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## **Contribution to the knowledge of the spider wasps fauna (Hymenoptera, Pompilidae) from Mazandaran province, Iran**

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### **Abstract**

In this study, the faunistic data of 115 pompilid specimens collected from five regions of Sari (Center of Mazandaran province of Iran) during 2009 were examined. In total 24 species belonging to 12 genera of Pompilidae were identified. Of those, 7 and 11 species are new for Iran and Mazandaran, respectively. The new species for Iran are: *Agenioideus nubecula* (COSTA 1874), *Aporus pollux* (KOHL 1888), *Arachnospila anceps* (WESMAEL 1851), *Dipogon bifasciatus* (GEOFFROY 1785), *Dipogon variegatus* (LINNAEUS 1758), *Episyron gallicum* (TOURNIER 1889) and *Evagetes pectinipes* (LINNAEUS 1758). The checklist of the species is also given.

Key words: fauna, spider wasps, Pompilinae, Pepsinae, Mazandaran.

### **Zusammenfassung**

Vorliegende Arbeit befasst sich mit einer 2009 getätigten Aufsammlung von 115 Pompiliden aus 5 Standorten der iranischen Stadt Sari nördlich des Elburs Gebirges in der Provinz Mazandaran. Nachgewiesen wurden 24 Arten aus 12 Gattungen, 7 Arten stellen Erstnachweise für den Iran dar, 11 für die Provinz Mazandaran. Namentlich neu für den Iran sind: *Agenioideus nubecula* (COSTA 1874), *Aporus pollux* (KOHL 1888), *Arachnospila anceps* (WESMAEL 1851), *Dipogon bifasciatus* (GEOFFROY 1785), *Dipogon variegatus* (LINNAEUS 1758), *Episyron gallicum* (TOURNIER 1889) and *Evagetes pectinipes* (LINNAEUS 1758).

## Introduction

Pompilidae, also known as "spider wasps", is a cosmopolitan family of Hymenoptera with moderate to large-size predatory wasps that occupy a diverse array of habitats. The number of pompilid species in the global fauna is about 5.000 species belonging to more than 230 genera. They are found mostly in tropical regions of the world (WASBAUER 1995).

These solitary wasps usually have slender bodies with spiny legs; they are identified by the almost universal characteristic of a transverse sulcus in mesopleuron. Most spider wasps are dark-colored, with smoky or yellowish wings. A few are brightly colored. Sexual dimorphism is slight to moderate, with both sexes usually macropterous, a few brachypterous and apterous species are known (BROTHERS & FINNAMORE 1993). These wasps can usually be distinguished from other similar wasps as they move by short jumps and repeatedly flick their wings while hunting for spiders among vegetation, under bark, in the crevices of trees or in the soil. Female pompilid searches for spider, subdues spider with venom from sting and transports spider to place of concealment. Many species construct cells or excavate soil in which larva develops on host. Some species develop as cleptoparasites of other pompilids with parasitized hosts detected by female who destroys extant egg and lays her own on paralysed spider, or second egg hatches and larva kills the first pompilid and then consumes spider host. A few species temporarily paralyze spider which recovers but is eventually killed by developing larva (EVANS & SHIMIZU 1996).

Some investigations on Iranian pompilid fauna have previously been done. Four species were reported by ESMAILI & RASTEGAR (1974) from Damavand (in vicinity of Tehran). Nine and 43 species were reported by WOLF (2003) and EBRAHIMI et al. (2008), respectively from various parts of Iran. Recently, AMIRESMAEILI et al. (2010) reported 16 species from different regions of Mazandaran province, Iran. According to EBRAHIMI et al. (2008) Iran is markedly rich in hymenopterous species because of having various zoogeographical zones.

This research is the second part of the series of our taxonomic study of the Mazandaranian species of the family Pompilidae. In the first part of this series were reviewed 16 species (AMIRESMAEILI et al. 2010). In the present paper, a faunistic survey was carried out on family Pompilidae in Sari, Mazandaran. These species belonging to the 12 genera and 24 species are revised, with detailed descriptions.

The species examined are deposited in the Agricultural and Natural Resources Research Center of Mazandaran, Sari/Iran.

## Material and Methods

**S a m p l i n g a r e a .** Mazandaran province is Hyrcanian region of Iran and located along the Caspian coast and occupied three main habitats: alluvial flats of the coastal plain, the northern slopes of the Elburz mountain chain and the subplain meadows of this mountain chain. The most outstanding feature of this area is the broad-leaved deciduous forests, which ranges in altitude from sea-level to 2800 above sea-level. During this

research we did sampling from five regions of Sari, which is center of Mazandaran province and situated in the longitude of 53° 05' and the latitude of 36° 04'.

**S a m p l i n g m e t h o d s a n d i n s t r u m e n t s .** Window traps, Malaise traps and Color traps were used for collecting pompilid specimens. They will be presented hereafter as WT, MT and CT respectively.

Each WT consisted of a vertically held, glass sheet (window), 100 × 85 cm in height and width that were embedded in a metal frame. The sheet had a plastic gutter tray along its bottom edge (BARARI 2005). The tray was half-filled with 90 % ethanol and 1 % glycerin. Each WT was erected about 10 cm from the ground. Two WT were set up in each sampling locality.

We use of bidirectional MT (TOWNES 1962) that was made of fine black and white net. The traps were about 200 cm high at the front peak, 150 cm high in the back, about 200 cm long and 120 cm wide. The walls were black and the roof was white. Each trap was surmounted by a white plastic collecting pot that was tied to the middle long pole at the peak in front. The collecting pot was a third-filled with 90 % ethanol and 1 % glycerin. Two MT were set up in each sampling locality.

Each CT was a cup-like container with 145 and 100 mm diameters at top and bottom, respectively, with 100 mm deep (personal communication with Hassan Barimani). The plastic pans were painted yellow and white and placed about 100 cm from the ground. Each CT half-filled with an aqueous solution of 10 drops per liter of detergent. We positioned 10 yellow pan traps and 10 white pan traps in each sampling locality.

