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A study on Sphecidae and Crabronidae from Iran (Hymenoptera: Apoidea)

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Abstract

This paper deals with distribution of some species of Sphecidae and Crabronidae (Hymenoptera: Apoidea) in Iran. In total 8 species of Sphecidae from 6 genera, and 18 species of Crabronidae from 14 genera is studied in this paper. One species, *Belomicrus schulthessii* KOHL, 1924 (Crabronidae), is newly recorded from Iran.

Key words: Hymenoptera, Apoidea, Sphecidae, Crabronidae, digger wasp, Iran.

Zusammenfassung

Vorliegende Arbeit befasst sich mit dem Vorkommen einiger Arten der Familien Sphecidae und Crabronidae (Hymenoptera: Apoidea) im Iran. Insgesamt gelang es 8 Arten der Familie Sphecidae und 18 Arten der Familie Crabronidae nachzuweisen. *Belomicrus schulthessii* KOHL, 1924 konnte erstmals für den Iran betätigt werden.

Introduction

Sphecidae is a cosmopolitian family in three subfamilies: Ammophilinae, Sceliphrinae and Sphecinae (YILDIRIM 2011), and Crabronidae is the largest of the spheciform families in two subfamilies: Crabroninae and Larrinae (YILDIRIM 2011; PULAWSKI 2012). Crabronidae is represented by about 9000 species in the world (CUBUK & GULMEZ 2013). They are powerful predators of insects. Prey consists of an exceptionally wide range of insects and spiders (Araneae): 12 orders of insects are known to be preyed upon (BOHART & MENKE 1976; GOULET & HUBER 1993). The fauna of Iranian digger wasps was poorly studied (e.g. de BEAUMONT 1957, 1970; ESMAILI & RASTEGAR 1974; EBRAHIMI 1993a, 1993b, 2000a, 2000b, 2005, 2008; EBRAHIMI et al. 1995; GHAZI-SOLTANI et al. 2006; FALLAHZADEH et al. 2006, 2009; SAKENIN et al. 2010, 2011). The aim of this paper is presenting a list of some species which were obtained from different regions of Iran.

Materials and Methods

The materials of this paper were collected from some regions of Iran during 2005-2010 by different researchers and students. The specimens are preserved in some insect collections of Islamic Azad University and museums. In this paper, classification and nomenclature follows that of PULAWSKI (2012).

Results

Totally 26 species (8 species belonging to Sphecidae, and 18 species belonging to Crabronidae) are studied in this paper. The list of species is given below. Families as well as species names within genera are arranged alphabetically.

Family Sphecidae (LATREILLE, 1802)

Genus *Ammophila* W. KIRBY, 1798

Ammophila sabulosa (LINNAEUS, 1758)

Material examined: Hamadan province: Hamadan, 1♂, summer 2005. West Azarbaijan province: Ourmieh, 1♀, 1♂, spring 2008.

Ammophila sinensis SICKMANN, 1894

Material examined: Guilan province: Lahijan, 1♂, spring 2007.

Genus *P a l m o d e s* KOHL, 1890

***Palmodes strigulosus* (COSTA, 1861)**

M a t e r i a l e x a m i n e d : West Azarbaijan province: Ourmieh, 1♂, summer 2006.

Genus *P o d a l o n i a* FERNALD, 1927

***Podalonia hirsuta* (SCOPOLI, 1763)**

M a t e r i a l e x a m i n e d : Isfahan province: no locality cited, 1♂, 2♀♀, April 2009.

Genus *P r i o n y x* LINDEN, 1827

***Prionyx nudatus* (KOHL, 1885)**

M a t e r i a l e x a m i n e d : Kermanshah province: Kermanshah, 2♂♂, 1♀, April 2005.

Genus *S c e l i p h r o n* KLUG, 1801

***Sceliphron destillatorium* (ILLIGER, 1807)**

M a t e r i a l e x a m i n e d : West Azarbaijan province: Makoo, 1♀, unknown date.

Genus *S p h e x* LINNAEUS, 1758

***Sphex flavipennis* FABRICIUS, 1793**

M a t e r i a l e x a m i n e d : Ardabil province: Mshkinshahr, 1♀, summer 2007.

***Sphex pruinosus* GERMAR, 1817**

M a t e r i a l e x a m i n e d : West Azarbaijan province: Ourmieh, 1♀, August 2010.

Family C r a b r o n i d a e

Genus *A s t a t a* LATREILLE ,1796

***Astata minor* KOHL, 1885**

M a t e r i a l e x a m i n e d : East Azarbaijan province: Tabriz, 3♀♀, June 2006.

