

A faunistic study on digger wasps (Hymenoptera: Crabronidae, Sphecidae) of Iran

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SAMIN, N. & BAGRIACIK, N.: *A faunistic study on digger wasps (Hymenoptera: Crabronidae, Sphecidae) of Iran.*

Abstract: The present paper deals with the fauna of digger wasps of the families Crabronidae and Sphecidae from various regions of Iran. Totally 16 species of 13 genera (Crabronidae: 11 species of 9 genera and Sphecidae: 5 species of 4 genera) were collected and identified

Keywords: Hymenoptera, Crabronidae, Sphecidae, digger wasp, fauna, Iran

Introduction

Hymenoptera are one of the four large orders of insects, with over 100.000 described species (GOULET & HUBER 1993). Sphecidae sensu lato comprise 318 genera and almost 10.000 described species worldwide. This group is divided into four families: Heterogynaeidae, Ampulicidae, Sphecidae, and Crabronidae (YILDIRIM 2011, PULAWSKI 2015). Sphecid wasps has worldwide distribution, occupying mainly arid and semi arid areas (SCHMID-EGGER 2011). They are predators or ectoparasitoids of various insects, collembolans, and spiders. They are able to hunt insect of nearly all orders from mayflies to hymenopterans; the most commons are Diptera, Orthoptera, Heteroptera, Blattodea, Homoptera, Lepidoptera (catterpillars and adults), Coleoptera, and Hymenoptera. Some species are generalists preying any living or dead insects, others are extreme specialists to one kind of prey (BOHART & MENKE 1976, BOGUSCH et al. 2007).

The Iranian digger wasps were studied by de BEAUMONT 1957, 1970, ESMAILI & RASTEGAR 1974, EBRAHIMI 1993a,b, 2000a,b, 2005, 2008, EBRAHIMI et al. 1995, GHAZISOLTANZADEH et al. 2006, FALLAHZADEH et al. 2006, 2009, SAKENIN et al. 2010, 2011, SAMIN et al. 2015.

Material and methods

The insects were collected from various regions of Iran using entomological net and Malaise trap. The collected specimens were placed in paper envelopes after killing them in a cyanid bottle. After putting the specimens in desiccator for 24 h, they were pinned by using 0, 1 and 2 insect pins and their wings and legs set on appropriate position to facilitate morphological studies. Classification and nomenclature were taken from LJUBOMIROV & YILDIRIM (2008) and PULAWSKI (2015).

Results

In total 16 species of digger wasps (Crabronidae and Sphecidae) were collected and identified. The list of species is given below in alphabetic order with distributional data.

Family **Sphecidae** (Latreille, 1802)

Subfamily **Ammophilinae**

Genus ***Podalonia*** Fernald, 1927

Podalonia tydei (Le Guillou, 1841)

Material examined: West Azarbaijan province, Urmia, 37°33'N 45°00'E, 2♀, June 2012.

Distribution outside Iran: Africa, Asia including Arabia and the Mediterranean region.

Subfamily **Sceliphrinae**

Genus ***Sceliphron*** Klug, 1801

Sceliphron destillatorium (Illiger, 1807)

Material examined: Ardabil province, Germe, 39°00'N, 47°57'E, 2♀, August 2013.

Distribution outside Iran: Southern and warmer parts of central Europe, southwestern Asia (Turkey, Palestine), Kazakhstan and Central Asia.

Sceliphron spirifex (Linnaeus, 1758)

Material examined: Ilam province, Ilam, 33°41'N, 46°16'E, 1♀, June 2012.

Distribution outside Iran: Southern Europe, Africa and southwest Asia.

Subfamily **Sphecinae**

Genus ***Palmodes*** Kohl, 1890

Palmodes strigulosus (A. Costa, 1861)

Material examined: Kurdistan province, Kamyaran, 34°55'N, 46°55'E, 1♀, July 2007.

Distribution outside Iran: Southern Europe, Kazakhstan, Turkey.

Genus ***Sphex*** ***Linnaeus***, 1758

Sphex oxianus Gussakovskij, 1928

Material examined: Mazandaran province, Babol, 36°30'N, 52°35'E, 2♀, June 2014.

Distribution outside Iran: Armenia, Kazakhstan, Kyrgyzstan, Palestine, Syria, Tajikistan, Turkey, Turkmenistan.

Family **Crabronidae** Latreille, 1802

Subfamily **Bembicinae**

Genus ***Alysson*** Panzer, 1806

Alysson spinosus (Panzer 1801)

Material examined: Northern Khorasan province, Bojnord, 37°35'N, 57°20'E, 2♀, 1♂, September 2010.