We set up all three kinds of traps on 9 April 2009 in five regions of Sari, checked once in every two weeks until 29 September 2009 and entrapped pompilids were collected and identified. Geographical situation of sampling localities are tabulated in table 1.

**I d e n t i f i c a t i o n .** Genera were identified using Wolf's identification keys (WOLF 1992). The species identifications were realized by the second author (R. Wahis, Gembloux, Belgium).

The specimens are kept in the insect collection of Agricultural and Natural Resources Research Center of Mazandaran (Sari).

## **Results**

In total, 115 specimens of the Pompilidae were collected from different locations of Sari/Iran during 2009 and examined. In addition, we examined some previously collected materials preserved at Agricultural and Natural Resources Research Center of Mazandaran, Sari/Iran. The identification results showed that these specimens belong to 24 species of 12 genera from two subfamilies (Pompilinae LATREILLE 1805 and Pepsinae LEPELETIER 1845) as follows.

## List of collected species

### Subfamily *Pepsinae* LEPELETIER 1845

#### Genus *Auplopus* SPINOLA 1841

##### *Auplopus carbonarius* (SCOPOLI 1763)

**Material examined:** Sari, Alamdar-Deh, 22.IV.09, 1♂ (WT); Sari, Haft-Khal, 05.V.09, 1♂ (WT); Sari, Haft-Khal, 25.VII.09, 2♀ (WT); Sari, Pahneh-Kola, 25.VII.09, 1♀ (WT); Sari, Pahneh-Kola, 24.VIII.09, 1♀ (PT), 1♀ (WT); Sari, Alamdar-Deh, 24.VIII.09, 1♀ (MT); Sari, Haft-Khal, 08.IX.09, 1♀ (PT); Sari, Pahneh-Kola, 29.IX.09, 1♀ (MT).

**Distribution in Iran:** Azarbaijan-e Sharghi; Karaj (EBRAHIMI et al. 2008); Mazandaran (AMIRESMAEILI et al. 2010).

**Distribution in Country/region:** Near East (Asian Turkey, Caucasian Russian republics, Georgia, Armenia, Azarbaijdan, Lebanon, Syria, Israel, Jordan, Sinai Peninsula (Egypt), Arabian peninsula, Iran, Iraq); North Africa (Not including Sinai Peninsula); Albania, Austria, Belgium, Bosnia and Herzegovina, Britain I.(Incl. Shetlands, Orkneys, Hebrides and Man Is.), Bulgaria, Channel Is. (Incl. Jersey, Guernsey, Alderney), Corsica, Cyprus, Czech Republic, Danish mainland (Incl. Borholm I.), European Turkey (Incl. Imroz I. - Gokceada, but not those in the Sea of Marmara), Finland, French mainland, Germany, Greek mainland (Incl. Andikithira I., Evvia I., Ionian Is., Samothraki I., Northern Sporades Is., Thasos I.), Italian mainland, Malta, Poland, Portuguese mainland, Romania, Russia Central, Sardinia, Sicily (Incl. adjacent Italian islands (Lipari Is., Ustica I., Egadi Is., Pantelleria I., Pelagie Is.)), Slovakia, Spanish mainland (Incl. Alboran I.), Switzerland, The Netherlands (WAHIS 2007).

**Remarks:** EBRAHIMI et al. (2008) and AMIRESMAEILI et al. (2010) reported this species from different regions of Iran and Mazandaran, respectively.

##### *Auplopus rectus* (HAUPT 1927)

**Material examined:** Sari, Pahneh-Kola, 24.V.09, 1♀ (PT); Sari, Alamdar-Deh, 08.IX.09, 2♀ (MT); Sari, Alamdar-Deh, 29.IX.09, 1♀ (MT).

**Distribution in Iran:** Mazandaran (AMIRESMAEILI et al. 2010).

**Distribution in Country/region:** Near East (Asian Turkey, Caucasian Russian republics, Georgia, Armenia, Azerbaidjan, Lebanon, Syria, Israel, Jordan, Sinai Peninsula (Egypt), Arabian peninsula, Iran, Iraq); North Africa (Not including Sinai Peninsula); Albania, Austria, Bosnia and Herzegovina, Corsica, Cyprus, Czech Republic, French mainland, Greek mainland (Incl. Andikithira I., Evvia I., Ionian Is., Samothraki I., Northern Sporades Is., Thasos I.), Italian mainland, Malta, Portuguese mainland, Romania, Russia Central, Sardinia, Sicily (Incl. adjacent Italian islands (Lipari Is., Ustica I., Egadi Is., Pantelleria I., Pelagie Is.)), Slovakia, Spanish mainland (Incl. Alboran I.) (WAHIS 2007).

**Remarks:** AMIRESMAEILI et al. (2010) cited it from different regions of Mazandaran province.

**Genus *Cryptocheilus* PANZER 1806**

***Cryptocheilus fischeri* (SPINOLA 1838)**

**M a t e r i a l e x a m i n e d :** Sari, Alamdar-Deh, 21.V.09, 1♀ (WT); Sari, Alamdar-Deh, 04.VI.09, 2♀♀ (WT); Sari, Haft-Khal, 25.VII.09, 1♀ (PT); Sari, Haft-Khal, 16.VIII.08, 1♀ (PT); Sari, Dasht-e-Naz, 27.V.08, 1♀ (MT).

