



**Received:**  
30 June, 2016

**Accepted:**  
13 July, 2016

**Published:**  
13 July, 2016

**Subject Editor:**  
George Japoshvili

## Fauna of chalcid wasps (Hymenoptera: Chalcidoidea, Chalcididae) in Hormozgan province, southern Iran

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**ABSTRACT.** This paper provides data on distribution of 13 chalcid wasp species (Hymenoptera: Chalcidoidea: Chalcididae) belonging to 9 genera and three subfamilies Chalcidinae, Dirhininae and Haltichellinae from Hormozgan province, southern Iran. All collected species are new records for the province. Two species *Dirhinus excavatus* Dalman, 1818 and *Hockeria bifasciata* Walker, 1834 are recorded from Iran for the first time. In the present study, *D. excavatus* is a new species record for the Palaearctic region. An updated list of all known species of Chalcididae from Iran is also included.

**Key words:** Chalcididae, Hymenoptera, Iran, Fauna, Distribution, Malaise trap

**Citation:** Tavakoli Roodi, T., Fallahzadeh, M. and Lotfalizadeh, H. 2016. Fauna of chalcid wasps (Hymenoptera: Chalcidoidea: Chalcididae) in Hormozgan province, southern Iran. *Journal of Insect Biodiversity and Systematics*, 2(1): 155–166.

### Introduction

The Chalcididae are a moderately specious family of parasitic wasps, with over 1469 nominal species in about 90 genera, occur worldwide but mainly in the tropics (Aguiar *et al.* 2013). In the Palaearctic region, there are more than 262 described species under 34 genera (Noyes 2016). Members of this family have a very diverse biology. Some species are internal and external primary parasitoids while several species are hyperparasitoids on a wide range of other insects (Habu 1960; Narendran 1986; Fry 1989; Delvare and Bouček 1992; Noyes 2016). The host range of the chalcidid wasps is diverse and consist of species classified at least six insect orders: Lepidoptera, Diptera, Hymenoptera,

Coleoptera, Neuroptera and Strepsiptera (Bouček 1952; Narendran 1986; Delvare and Bouček 1992; Noyes 2016).

The first information on Chalcididae from Iran was published by Masi (1924), who described two new species. In the following years, only a few species of this family were reported from the country (Bouček 1952, 1956, Nikol'skaya 1952, 1960). Recently, Delvare *et al.* (2011) described three new species from Iran. Later, Rajabi *et al.* (2011) and Lotfalizadeh *et al.* (2012) provided new information on the Iranian chalcidid fauna together with new data on the hosts of the Chalcididae. Furthermore, Kazemi and Lotfalizadeh (2014), Lotfalizadeh (2014), Lotfalizadeh

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and Jafari-Nadushan (2015) and Moravvej *et al.* (2016) added some new records from Iran. However, the chalcids fauna of Iran is still poorly studied.

According to the literature, no Chalcididae have been recorded from Hormozgan province. The aim of present study was to increase of our knowledge regarding Iranian chalcid wasps of the family Chalcididae from southern Iran.

### Material and methods

The specimens were collected using five standard Malaise traps in different locations in Hormozgan province, Iran during year 2013. Hormozgan province covers the surface of about 70,697 km<sup>2</sup>, is located in the in the south of Iran and border of Persian Gulf. The province is primarily mountainous, consisting of the southern tip of the Zagros mountain range. Hormozgan has a tropical humid climate, with summer temperatures very frequently above 49°C. There is very little precipitation year round.

The identifications were mainly carried out using available keys (Masi 1924, 1929a,b, 1932, Nikol'skaya 1952, Bouček 1952, 1956, 1988, Habu 1960, Steffan 1976, Bouček and Narendran 1981). The photographs were taken using a Nikon 990 camera mounted on a Nikon SMZ-2T stereomicroscope, and were processed using Adobe Photoshop.

The voucher specimens are deposited in Department of Entomology, Jahrom Branch, Islamic Azad University, Jahrom, Iran (JIAU) and Department of Plant Protection, Agricultural and Natural Resources Research of East-Azərbayjan province, Tabriz. The taxonomy and distributional data were adapted from Noyes (2016).

### Results

In the present study, a total of 36 specimens from 13 species in nine genera and three subfamilies Chalcidinae, Dirhininae and

Haltichellinae are recorded from Hormozgan province, southern Iran. The subfamilies, genera and species are listed in alphabetic order.

### Chalcididae: Chalcidinae

#### Genus *Brachymeria* Westwood, 1829

#### *Brachymeria podagrica* (Fabricius, 1787)

**Material examined:** 1♀, Hormozgan province, Roodan (Band e Mola), 27°24'N, 57°09'E, 16.vi.2013, in Lime garden, leg. T. Tavakoli; 1♀, Hormozgan province, Roodan (SarKahnan), 27°25'N, 57°07'E, 09.vii.2013, in mixed Lime and Mango garden, leg. T. Tavakoli; 1♀, 18.vii.2013, same data

**General distribution:** Cosmopolitan (Noyes 2016).

**Comments:** *Brachymeria* is a worldwide, large genus contains about 308 described species (Noyes 2016) with many parasitoid species of Lepidoptera which are often important pest on various fruit and forest trees and other economic important trees (Burks 1960; Delvare *et al.* 2011). Recently, *Brachymeria ceratoniae* Delvare, 2011 was described as parasitoid of *Apomyelois ceratoniae* (Lepidoptera: Pyralidae), the economic important pest of carob tree, *Ceratonia siliqua* (Fabaceae) from Iran (Delvare *et al.* 2011). In Iran, *B. podagrica* was already collected by sweep net on Fabaceae in Kerman province (Rajabi *et al.* 2011).

#### Genus *Chalcis* Fabricius, 1787

#### *Chalcis sispes* (Linnaeus, 1761)

**Material examined:** 1♀, Hormozgan province, Roodan (SarKahnan), 27°25'N, 57°07'E, 04.vi.2013, in mixed Lime and Mango garden, leg. T. Tavakoli; 1♀, 16.vi.2013, same data; 1♂, Hormozgan province, Roodan (Band e Mola), 27°25'N, 57°09'E, 16.vi.2013, in Lime garden, leg. T. Tavakoli.

**General distribution:** Palaearctic (Noyes, 2016).

**Comments:** The genus *Chalcis* includes more than 60 known species that only 13 species have been reported from Palaearctic region (Noyes 2016). Within *Chalcis*, only two species, *C. biguttata* Spinola, 1808 and *C. sispes* have hitherto been reported from Iran (Lotfalizadeh *et al.* 2012). *Chalcis sispes* is a primary parasitoid of some species of Stratiomyidae (Diptera: Stratiomyompha) (Noyes 2016).

#### Chalcididae: Dirhininae

##### Genus *Dirhinus* Dalman, 1818

##### *Dirhinus excavatus* Dalman, 1818

**Material examined:** 1♀, Hormozgan province, Roodan (SarKahnan), 27°25'N, 57°07'E, 18.vii.2013, in mixed Lime and Mango garden, leg. T. Tavakoli

**General distribution:** Afrotropical (Eritrea, Kenya, Senegal, Sierra Leone), Oriental (India) (Noyes, 2016). New for the Iranian fauna.

**Comments:** The genus *Dirhinus* is a moderate and cosmopolitan genus of the tribe Dirhinini that currently consists of over 62 nominal species (Bouček and Narendran 1981; Noyes 2016). Bouček and Narendran (1981) reviewed and revised Indian species of this genus. The majority of species appears to be associated with dipteran families (Habu 1960; Noyes 2016).

*Dirhinus excavatus* is considered a primary parasitoid of *Stomorphina lunata* (Diptera: Calliphoridae), *Pyrausta machaeralis* and *Sylepta derogata* (Lepidoptera: Pyralidae) and *Hersecon volvuli* (Lepidoptera: Sphingidae) (see Noyes 2016). It was already reported as hyperparasitoid of *Drino solennis* and *Sturmiopsis parasitica* (Diptera: Tachinidae) and *Phanerotoma hendecasisella* (Hymenoptera: Braconidae) (Noyes 2016).

It can be distinguished from other species of the genus by the following combination of characters: Peduncle in female twice than long; first tergite with about 15 furrows

evidently longer than petiole, minutely punctate on dorsum, setae on head and on dorsum of thorax brass-yellow; wings hardly with tined greyish yellow (Husain and Agarwal 1981) (Figs.1–4).

Until now, the *Dirhinus* species recorded from Iran were *D. bakeri* (Crawford, 1914); *D. hesperidum* (Rossi, 1790); *D. himalayanus* Westwood, 1836 and *D. wohlfahrtiae* Ferrière, 1935 (Rajabiet *al.* 2011; Lotfalizadeh *et al.* 2012; