

A BRIEF STUDY ON THE SCOLIIDAE IN IRAN (INSECTA: HYMENOPTERA)

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ABSTRACT: The present paper mentions 9 species and subspecies belonging to 4 genera of the family Scoliidæ (Insecta: Hymenoptera). They were collected from different parts of Fars province in the south of Iran. Of these, *Dasyscolia ciliata ciliata* (Fabricius, 1787) is new to the fauna of Iran and Near East. Additionally 4 species were recorded for the first time from Fars province. Synonyms and distributional data for each species are included.

KEY WORDS: Distribution, Fars, Fauna, Hymenoptera, Iran, Scoliidæ.

The family Scoliidæ belongs to the superfamily Vespoidea and contains approximately about 560 valid species, 220 subspecies distributed among 43 valid genera, 28 subgenera and 2 subfamilies (Osten, 2005b). They are solitary insect; both male and female are winged. They tend to be black, often marked with yellow or orange, and their wing tips are distinctively corrugated. The larvae are ectoparasitoids of the grubs of Scarabaeidae (Esmaili & Rastegar, 1954; Osten, 2000; Osten et al., 2003).

The faunistic and taxonomic papers treated the family in Iran have been conducted by Tkalcu (1987), Esmaili & Rastegar (1954), Chahartaghi Abineh (2002). The Scoliid fauna of West Palaearctic was monographed by Osten (2000), who also provided geographic distribution and keys, for all taxa. Osten et al. (2003) listed 43 taxa of this family for Iran.

Our present research is focused on scoliid wasps which have been collected from the different parts of Fars province. They have been preserved in the collection of Department of Entomology, Jahrom Islamic Azad University, Fars, Iran, but the data have not been published yet. The aim of this paper is to present the complete records of preserved material to researchers and relevant people. It includes insect synonyms, general distribution and previously recorded from Iran.

MATERIALS AND METHODS

The scoliids were collected at different localities in Fars province, Iran during 1998-2005. They were captured by sweep net in flight. The Fars province is located in southern Iran between 27°01' and 31°51'N and between 50°27' and 55°45'E, covering an area of 125,000 km². The climate of the province is arid to semiarid. The wasps were identified using published keys (Osten, 2000; Osten, 2004; Osten, 2005a). Classification, nomenclature and distributional data of Scoliidæ suggested by Osten (2000; 2005 a; b) and Fauna Europaea Web Service (2004) have been followed. The specimens are deposited in the Insect Collection of the Islamic Azad University, Jahrom Branch.

RESULTS

In this study, 9 species and subspecies of 4 genera belonging to Campsomerini and Scoliini tribes of Scoliinae (Scoliidae) were reported in Fars province, Iran.

Scoliinae

Campsomerini

Campsomeriella thoracica (Fabricius, 1787)

Scolia thoracica Fabricius, 1787

Synonym: *Scolia thoracica eriophora* Khalof, 1958 (Osten, 2000; Osten et al., 2003)

Material Examined: Shiraz: Maharlu, 5 July 1998, male; Shiraz: Dokohak 17 June 2000, female; Dasht-e Arzhan, 2 April 2001, female; Zarghan, 29 May 2001, female; Sarvestan, 30 April 2002, female; Lar, 1 August 2002, female, Arsanjan, 22 September 2003, female; Marvdasht: Fath Abad, 4 May 2004, female. This is a new record for the fauna of Fars province.

Distribution: Crete, Cyprus, Dodecanese Is., Greek mainland, Iran, Italian mainland, Malta, North Aegean Is., North Africa (Morocco), Sicily, Spanish mainland, Syria, Turkey.

Iranian records: Tehran province (Chahartaghi Abineh, 2002); Busher, Gilan, Golestan, Hormozgan, Kerman, Khuzestan, Lorestan, Sistan o Baluchestan, Tehran provinces (Osten et al., 2003).