**D i s t r i b u t i o n i n I r a n :** Bushehr (EBRAHIMI et al. 2008).

**D i s t r i b u t i o n i n C o u n t r y / r e g i o n :** Near East (Asian Turkey, Caucasian Russian republics, Georgia, Armenia, Azerbaidjan, Lebanon, Syria, Israel, Jordan, Sinai Peninsula (Egypt), Arabian peninsula, Iran, Iraq); Cyprus, Dodecanese Is. (Incl. Alimnia, Arkoi, Astipalaia, Avgonisi, Ankathonisi, Farmakonisi, Ioinianisia, Kalimnos, Kalolimnos, Kandeliousa, Karpathos, Kasos, Khalki, Khamili, Kinaros, Kos, Leros, Levitha, Lipsoi, Meyisti, Nisiros, Ofidousa, Patmos, Rodhos, Saria, Simi, Sirina, Tilos, Tria Nisia, Yiali and other smaller islands), French mainland, Greek mainland (Incl. Andikithira I., Evvia I., Ionian Is., Samothraki I., Northern Sporades Is., Thasos I.), Italian mainland, Portuguese mainland, Romania, Russia Central, Spanish mainland (Incl. Alboran I.) (WAHIS 2007).

**R e m a r k s :** Only one female from Bandar-e Bushehr had been caught and recorded by EBRAHIMI et al. (2008). It is the first time for the species to occur in Mazandaran province.

***Cryptocheilus notatus* (ROSSIUS 1792)**

**M a t e r i a l e x a m i n e d :** Sari, Alamdar-Deh, 08.VII.09, 1♀ (WT); Sari, Aali-Kola, 08.IX.09, 1♀ (PT); Sari, Alamdar-Deh, 08.IX.09, 1♀ (MT); Sari, Aali-Kola, 29.IX.09, 1♀ (WT).

**D i s t r i b u t i o n i n I r a n :** Tehran; Mazandaran (EBRAHIMI et al. 2008 & AMIRESMAEILI et al. 2010).

**D i s t r i b u t i o n i n C o u n t r y / r e g i o n :** Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Britain (Incl. Shetlands, Orkneys, Hebrides and Man Is.), Bulgaria, Channel Is. (Incl. Jersey, Guernsey, Alderney), Corsica, Cyprus, Czech Republic, Danish mainland (Incl. Borholm I.), French mainland, Germany, Greek mainland (Incl. Andikithira I., Evvia I., Ionian Is., Samothraki I., Northern Sporades Is., Thasos I.), Italian mainland, Luxembourg, Poland, Portuguese mainland, Romania, Russia Central, Slovakia, Spanish mainland (Incl. Alboran I.), The Netherlands (WAHIS 2007).

**R e m a r k s :** EBRAHIMI et al. (2008) had reported female of this species from Malard (Tehran province), Khoshnam, 5.XI.1991, also male of it from Elburs, 30 km SE Chalus in 1971. AMIRESMAEILI et al. (2010) also collected it from various regions of Mazandaran with different methods.

***Cryptocheilus octomaculatus* (ROSSIUS 1790)**

**M a t e r i a l e x a m i n e d :** Sari, Dasht-e-Naz, 04.VI.09, 1♂ (WT); Sari, Alamdar-Deh, 23.VI.09, 1♀ (WT), 4♂♂ (WT); Sari, Dasht-e-Naz, 25.VII.09, 1♀ (WT); Sari, Pahneh-Kola, 25.VII.09, 1♀ (PT), 1♂ (WT); Sari, Pahneh-Kola, 24.VIII.09, 1♀ (WT); Sari, Dasht-e-Naz, 15.VIII.08, 1♀ (MT).

**Distribution in Iran:** Fars; Tehran; Golestan; Mazandaran (EBRAHIMI et al. 2008 & AMIRESMAEILI et al. 2010).

**Distribution in Country/region:** Albania, Bosnia and Herzegovina, Corsica, Cyprus, French mainland, Greek mainland (Incl. Andikithira I., Evvia I., Ionian Is., Samothraki I., Northern Sporades Is., Thasos I.), Italian mainland, Sicily (Incl. adjacent Italian islands (Lipari Is., Ustica I., Egadi Is., Pantelleria I., Pelagie Is.)), Spanish mainland (Incl. Alboran I.) (WAHIS 2007).

**Remarks:** EBRAHIMI et al. (2008) reported it from Babolsar (Mazandaran province) without mentioning exact collecting locality and the other regions with mentioning exact locality. AMIRESMAEILI et al. (2010) also collected it in a large number from different regions of Mazandaran province.

### ***Cryptocheilus variabilis* (ROSSIUS 1790)**

**Material examined:** Sari, Haft-Khal, 25.VII.09, 1♂ (WT).

**Distribution in Iran:** Golestan (EBRAHIMI et al. 2008); Mazandaran.

**Distribution in Country/region:** Albania, Austria, Bosnia and Herzegovina, Canary Is., Corsica, Cyprus, Czech Republic, French mainland, Germany, Italian mainland, Portuguese mainland, Romania, Russia Central, Sardinia, Slovakia, Spanish mainland (Incl. Alboran I.) (WAHIS 2007).

**Remarks:** This species was reported by EBRAHIMI et al. (2008) from various regions of Golestan. It is the first time for this species to occur in the province of Mazandaran.

### ***Cryptocheilus versicolor* (SCOPOLI 1763)**

**Material examined:** Sari, Aali-Kola, 04.VI.09, 1♀, 1♂ (WT); Sari, Haft-Khal, 25.VII.09, 1♀ (WT), 1♀ (MT); Sari, Pahneh-Kola, 24.VIII.09, 1♀ (PT); Sari, Alamdar-Deh, 24.VIII.09, 1♀, 1♂ (MT); Sari, Aali-Kola, 08.IX.09, 1♂ (MT), 1♀ (PT), 1♀ (WT); Sari, Pahneh-Kola, 08.IX.09, 1♀ (PT), 1♀ (MT); Sari, Alamdar-Deh, 08.IX.09, 1♀ (WT); Sari, Haft-Khal, 29.IX.09, 1♀ (WT).

**Distribution in Iran:** Ardabil, Golestan, Mazandaran (EBRAHIMI et al. 2008 & AMIRESMAEILI et al. 2010).

**Distribution in Country/region:** Albania, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Corsica, Cyprus, Czech Republic, Germany, Italian mainland, Poland, Portuguese mainland, Romania, Russia Central, Sardinia, Sicily (Incl. adjacent Italian islands (Lipari Is., Ustica I., Egadi Is., Pantelleria I., Pelagie Is.)), Slovakia, Spanish mainland (Incl. Alboran I.), Switzerland (WAHIS 2007).

