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A study on Asilidae (Diptera: Brachycera: Asiloidea) from West Azarbaijan, northwestern Iran

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Abstract

The fauna of Asilidae (Diptera) in West Azarbaijan province (northwestern Iran) is studied in this paper. In total 16 species from 14 genera and 9 subfamilies Apocleinae, Asilinae, Dasyopogoninae, Brachyrhopalinae, Laphriinae, Laphystiinae, Ommatiinae, Stenopogoninae, and Stichopogoninae are recorded.

Key words: Diptera, Asilidae, Fauna, West Azarbaijan, Iran.

Introduction

The Asilidae are a worldwide family of insects known for their predatory habits and mimicry of other insects, especially some bees (Hymenoptera). Adults of many species are large and conspicuous, and they are easily recognized and frequently collected. Many species prey upon honey bees, sometimes causing significant damage to bee colonies (LEHR 1964; DENNIS & LAVIGNE 2007). Some robber flies are regarded as potential biological control agents against scarab larvae (WEI et al. 1995). Asilidae is known to have 1.634 species at Palaeartic region (GELLER-GRIMM 2005). The fauna of Iranian Asilidae has been studied rather well by several authors (e.g. ABBASSIAN-LINTZEN 1964a, b; LEHR

et al. 2007; HAYAT et al. 2008; GHAHARI et al. 2007a, b, 2008a, b, 2009, 2010; SAGHAEI et al. 2008, 2009, 2010; SAKENIN et al. 2008a, b, 2009, 2010, 2011; TOMASOVIC & SAGHAEI 2009; SAMIN et al. 2010, 2011; OSTOVARI & RASTEGAR 2013).

In this paper, the asilids' fauna of West Azarbaijan province (located in North West of Iran, bordering with Turkey, Iraq and Armenia, and the provinces of East Azerbaijan, Zanjan and Kurdistan) is dealt with. It covers an area of 43,660 km². The climate of the province is largely influenced by the rainy winds of the Atlantic Ocean and Mediterranean. According to existing meteorological data, local temperatures vary within the province. The highest temperature reaches 34 °C in July, and the lowest temperature is -16 °C in January. West Azerbaijan province encompasses vast and fertile plains, high mountains, rivers with high volume of water, vineyards, orchards, luxuriant forest and rangelands, mountain outskirt with wonderful flora, magnificent wildlife and beautiful shores around the lake with different recreational facilities, which all together form one of the most beautiful and spectacular region in Iran. A land with wonderful flora during the spring and the summer covered with tulip, poppy, narcissus and hyacinth. The aim of this paper is faunistic survey on the family Asilidae from West Azarbaijan province where included various geographical regions and diverse flora.

Materials and Methods

For studying the asilids' fauna of West Azarbaijan province (northwestern Iran), many samplings were conducted at different localities of this province, and also some materials preserved in insect collections of some universities were studied. Identifications made by ENGEL (1930), OLDROYD (1958), ABBASIAN-LINTZEN (1964a, b), TSACAS (1968), THEODOR (1980) and LEHR (1988). The taxonomic arrangement and distributional data for regions outside Iran are those of LEHR (1988, 1996), BOSÁK & HRADSKÝ (2001) and GELLER-GRIMM (2005). The information concerning specific name, describer and description date, locality and date of collection, place where the species were collected, determinant and number of species (in brackets) was given.

Results

Totally 16 species of Asilidae from 14 genera and 9 subfamilies are recorded as the fauna of West Azarbaijan province. The list of species is given below with distribution data.

Subfamily *Apoelinae* PAPAVERO 1973

Genus *Promachus* LOEW 1848

Promachus mustela LOEW 1854

Material examined: West Azarbaijan, Khoy (1148 m), (1), June 2011.

Distribution outside Iran: Israel, Lebanon, Syria, Turkey.

Subfamily A s i l i n a e LATREILLE 1802

Genus *A n e o m o c h t h e r u s* LEHR 1996

***Aneomochtherus aerifacies* (TSACAS 1968)**

M a t e r i a l e x a m i n e d : West Azarbaijan, Salmas (1357 m), (1), June 2011.

D i s t r i b u t i o n o u t s i d e I r a n : Turkey.

Genus *E r a x* SCOPOLI 1763

***Erax tenuicornis* (LOEW 1848)**

M a t e r i a l e x a m i n e d : West Azarbaijan, Myandoab (1338 m), (4), July 2012.

D i s t r i b u t i o n o u t s i d e I r a n : Greece, Turkey.

Genus *M a c h i m u s* LOEW 1849

***Machimus cyanopus* (LOEW 1849)**

M a t e r i a l e x a m i n e d : West Azarbaijan, Khoy (1148 m), (3), June 2011. West Azarbaijan, Salmas (1357 m), (2), June 2011.

D i s t r i b u t i o n o u t s i d e I r a n : Austria, Albania, Bulgaria, France, Germany, Greece, Hungary, Italy, Romania, Switzerland, Turkey, former Yugoslavia.

Genus *T o l m e r u s* LOEW 1849

***Tolmerus fuscus* (MACQUART 1839)**

M a t e r i a l e x a m i n e d : West Azarbaijan, Makoo (1674 m), (1), September 2008.

