

# A faunistic study on digger wasps of Iran (Hymenoptera)

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GHAHARI H.: *A faunistic study on digger wasps of Iran (Hymenoptera)*.

**Abstract:** This paper deals with distribution data of 53 species of Iranian digger wasps from 27 genera and three families, Ampulicidae (single species), Crabronidae (28 species, 16 genera) and Sphecidae (24 species, 9 genera). Eight species are new records for the fauna of Iran: *Bembix diversipes* F. Morawitz, 1889, *Cerceris quadrifasciatus* (Panzer, 1799), *Lestica (Lestica) subterranea* (Fabricius, 1775) (Crabronidae), *Ammophila sabulosa sabulosa* (Linnaeus, 1758), *Podalonia tydei tydei* (Le Guillou, 1841), *Prionyx viduatus viduatus* (Christ, 1791), *Sceliphron (Sceliphron) spirifex* (Linnaeus, 1758) and *Sphex (Sphex) flavipennis* Fabricius, 1793 (Sphecidae).

**Keywords:** Ampulicidae, Crabronidae, Sphecidae, fauna, distribution, Iran

## Introduction

The fauna of Iranian digger wasps has poorly been studied so far. The first work on this taxon was done by de GUSSAKOVSKIJ (1933), and after that many other contributions have been published: BEAUMONT (1957, 1970), ESMAILI & RASTEGAR (1974), EBRAHIMI (1993a, 1993b, 2000a, 2000b, 2005, 2008), EBRAHIMI et al. (1995), GHAZISOLTANZADEH et al. (2006), FALLAHZADEH et al. (2006, 2009), SAKENIN et al. (2010, 2011), SAMIN et al. (2015), REZAEI & FALLAHZADEH (2015), and ATBAEI et al. (2015). Recently JAHANTIGHI et al. (2017) listed 404 species belonging to 71 genera and 11 subfamilies for the fauna of Iran. The aim of this paper is a faunistic work on digger wasps collected from different regions of Iran and presenting of eight new country records.

## Material and methods

The materials were collected from different regions of Iran using common handy entomological net and Malaise trap. Additionally, several materials were collected from some insect collections of Islamic Azad University (Science and Research, Qaemshahr, Rudehen, Garmsar and Shahre Rey Branches). Most of the specimens were identified by Dr. T. Ljubomirov and some by Dr. P. Nemkov, and are deposited in their collections. Classification and nomenclature were taken from PULAWSKI (2016). The localities of Iran are represented in the fig. 1.