**Remarks:** EBRAHIMI et al. (2008) had reported it from Northeastern (Ardabil) and North (Gorgan) of Iran that did not cite exact collecting locality. AMIRESMAEILI et al. (2010) also collected it in a large number by various methods in Mazandaran. It is the most abundant species among the species of *Cryptocheilus*, active in different height. Also they were collected a lot in sampling of last year.

**Genus *Dipogon* FOX 1897**

***Dipogon bifasciatus* (GEOFFROY 1785)**

**Material examined:** Savad-Kooh, Obour-e-Parsi, 23.V.08, 1♀ (SN).

**Distribution in Iran:** New for Iran.

**Distribution in Country/region:** Austria, Belarus, Belgium, Bosnia and Herzegovina, Britain I. (Incl. Shetlands, Orkneys, Hebrides and Man Is.), Corsica, Czech Republic, Finland, French mainland, Germany, Italian mainland, Poland, Romania, Russia Central, Sardinia, Slovakia, The Netherlands (WAHIS 2007).

**Remarks:** This genus is new record for Iranian fauna. It was collected in 2008 from a lawn near a river by sweeping net about 10:00 am. It was caught at 36° 06' 48" E & 52° 59' 46" N in +865 m.

***Dipogon variegatus* (LINNAEUS 1758)**

**Material examined:** Sari, Haft-Khal, 08.VII.09, 1♂ (WT).

**Distribution in Iran:** New for Iran.

**Distribution in Country/region:** East Palaearctic (East of the border line here defined), North Africa (Not including Sinai Peninsula); Albania, Austria, Belgium, Bosnia and Herzegovina, Britain I. (Incl. Shetlands, Orkneys, Hebrides and Man Is.), Bulgaria, Corsica, Croatia, Cyprus, Czech Republic, Finland, French mainland, Germany, Greek mainland (Incl. Andikithira I., Evvia I., Ionian Is., Samothraki I., Northern Sporades Is., Thasos I.), Hungary, Italian mainland, Luxembourg, Macedonia, Malta, Norwegian mainland, Portuguese mainland, Russia Central, San Marino, Sardinia, Sicily (Incl. adjacent Italian islands (Lipari Is., Ustica I., Egadi Is., Pantelleria I., Pelagie Is.)), Slovakia, Slovenia, Spanish mainland (Incl. Alboran I.), Sweden (Incl. Gotland I.), Switzerland, The Netherlands, Yugoslavia (Incl. Serbia, Kosovo, Voivodina, Montenegro) (WAHIS 2007).

**Remarks:** This genus is new record for Iranian fauna.

**Genus *Priocnemis* SCHIØDTE 1837**

***Priocnemis fahringeri* WOLF 1963**

**Material examined:** Sari, Haft-Khal, 08.IV.09, 2♂♂ (WT); Sari, Aali-Kola, 08.IV.09, 1♀ (WT); Sari, Pahneh-Kola, 21.IV.09, 1♀ (PT); Sari, Haft-Khal, 22.IV.09, 2♂♂ (WT); Sari, Dasht-e-Naz, 05.V.09, 1♀ (PT); Sari, Aali-Kola, 24.V.09, 1♂ (WT); Sari, Aali-Kola, 08.VII.09, 1♀ (MT); Sari, Aali-Kola, 29.IX.09, 1♀ (WT); Sari, Haft-Khal, 08.IX.09, 1♀ (MT) (WAHIS 2007).

**Distribution in Iran:** Mazandaran (AMIRESMAEILI et al. 2010).

**Distribution in Country/region:** No data

**Remarks:** AMIRESMAEILI et al. (2010) recorded it from Sari (Pahneh-Kola & Haft-Khal) and Qaem-Shahr (Jaddeh-Nezami). In this research we collected a lot of it from various regions.

***Priocnemis melanosoma* KOHL 1880**

**Material examined:** Sari, Aali-Kola, 24.VIII.09, 1♀ (PT); Sari, Pahneh-Kola, 08.IX.09, 1♀ (PT); Sari, Pahneh-Kola, 21.V.09, 1♀ (WT); Sari, Pahneh-Kola, 29.IX.09, 1♀ (WT), 1♀ (MT), 1♀ (PT), 4♀♀ (PT); Sari, Alamdar-Deh, 29.IX.09, 2♀♀ (MT).

**Distribution in Iran:** Mazandaran (AMIRESMAEILI et al. 2010).

**Distribution in Country/region:** Austria, Czech Republic, Dodecanese Is. (Incl. Alimnia, Arkoi, Astipalaia, Avgonisi, Ankathonisi, Farmakonisi, Ioinianisia, Kalimnos, Kalolimnos, Kandeliousa, Karpathos, Kasos, Khalki, Khamili, Kinaros, Kos, Leros, Levitha, Lipsoi, Meyisti, Nisiros, Ofidousa, Patmos, Rodhos, Saria, Simi, Sirina, Tilos, Tria Nisia, Yiali and other smaller islands), Poland, Romania, Slovakia (WAHIS 2007).

**Remarks:** AMIRESMAEILI et al. (2010) was reported it from Iran.

***Priocnemis pusilla* (SCHIØDTE 1837)**

**Material examined:** Sari, Pahneh-Kola, 25.VII.09, 1♂ (WT); Sari, Aali-Kola, 04.VI.09, 1♀ (WT).

**Distribution in Iran:** Golestan (EBRAHIMI et al. 2008); Mazandaran.

**Distribution in Country/region:** Albania, Austria, Belarus, Belgium, Britain I. (Incl. Shetlands, Orkneys, Hebrides and Man Is.), Bulgaria, Channel Is. (Incl. Jersey, Guernsey, Alderney), Czech Republic, Danish mainland (Incl. Borholm I.), Finland, French mainland, Germany, Greek mainland (Incl. Andikithira I., Evvia I., Ionian Is., Samothraki I., Northern Sporades Is., Thasos I.), Italian mainland, Luxembourg, Poland, Romania, Sicily (Incl. adjacent Italian islands (Lipari Is., Ustica I., Egadi Is., Pantelleria I., Pelagie Is.)), Slovakia, Spanish mainland (Incl. Alboran I.), The Netherlands (WAHIS 2007).

