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## **A Contribution to the knowledge of Scelionidae (Hymenoptera: Platygastroidea) from Khuzestan province, Southwestern Iran**

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### **Abstract**

Fauna of the family Scelionidae (Hymenoptera) is studied in Khuzestan province, southwestern Iran. In a total 14 species from 4 genera (*Paratelenomus* DODD, *Scelio* LATREILLE, *Telenomus* HALIDAY, *Trissolcus* ASHMEAD) and 2 subfamilies (Scelioninae, Telenominae) were collected. Of these, 2 species including, *Paratelenomus saccharalis* (DODD) and *Paratelenomus striativentris* (RISBEC) are new records for Iran.

**K e y w o r d s :** Hymenoptera, Scelionidae, Khuzestan, Iran.

### **Zusammenfassung**

Die Fauna der Familie *Scelionidae* (Hymenoptera) in der Provinz Khuzestan, südwest-Iran wurde studiert. Gesamt wurden 14 Arten aus 4 Gattungen (*Paratelenomus* DODD, *Scelio* LATREILLE, *Telenomus* HALIDAY, *Trissolcus* ASHMEAD) und 2 Subfamilien (Scelionidae, Telenominae) gesammelt. Darunter befinden sich 2 Arten, *Paratelenomus saccharalis* (DODD) und *Paratelenomus striativentris* (RISBEC), die neu für die Fauna des Iran sind.

## **Introduction**

The scelionid wasps are parasitoids of the eggs of other arthropods, including insects and spiders. The wasp larva that hatches consumes the contents of the host egg and pupates within it. A wide range of taxa serve as hosts: besides spiders, insect hosts include grasshoppers and crickets (Orthoptera sensu stricto), praying mantids (Mantodea), webspinners (Embiidina), true bugs (Hemiptera: both Heteroptera and Auchenorrhyncha), lacewings (Neuroptera), beetles (Coleoptera), flies (Diptera) and butterflies and moths (Lepidoptera) (KOZLOV & KONONOVA 1983; JOHNSON 2005).

The fauna of Iranian Scelionidae was studied rather well (RADJABI & AMIR-NAZARI 1989; RADJABI 1994; MODARRES AWAL 1997; TAGHADDOSI & RAJABI 1998; MANSOUR GHAZI & RADJABI 2000; NOORI & ASGARI 2000; SAKENIN CHELAV et al. 2008; SAMIN et al. 2010a, b, 2011); but among the different provinces of Iran, the fauna of Khuzestan province was not studied so far.

## **Materials and Methods**

The specimens were obtained mainly as adults emerged from specimens collected as eggs and reared in the laboratory. Egg masses of Pentatomidae were collected from different regions of Khuzestan province (including, Ahwaz, Andimeshk, Behbahan, Izeh, Laly, Omidieh, Ramhormoz, Shadegan, Shoushtar), through 2009-2010. For emergence of parasitoids inside the host, egg masses of pentatomids were placed in plastic bags with holed cap at optimum rearing conditions ( $26\pm 2$  °C,  $65\pm 5$  % RH, 14: 10 L: D) in an incubator. Also, some specimens were collected by Malaise traps in wheat fields and their surrounding weeds. The collected specimens were examined and determined in the laboratory using stereo zoom binocular microscope by the 1<sup>st</sup> author and confirmed by the 2<sup>nd</sup> author.

## **Results**

Totally fourteen scelionid species from four genera and two subfamilies were collected from different regions of Khuzestan province. The list of species together with their distributional data is given below.

**Family Scelionidae (HALIDAY 1840)**

**Subfamily Scelioninae FOERSTER 1856**

**Genus *Scelio* LATREILLE 1805**

***Scelio flavibarbis* (MARSHALL 1874)**

**Material examined:** Khuzestan province: Ahwaz, 2♀♀, October 2009.

**Distribution:** Species known from Bulgaria, France, Kazakhstan, Russia, Ukraine (KONONOVA & KOZLOV 2008).

***Scelio remaudierei* FERRIÈRE 1952**

**Material examined:** Khuzestan province: Omidieh, 1♀, 1♂, April 2009.

**Distribution:** Species widely distributed in Afrotropical and Palearctic regions (FERRIÈRE 1952; KOZLOV 1978).

**Subfamily Telenominae THOMSON 1860**

**Genus *Telenomus* HALIDAY 1833**

***Telenomus busseolae* GAHAN 1922**

**Material examined:** Khuzestan province: Behbahan, 2♀♀, 2♂♂, June 2009.

**Distribution:** Species known from Bangladesh, Cameroon, Egypt, Ghana, Greece, Iraq, Israel, Kenya, Mauritius, Nigeria, Reunion, Senegal, South Africa, Sudan and Uganda (KOZLOV & KONONOVA 1983; POLASZEK & KIMANI 1990).

***Telenomus sechellensis* KIEFFER 1910**

**Material examined:** Khuzestan province: Andimeshk, 2♀♀, November 2009.

**Distribution:** Species widely distributed in Afrotropical and Oriental regions (JOHNSON 1992).

**Genus *Paratelenomus* DODD 1914**

***Paratelenomus saccharalis* (DODD 1914)**

**Material examined:** Khuzestan province: Ahwaz, 2♀♀, August 2009. **New record for Iran.**

**Distribution:** Widespread in southern Palearctic, Africa, tropical Asia and northern Australia (JOHNSON 1992; KONONOVA & KOZLOV 2008).

