manure and other garbage, various plants in gardens and vegetable gardens as well.

Melieria Robineau-Desvoidy, 1830

This genus occurs mainly in the Palaearctic Region (30 species), with some species in Holarctic (2), Nearctic (3) and Afrotropical (2–3) regions. Flies occur usually on wet (often saline) meadows. Larvae develop in rotting remains of herbaceous plants (Artemisia, Juncus and Phragmites) [Kameneva, 2001].

Melieria nigratarsis Becker, 1903

Material. 1♀, 1♂, Qurigol, 37°54.975'N / 46°41.120'E, 1943 m, 9.07.2010; 1♂, Arasbaran forests (S. Khaghaninia, Y. Gharajedaghi, E. Zarghani leg.; T.V. Galinskaya det.).

Distribution. Ukraine, European Russia, Kazakhstan, Uzbekistan, Turkmenistan, Eastern and Western Siberia, Iraq, Tunisia, Egypt [Soós, 1984]; Israel, Saudi Arabia, Iran, Western China [Kameneva, 2000].

Melieria obscuripes (Loew, 1873)

Material. 1♀, Qurigol, 37°55.028'N / 46°41.244'E, 1847 m, 2.09.2010 (S. Khaghaninia, Y. Gharajedaghi leg.; T.V. Galinskaya det.).

Distribution. Uzbekistan, Tajikistan, Mongolia, Western China [Soós, 1984]; Eastern Siberia, Kazakhstan, Kyrgyzstan [Kameneva, 2000].

Notes. New record for the Iranian insect fauna.

Melieria picta (Meigen, 1826)

Material. 2♀, Qurigol, 37°55.215'N / 46°41.519'E, 1888 m, 4.08.2010 (S. Khaghaninia, Y. Gharajedaghi leg.; T.V. Galinskaya det.).

Distibution. All parts of Europe, Alaska [Soós, 1984]; Kazakhstan [Kameneva, 2000]; Canada [Kameneva, 2008].

Biology. Larvae are associate with dead or rotting stems and roots of *Artemisia maritima* (Asteraceae) [Kabos, van Aartsen, 1984].

Notes. New record for the Iranian insect fauna.

Family Ulidiidae Macquart, 1835*Timia* Wiedemann, 1824

This is a Palaearctic genus, which includes 57 described species, distributed in semi-arid and arid areas [Zaitzev, 1982, 1984; Kameneva, 1996, 2010]. Adults of *Timia* species feed mainly on various organic residues (decaying plant tissue, animal corpses and excrements).

Sometimes it is difficult to separate *Timia* from *Ulidia* Meigen, 1826. The differences used so far are mainly as follow: the frons smooth (in *Timia*) or dimpled (in *Ulidia*) (with some exceptions), head and thorax microtrichose (in *Timia*) or bare (in *Ulidia*, but some assigned to *Timia* have shiny head and thorax, and *Ulidia metope* Kameneva, 2010 has frons widely microtrichose) [Chen, Kameneva, 2009; Kameneva, 2010].

Timia (Empyelocera) abstersa (Loew, 1873)

Material. 6♀, 3♂, Arasbaran forests; 1♀, Kandovan, 37°46'N / 46°16'E, 2496 m, 2.08.2010; 1♂, Kandovan, 37°42'N / 46°18'E, 2863 m, 5.09.2010 (S. Khaghaninia, Y. Gharajedaghi, E. Zarghani leg.; T.V. Galinskaya det.).

Distibution. Uzbekistan, Tajikistan, Kyrgyzstan, Turkmenistan [Loew, 1873]; South of the European Russia, the Caucasus, Kazakhstan, Mongolia [Zaitsev, 1982]; Iran [Zaitzev, 1984]; Ukraine, Moldova, Kyrgyzstan [Kameneva, 2000].

Timia (Empyelocera) melanorrhina (Loew, 1866)

Material. 1♂, Kandovan, 37°46'N / 46°15'E, 2341 m, 25.06.2010; 1♂, Kandovan, 37°45'N / 46°18'E, 2844 m, 24.05.2010; 1♀, Arasbaran forests (S. Khaghaninia, Y. Gharajedaghi, E. Zarghani leg.; T.V. Galinskaya det.).

Distibution. South of the European Russia [Loew, 1866]; Kazakhstan, Uzbekistan, Tajikistan, Kyrgyzstan, Turkmenistan, Greece [Zaitzev, 1984]; Italy [Belcari et al., 1995]; Iraq, Afghanistan [Kameneva, 2000].

Notes. New record for the Iranian insect fauna.

Ulidia Meigen, 1826

This genus includes 21 described species distributed mainly in semiarid areas from the Mediterranean in the West to China (Inner Mongolia and Tibet) in the East [Zaitzev, 1984; Kameneva, 2008, 2010; Chen, Kameneva, 2009]. No one of the larvae of this genus has been described yet.

Ulidia nigripennis Loew, 1845

Material. 1♂, Kandovan, 37°42'N / 46°18'E, 2863 m, 25.06.2010;

1♀, Kandovan, 37°44'N / 46°19'E, 3005 m, 2.08.2010; 1♀, 1♂, Qurigol, 37°55.215'N / 46°41.519'E, 1888 m, 4.08.2010 (S. Khaghaninia, Y. Gharajedaghi leg.; T.V. Galinskaya det.).

Distibution. Hungary [Schiner, 1864]; Ukraine [Jaroszewski, 1884]; Germany [Zaitzev, 1984]; Slovakia [Roháček, 2006]; Italy, Poland [Hennig, 1940]; Moldova, Israel [Kameneva, 2000].

Notes. New record for the Iranian insect fauna.

Ulidia ruficeps Becker, 1913

Material. 1♀, Kandovan, 37°42'N / 46°18'E, 2863 m, 15.07.2010; 1♂, Qurigol, 37°54.975'N / 46°41.120'E, 1943 m, 9.07.2010 (S. Khaghaninia, Y. Gharajedaghi leg.; T.V. Galinskaya det.).

Distibution. Iran, Lebanon [Hennig, 1940]; Uzbekistan, Tajikistan, Kyrgyzstan, Turkmenistan [Zaitzev, 1984]; Italy [Belcari et al., 1995]; European Russia, Turkey [Kameneva, 2000].

Ulidia salonikiensis Hennig, 1940

(Fig. 1)

Material. 1♂, Kandovan, 37°44'N / 46°19'E, 2900 m, 25.06.2010; 1♀, 1♂, Arasbaran forests (S. Khaghaninia, Y. Gharajedaghi, E. Zarghani leg.; T.V. Galinskaya det.).

Distibution. Greece [Hennig, 1940]; Uzbekistan, Tajikistan, Kyrgyzstan, Turkmenistan [Zaitzev, 1984]; Italy [Belcari et al., 1995].

Notes. New record for the Iranian insect fauna.



Fig. 1. *Ulidia salonikiensis* Hennig, 1940, total view.
Рис. 1. *Ulidia salonikiensis* Hennig, 1940, общий вид.

Physiphora Fallén, 1810

This genus contains 24 species, distributed in all geographic regions. The greatest diversity of species is registered in Afrotropical Region.

Larvae in decaying plant residues, manure, compost. Larvae of *Ph. alceae* (Preyßler, 1791) develop in goat's and cow dung, rotting clover, onion; larvae of *P. clausa* (Macquart, 1843) are associate with wild mushrooms [Chen, Kameneva, 2007].

Physiphora alcea (Preysslér, 1791)

Material. 1♀, Kandovan, 37°45'N / 46°18'E, 2844 m, 24.05.2010 (S. Khaghaninia, Y. Gharajedaghi leg.; T.V. Galinskaya det.).

Distribution. Europe, Iraq, Iran, Central Asia, India, Pakistan, south of Arabian Peninsula, China, Japan, Africa, Seychelles, Australia, North and South America. Cosmopolitan species.

Biology. Larvae are apparently associate with various dead plant matters and also with dung [Hennig, 1940].

Physiphora chalybea (Hendel, 1909)

Material. 1♀, Kandovan, 37°45'N / 46°17'E, 2696 m, 25.06.2010; 1♀, Kandovan, 37°46'N / 46°15'E, 2341 m, 24.07. July 2010; 3♀, 1♂, Arasbaran forests; 2♀, Qurigol, 37°55.028'N / 46°41.244'E, 1847 m, 2.09.2010 (S. Khaghaninia, Y. Gharajedaghi, E. Zarghani leg.; T.V. Galinskaya det.).

Distribution. Turkmenistan [Zaitzev, 1984]; Tajikistan [N. Krivosheina, M. Krivosheina, 1997]; Northwest China [Chen, Kameneva, 2007].

Biology. N. Krivosheina and M. Krivosheina [1997] recorded the larvae under the bark of dead poplars as necro and phloeophages.

Notes. New record for the Iranian insect fauna.

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