**Remarks:** EBRAHIMI et al. (2008) cited only one female from Golestan, Malard-Tappeh, Chanaran, 950m, 7.X.2000. It is the first time for the species to occur in Mazandaran province.

***Priocnemis sulci* BALTHASAR 1943**

**Material examined:** Sari, Haft-Khal, 08.IV.09, 1♀, 1♂ (WT); Sari, Haft-Khal, 05.V.09, 1♂ (WT); Sari, Alamdar-Deh, 21.V.09, 1♀ (PT); Sari, Pahneh-Kola, 24.V.09, 1♀ (PT); Sari, Haft-Khal, 24.V.09, 1♀ (MT); Sari, Dasht-e-Naz, 04.VI.09, 1♀ (PT); Sari, Alamdar-Deh, 04.VI.09, 1♂ (WT).

**Distribution in Iran:** Mazandaran (AMIRESMAEILI et al. 2010).

**Distribution in Country/region:** Austria, Britain I. (Incl. Shetlands, Orkneys, Hebrides and Man Is.), Czech Republic, Dodecanese Is. (Incl. Alimnia, Arkoi, Astipalaia, Avgonisi, Ankathonisi, Farmakonisi, Ioinianisia, Kalimnos, Kalolimnos, Kandeliousa, Karpathos, Kasos, Khalki, Khamili, Kinaros, Kos, Leros, Levitha, Lipsoi, Meyisti, Nisiros, Ofidousa, Patmos, Rodhos, Saria, Simi, Sirina, Tilos, Tria Nisia, Yiali and other smaller islands), Italian mainland, Romania, Slovakia (WAHIS 2007).

**Remarks:** This species was recorded by AMIRESMAEILI et al. (2010) for Iranian fauna.



**Subfamily P o m p i l i n a e** LATREILLE 1805

**Genus *Agenioideus*** ASHMED 1902

***Agenioideus nubecula*** (COSTA 1874)

**M a t e r i a l e x a m i n e d :** Sari, Haft-Khal, 25.VII.09, 1♀ (MT); Sari, Pahneh-Kola, 25.VII.09, 1♂ (PT); Sari, Haft-Khal, 29.IX.09, 1♀ (MT); Behshahr, Pasand, 24.IX.08, 1♀ (SN).

**D i s t r i b u t i o n i n I r a n :** New for Iran.

**D i s t r i b u t i o n i n C o u n t r y / r e g i o n :** Near East (Asian Turkey, Caucasian Russian republics, Georgia, Armenia, Azerbaidjan, Lebanon, Syria, Israel, Jordan, Sinai Peninsula (Egypt), Arabian peninsula, Iran, Iraq); North Africa (Not including Sinai Peninsula); Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Corsica, Croatia, Cyprus, Czech Republic, European Turkey (Incl. Imroz I. - Gokceada, but not those in the Sea of Marmara), French mainland, Germany, Greek mainland (Incl. Andikithira I., Evvia I., Ionian Is., Samothraki I., Northern Sporades Is., Thasos I.), Hungary, Italian mainland, Malta, Portuguese mainland, Romania, Russia Central, Sardinia, Sicily (Incl. adjacent Italian islands (Lipari Is., Ustica I., Egadi Is., Pantelleria I., Pelagie Is.)), Slovakia, Slovenia, Spanish mainland (Incl. Alboran I.), Switzerland (WAHIS 2007).

**R e m a r k s :** It is new record for Iranian fauna.

**Genus *Anoplius*** DUFOR 1834

***Anoplius nigerrimus*** (SCOPOLI 1763)

**M a t e r i a l e x a m i n e d :** Sari, Alamdar-Deh, 29.IX.09, 1♂ (MT).

**D i s t r i b u t i o n i n I r a n :** Mazandaran (AMIRESMAEILI et al. 2010).

**D i s t r i b u t i o n i n C o u n t r y / r e g i o n :** Nearctic region; Austria, Belarus, Belgium, Bosnia and Herzegovina, Britain I. (Incl. Shetlands, Orkneys, Hebrides and Man Is.), Bulgaria, Channel Is. (Incl. Jersey, Guernsey, Alderney), Corsica, Czech Republic, Danish mainland (Incl. Borholm I.), Finland, French mainland, Germany, Greek mainland (Incl. Andikithira I., Evvia I., Ionian Is., Samothraki I., Northern Sporades Is., Thasos I.), Italian mainland, Luxembourg, Norwegian mainland, Poland, Portuguese mainland, Romania, Russia Central, Sardinia, Sicily (Incl. adjacent Italian islands (Lipari Is., Ustica I., Egadi Is., Pantelleria I., Pelagie Is.)), Slovakia, Spanish mainland (Incl. Alboran I.), Sweden (Incl. Gotland I.), The Netherlands (WAHIS 2007).

**R e m a r k s :** This species was recorded by AMIRESMAEILI et al. (2010). They had been collected 13 sample of this species from different regions of Mazandaran in 2008 that most of them caught with sweep net but in 2009 we trapped only one male.

