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A faunistic study on the Ichneumonidae (Hymenoptera: Ichneumonoidea) from the west of Iran

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Abstract: The fauna of the family Ichneumonidae (Hymenoptera: Ichneumonoidea) from some regions of western Iran is studied in this paper. Totally 17 species from 15 genera and 4 subfamilies (Cryptinae, Ichneumoninae, Metopiinae, Pimplinae) were determined.

Key words: Hymenoptera, Ichneumonoidea, Ichneumonidae, Fauna, Iran.

Introduction

The Ichneumonidae (Hymenoptera, Ichneumonoidea) is the biggest family in the order Hymenoptera with 51 generally recognized subfamilies, 1579 genera and 24.281 described species (YU et al. 2012). TOWNES (1969) estimated that there could be about 60.000 Ichneumonidae species in the world, but because of the poor knowledge of the tropical faunas the present investigators estimate that the size of the family could be higher than 100.000 (GAULD 1997; ÇORUH et al. 2014). Ichneumonids are common as the parasitoids of various agricultural and forest pests and therefore with important role in biological control (GUPTA 1987; GODFRAY 1994). They parasitize mainly the larvae and pupae of holometabolous insects, excluding the Megaloptera and Siphonaptera. Whereas ichneumonids are almost completely restricted to the immature stages of the Holometabola (a few groups use egg nests of Pseudoscorpionida, egg cocoons of Araneae or adult Araneae) (GAULD 1988; WAHL & SHARKEY 1993; ÇORUH & KOLAROV 2010). The fauna of Iranian Ichneumonidae was studied rather well which the first checklist of Iranian Ichneumonidae was prepared by KOLAROV & GHAHARI (2005), and then most of publications were listed by BARAHOEI et al. (2012). Due to the great diversity and difficulties in identification of many species in this group, our knowledge of the Iranian fauna remains insufficient. During the last 10 years, several species of Ichneumonidae were reported as new to the fauna of Iran and the faunistic works are continued. The aim of this paper is faunistic work on some materials of ichneumonid wasps collected from some regions of western Iran.

Materials and Methods

This faunistic study is based upon the materials of Ichneumonidae collected from some

regions of five provinces, Hamadan, Ilam, Kermanshah, Kordestan and West Azarbaijan located in western parts of Iran. The materials were collected mainly by Malaise traps and sweeping net by different researchers and identified by the authors. Classification and nomenclature suggested by YU et al. (2012) have been followed.

Results

In total 17 ichneumonid species from 15 genera and four subfamilies were collected from western parts of Iran. The list of species is given below alphabetically.

Subfamily *C r y p t i n a e*

Genus *Acroricnus* RATZEBURG, 1852

Acroricnus seductor elegans (MOCSARY, 1883)

M a t e r i a l e x a m i n e d : West Azarbaijan province, Ourmieh (1381 m), 1 ♀, summer 2009.

Genus *Cryptus* FABRICIUS, 1804

Cryptus diana GRAVENHORST, 1829

M a t e r i a l e x a m i n e d : Hamadan province, Nahavand (1684 m), 1 ♀, 2 ♂ ♂, August 2007.

Genus *Gelis* THUNBERG, 1827

Gelis anthracinus (FOERSTER, 1850)

M a t e r i a l e x a m i n e d : Kermanshah province, Kermanshah (1269 m), 1 ♀, summer 2012.

Gelis stevenii (GRAVENHORST, 1829)

M a t e r i a l e x a m i n e d : West Azarbaijan province, Salmas (1353 m), 2 ♀ ♀, fall 2008.

Genus *Glyphicnemis* FÖRSTER, 1869

Glyphicnemis atrata (STROBL, 1901)

M a t e r i a l e x a m i n e d : Kermanshah province, Kermanshah (1269 m), 2 ♀ ♀, summer 2012.

Genus *Mesostenus* GRAVENHORST, 1829

Mesostenus grammicus GRAVENHORST, 1829

M a t e r i a l e x a m i n e d : West Azarbaijan province, Salmas (1353 m), 1 ♀, 2 ♂ ♂, fall 2008.