Distribution outside Iran: Austria, Belarus, Belgium, Bulgaria, Caucasus, Croatia, Cyprus, Czech Republic, Denmark, France, Georgia, Germany, Greece, Hungary, Italy, Kazakhstan, Latvia, Lithuania, Netherlands, Poland, Portugal, Romania, Russia, Serbia, Slovenia, Spain, Switzerland, Slovakia, Turkey, United Kingdom, Ukraine.

Genus ***Gorytes*** Latreille, 1804

Gorytes foveolatus Handlirsch, 1888

Material examined: Kurdistan province, Kamyaran, 34°55'N, 46°55'E, 1♀, July 2007.

Distribution outside Iran: Northwest Africa, southern Europe, Turkey, Ukraine, Russia, Syria, Jordan.

Subfamily **Crabroninae**

Genus ***Crossocerus*** Lepeletier et Brullé, 1835

Crossocerus acanthophorus (Kohl, 1892)

Material examined: West Azarbaijan province, Mahabad, 36°46'N, 45°44'E, 1♀, June 2012.

Distribution outside Iran: Europe, southern former Soviet Union states, Palestine, Turkey.

Genus ***Oxybelus*** Latreille, 1796

Oxybelus aurantiacus Mocsáry, 1883

Material examined: Golestan province, Gorgan, 36°50'N, 54°30'E, 1♀, 1♂, July 2011.

Distribution outside Iran: Algeria, Bulgaria, China, Czech Republic, Egypt, France, Greece, Hungary, Israel, Italia, Mongolia, Morocco, Russia, Saudi Arabia, Slovakia, Spain, Syria, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan, Yemen, former Yugoslavia.

Genus ***Tachysphex*** Kohl, 1883

Tachysphex fugax (Radoszkowski, 1877)

Material examined: Semnan province, Damghan, 35°30'N, 54°20'E, 1♂, 2♀, August 2011.

Distribution outside Iran: Algeria, Austria, Bulgaria, Canary Islands, Central African Republic, Croatia, Egypt, Ethiopia, France, Germany, Greece, Hungary, Israel, Italy, Kazakhstan, Madagascar, Malta, Morocco, Oman, Portugal, Romania, Russia, Saudi Arabia, South Africa, Spain, Switzerland, Syria, Tanzania, Turkey, Ukraine, Uzbekistan, Yemen, former Yugoslavia, Zimbabwe.

Tachysphex schmiedeknechti Kohl, 1883

Material examined: East Azarbaijan province, Maragheh, 37°23'N, 46°24'E, 1♀, July 2011.

Distribution outside Iran: Some circum-Mediterranean countries, to Oman, Central Asia, Syria.

Genus *Tachytes* Panzer, 1806

Tachytes etruscus (Rossi, 1790)

Material examined: Guilan province, Fuman, 34 m, 37°13'N, 49°19'E, 1♀, September 2012.

Distribution outside Iran: Algeria, Austria, Bulgaria, China, Croatia, Cyprus, France, Greece, Hungary, Israel, Italy, Romania, Russia, Saudi Arabia, Slovakia, Spain, Syria, Turkey, Turkmenistan, Ukraine, former Yugoslavia.

Tachytes xenoferus Rohwer, 1911

Material examined: Lorestan province, Borujerd, 33°50'N, 48°50'E, 2♀, October 2009.

Distribution outside Iran: Algeria, Burkina-Faso, China, Egypt, Ethiopia, Ghana, India, Israel, Mali, Niger, Oman, Pakistan, Saudi Arabia, Sri Lanka, Taiwan, Thailand, the United Arab Emirates.

Genus *Trypoxylon* Latreille, 1796

Trypoxylon scutatatum Chevrier, 1867

Material examined: Kermanshah province, Baneh, 35°55'N, 45°50'E, 1♀, July 2012.

Distribution outside Iran: circum-Mediterranean countries to Oman and Central Asia.

Subfamily **Philanthinae**

Genus *Cerceris* Latreille, 1802

Cerceris rybyensis (Linnaeus, 1771)

Material examined: Mazandaran province, Babol, 36°30'N, 52°35'E, 1♀, June 2014.

Distribution outside Iran: Europe throughout Russia to Central Asia and North Africa.

Genus *Philanthus* (Fabricius, 1790)

Philanthus triangulum (Fabricius, 1775)

Material examined: Lorestan province, Borujerd, 33°50'N, 48°50'E, 2♀, October 2009.

Distribution outside Iran: Western Palearctic, Middle East to Africa.

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