***Anoplius viaticus*** (LINNAEUS 1758)

**M a t e r i a l e x a m i n e d :** Sari, Pahneh-Kola, 04.VI.09, 1♂ (WT); Sari, Haft-Khal, 25.VII.09, 1♀ (WT).

**Distribution in Iran:** Tehran; Azarbaijan-e Sharghi (EBRAHIMI et al. 2008); Mazandaran.

**Distribution in Country/region:** East Palaearctic (East of the border line here defined); North Africa (Not including Sinai Peninsula); Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Britain I. (Incl. Shetlands, Orkneys, Hebrides and Man Is.), Bulgaria, Corsica, Cyprus, Czech Republic, Danish mainland (Incl. Borholm I.), Dodecanese Is. (Incl. Alimnia, Arkoï, Astipalaia, Avgonisi, Ankathonisi, Farmakonisi, Ioinianisia, Kalimnos, Kalolimnos, Kandeliousa, Karpathos, Kasos, Khalki, Khamili, Kinaros, Kos, Leros, Levitha, Lipsoi, Meyisti, Nisiros, Ofidousa, Patmos, Rodhos, Saria, Simi, Sirina, Tilos, Tria Nisia, Yiali and other smaller islands), Finland, French mainland, Germany, Greek mainland (Incl. Andikithira I., Evvia I., Ionian Is., Samothraki I., Northern Sporades Is., Thasos I.), Italian mainland, Luxembourg, Malta, Norwegian mainland, Poland, Portuguese mainland, Romania, Russia Central, Sardinia, Sicily (Incl. adjacent Italian islands (Lipari Is., Ustica I., Egadi Is., Pantelleria I., Pelagie Is.)), Slovakia, Spanish mainland (Incl. Alboran I.), Sweden (Incl. Gotland I.), Switzerland, The Netherlands (WAHIS 2007).

**Remarks:** EBRAHIMI et al. (2008) reported it from different regions of Tehran and Azarbaijan-e Sharghi provinces. It is the first time for the species to occur in Mazandaran province.

### **Genus *Aporus* SPINOLA 1808**

#### ***Aporus bicolor* SPINOLA 1808**

**Material examined:** Sari, Pahneh-Kola, 24.VIII.09, 1♂ (WT); Sari, Aali-Kola, 08.IX.09, 1♂ (WT); Sari, Alamdar-Deh, 08.IX.09, 1♂ (WT).

**Distribution in Iran:** Mazandaran (AMIRESMAEILI et al. 2010).

**Distribution in Country/region:** Near East (Asian Turkey, Caucasian Russian republics, Georgia, Armenia, Azerbaidjan, Lebanon, Syria, Israel, Jordan, Sinai Peninsula (Egypt), Arabian peninsula, Iran, Iraq); North Africa (Not including Sinai Peninsula); Bosnia and Herzegovina, Bulgaria, Corsica, Croatia, Cyprus, Czech Republic, French mainland, Greek mainland (Incl. Andikithira I., Evvia I., Ionian Is., Samothraki I., Northern Sporades Is., Thasos I.), Italian mainland, Malta, Portuguese mainland, Russia Central, Sardinia, Sicily (Incl. adjacent Italian islands (Lipari Is., Ustica I., Egadi Is., Pantelleria I., Pelagie Is.)), Spanish mainland (Incl. Alboran I.), Yugoslavia (Incl. Serbia, Kosovo, Voivodina, Montenegro) (WAHIS 2007).

**Remarks:** AMIRESMAEILI et al. (2010) recorded this species from different regions of Mazandaran. They caught 12 female only by color trap.

#### ***Aporus pollux* (KOHLE 1888)**

**Material examined:** Sari, Pahneh-Kola, 25.VII.09, 1♂ (WT); Qaem-Shahr, Shahr-e-Sookhteh, 31.VIII.07, 1♂ (MT); Sari, Alamdar-Deh, 29.IX.09, 1♂ (PT).

**Distribution in Iran:** New for Iran.

**Distribution in Country/region:** Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Germany, Poland, Russia Central (WAHIS 2007).

**Remarks:** It is new record for Iranian fauna.

**Genus *Arachnospila* KINCAID 1900**

***Arachnospila anceps* (WESMAEL 1851)**

**Material examined:** Qaem-Shahr, Shahr-e-Sookhteh, 31.VIII.07, 1♀ (MT).

**Distribution in Iran:** New for Iran.

**Distribution in Country/region:** Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Britain I. (Incl. Shetlands, Orkneys, Hebrides and Man Is.), Bulgaria, Channel Is. (Incl. Jersey, Guernsey, Alderney), Corsica, Cyprus, Czech Republic, Danish mainland (Incl. Borholm I.), Finland, French mainland, Germany, Greek mainland (Incl. Andikithira I., Evvia I., Ionian Is., Samothraki I., Northern Sporades Is., Thasos I.), Italian mainland, Luxembourg, Norwegian mainland, Poland, Portuguese mainland, Romania, Russia Central, Sardinia, Sicily (Incl. adjacent Italian islands (Lipari Is., Ustica I., Egadi Is., Pantelleria I., Pelagie Is.)), Slovakia, Spanish mainland (Incl. Alboran I.), Switzerland, The Netherlands (WAHIS 2007).

**Remarks:** It is new record for Iranian fauna.

**Genus *Batozonellus* ARNOLD 1937**

***Batozonellus lacerticida* (PALLAS 1771)**

**Material examined:** Sari, Dasht-e-Naz, 23.VI.09, 1♀ (WT); Sari, Pahneh-Kola, 08.VII.09, 1♂ (WT); Sari, Pahneh-Kola, 25.VII.09, 1♀ (PT); Sari, Dasht-e-Naz, 23.VII.09, 1♂ (WT); Sari, Dasht-e-Naz, 29.IX.09, 2♀♀ (WT); Sari, Pahneh-Kola, 29.IX.09, 1♂ (WT).

**Distribution in Iran:** Tehran (ESMAILI & RASTEGAR 1974); Gilan (EBRAHIMI et al. 2008); Mazandaran (AMIRESMAEILI et al. 2010).

**Distribution in Country/region:** Albania, Austria, Belarus, Bosnia and Herzegovina, Bulgaria, Corsica, Cyprus, Czech Republic, French mainland, Germany, Italian mainland, Malta, Norwegian mainland, Poland, Portuguese mainland, Romania, Russia Central, Sardinia, Sicily (Incl. adjacent Italian islands (Lipari Is., Ustica I., Egadi Is., Pantelleria I., Pelagie Is.)), Slovakia, Spanish mainland (Incl. Alboran I.), Sweden (Incl. Gotland I.) (WAHIS 2007).