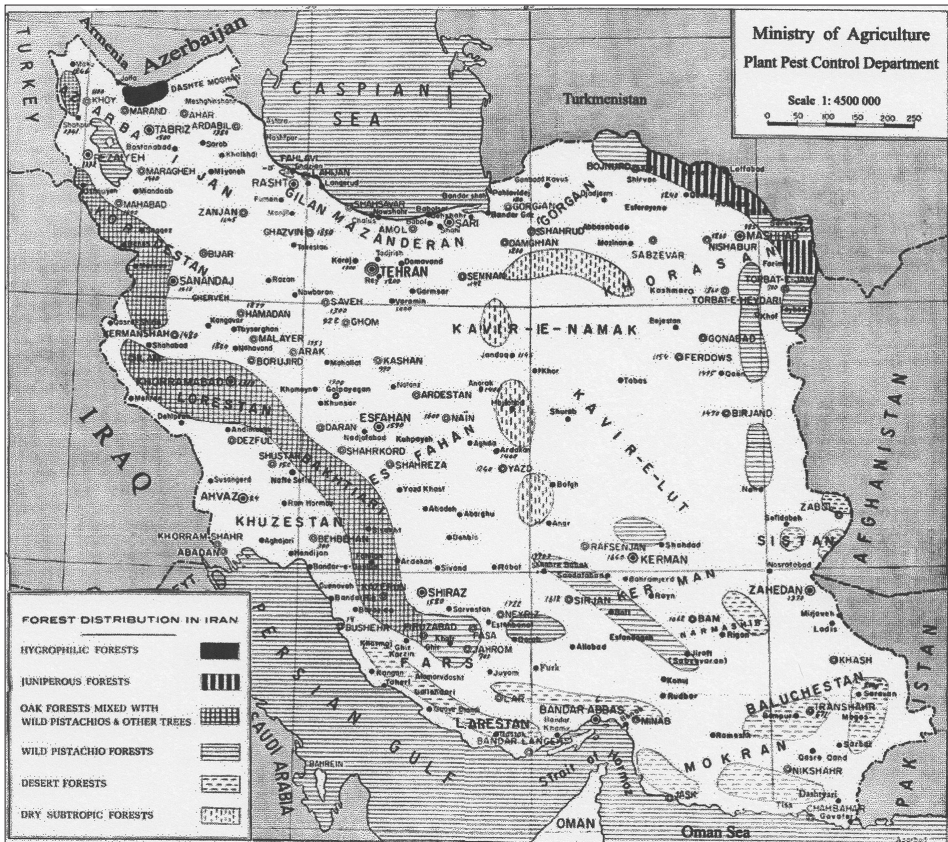


Fig. 1: Map of Iran with localities and geographical regions

## Results

In total 53 species of digger wasps, Ampulicidae (one species), Crabronidae (28 species, 16 genera) and Sphecidae (24 species, 9 genera) were collected and identified from different regions of Iran. The list of species is given below alphabetically.

### Family Ampulicidae Shuckard, 1840

#### Genus *Trirogma* Westwood, 1841

##### *Trirogma caerulea* Westwood, 1841

*Material examined:* Mazandaran province, Sari, 1♀, v.1998; Khuzestan province, Ahvaz, 2♂, 20.v.1999; Kerman province, Jiroft, 2♀, iv.1999; Qazvin province, Alamot, 1♂, vii.2000; Qazvin province, Qazvin, 1♀, vii.2000; Zanjan province, Zanjan, 1♀, ix.2000; West Azarbaijan province, Ourmieh, 1♀, ix.2001; Guilan province, Lanhajan, 2♀, vi.2002; West Azarbaijan province, Mahabad, 2♀, ix.2005; Lorestan province, Khorram-Abad, 2♀, VI.2006; Chaharmahal & Bakhtiari province, Brojen, 2♀, viii.2007; Yazd province, Meybod, 1♀, x.2007.

**Family Crabronidae Latreille, 1802****Genus *Ammatomus* A. Costa, 1859***Ammatomus mesostenus* (Handlirsch, 1888)*Material examined:* Mazandaran province, Behshahr, 2♂, ix.2008; Northern Khorasan province, Bojnord, 1♂, vii.2009.**Genus *Astata* Latreille, 1796***Astata boops boops* (Schrank, 1781)*Material examined:* Tehran province, Firuzkuh, 1♂, viii.1994; Kordestan province, Sanandaj, 1♀, viii.2006.*Astata kashmirensis kashmirensis* Nurse, 1909*Material examined:* Semnan province, Shahmirzad, 2♂, viii.2003.*Astata minor* Kohl, 1885*Material examined:* Golestan province, Kalaleh, 1♂, iv.2010.**Genus *Bembecinus* A. Costa, 1859***Bembecinus validior* Gussakovskij, 1952*Material examined:* Kerman province, Kahnuj, 1♂, vii.2006.**Genus *Bembix* Fabricius, 1775***Bembix diversipes* F. Morawitz, 1889*Material examined:* Golestan province, Gonbad, 1♀, vi.2007. New record for Iran.*Bembix oculata oculata* Panzer, 1801*Material examined:* Razavi Khorasan province, Mashhad, 3♀, 1♂, viii.2002.**Genus *Cerceris* Latreille, 1802***Cerceris eryngii eryngii* Marquet, 1875*Material examined:* Kermanshah province, Ravansar, 1♀, viii.2010.*Cerceris flavilabris flavilabris* (Fabricius, 1793)*Material examined:* Golestan province, Gorgan, 2♀, 2♂, ix.2011; Guilan province, Rudbar, 1♀, 2♂, vi.2011.*Cerceris quadricincta quadricincta* (Panzer, 1799)*Material examined:* Ilam province, Ilam, 1♂, IX.2007.*Cerceris quadrifasciatus* (Panzer, 1799)*Material examined:* Isfahan province, Kashan, 2♀, vii.1998. New record for Iran.**Genus *Diodontus* Curtis, 1834***Diodontus tristis* (Vander Linden, 1829)*Material examined:* East Azarbaijan province, Maragheh, 1♀, 1♂, viii.2010.**Genus *Ectemnius* Dahlbom, 1845***Ectemnius continuus continuus* (Fabricius, 1804)*Material examined:* Ilam province, Abdanan, 1♂, ix.2009.

