J Insect Biodivers Syst 01(2): 125–132

ISSN: 2423-8112

OPEN ACCESS

JOURNAL OF
INSECT BIODIVERSITY AND SYSTEMATICS

JIBS

Research Article

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Family Asilidae (Diptera: Brachycera: Asiloidea) in East Azerbaijan province, with two new records for Iranian Fauna

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Received:
01 December 2015

Accepted:
26 April 2016

Published:
30 April 2016

Subject Editor:
Babak Gharali

ABSTRACT. The studied specimens of the family Asilidae were collected from various localities of the East Azerbaijan province during 2011–2014. Nine genera and thirteen species of the family Asilidae are recognized two species *Engelopogon goedli* (Loew, 1854) and *Holopogon fumipennis* (Meigen, 1820) are reported as new records to the Iranian fauna.

Key words: Asilidae, Robber flies, East Azerbaijan province, Iran, New records.

Citation: Mohammadi, R. and Khaghaninia, S. 2015. Family Asilidae (Diptera: Brachycera: Asiloidea) in East Azerbaijan province, with two new records for Iranian Fauna. *Journal of Insect Biodiversity and Systematics*, 1 (2): 125–132.

Introduction

The robber flies or Asilidae are a large family of Diptera comprising approximately 7187 described species in eleven subfamilies and 821 genera which have adapted most successfully in the semi-arid to arid regions of the world (Hull 1962; Geller-Grimm *et al.* 2015). The family Asilidae belongs to the superfamily Asiloidea. These flies are characterized morphologically by large eyes, piercing sucking mouthparts and strong spiny legs. The eyes occupy a large proportion of the head and are well adapted for perception of moving objects to which the foraging fly is always alert (Lavign 1978). Robber flies occur in various habitats, from forests and meadows to desert areas, but they may be found in any sunny sites, where they bask on bare ground and flowers, stems and branches of trees, or rocks. All known species are predators, and hunting for other insects (Bosac 2011).

The most important contributions to the knowledge of the robber flies of the Iran were published by Abbassian-Lintzen (1964 a; b), Lehr *et al.* (2007) and Hayat *et al.* (2008). The first contribution to the fauna of Asilidae of Iran was made by The Becker and Stein (1913). Later new records of Iranian Asilidae were published by Engel (1930), Oldroyd (1958), Abbassian-Lintzen (1964 a; b), Tsacas (1968), Lehr (1988), Tomasović (2002), Lehr *et al.* (2007) and Hayat *et al.* (2008). Saghaei (2008) compiled a list of Asilidae of the country including ies representing 88 genera and 9 subfamilies 232 species and subspecies.

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Material and methods

The studied specimens were collected from different localities in the East Azarbaijan province located in the northern west of Iran (situated in 36° 45′ to 39° 26′ N and 45° 5′ to 48° 22′ E) during 2011-2014. They were captured by sweep net (standard size and method) in flight or when they were rest on the ground. The following references were used in identifications as well geographical distributions of the studied species: Oldroyd (1958), Bei-Bienko G. (1988), Geller-Grimm (2003; 2015), Lehr *et al.* (2007) and Hayat *et al.* (2008). The collected specimens are deposited at the Insect Collection of Professor Hasan Maleki Milani, Tabriz, Iran (ICHMM).

Results

Thirteen species of the family Asilidae are known from East azarbayjan province; of them two species *Engelopogon goedli* (Loew, 1854) and *Holopogon fumipennis* (Meigen, 1820) are newly recorded for the Iranian insect fauna.

The list of the studied species known from East Azerbaijan province

Antipalus varipes (Meigen, 1820)

Material examined: Xumarlu, (38° 59.565' N, 46° 54.096' E) 950 m, 23.06.2013, 1♂; Horand, (38° 53' N, 47° 16' E) 1367 m, 11.8.2014, 2♂♂; Arasbaran: (38°57' N, 4°17'E) 1444 m, 25.06.2014, 2♂♂.
Iranian Records: East Azarbayjan (Tomasović 2015).
Distribution outside Iran: Albania, Switzerland, Former Czechoslovakia, Germany, Denmark, Finland, Netherlands, Poland and Turks and Caicos Islands.