**Remarks:** In 1974 Esmaili & Rastegar reported this species from Damavand (in vicinity of Tehran). Only one female reported from Gilan province, 10 km S SE Kalacay 2001 by EBRAHIMI et al. (2008). Also AMIRESMAEILI et al. (2010) reported this species from different regions of Mazandaran.

**Genus *Episyron* SCHIØDTE 1837**

***Episyron arrogans* (SMITH 1873)**

**M a t e r i a l e x a m i n e d :** Sari, Pahneh-Kola, 04.VI.09, 1♂ (WT).

**D i s t r i b u t i o n i n I r a n :** Mazandaran (AMIRESMÆILI et al. 2010).

**D i s t r i b u t i o n i n C o u n t r y / r e g i o n :** Austria, Belarus, Bosnia and Herzegovina, Corsica, Czech Republic, French mainland, Germany, Greek mainland (Incl. Andikithira I., Evvia I., Ionian Is., Samothraki I., Northern Sporades Is., Thasos I.), Italian mainland, Romania, Slovakia, Slovenia, Spanish mainland (Incl. Alboran I.), Switzerland (WAHIS 2007).

**R e m a r k s :** According AMIRESMÆILI et al. (2010) have reported it from different regions of Mazandaran. A single specimen was caught in this research.

***Episyron gallicum* (TOURNIER 1889)**

**M a t e r i a l e x a m i n e d :** Sari, Pahneh-Kola, 04.VI.09, 1♂ (WT); Sari, Pahneh-Kola, 01.VIII.08, 1♂ (WT).

**D i s t r i b u t i o n i n I r a n :** New for Iran.

**D i s t r i b u t i o n i n C o u n t r y / r e g i o n :** Austria, Bosnia and Herzegovina, Cyprus, French mainland, Germany, Greek mainland (Incl. Andikithira I., Evvia I., Ionian Is., Samothraki I., Northern Sporades Is., Thasos I.), Italian mainland, Portuguese mainland, Sicily (Incl. adjacent Italian islands (Lipari Is., Ustica I., Egadi Is., Pantelleria I., Pelagie Is.)), Spanish mainland (Incl. Alboran I.) (WAHIS 2007).

**R e m a r k s :** It is new record for Iranian fauna.

**Genus *Evagetes* LEPELETIER 1845**

***Evagetes pectinipes* (LINNAEUS 1758)**

**M a t e r i a l e x a m i n e d :** Sari, Aali-Kola, 23.VI.09, 1♀ (WT); Qaem-Shahr, Shahr-e-Sookhteh, 20.VIII.07, 1♂ (MT).

**D i s t r i b u t i o n i n I r a n :** New for Iran.

**D i s t r i b u t i o n i n C o u n t r y / r e g i o n :** Near East (Asian Turkey, Caucasian Russian republics, Georgia, Armenia, Azerbaidjan, Lebanon, Syria, Israel, Jordan, Sinai Peninsula (Egypt), Arabian peninsula, Iran, Iraq); North Africa (Not including Sinai Peninsula); Austria, Belarus, Belgium, Britain I. (Incl. Shetlands, Orkneys, Hebrides and Man Is.), Bulgaria, Channel Is. (Incl. Jersey, Guernsey, Alderney), Corsica, Croatia, Cyprus, Czech Republic, Danish mainland (Incl. Borholm I.), Finland, French mainland, Germany, Greek mainland (Incl. Andikithira I., Evvia I., Ionian Is., Samothraki I., Northern Sporades Is., Thasos I.), Hungary, Italian mainland, Poland, Portuguese mainland, Romania, Russia Central, Sardinia, Sicily (Incl. adjacent Italian islands (Lipari Is., Ustica I., Egadi Is., Pantelleria I., Pelagie Is.)), Slovakia, Spanish mainland (Incl. Alboran I.), Sweden (Incl. Gotland I.), Switzerland, The Netherlands (WAHIS 2007).

**R e m a r k s :** It is new record for Iran.

**Genus *Pamirospala* WOLF 1970**

***Pamirospila magiana* ZONSTEIN 2000**

**Material examined:** Sari, Aali-Kola, 21.IV.09, 1♀ (MT); Sari, Pahneh-Kola, 04.VI.09, 1♂ (WT); Sari, Sari, Aali-Kola, 24.VIII.09, 1♂ (MT), Alamdar-Deh, 29.IX.09, 1♂ (MT).

**Distribution in Iran:** Mazandaran (AMIRESMAEILI et al. 2010).

**Distribution in Country/region:** No data.

**Remarks:** AMIRESMAEILI et al. (2010) reported this species from different regions of Mazandaran.

**Checklist of the Mazandaran province pompilid species**

**Pepsinae** LEPELETIER 1845

1. *Auplopus carbonarius* (SCOPOLI 1763)
2. *Auplopus rectus* (HAUPT 1927)
3. *Cryptocheilus fischeri* (SPINOLA 1838)
4. *Cryptocheilus notatus* (ROSSIUS 1792)
5. *Cryptocheilus octomaculatus* (ROSSIUS 1790)
6. *Cryptocheilus variabilis* (ROSSIUS 1790)
7. *Cryptocheilus versicolor* (SCOPOLI 1763)
8. *Dipogon bifasciatus* (GEOFFROY 1785)
9. *Dipogon variegatus* (LINNAEUS 1758)
10. *Priocnemis fahringeri* WOLF 1963
11. *Priocnemis pusilla* (SCHIÖDTE 1837)
12. *Priocnemis melanosoma* KOHL 1880
13. *Priocnemis sulci* BALTHASAR 1943