Genus *Synechocryptus* SCHMIEDEKNECHT, 1904

Synechocryptus mactator (TSCHEK, 1871)

M a t e r i a l e x a m i n e d : West Azarbaijan province, Ourmieh (1381 m), 2 ♀ ♀, 2 ♂ ♂, summer 2009.

Genus *Zoophthorus* FÖRSTER, 1869

***Zoophthorus trochanteralis* (DALLA TORRE, 1902)**

Material examined: Ilam province, Ilam (987 m), 1 ♀, October 2011.

Subfamily Ichneumoninae

Genus *Barichneumon* THOMSON, 1893

***Barichneumon bilunulatus* (GRAVENHORST, 1829)**

Material examined: Ilam province, Ilam (987 m), 1, 3 ♂♂, October 2011.

Genus *Eutanyacra* CAMERON, 1903

***Eutanyacra picta* (SCHRANK, 1776)**

Material examined: Kordestan province, Kamyaran (1469 m), 2 ♀♀, September 2010.

Genus *Ichneumon* LINNAEUS, 1758

***Ichneumon extensorius* LINNAEUS, 1758**

Material examined: Ilam province, Ilam (987 m), 4 ♂♂, October 2011.

Genus *Platylabus* HEINRICH, 1950

***Platylabus oehlkei* HEINRICH, 1972**

Material examined: Kermanshah province, Kermanshah (1269 m), 2 ♀♀, summer 2012.

Subfamily Metopiinae

Genus *Colpotrochia* HOLMGREN, 1855

***Colpotrochia tricolor* (AUBERT, 1979)**

Material examined: Hamadan province, Nahavand (1684 m), 2 ♀♀, June 2012.

Genus *Metopius* PANZER, 1806

***Metopius pinatorius* BRULLÉ, 1846**

Material examined: West Azarbaijan province, Ourmieh (1381 m), 2 ♂♂, summer 2009. New record for Iran.

Subfamily Pimplinae

Genus *Dolichomitus* SMITH, 1877

***Dolichomitus sericeus* (HARTIG, 1847)**

Material examined: Hamadan province, Nahavand (1684 m), 2 ♂♂, August 2007.

Genus *Pimpla* FABRICIUS, 1804

***Pimpla contemplator* (MÜLLER, 1776)**

M a t e r i a l e x a m i n e d : Kordestan province, Kamyaran (1469 m), 2 ♀♀, 1 ♂, September 2010.

***Pimpla spuria* GRAVENHORST, 1829**

M a t e r i a l e x a m i n e d : West Azarbaijan province, Ourmieh (1381 m), 1 ♀, 1 ♂, summer 2009.

Discussion

This short paper contains 17 ichneumonid species collected from western parts of Iran. Iran is a large country with various agroecosystems and forests especially in northern and western regions; so diverse fauna of insects is expected to be in the mentioned areas. Although in total more than 502 species of Ichneumonidae have been listed for Iran so far (see BARAHOEI et al. 2012), published checklists from adjacent territories and also many papers which have been published after the mentioned checklist, suggest that the Iranian list is still very incomplete. Faunistic works are the base of entomological studies but these works are progressed rather slowly in Iran. We suggest to the researchers to continue the faunistic surveys on different taxa especially Ichneumonoidea as the powerful parasitoids of agricultural pests. Additionally most of the faunistic works on Iranian parasitoids were conducted upon the samplings of adult insects by sweeping net and Malaise traps while in this case the hosts of the parasitoids are unknown. So the collecting of larval stages of ichneumonid's hosts and rearing them in optimum conditions will result to determining of host-parasitoid relationships of these beneficial insects. Ichneumonids have been used successfully as biocontrol agents and given the largely undocumented fauna there is a huge potential for their utilization in managed biocontrol programs (GUPTA 1987; GODFRAY 1994).

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Zusammenfassung

Vorliegende Arbeit behandelt Aufsammlungen von Ichneumonidae (Hymenoptera: Ichneumonoidea) aus verschiedenen Gebieten Westirans. Es gelang der Nachweis von 17 Arten in 15 Gattungen und 4 Unterfamilien (Cryptinae, Ichneumoninae, Metopiinae, Pimplinae).

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