Dasyscolia ciliata araratica (Radoskovsky, 1890)

Tiphia ciliata Fabricius, 1787 [nominotypical subspecies]

Synonym: *Dielis araratica* Radoskovsky, 1890 (Osten, 2000; Osten et al., 2003).

Material Examined: Kazeron, 2 July 1999, female; Shiraz: Bamu, 8 September 2002, female; Jahrom: Hakan, 5 September 2003, female; Firoz Abad, 21 June 2003, female; Shiraz: Ab Barik 13 August 2004, female.

Distribution: Dodecanese Is., Greek mainland, Iran, Iraq, Israel, North Africa, Turkey.

Iranian records: Iran without more detailed data (Esmaili & Rastegar, 1954); Tehran province (Chahartaghi Abineh, 2002); Chahar Mahall o Bakhtiari, Esfahan, Fars, Golestan, Hamadan, Khorasan, Khuzestan, Mazandaran, Tehran provinces (Osten et al., 2003).

Dasyscolia ciliata ciliata (Fabricius, 1787)

Tiphia ciliata Fabricius, 1787 [nominotypical subspecies]

Synonyms: *Scolia aurea* Fabricius, 1793; *Colpa rufa* Lepeletier, 1845 (Osten, 2005b).

Material Examined: Fasa: Mian-Jangle, 1 June 2000, female; Jahrom: Simakan, 17 May 2004, female. This is a new record for the fauna of Iran and Near East.

Distribution: Balearic Is., Greek mainland, Malta, North Africa (Egypt, Morocco) Portuguese mainland, Spanish mainland.

Scoliini

Megascolia (Regiscolia) maculata maculata (Drury, 1773)

Sphex maculata Drury, 1773 [nominotypical subspecies]

Synonyms: *Solia haemorrhoidalis* Fabricius, 1787; *Scolia (Lacosi) versicolor* Saauaure, 1859 (Osten, 2005 a; b).

Material Examined: Dasht-e Arzhan, 8 July 1998, female; Kazeron: Nodan, 23 August 1998, female; Sivand, 4 May 1999, male; Shiraz: Dokohak 17 June 2000, male; Sarvestan, 30 April 2000, male; Shiraz: Khanezenian, 14 May 2001, female; Arsanjan, 22 September 2001, male; Arsanjan, 12 June 2002, female; Shiraz: Akbar Abad, 16 July 2002, male; Jahrom: Markazi, 23 September 2003, female; Lar, 12 April 2003, male; Jahrom: Markazi, 22 October 2003, female; Jahrom: Markazi, 8 November 2003, female; Jahrom: Hakan, 19 October 2003, male; Jahrom: Hakan, 3 May 2004, male; Jahrom: Hakan, 1 May 2005, male; Jahrom: Hakan, 12 August 2005, male; Jahrom: Hakan, 24 April 2005, female.

Distribution: Albania, Austria, Bosnia and Herzegovina, Bulgaria, Crete, Croatia, Cyclades Is., Dodecanese Is., French mainland, Greek mainland, Iraq, Hungary, Macedonia, North Africa, Romania, Russia South, Turkmenistan, Slovenia.

Iranian records: Iran without more detailed data (Esmaili & Rastegar, 1954); Tehran province (Chahartaghi Abineh, 2002); Busher, Esfahan, Fars, Gilan, Golestan, Hormozgan, Khuzestan, Lorestan, Mazandaran, Sistan o Baluchestan, Tehran, provinces (Osten et al., 2003).

***Scolia (Scolia) anatoliae* Osten, 2004**

Material Examined: Jahrom: Markazi, 7 September 2005, male. This is a new record for the fauna of Fars province.

Distribution: Crete, Dodecanese Is., Iran, Turkey, Turkmenistan, Uzbekistan, Syria.

Iranian record: Tehran province (Osten, 2004; Osten, 2005a).

***Scolia (Scolia) fallax* Eversmann, 1849**

Misidentification: *Scolia galbula* (Pallas, 1771) (Betrem, 1935; Steinberg, 1962; Osten et al., 2003)

Synonyms: *Scolia moreana* Muche, 1962; *Scolia syriacola* Betrem, 1935; *Scolia tricolor* Bradley, 1972 (Osten, 2000; Osten et al., 2003; Osten, 2005a; b).