Genus *B e l o m i c r u s* A. COSTA, 1871

***Belomicrus schulthessii* KOHL, 1924**

M a t e r i a l e x a m i n e d : Golestan province: Bandar-Torkman, 1♀, October 2010. **New record for Iran.**

Genus *B e m b i x* FABRICIUS, 1775

***Bembix bidentata* VANDER LINDEN, 1829**

M a t e r i a l e x a m i n e d : Mazandaran province: Ramsar, 2♀♀, September 2007.

Genus *C e r c e r i s* LATREILLE, 1802

***Cerceris albofasciata* (ROSSIUS, 1790)**

M a t e r i a l e x a m i n e d : Ardabil province: no locality cited, 1♂, summer 2010.

***Cerceris eryngii* MARQUET, 1875**

M a t e r i a l e x a m i n e d : Hamadan province: Hamadan, 1♀, unknown date.

Genus *C r a b r o* FABRICIUS, 1775

***Crabro cribrarius* (LINNAEUS, 1758)**

M a t e r i a l e x a m i n e d : Kermanshah province: Kermanshah, 1♀, unknown date.

Genus *G a s t r o s e r i c u s* SPINOLA, 1839

***Gastrosericus electus* NURSE, 1903**

M a t e r i a l e x a m i n e d : Golestan province: Golestan National Park, 2♂♂, September 2010. Mazanadaran province: Behshahr, 1♂, 3 October 2010.

***Gastrosericus waltlii* SPINOLA, 1839**

M a t e r i a l e x a m i n e d : Kerman province: Kerman, 2♀♀, 1♂, unknown date.

Genus *G o r y t e s* LATREILLE, 1804

***Gorytes quinquecinctus* (FABRICIUS, 1793)**

M a t e r i a l e x a m i n e d : East Azarbaijan province: Khomarloo, 2♀♀, June 2006.

Genus *L i r i s* FABRICIUS, 1804

***Liris niger* (FABRICIUS, 1775)**

M a t e r i a l e x a m i n e d : Mazandaran province, Behshahr, 1♀, 3 October 2010.

Genus *M i m e s a* SHUCKARD, 1937

***Mimesa crassipes* (COSTA, 1869)**

M a t e r i a l e x a m i n e d : East Azarbaijan province: Azarshahr, 1♀, August 2007.

Genus *O x y b e l u s* LATREILLE, 1796

***Oxybelus mucronatus* (FABRICIUS, 1793)**

M a t e r i a l e x a m i n e d : Ardabil province: no locality cited, 1♂, summer 2008.

Genus *P a l a r u s* LATREILLE, 1802

***Palarus histrio* SPINOLA, 1838**

M a t e r i a l e x a m i n e d : Golestan province, Gonbad, 1♀, August 2010.

Genus *P h i l a n t h u s* FABRICIUS, 1790

***Philanthus triangulum* (FABRICIUS, 1775)**

M a t e r i a l e x a m i n e d : Kermanshah province: Kermanshah, 1♀, 1♂, April 2005. Ilam province: Abdanan, 2♀♀, 1♂, spring 2007. Khorasan province: Sabzevar, 1♀, summer 2009.

Genus *T a c h y s p h e x* KOHL, 1883

***Tachysphex brevipennis* MERCET, 1909**

M a t e r i a l e x a m i n e d : Khorasan province: Sabzevar, 2♂♂, summer 2009.

***Tachysphex consocius* KOHL, 1892**

M a t e r i a l e x a m i n e d : East Azarbaijan province: Miyaneh, 1♀, unknown date.

***Tachysphex tarsinus* (LEPELETIER, 1845)**

M a t e r i a l e x a m i n e d : East Azarbaijan province: Harris, 1♂, May 2007.

Genus *T a c h y t e s* PANZER, 1806

***Tachytes pygmaeus* KOHL, 1888**

M a t e r i a l e x a m i n e d : Khuzestan province: no locality cited, 1♂, April 2008.

Discussion

In this research 45 specimens of Sphecidae and Crabronidae were studied and totally 26 species from 20 genera are listed in this paper as the fauna of Iran. This research and also other published data on Iranian digger wasps indicate that the fauna of these insects is diverse in Iran and it is necessary that the faunistic surveys on these taxa are continued in order to completing the fauna of Iran. On the other hand the presence of an impressive list on Iranian digger wasps (same as Turkish fauna, LJUBOMIROV & YILDIRIM 2008) is really absent. Additionally, digger wasps are powerful predators on insects and so studying on their preys can be interesting research subject. The type of prey ranges from spiders to various dictyopterans or orthopteroids to caterpillars (of either Lepidoptera or other Hymenoptera); the vast majority practice mass provisioning, providing all the prey items prior to laying the egg (BOHART & MENKE 1976).

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