

## Correspondence

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**K. Dehdar, S. M. Madjdzadeh\*. PTEROMALIDAE (HYMENOPTERA: CHALCIDOIDEA) FROM KORDESTAN PROVINCE, WESTERN IRAN. – Far Eastern Entomologist. 2016. N 315: 11-20.**

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**Summary.** Twenty species of Pteromalidae were collected from Kordestan province, Western Iran during 2009–2010. Among the collected material four species, *Mesopolobus xanthocerus* (Thomson, 1878), *Sphegigaster mutica* Thomson, 1878, *Systasis longula* Bouček, 1956 and *Systasis tenuicornis* Walker, 1834, are reported for the first time from Iran and nine species are new for Kordestan province.

**Key words:** Hymenoptera, Pteromalidae, parasitoids, distribution, fauna, Iran.

**К. Дехдар, С. М. Мадидзаде\*. Pteromalidae (Hymenoptera: Chalcidoidea) провинции Курдистан, Западный Иран // Дальневосточный энтомолог. 2016. N 315. С. 11-20.**

**Резюме.** В результате сборов 2009–2010 гг. в провинции Курдистан в Западном Иране найдено 20 видов семейства Pteromalidae. Среди них четыре вида (*Mesopolobus xanthocerus* (Thomson, 1878), *Sphegigaster mutica* Thomson, 1878, *Systasis longula* Bouček, 1956 и *Systasis tenuicornis* Walker, 1834) впервые указываются для фауны Ирана, а 9 видов впервые проводятся для провинции Курдистан.

## INTRODUCTION

The family Pteromalidae (Hymenoptera: Chalcidoidea) is one of the largest families of parasitic Hymenoptera, whose members are distributed in all zoogeographical regions of the world (Noyes, 2015). Majority of the species are primary or secondary parasitoids attacking other insect groups and some Arachnida in their various stages of development (egg, pupa or larva) (Bouček & Rasplus, 1991). Some species are phytophagous, developing in seeds or making galls in plants. They play a vital role in the control of insect pests and several species have been employed successfully in biological control programs all over the world (Debach & Rose, 1991; Bouček & Rasplus, 1991). It seems that the pteromalid fauna of Iran is very diverse but there is no complete published information on this valuable group in different parts of Iran. Recently several new records have been added to the previous studies (Aleman-sour *et al.*, 2010; Hesami *et al.*, 2010; Nazemi-Rafie & Lotfalizadeh, 2010, Hasani *et al.*, 2011; Mitroiu *et al.*, 2011; Nazemi-Rafie *et al.*, 2011; Hasani & Madjdzadeh, 2012; Bahri-Motlagh *et al.*, 2012; Mahdavi & Madjdzadeh, 2013; Sadeghi & Lotfalizadeh, 2013; Dehdar & Madjdzadeh, 2013; Alipanah *et al.*, 2013; Lotfalizadeh & Hosseini, 2014; Lotfalizadeh & Gharali, 2014; Lotfalizadeh *et al.*, 2014; Bayegan *et al.*, 2014; Ebrahimi, 2014; Ghafouri-Moghdam *et al.*, 2014; Ziaaddini *et al.*, 2014; Lotfalizadeh *et al.*, 2015; Mahdavi *et al.*, 2015). Consequently there is inadequate knowledge relating to the pteromalids of the Western Iran. Dehdar & Madjdzadeh (2013) carried out a preliminary study on the pteromalid fauna of Kordestan province which resulted in two new records for the country. The aim of the present paper is to report on our investigation of Pteromalidae in Kordestan province.

## MATERIALS AND METHODS

The material from Western Iran was collected by sweeping net. It was preserved in 75% ethanol until it was partly mounted on cards. Prior to mounting the specimens were treated with hexamethyldisilazane in order to avoid collapsing. The identified species are ordered based on subfamily name alphabetically and new records are marked by asterisk. The pteromalid wasps were identified using Graham (1969), Bouček (1988) and Bouček & Rasplus (1991). The external morphology of the specimens was studied using a Nikon SMZ800 stereomicroscope. The material is deposited in the insect collection of Department of Biology, Shahid Bahonar University of Kerman, Kerman, Iran.