Material Examined: Dasht-e Arzhan, 10 July 2002, female; Arsanjan, 19 October 2002, female; Lar, 27 April 2003, male; Jahrom: Hakan, 28 April 2004, female; Jahrom: Markazi, 14 October 2004, female.

Distribution: Armenia, Azerbaijan, Dodecanese Is., Iran, Greek mainland, Turkmenistan, Turkey, Ukraine.

Iranian records: Tehran province (Chahartaghi Abineh, 2002); East Azerbaijan, Fars, Golestan, Kurdistan, Tehran provinces (Osten et al., 2003).

***Scolia (Scolia) flaviceps* Eversmann, 1846**

Material Examined: Jahrom: Hakan, 11 August 1999, Female; Jom, 12 April 2000, Female.

Distribution: Crete, Cyprus, Iran, Iraq Tajikistan, Trans Caucasus, Turkmenistan, Uzbekistan.

Iranian records: Tehran province (Chahartaghi Abineh, 2002); East Azerbaijan, Fars, Gilan, Golestan, Hormozgan, Mazandaran, Tehran provinces (Osten et al., 2003).

***Scolia (Scolia) sexmaculata sexmaculata* (O. F. Müller, 1766)**

Vespa sexmaculata O. F. Müller, 1766 [nominotypical subspecies]

Synonyms: *Scolia beirutii* Betrem, 1935; *Scolia bigittata* Fabricius, 1787; *Scolia dionysopolis* Tkalcu, 1988; *Scolia hispanica* Betrem, 1935; *Scolia montana* Steinberg, 1962; *Scolia quadripunctata* Fabricius, 1775; *Scolia violacea* Panzer, 1799 (Osten, 2000; Osten, 2005a, b).

Material Examined: Jahrom: Markazi, 16 March 2005, female; Shiraz: Dokohak 14 September 2005, female. This is a new record for the fauna of Fars province.

Distribution: Albania, Andorra, Austria, Balearic Is., Bosnia and Herzegovina, Bulgaria, Channel Is., Corsica, Croatia, Cyclades Is., Czech Republic, European Turkey, French mainland, Germany, Greek mainland, Kazakhstan, Kyrgyzstan, Hungary, Iran, Italian mainland, Macedonia, Malta, Moldova, North Aegean Is., North Africa, Portuguese mainland, Romania, Russia Central, Russia East, Russia South, Sardinia, Sicily, Slovakia, Slovenia, Spanish mainland, Switzerland, Turkmenistan, Ukraine, Yugoslavia.

Iranian records: Iran without more detailed data (Esmaili & Rastegar, 1954); Tehran province (Chahartaghi Abineh, 2002); East Azerbaijan, Golestan, Khorasan, Kurdistan, Markazi, Mazandaran, Tehran provinces (Osten et al., 2003).

***Scolia (Scolia) sexmaculata orientalis* (Steinberg, 1962)**

Scolia (Scolia) quadripunctata orientalis Steinberg, 1962

Synonym: *Scolia (Scolia) sexmaculata steinbergi* Betrem, 1964

Material Examined: Jahrom: Simakan, 3 December 2002, male.

Distribution: Turkmenistan, Georgian, Iran.

Iranian records: Tehran province (Chahartaghi Abineh, 2002); Fars, Gilan provinces (Osten et al., 2003).

DISCUSSION

Although Dr. T. Osten studied the fauna of Scoliidæ in Iran and adjacent regions (Osten, 2000; Osten et al., 2003; Osten, 2005a), but co-evolution and biology of almost species and their hosts are unknown. we expect that a large number of species remain to be discovered though many will already be described. The species of Scoliidæ are important in biological control of Scarabaeidae larvae (Osten et al., 2003), so further study of their occurrence, distribution and biology in Iran should be encouraged.

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