D i s t r i b u t i o n o u t s i d e I r a n : South European Territory of USSR, Spain (Canary Islands & Madeira), Turkey.

***Tolmerus tesselatus* (LOEW 1849)**

M a t e r i a l e x a m i n e d : West Azarbaijan, Khoy (1148 m), (2), June 2011.

D i s t r i b u t i o n o u t s i d e I r a n : Italy, Romania, Turkey.

Genus *T r i c h o m a c h i m u s* ENGEL 1934

***Trichomachimus pubescens* (RICARDO 1922)**

M a t e r i a l e x a m i n e d : West Azarbaijan, Ourmieh (1374 m), (1), September 2010.

D i s t r i b u t i o n o u t s i d e I r a n : Afghanistan, China, India, Tibet.

Subfamily D a s y p o g o n i n a e MACQUART 1838

Genus *S a r o p o g o n* LOEW 1847

***Saropogon dasynotus* LOEW 1871**

M a t e r i a l e x a m i n e d : West Azarbaijan, Ourmieh (1406 m), (2), April 2013.

D i s t r i b u t i o n o u t s i d e I r a n : Kazakhstan, Russia, Turkey.

***Saropogon melanophrus* BIGOT 1878**

Material examined: West Azarbaijan, Ourmieh (1379 m), (2), September 2010.

Distribution outside Iran: Palaearctic Region (unknown exactly).

Subfamily Brachyropalinae HARDY 1926

Genus *Theurgus* RICHTER 1966

***Theurgus kerzneri* Lehr 1974**

Material examined: West Azarbaijan, Makoo (1648 m), (2), September 2008. West Azarbaijan, Ourmieh (1374 m), (1), September 2010.

Distribution outside Iran: Mongolia, Russia (Far East).

Genus *Pegesimallus* LOEW 1858

***Pegesimallus mesasiaticus* (LEHR 1958)**

Material examined: West Azarbaijan, Makoo (1648 m), (2), September 2008.

Distribution outside Iran: Armenia, China, Mongolia, Transcaucasus, Kazakhstan (incl. Turkistan), Soviet Middle Asia.

Subfamily Laphriinae MACQUART 1838

Genus *Choerades* WALKER 1851

***Choerades fuliginosa* (PANZER 1798)**

Material examined: West Azarbaijan, Oshnavieh (1451 m), (2), July 2012.

Distribution outside Iran: Armenia, Austria, Albania, Bulgaria, Czech Republic, Finland, former Yugoslavia, France, Germany, Greece, Spain, Poland, Romania, Russia, Sweden, Turkey.

Subfamily Laphystiinae HENDEL 1936

Genus *Laphystia* LOEW 1847

***Laphystia sabulicola* LOEW 1847**

Material examined: West Azarbaijan, Myandoab (1338 m), (1), July 2012.

Distribution outside Iran: Austria, China, Greece, Italy, former Yugoslavia, Kazakhstan, Tajikistan, Tunisia, Turkey, Turkmenia, Uzbekistan.

Subfamily Ommatiinae HARDY 1927

Genus *Ommatius* WIEDEMANN 1821

***Ommatius eugenii* RICHTER 1976**

Material examined: West Azarbaijan, Piranshahr (1466 m), (1), October 2009.

Distribution outside Iran: Afghanistan.

Subfamily Stenopogoninae HULL 1962

Genus *Sisyrnodytes* LOEW 1856

***Sisyrnodytes nilicola* (RONDANI 1850)**

Material examined: West Azarbaijan, Ourmieh (1391 m), (1), August 2008.

Distribution outside Iran: Algeria, Egypt, Israel, Morocco, North Africa, Palestine, Russia, Yemen.

Subfamily Stichopogoninae HARDY 1930

Genus *Rhadinus* LOEW 1856

***Rhadinus unguinus* LOEW 1856**

Material examined: West Azarbaijan, Salmas (1357 m), (1), July 2013.

Distribution outside Iran: Egypt, Israel, North Africa, Palestine, Tunisia, Yemen.

Discussion

Although the fauna of Iranian Asilidae was studied well but continuing the surveys on these beneficial insects in other provinces of Iran is necessary for completing the fauna of Iran. Among the Iranian provinces, West Azarbaijan is one of them where the asilids' fauna has not been studied so far, and so this research included some new distribution data for Iranian Asilidae. Another important and interesting project can be determining of asilids' preys in Iran which it is nearly absent in the science exception a few studies (e.g. LAVIGNE 2003; GELLER-GRIMM 2005; LONDT 2006; DENNIS & LAVIGNE 2007; DENNIS et al. 2012). These powerful predators have several preys from the various taxa, and can be efficient predators on agricultural pests.

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Zusammenfassung

Vorliegende Arbeit behandelt die Asiliden-Fauna (Diptera) des Westens der Provinz Aserbeidschan im Nordwesten des Iran. 16 Arten aus 14 Gattungen der 9 Unterfamilien Apocleinae, Asilinae, Dasypogoninae, Brachyrhopalinae, Laphriinae, Laphystiinae, Ommatiinae, Stenopogoninae und Stichopogoninae konnten nachgewiesen werden.

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