**Genus *Larra* Fabricius, 1793***Larra anathema anathema* (Rossi, 1790)*Material examined:* Mazandaran province, Ramsar, 1♂, viii.1994; Hormozgan: Bandar-Abbas, 2♀, x.2000.**Genus *Lestica* Billberg, 1820***Lestica clypeata clypeata* (Schreber, 1759)*Material examined:* Mazandaran province, Neka, 1♀, VI.2012.*Lestica (Lestica) subterranea* (Fabricius, 1775)*Material examined:* Razavi Khorasan province, Neyshabur, 2♀, 1♂, ix.2010. New record for Iran.**Genus *Liris* Fabricius, 1804***Liris (Leptolarra) festinans praetermissus* (Richards, 1928)*Material examined:* Tehran province, Damavand, 1♀, viii.2000; Mazandaran province, Savadkooh, 2♀, vii.2005.*Liris (Leptolarra) haemorrhoidalis* (Fabricius, 1804)*Material examined:* Khuzestan province, Ahvaz, 2♀, 20.V.1999; Isfahan province, Najaf-Abad, 1♀, vi.1998.*Liris (Leptolarra) memnonius* (F. Smith, 1856)*Material examined:* Razavi Khorasan province, Mashhad, 1♀, viii.2002; Yazd province, Ardakan, 2♀, x.2006.*Liris (Leptolarra) micans* (Spinola, 1806)*Material examined:* Khuzestan province, Ahvaz, 1♀, v.1999; East Azarbaijan province, Arasbaran, 1♀, viii.1999.**Genus *Mimumesa* Malloch, 1933***Mimumesa unicolor* (Vander Linden, 1829)*Material examined:* Hormozgan province, Haji-Abad, 2♂, xi.2007; Fars province, Darab, 2♂, ix.2008.**Genus *Philanthus* Fabricius, 1790***Philanthus triangulum triangulum* (Fabricius, 1775)*Material examined:* Mazandaran province, Qaemshahr, 2♂, viii.2007.**Genus *Stizus* Latreille, 1802***Stizus kohlii* Mocsáry, 1883*Material examined:* East Azarbaijan province, Kaleybar, 1♀, viii.2009.**Genus *Oxybelus* Latreille, 1796***Oxybelus lamellatus lamellatus* Olivier, 1812*Material examined:* Razavi Khorasan province, Mashhad, 2♀, 1♂, viii.2002; Kerman province, Jiroft, 1♀, 1♂, x.2005.*Oxybelus latro* Olivier, 1812*Material examined:* Mazandaran province, Neka, 2♂, vi.2012.

**Genus *Tachysphex* Kohl, 1883***Tachysphex dignus* Kohl, 1889*Material examined:* Golestan province, Golestan National Park, Dasht-e-Mirzabaylu, 1♀, viii.2007.**Genus *Trypoxylon* Latreille, 1796***Trypoxylon albipes* F. Smith, 1856*Material examined:* Kerman province, Kerman, 1♂, vi.2003.*Trypoxylon scutatatum scutatatum* Chevrier, 1867*Material examined:* Kordestan province, Sanandaj, 2♀, 1♂, vii.2006.**Family Sphecidae Latreille, 1802****Genus *Ammophila* W. Kirby, 1798***Ammophila heydeni heydeni* Dahlbom, 1845*Material examined:* Ilam province, Ilam, 2♀, ix.2005; Isfahan province, Semirom, 2♀, viii.2006.*Ammophila sabulosa sabulosa* (Linnaeus, 1758)*Material examined:* Tehran province, Shahre Rey, 3♀, vi.2000. New record for Iran.**Genus *Chalybion* Dahlbom, 1843***Chalybion (Chalybion) flebile* (Lepeletier de Saint-Fargeau, 1845)*Material examined:* Tehran province, Damavand, 1♀, viii.1996.*Chalybion (Chalybion) walteri* (Kohl, 1889)*Material examined:* Yazd province, Abarkooh, ♀, ix.1992; Kermansahah province, Ravansar, 1♂, iv.1994; Fars province, Kazerun, 2♀, viii.1998; Alborz province, Karaj, 1♀, v.1999; Hamadan province, Malayer, 1♀, viii.2001; West Azarbaijan province, Ourmieh, 1♀, viii.2002; Semnan province, Shahmirzad, 2♀, iv.2004.**Genus *Hoplammophila* de Beaumont, 1960***Hoplammophila armata* (Illiger, 1807)*Material examined:* Kerman province, Kahnuj, 2♂, vii.2006.**Genus *Isodontia* Patton, 1880***Isodontia paludosa* (Rossi, 1790)*Material examined:* Mazandaran province, Noshahr, 1♀, vii.2001.**Genus *Palmodes* Kohl, 1890***Palmodes orientalis* (Mocsáry, 1883)*Material examined:* Lorestan province, Dorud, 1♀, ix.2002; Guilan province, Rasht, 2♀, vii.2005.**Genus *Podalonia* Fernald, 1927***Podalonia affinis affinis* (W. Kirby, 1798)*Material examined:* Sistan & Baluchestan province, Iranshahr, 2♀, iv.2007.*Podalonia ebenina* (Spinola, 1839)*Material examined:* Golestan province, Galogah, 1♀, v.2001.

*Podalonia hirsuta hirsuta* (Scopoli, 1763)

*Material examined:* Hormozgan province, Bandar-Abbas, 1♂, x.1995; Golestan province, Bandar-Torkman, 2♂, viii.1995; Chaharmahal & Bakhtiari province, Shahrekord, 1♀, vi.1999; Markazi province, Arak, 2♀, v.1999; Guilan province, Amlash, 2♂, vi.1999; Guilan province, Rasht, 1♂, v.1999; Golestan province, Golestan National Park, 1♂, vii.1999; Sistan & Baluchestan province, Chabahar, 2♀, xi.2000; Mazandaran province, Babolsar, 2♀, vi.2000; Khorasan province, Mashhad, 1♀, v.2000; Mazandaran province, Sari, 1♂, v.2000; West Azarbaijan province, Miandoab, 1♀, ix.2001; East Azarbaijan province, Arasbaran, 1♀, ix.2001; Hamadan province, Nahavand, 2♀, viii.2007.

*Podalonia micipsa* (Morice, 1900)

*Material examined:* West Azarbaijan province, Ourmieh, 1♀, ix.2001; Golestan province, Minoodasht, 2♀, vi.2005.

*Podalonia tydei tydei* (Le Guillou, 1841)

*Material examined:* Sistan & Baluchestan province, Zabol, 2♀, vii.1999. New record for Iran.

**Genus *Prionyx* Vander Linden, 1827***Prionyx viduatus viduatus* (Christ, 1791)

*Material examined:* Hamadan province, Malayer, 1♀, viii.2006. New record for Iran.

*Prionyx viduatus pollens* (Kohl, 1885)

*Material examined:* Bushehr province, Bushehr, 1♀, ix.1998.

**Genus *Sceliphron* Klug, 1807***Sceliphron (Sceliphron) arabs* (Lepelletier de Saint-Fargeau, 1845)

*Material examined:* East Azarbaijan province, Arasbaran, 1♀, v.2004; East Azarbaijan province, Mianeh, 2♀, vii.2004; Kerman province, Jiroft, 2♀, ix.2005; Qazvin province, Abyek, 2♀, vii.2007.

*Sceliphron (Sceliphron) destillatorium* (Illiger, 1809)

*Material examined:* Guilan province, Rasht, 1♀, viii.1993; Fars province, Firuzabad, 2♀, vi.1993; East Azarbaijan province, Tabriz, 1♂, vii.1997; Ilam province, Ilam, 2♀, v.1999; Alborz province, Karaj, 1♀, vii.2000; Semnan province, Semnan, 1♂, viii.2000; Sistan & Baluchestan province, Chabahar, 1♂, ix.2000; East Azarbaijan province, Arasbaran, 2♀, vii.2007; Fars province, Abadeh, 2♂, VI.2007; Yazd province, Meybod, 1♀, x.2007.

*Sceliphron (Sceliphron) madraspatanum pictum* (F. Smith, 1856)

*Material examined:* Guilan province, Lahijan, 1♀, ix.1995; Kordestan province, Marivan, 1♂, iv.1997; Khuzestan province, Ahwaz, 2♀, xi.1997; Mazandaran province, Sari, 1♂, viii.2003; Sistan & Baluchestan province, Zahedan, 2♀, v.2008.

*Sceliphron (Hensenia) rectum* Kohl, 1918

*Material examined:* Southern Khorasan province, Birjand, 2♀, ix.1997.

*Sceliphron (Sceliphron) spirifex* (Linnaeus, 1758)

*Material examined:* West Azarbaijan province, Salmas, 1♀, vi.2007. New record for Iran.

**Genus *Sphex* Linnaeus, 1758***Sphex (Sphex) flavipennis* Fabricius, 1793

*Material examined:* West Azarbaijan province, Oshnavieh, 2♂, v.2006; Fars province, Abadeh, 2♂, vi.2007; East Azarbaijan province, Arasbaran, 2♀, vii.2007; Sistan & Baluchestan province, Iranshahr, 2♀, iv.2007.

*Sphex (Sphex) funerarius* Gussakovsky, 1934

*Material examined:* Hamadan province, Malayer, 2♀, vi.2000.

*Sphex (Sphex) oxianus* Gussakovsky, 1928

*Material examined:* Kerman province, Jiroft, 1♀, ix.2001.

*Sphex (Sphex) flavipennis* Fabricius, 1793

*Material examined:* West Azarbaijan province, Salmas, 1♀, vi.2007. New record for Iran.

*Sphex (Sphex) pruinosus* Germar, 1817

*Material examined:* Qom province, Qom, 2♀, vii.2005.

**Discussion**

Finding these eight new country records and also regarding to data of the checklist JAHANTIGHI et al. (2017) indicate that the fauna of Iranian digger wasps is diverse and rather unknown. With this eight new records total number of species of Iranian digger wasps reaches to 412. Iran is a vast country with huge numbers of varieties in landscapes and weather conditions (ZEHZAD et al. 2002). This rich environmental condition led to the high diversity of flora of Iran Plateau (GHAHREMAN & ATTAR 1999) that affects the species richness of insects, like digger wasps. Conducting the faunistic surveys systematically in different areas of Iran especially in east and south where have poorly been studied, will result to finding several new records and probably new species.

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