Crobilocerus spinosus Theodor, 1980

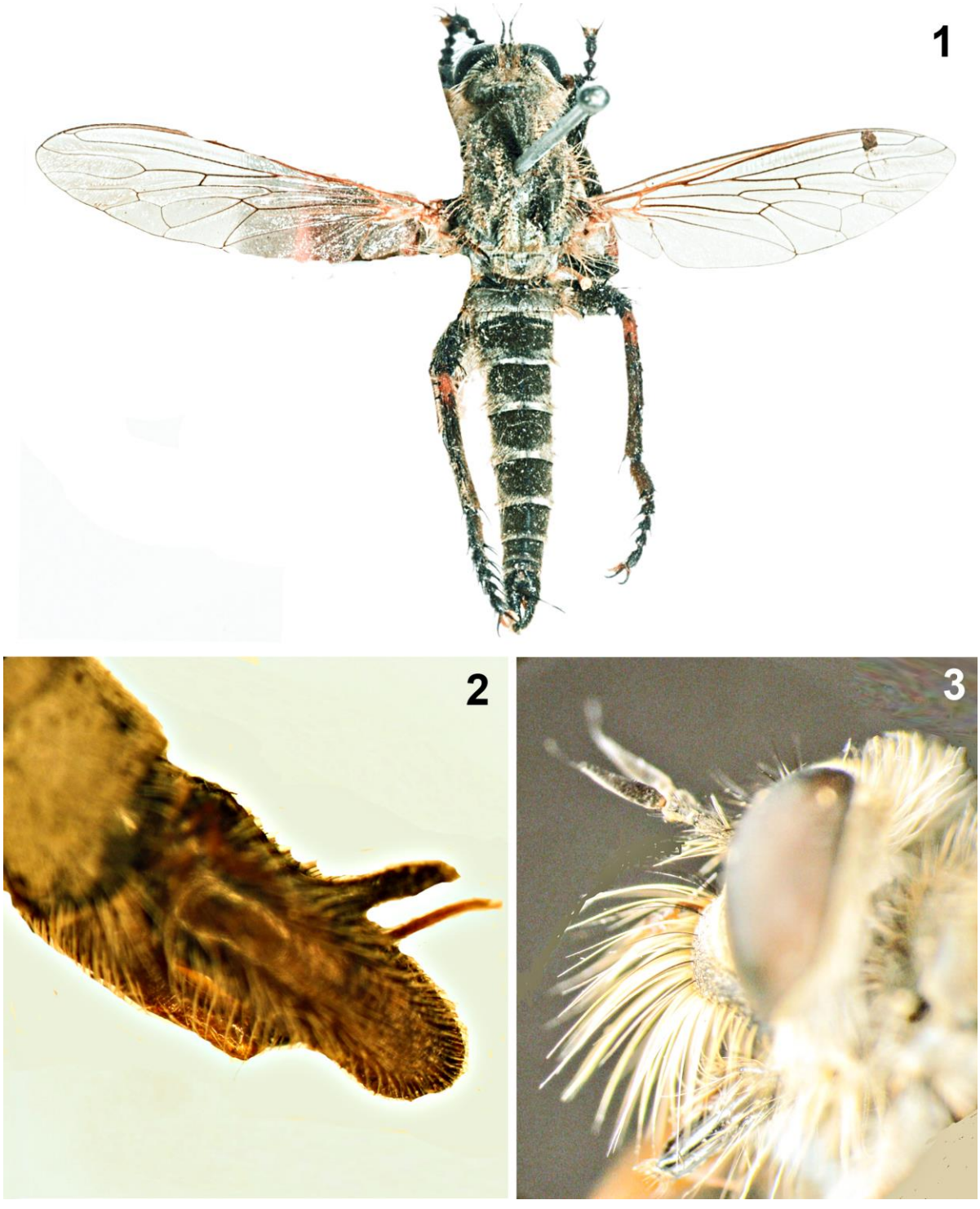
Material examined: Arasbaran, (38° 50.903' N, 47° 00.367' E) 1524, 25.05.2013, 2♂♂.
Iranian Records: Fars (Saghaei *et al.* 2008; Tomasović and Saghaei 2009), Isfahan (Hradsky and Geller-Grimm 1999).
Comments: Endemic to Iran.

Dasypogon diadema (Fabricus, 1781)

Material examined: Ajabshir, (37°30' N, 45°59' E) 1525 m, 09.08.2014, 1♂, 2♀♀; Horand, (38° 53' N, 47° 16' E) 1367 m, 11.8.2014, 2♂♂, 2♀♀; Hashtrod: (38°23' N, 47°09' E) 1510 m, 17.08.2014, 3♂♂, 2♀♀; Mianeh: (37°28' N, 47°32' E) 1275 m, 04.07.2012, 4♂♂.
Iranian Records: East Azarbaijan, Fars, Golestan, Khuzestan, Mazandaran, Tehran (Abbassian-Lintzen 1964a), Iran (Theodor 1980).
Distribution outside Iran: Albania, Austria, Azerbaijan, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, France, Germany, Greece, Hungary, Italy, Morocco, Poland, Romania, Russia, Slovakia, Slovenia, Spain, Switzerland, former Transcaucasus Republics, Turkey, United Kingdom.

Engelopogon goedli (Loew, 1854)

Material examined: Horand, (38° 53.838´ N, 47° 16.988´ E) 1367m, 22.5.2012, 1♂.
Diagnostic characters: Body 15 to 25mm. charaoterized by the gibbous face, which bears numerous, stout bristles that extend asfar as the upper third of the faceThe face is moderately protuberant on the lower two-thirds, arising shallowly but abruptly. The thorax is densely pollinose. anterior and posterior sternopleuron, the posterior mesopleuron with some scanty, fine pile. The femora are stout; the anterior femur and to a lesser extent the middle femur are a little swollen basally (Figs. 1–3).
Distribution outside Iran: Bulgaria, Greece, Yugoslavia, Lebanon, Syria, Turkey. (**New record for Iran**).



Figures 1–3. *Engelopogon goedli* (Loew, 1854), male: **1**. dorsal view, **2**. genitalia, lateral view, **3**. Head, lateral view.

Leptogaster cylindrica **(De Geer, 1776)**

Material examined: Horand, (38° 53' N, 47° 16' E) 1367 m, 24.8.2014, 1♂,1♀; Mianeh, (37°28' N, 47°32' E) 1275 m, 04.07.2012, 1♂.
Iranian Records: Fars (Saghaei *et al.* 2008); Iran (Lehr 1988).
Distribution outside Iran: Albania, Algeria, Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Kazakhistan (incl. Turkistan), Luxembourg, Mongolia, Norway, Poland, Roumania, Russia (Central, North and South European Territory, East and West Siberia, Far East), Soviet Middle Asia, Spain, Sweden, Switzerland, The Netherlands, former Transcaucasus Republics, Turkey, United Kingdom, former Yugoslavia.

Leptogaster guttiventris **Zetterstedt, 1842**

Material examined: Arasbaran, (38° 51.077' N, 46° 59.932'E) 1367 m, 01.06.2013, 1♂.
Iranian Records: Golestan (Hayat *et al.* 2008).
Distribution outside Iran: Austria, Belgium, Czech Republic, Denmark, England, Finland, France, Germany, Hungary, Poland, Russia, Sweden, Switzerland, The Netherlands.

Leptogaster pubicornis **Loew, 1841**

Material examined: Qurigol, (37° 54.929' N, 46° 42.308' E) 1918 m, 22.05.2013, 3♂♂; Ajabshir, (37°30' N, 46°01' E) 1437 m, 19.08.2014, 2♀♀.
Iranian Records: Golestan (Hayat *et al.* 2008).
Distribution outside Iran: Bulgaria, Czech Republic, France, Germany, Greece, Hungary, Italy, Kazakhstan, Russia, Switzerland, Turkey, Uzbekistan.

Holopogon fumipennis **(Meigen, 1820)**

Material examined: Arasbaran, (38° 53.756' N, 46° 46.765' E) 1221m, 20.5.2014, 2♂♂; Qurigol, (37° 55.287'N, 46° 41.437'E) 1913m, 24.5.2012, 1♂.
Diagnostic characters: Pulvilli present. Face flat or weakly raised. Proboscis straight, long or short. Length of antenna less than height of eyes. 1st segment of anterior and middle tarsi not reduced; length dotably exceeding width. Tibia 3 with thickened apices; 1st segment of posterior tarsi also thickened. Wings uniformly brownish or grayish. All tergit of abd. lustrous black (Figs. 4-6).
Distribution outside Iran: Austria, Belgium, Czech Republic, Germany, Greece, France, Hungary, Italy, Poland, Roumania, former South European territory, Switzerland, Turkey, former Yugoslavia. (**New record for Iran**).

Holopogon priscus **(Meigen, 1820)**

Material examined: Qurigol, (37° 55.287' N, 46° 41.437' E) 1913m, 24.05.2012, 2♂♂.
Iranian records: Lorestan (Samin *et al.* 2011).
Distribution outside Iran: Austria, France, Hungary, Kazakhstan, Poland, Russia (Central European territory, former South European territory, West Siberia), Kirgyzstan, Tajikistan, Turkey, former Yugoslavia.

Philodicus ponticus **(Bigot, 1880)**

Material examined: Kandovan, (37° 46' N, 46° 15' E) 2341m, 3.8.2011, 2♂♂; Arasbaran, (46° 26' N, 44° 54' E) 1524m, 3.8.2011, 1♂; Arasbaran, (46° 26' N, 44° 54' E) 1753, 1.7.2013, 1♂; Qurigol, (37° 55.287' N, 46° 41.437' E) 1913m, 24.5.2012, 2♂♂, 2♀♀.
Iranian Records: Fars (Saghaei *et al.* 2008; Tomasović and Saghaei 2009), Golestan, Guilan (Hayat *et al.* 2008), Kerman, Khorasan (Becker and Stein 1913), Sistan and Baluchestan (Becker and stein 1913; Oldroyd 1958), Iran (Engel 1930; Theodor 1980).
Distribution outside Iran: Afghanistan, Azerbaijan, Greece, Iraq, Israel, Russia, Turkey.

Figures 4–6. *Holopogon fumipennis* (Meigen, 1820), female: **4**. dorsal view, **5**. head, lateral view, **6**. lateral view.

***Pycnopogon fasciculatus* (Loew, 1847)**

Material examined: Arasbaran, (46° 26' N, 44° 54' E) 1753m, 01.07.2013, 1♂.

Iranian Records: Golestan, Mazandaran (Lehr *et al.* 2007).

Distribution outside Iran: Albania, Algeria, Azerbaijan, Bulgaria, Czech Republic, France, Greece, Israel, Italy, Morocco, Romania, Spain, Syria, Tunisia, Turkey, former Yugoslavia.

***Stenopogon sciron* (Loew, 1873)**

Material examined: Chichakli, (38°39' N, 46°31' E) 2140 m, 19.07.2013, 2♂♂, 1♀; Ajabshir (37°29' N, 45°52' E) 1320 m, 24.7.2013, 1♀.
Iranian Records: Fars (Saghaei *et al.* 2008; Tomasović and Saghaei 2009), Kerman (Abbassian-Lintzen 1964a), Iran (Engel 1930; Theodor 1980).
Distribution outside Iran: Afghanistan, former Transcaucasus Republics, Turkey.

***Stenopogon xanthotrichus* (Brullé, 1832)**

Material examined: Chichakli, (38°39' N, 46°31' E) 2140 m, 19.07.2013, 2♂♂, 1♀; Kandovan, (37° 46' N, 46° 15' E) 2341m, 25.06.2010, 3♂♂, 1♀.
Iranian Records: Isfahan (Lehr *et al.* 2007).
Distribution outside Iran: Albania, Greece, Romania, Turkey.

Discussion

All of the studied species were collected from forest, grassland and everglade areas such as Arasbaran forests, Ajabshir, Chichekli, Ghurigol, Hashtrod, Horand, Kandovan, Mianeh and Xumarlu from East Azarbaijan province located in the northern west of Iran. The Iranian fauna of Asilidae has been nearly well known, but in the East Azerbaijan province no specific studies of this family had been done. Based on the rich fauna as well as various flora in in virgin areas of this province, it is expected that more species of the family Asilidae can be found in this area, thus further studies are needed. The results of present study increase the number of the asilids species in Iran to 234. Another important and interesting project could be determining of asilids' preys in East Azerbaijan province which has not been done previously.

Acknowledgments

The authors show their sincere thanks to Dr. G. Tomasović (Collaborateur scientifique à l'Université de Liège, Gembloux Agro-Bio Tech, Unité d'Entomologie fonctionnelle et évolutive (Prof. Eric Haubruge), Gembloux (Belgique)) kindly gave assistance with identifications.

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خانواده Asilidae (Diptera: Brachycera: Asiloidea) در آذربایجان شرقی، به همراه دو گزارش جدید برای فون ایران

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تاریخ دریافت: ۱۰ دی ۱۳۹۴، تاریخ پذیرش: ۰۷ اردیبهشت ۱۳۹۵ تاریخ انتشار: ۱۱ اردیبهشت ۱۳۹۵

چکیده: نمونه های خانواده Asilidae از محل‌های مختلف در استان آذربایجان شرقی و در طی سال‌های ۱۳۹۴–۱۳۹۱ جمع آوری شد. ۹ جنس و ۱۳ گونه از این خانواده شناسایی شد که دو گونه *Engelopon goedli* (Loew, 1854) و *Holopogon fumipennis* (Meigen, 1820) به عنوان گزارش جدید برای فون ایران گزارش می‌شوند.

واژگان کلیدی: Asilidae، دزد مگس‌ها، آذربایجان شرقی، ایران، گزارش جدید.