### LIST OF THE SPECIES

#### Family Pteromalidae Dalman, 1820

#### Subfamily Asaphinae Ashmead, 1904

#### Genus *Asaphes* Walker, 1834

##### 1. *Asaphes suspensus* Nees, 1834

MATERIAL EXAMINED. **Iran**, Kordestan province: Kamyaran, Muchesh, N35°16' 31.85" E47°23'38.8", 1624 m, swept on *Ttifolium* sp., 27.VI 2010, 6♀, 1♂ (K. Dehdar); Kamyaran, Shirvaneh, N34° 46' 41.94" E46° 52'38.81", 1361m, 25.V 2010, 4♀, 2♂ (K. Dehdar); Bijar, Salavat Abad, N36° 01' 25.86" E47° 33' 38.7", 1667 m, swept on *Anthemis* sp., 1.VII 2010, 6♀, 2♂ (K. Dehdar); Bijar, Negarestan, N36°14'6.25" E47° 36'39.4", 1626 m, swept on *Ttifolium* sp., 2.VII 2010, 4♀, 1♂ (K. Dehdar); Divandareh, Zaghe Sofla, N35°45'09.51" E47°5'53.9", 1628 m, swept on *Persica* sp., 17.VII 2010, 5♀, 5♂ (K. Dehdar); Saghez, Hasansalaran, N36° 21'34.06" E46°22'7.8", 1566 m, swept on *Malus* sp., 24.V 2010, 2♀, 3♂ (K. Dehdar); Marivan, Chenareh, N35°37'37.72" E46°17'42.2", 1548 m, swept on *Malus* sp., 2.VIII 2010, 3♀, 1♂ (K. Dehdar).

DISTRIBUTION. Iran: East-Azarbaijan (Lotfalizadeh & Gharali, 2008), Kerman (Mitroiu *et al.*, 2011; Kordestan (Dehdar & Madjdzadeh, 2013) and Ardabil provinces (Ghafouri-Moghaddam *et al.*, 2014). – Nearctic and Palaearctic.

#### Subfamily Miscogasterinae Walker, 1833

#### Genus *Halticoptera* Spinola, 1811

##### 2. *Halticoptera aenea* (Walker, 1833)

MATERIAL EXAMINED. **Iran**, Kordestan province: Kamyaran, Muchesh, N35°16'31.85" E47°23'38.8", 1624 m, swept on *Ttifolium* sp., 27.VI 2010, 4♀, 1♂ (K. Dehdar).

DISTRIBUTION. Iran: Kordestan province (Dehdar & Madjdzadeh, 2013). – Nearctic, Neotropical and Palaearctic.

##### 3. *Halticoptera circulus* Walker, 1833

MATERIAL EXAMINED. **Iran**, Kordestan province: Marivan, Chenareh, N35°37'37.72" E46°17'42.2", 1548 m, swept on *Persica* sp. 2.VII 2010, 4♀ (K. Dehdar); Ghorveh, Shanvare,

N35°10'11.52" E47°42'11.8", 1325 m, swept on *Medicago* sp. 26.V 2010, 1♀ (K. Dehdar); Sarv abad, Negel, N35°16'51.47" E46°30'53.16", 1381 m, swept on Gramineae, 8.VII 2010, 1♀ (K. Dehdar).

DISTRIBUTION. Iran: East-Azərbayjan (Lotfalizadeh & Gharali, 2008), Kerman (Mitroiu *et al.*, 2011) and Kordestan provinces. – Nearctic and Palaearctic.

NOTES. This species is reported here for the first time from Kordestan province.

#### 4. *Halticoptera* cf. *yoncacus* Doğanlar, 2006

MATERIAL EXAMINED. Iran, Kordestan province: Divandareh, Zaghe sofla, N35° 45' 09.51" E47° 05' 53.9", 1628 m, swept on *Persica* sp., 17.VII 2010, 3♀ (K. Dehdar).

DISTRIBUTION. Iran: Khorasan Razavi (Hasani *et al.*, 2011) and Kordestan province. – Palaearctic (Turkey and Iran).

NOTES. This species is reported for the first time from Kordestan province in the present study.

### Subfamily Ormocerinae Walker, 1833

#### Genus *Systasis* Walker, 1834

#### 5. *Systasis encyrtoides* Walker, 1854

MATERIAL EXAMINED. Iran, Kordestan province, Sanandaj, Sarab Ghamish, N35°19'69.0" E47°08'22.5", 1511 m, swept on *Brassica* sp., 8.VIII 2009, 2♀, 1♂ (K. Dehdar); Ghorveh, Dehgolan, N35°15'37.1"E47°27'78.1", 1476 m, 14.VIII 2009, 5♀.

DISTRIBUTION. Iran: Kerman (Mitroiu *et al.*, 2011), Khorasan Razavi (Hasani & Madjdzadeh 2012) and Kordestan (Dehdar & Madjdzadeh, 2013) provinces. – Palaearctic.

#### 6. \**Systasis longula* Bouček, 1956

MATERIAL EXAMINED. Iran, Kordestan province: Saghez, Kani Jashni, N36°17' 27.95" E46°21'37.5", 1339 m, swept on *Malus* sp., 25.VII 2010, 3♀ (K. Dehdar).

DISTRIBUTION. Iran: Kordestan province. – Oriental and Palaearctic.

NOTES. This species is reported for the first time from Iran in the present study.

#### 7. \**Systasis tenuicornis* Walker, 1834

MATERIAL EXAMINED. Iran, Kordestan province: Saghez, Kani Jashni, N36°17' 27.95" E46°21'37.5", 1339 m, swept on *Malus* sp., 25.VII 2010, 5♀ (K. Dehdar); Divandareh, Zaghe Sofla, N35° 45' 09.51" E47° 05' 53.9", 1628 m, swept on *Persica* sp., 17.VII 2010, 2♀ (K. Dehdar).

DISTRIBUTION. Iran: Kordestan province. – Oriental and Palaearctic.

NOTES. This species is reported here for the first time from Iran.

### Subfamily Pteromalinae Dalman, 1820

#### Genus *Callitula* Spinola, 1811

### 8. *Callitula bicolor* Spinola, 1811

MATERIAL EXAMINED. **Iran**, Kordestan province: Sarv Abad, Negel, N35°16' 51.47" E46° 30'53.16", 1381 m, swept on Graminae, 8.VII 2010, 1♀ (K. Dehdar); Saghez, Hasan--salaran, N36° 21' 34.06" E46° 22' 7.8", 1566 m, swept on *Malus* sp., 24.VII 2010, 1♀ (K. Dehdar).

DISTRIBUTION. Iran: Kordestan province (Dehdar & Madjdzadeh, 2013). – Nearctic and Palaearctic.

### Genus *Catolaccus* Thomson, 1878

### 9. *Catolaccus crassiceps* Masi, 1911

MATERIAL EXAMINED. **Iran**, Kordestan province: Ghorveh, Dehgolan, N35°15' 37.1" E47°27'78.1", 1476 m, swept on *Anthemis* sp., 14.VIII 2009, 4♀, 2♂ (K. Dehdar).

DISTRIBUTION. Iran: Ardebil, East-Azərbayjan, Fars (Lotfalizadeh & Gharali, 2008) and Kordestan provinces – Oriental and Palaearctic.

NOTES. This species is reported for the first time from Kordestan province in the present study.

### Genus *Cyrtogaster* Walker, 1833

### 10. *Cyrtogaster vulgaris* Walker, 1833

MATERIAL EXAMINED. **Iran**, Kordestan province: Bijar, Salavat Abad, N36°1'25.86" E47°33'38.7", 1667 m, swept on *Anthemis* sp., 1.VII 2010, 5♀ (K. Dehdar).

DISTRIBUTION. Iran: Kerman (Mitroiu *et al.*, 2011) and Khorasan Razavi (Hasani & Madjdzadeh, 2012) and Kordestan provinces. – Nearctic and Palaearctic.

NOTES. This species is reported here for the first time from Kordestan province.

### Genus *Dibrachoides* Kurdjumov, 1913

### 11. *Dibrachoides dynastes* (Förster, 1841)

MATERIAL EXAMINED. **Iran**, Kordestan province: Kamyaran, Shirvaneh, N34°46' 41.94" E46°52'38.81", 1361 m, swept on *Titfolium* sp., 26.V 2010, 3♀, 1♂ (K. Dehdar).

DISTRIBUTION. Iran: Kordestan province (Dehdar & Madjdzadeh, 2013). – Nearctic and Palaearctic.

NOTES. Herting (1973) in his catalogue reported *D. dynastes* from Iran.

### Genus *Homoporus* Thomson, 1878

### 12. *Homoporus fulviventris* (Walker, 1835)

MATERIAL EXAMINED. **Iran**, Kordestan province: Divandareh, Gav Shale, N35°59' 57.0"E 46°59'23.1", 1332 m, swept on grass, 18.VIII 2010, 2♀ (K. Dehdar); Saghez, Hasan--salaran, N36°21'34.06" E46°22'7.8", 1566 m, swept on grass, 24.VII.2010, 2♀ (K. Dehdar).

DISTRIBUTION. Iran: Kerman (Mitroiu *et al.*, 2011) province. – Palaearctic.

NOTES. This species is reported here for the first time from Kordestan province.

### Genus *Mesopolobus* Westwood, 1833

#### 13. \**Mesopolobus xanthocerus* (Thomson, 1878)

MATERIAL EXAMINED. **Iran**, Kordestan province: Baneh, Mirdeh, N36°8'38.31" E46°1'51.8", 1680 m, swept on grass, 7.V 2010, 2♀, 7♂; (K. Dehdar), Sarv Abad, Negel, N35°16'51.47" E46°30'53.16", 1381 m, swept on Gramineae, 8.VII 2010, 2♀, 2♂ (K. Dehdar).

DISTRIBUTION. Iran: Kordestan province. – Palaearctic.

NOTES. This species is reported here for the first time from Iran.

### Genus *Pachyneuron* Walker, 1833

#### 14. *Pachyneuron aphidis* (Bouché, 1834)

MATERIAL EXAMINED. **Iran**, Kordestan province: Kamyaran, Muchesh, N35°16' 31.85" E 47°23'38.8", 1624 m, swept on *Malus* sp., 27.VI 2010, 1♀ (K. Dehdar); Bijar, Negarestan, N36°14'6.25" E47°36'39.4", 1626 m, swept on *Malus* sp., 2.VII 2010, 4♀ (K. Dehdar); Marivan, Chenareh, N35°37'37.72" E46°17'42.2", 1548 m, swept on *Tifolium* sp., 2.VII 2010, 1♀ (K. Dehdar).

DISTRIBUTION. Iran: Ardebil (Lotfalizadeh & Gharali, 2008), Tehran (Haeselbarth 1983), Kerman (Mitroiu *et al.*, 2011), Khorasan Razavi (Hasani & Madjdzadeh, 2012) and Kordestan provinces. – Cosmopolitan.

NOTES. This species is reported here for the first time from Kordestan province.

#### 15. *Pachyneuron formosum* Walker, 1833

MATERIAL EXAMINED. **Iran**, Kordestan province: Kamyaran, Shirvaneh, N34°46' 41.94" E46°52'38.81", 1361 m, swept on *Tifolium* sp., 26.V 2010, 3♀ (K. Dehdar); Bijar, Negarestan, N36°14'6.25" E47°36'39.4", 1626 m, swept on *Tifolium* sp., 2.VII 2010, 1♀ (K. Dehdar); Marivan, Chenareh, N35°37' 37.72" E46°17'42.2", 1548 m, swept on *Malus* sp., 2.VIII 2010, 2♀ (K. Dehdar); Divandareh, Gav Shale, N35°59'57.0"E 46°59'23.1", 1332 m, swept on grass, 18.VIII 2010, 2♀, 3♂ (K. Dehdar).

DISTRIBUTION. This species is reported for the first time from Kordestan province in the present study.

DISTRIBUTION. Iran: Ilam (Lotfalizadeh & Gharali, 2008) and Kordestan provinces. – Palaearctic.

NOTES. This species is reported here for the first time from Kordestan province.

#### 16. *Pachyneuron leucopiscida* Mani, 1939

MATERIAL EXAMINED. **Iran**, Kordestan province: Ghorveh, Shanvare, N35°10' 11.52" E47°42'11.8", 1325 m, swept on *Medicago* sp., 28.VI 2010, 4♀ (K. Dehdar).

DISTRIBUTION. Iran: Fars, Alborz (Ebrahimi, 2014), Tehran (Haeselbarth, 1989) and Kordestan provinces. – Oriental and Palaearctic.

NOTES. This species is reported for the first time from Kordestan province in the present study.

**17. *Pachyneuron nelsoni* Gault, 1928**

MATERIAL EXAMINED. **Iran**, Kordestan province: Baneh, Mirdeh, N36°08'38.31" E46°1'51.8", 1608 m, swept on grass, 7.V 2010, 2♀ (K. Dehdar); Divandareh, Gav Shale, N35°59'57.0"E 46°59'23.1", 1332 m, swept on grass, 18.VIII 2010, 2♀ (K. Dehdar).