***Paratelenomus striativentris* (RISBEC 1950)**

**Material examined:** Khuzestan province: Shadegan, 1♀, May 2009. **New record for Iran.**

**Distribution:** Sub-Sahara Africa and southern India (KOZLOV & KONONOVA 1983; RAJMOHANA 2006).

**Genus *Trissolcus* ASHMEAD 1893**

***Trissolcus basalis* (WOLLASTON 1858)**

**Material examined:** Khuzestan province: Ramhormoz, 3♂♂, May 2010.

**Distribution:** Cosmopolitan species (JOHNSON 1992).

***Trissolcus djadetszko* (RJACHOVSKY 1959)**

**Material examined:** Khuzestan province: Izeh, 2♀♀, October 2009.

**Distribution:** Species known from Armenia, Azerbaijan, Kazakhstan, Moldavia, Russia, Turkey, Ukraine and Uzbekistan (KOZLOV 1978; KOÇAK & KILINÇER 2000, 2003).

***Trissolcus grandis* (THOMSON 1861)**

**Material examined:** Khuzestan province: Omidieh, 6♀♀, 7♂♂, April 2009.  
Khuzestan province: Ahwaz, 4♀♀, 4♂♂, August 2009. Khuzestan province: Behbahan, 3♀♀, 1♂, June 2009. Khuzestan province: Ramhormoz, 5♀♀, 4♂♂, May 2010.  
Khuzestan province: Shadegan, 2♀♀, 2♂♂, April 2010.

**Distribution:** Species known from Belgium, Denmark, England, Italy, Kazakhstan, Moldavia, Morocco, Romania, Russia, Syria, Turkey and Ukraine (REMAUDIÈRE & SKAF 1963; VOEGEL 1964; JAVAHERY 1968; FABRITIUS 1974; VIGGIANI & MINEO 1974; KOZLOV & KONONOVA 1983; KOÇAK 2007).

***Trissolcus pseudoturesis* (RJACHOVSKY 1959)**

**Material examined:** Khuzestan province: Shoushtar, 2♀♀, 3♂♂, April 2009.

**Distribution:** Species known from Moldavia, Mongolia, Romania, Russia, Turkey and Ukraine (FABRITIUS 1974; KOZLOV & KONONOVA 1983; KOÇAK & KILINÇER 2003).

***Trissolcus rufiventris* (MAYR 1908)**

**Material examined:** Khuzestan province: Laly, 2♀♀, 1♂, May 2010.

**Distribution:** Species known from Moldavia, Mongolia, Morocco, Romania, Russia, South Africa, Turkey and Ukraine (VOEGELE 1964; FABRITIUS 1974; KOZLOV & KONONOVA 1983; KOÇAK 2007).

***Trissolcus semistriatus* (NEES 1834)**

**Material examined:** Khuzestan province: Omidieh, 5♀♀, 3♂♂, April 2009.  
Khuzestan province: Ahwaz, 1♀, 3♂♂, August 2009. Khuzestan province: Andimeshk, 2♀♀, 4♂♂, November 2009. Khuzestan province: Ramhormoz, 4♀♀, 3♂♂, May 2010.  
Khuzestan province: Shadegan, 3♀♀, April 2010.

**Distribution:** Species known from Austria, Caucasus, Denmark, Britain, France, Germany, Morocco, Portugal, Romania, Russia and Turkey (LODOS 1961; VOEGELE 1964; JAVAHERY 1968; FABRITIUS 1974; GRAHAM 1984).

***Trissolcus simoni* (MAYR 1879)**

**Material examined:** Khuzestan province: Behbahan, 2♀♀, 3♂♂, June 2009.

**Distribution:** Species known from Austria, Azerbaijan, Georgia, Morocco, Romania, Russia, Syria, Turkey and Ukraine (REMAUDIÈRE & SKAF 1963, VOEGELE 1964, FABRITIUS 1974, KOZLOV & KONONOVA 1983, KOÇAK & KILINÇER 2003).

***Trissolcus vassilievi* (MAYR 1903)**

**Material examined:** Khuzestan province: Shoushtar, 2♀♀, 2♂♂, April 2009.  
Khuzestan province: Izeh, 1♀, 1♂, October 2009. Khuzestan province: Laly, 4♀♀, 1♂, May 2010.

**Distribution:** Species known from Armenia, Moldavia, Morocco, Russia, Syria, Turkmenistan, Turkey and Ukraine (LODOS 1961; REMAUDIÈRE & SKAF 1963; VOEGELE 1964; KOZLOV & KONONOVA 1983).

### **Discussion**

The faunal research on the scelionid wasps in Khuzestan province indicated that there is diverse fauna of these powerful parasitoids in this region of Iran. Among the collected species, two species including, *Trissolcus grandis* (THOMSON) and *Trissolcus semistriatus* (NEES) are the dominant species in Khuzestan province which were collected from almost the sampled regions. All the studied works on Iranian Scelionidae are on the species diversity while the biology of these beneficial insects as the efficient natural enemies of pentatomids was not studied so far. Therefore we suggest to the researchers that meantime continuing of faunistic surveys in different regions of Iran toward to completing the fauna of Iranian Scelionidae, start to work on the biology and efficiency of these parasitoids in agricultural and natural ecosystems. The most detailed biological studies have been undertaken on scelionids that are used as, or have potential for use as, biological control agents, for example, *Trissolcus*, *Telenomus*, and *Scelio*. As a consequence, information is strongly biased toward the Telenominae, and care should be taken in extrapolating from these taxa to other members of the Scelionidae that are associated with different hosts (AUSTIN et al. 2005).

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