**Pompilinae** LATREILLE 1805

14. *Agenioideus nubecula* (COSTA 1874)
15. *Anoplius nigerrimus* (SCOPOLI 1763)
16. *Anoplius viaticus* (LINNAEUS 1758)
17. *Aporus bicolor* SPINOLA 1808
18. *Aporus pollux* (KOHL 1888)
19. *Arachnospila anceps* (WESMAEL 1851)
20. *Batozonellus lacerticida* (PALLAS 1771)
21. *Episyron arrogans* (SMITH 1873)
22. *Episyron gallicum* (TOURNIER 1889)
23. *Evagetes pectinipes* (LINNAEUS 1758)
24. *Pamirospila magiana* ZONSTEIN 2000

## Discussion

The taxonomic study of the Iranian Pompilidae is still incomplete. Nearly 57 species were described or recorded (AMIRE SMAEILI et al. 2010). In this research, we identified 12 genera from two large subfamilies: Pepsinae and Pompilinae. These subfamilies are not divided into tribes because even at present there are disagreements among researchers on a classification not only at the subfamily or tribe levels, but also at the genus level (SHIMIZU 1994). At the present study 24 species were reported, from which 7 and 11 species are new for Iran and Mazandaran, respectively. The 7 new species for Iranian fauna are *Agenioideus nubecula* (COSTA 1874), *Aporus pollux* (KOHLE 1888), *Arachnospila anceps* (WESMAEL 1851), *Dipogon bifasciatus* (GEOFFROY 1785), *Dipogon variegatus* (LINNAEUS 1758), *Episyron gallicum* (TOURNIER 1889) and *Evagetes pectinipes* (LINNAEUS 1758) that among them genus of *Dipogon* FOX 1897 was new genera for Iran, adding them the species of *Anoplius viaticus* (LINNAEUS 1758), *Cryptocheilus fischeri* (SPINOLA 1838), *Cryptocheilus variabilis* (ROSSIUS 1790) and *Priocnemis pusilla* (SCHJØDTE 1837) are also new records for Mazandaran province.

ESMAILI & RASTEGAR (1974) reported four species from Damavand. WOLF (2003) and EBRAHIMI et al. (2008) also have reported nine and 43 species of Pompilidae fauna from various parts of Iran with the mention of locality, respectively. AMIRE SMAEILI et al. (2010) have reported 16 species from different regions of Mazandaran for Iranian fauna.

In conclusion, 57 pompilid species and 22 genera had previously been reported from Iran. Adding the 7 new species reported in present paper to those, and one new genus, until now, 64 pompilid species and 23 genera have been reported from Iran (ESMAILI & RASTEGAR 1974, WOLF 2003, EBRAHIMI et al. 2008, AMIRE SMAEILI et al. 2010).

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## References

- AMIRE SMAEILI KENARI N., IRANIPOUR Sh., EBRAHIMI E., BARARI H. & R. WAHIS (2010): Spider Wasps (Hymenoptera, Pompilidae) from North of Iran, Mazandaran. – *Entomofauna* **31** (9): 85-96.
- BARARI H. (2005): Ecology of the coleopteran stem-mining pests and their parasitoids in winter oilseed rape: implications for integrated pest management. – Ph.D. Thesis in Entomology, Departement of Biological Sciences, Imperial College, University of London.
- BROTHERS D.J. & A.T. FINNAMORE (1993): Key to the subfamilies of Pomilidae. – In: GOULET H. & J.T. HUBER (eds), *Hymenoptera of the World: An Identification Guide to the Families*. Ottawa, Ontario: Agriculture Canada: 202-206.

- EBRAHIMI E., SCHMID-EGGER C. & R. WAHIS (2008): New Records of Pompilidae (Hymenoptera) from Iran. – Linzer biol. Beitr. **40** (2): 1435-1442.
- ESMAILI M. & R. RASTEGAR (1974): Identified species of Aculeate Hymenoptera of Iran. – JESI **2** (1): 41-52.
- EVANS H.E. & A. SHIMIZU (1996): The evolution of nest building and communal nesting in Ageniellini (Insecta: Hymenoptera: Pompilidae). – J. of Nat. Hist. **30**: 1633-1648.
- SHIMIZU A. (1994): Phylogeny and classification of the family Pompilidae. – TMU Bulletin of Natural History **2**: 1-142.
- TOWNES H. (1962): Design for a Malaise trap. – Proceedings of the ESW. **64**: 253-262.
- WAHIS R. (2007): Fauna Europaea: Pompilidae. Fauna Europaea version 1.3, <http://www.faunaeur.org>.
- WASBAUER M.S. (1995): Pompilidae. – In: HANSON P.E. & I.D. GAULD (eds), The Hymenoptera of Costa Rica. Oxford University Press, London: 522-539.
- WOLF H. (1992): Bestimmungsschlüssel für die Gattungen und Untergattungen der westpaläarktischen Wegwespen (Hymenoptera: Pompilidae). – Mitteilungen des I.E.V e.V. **17**: 45-119.
- WOLF H. (2003): Wegwespen aus Zentralasien und dem Iran (Hymenoptera, Pompilidae). – Linzer biol. Beitr. **35** (2): 801-811.
- ZONSTEIN S.L. (2000): New data on Middle Asian representatives of the spider wasp genera *Hemipepsis* DAHLBOM, 1843, *Dipogon* FOX, 1897, *Tachyagetes* HAUPT, 1930, *Pareiocurgus* HAUPT, 1962 and *Pamirospila* WOLF, 1970 stat.n. (Hymenoptera, Pompilidae). – Thesis, Entomological Research **2**: 20 pages.

**Table 1:** Geographical situation of sampling localities in Sari (center of Mazandaran/Iran)

Locality	Longitude	Latitude	Altitude (m)
Dasht-e-Naz	36° 41' 56"E	53° 12' 37"N	+20
Pahneh-Kola	36° 27' 30"E	53° 05' 67"N	+175
Alamdar-Deh	36° 21' 21"E	53° 14' 50"N	+396
Haft-Khal	36° 17' 16"E	53° 23' 43"N	+855
Aalikola	36° 13' 00"E	53° 39' 45"N	+1640

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