DISTRIBUTION. Iran: East-Azarbaijan (Lotfalizadeh & Gharali, 2008), Khorasan Razavi (Hasani & Madjzadeh, 2012) and Kordestan provinces. – Afrotropical, Australian, Oriental and Palaearctic.

NOTES. This species is reported here for the first time from Kordestan province.

**Genus *Sphegigaster* Spinola, 1811**

**18. \**Sphegigaster mutica* Thomson, 1878**

MATERIAL EXAMINED. **Iran**, Kordestan province: Kamyaran, Muchesh, N35°16' 31.85" E 47°23'38.8", 1624 m, swept on *Trifolium* sp., 27.VI 2010, 3♀ (K. Dehdar).

DISTRIBUTION. Iran: Kordestan province. – Palaearctic (Sweden, Hungary, China, Iran).

NOTES. This species is reported here for the first time from Iran.

**19. *Sphegigaster nigricornis* (Nees, 1834)**

MATERIAL EXAMINED. **Iran**, Kordestan province, Sarv Abad, Negel, N35°16'51.47" E46°30'53.16", 1381 m, swept on Gramineae, 8.VII 2010, 3♀ (K. Dehdar).

DISTRIBUTION. Iran: East-Azarbaijan and Ilam provinces (Lotfalizadeh & Gharali, 2008), Kordestan province. – Palaearctic.

NOTES. This species is reported here for the first time from Kordestan province.

**Genus *Stenoselma* Delucchi, 1956**

**20. *Stenoselma nigrum* Delucchi, 1956**

MATERIAL EXAMINED. **Iran**, Kordestan province: Divandareh, Zaghe Sofla, N35°45'09.51" E47°5'53.9", 1628 m, swept on *Persica* sp., 17.VII 2010, 1♀ (K. Dehdar).

DISTRIBUTION. Iran: Kordestan province (Nazemi Rafie *et al.*, 2011; Dehdar & Madjzadeh, 2013). – Palaearctic.

NOTES. This species was also collected from Kordestan province in the present study.

**DISCUSSION**

As there was little information on the pteromalid fauna of Kordestan province, a recent complementary study of the pteromalid fauna of this region has been locally performed. In the course of this survey of Pteromalidae of Kordestan province, twenty species were collected. Nine species are new for the Kordestan province. Four species, *Mesopolobus xanthocerus*, *Sphegigaster mutica*, *Systasis longula* and *Systasis tenuicornis*, were recorded for the first time from Iran. *Mesopolobus* Westwood is a large genus and according to Noyes (2015), so far 100 species of this genus have been recorded from the Palaearctic region. Available keys

are those of Graham (1969) (some West Palaearctic species), and Baur *et al.* (2007) (species associated with *Ceutorhynchus* Germar, 1824). To date 30 species of the genus *Sphegigaster* and 16 species of the genus *Systasis* are recorded from the Palaearctic region (Noyes, 2015). *Pachyneuron aphidis* is a cosmopolitan species that has been reported from other Iranian regions. Some collected species such as *Halticoptera* cf. *yoncacus*, *Systasis encyrtoides*, *Homoporus fulviventris*, *Mesopolobus xanthocerus*, *Pachyneuron formosum*, *Sphegigaster mutica*, *S. nigricornis* and *Stenoselma nigrum* are distributed only in the Palaearctic region. Some collected species have Holarctic distribution: *Asaphes suspensus*, *Halticoptera circulus*, *Callitula bicolor*, *Cyrtogaster vulgaris* and *Dibrachoides dynastes* while *Systasis longula*, *S. tenuicornis*, *Catolaccus crassiceps* and *Pachyneuron leucopiscida* are distributed in the Oriental and Palaearctic regions. *Halticoptera aenea* is distributed in the Nearctic, Neotropical and Palaearctic while *Pachyneuron nelson* is distributed in Afrotropical, Australian, Oriental and Palaearctic regions. Finding four new reports from Iran is an important task to show the biodiversity of Pteromalidae in region with diverse zoogeographical distribution. It seems that there are many more species of Pteromalidae in Iran and it needs more comprehensive investigations to increase the knowledge on biodiversity of this valuable group in Iran.

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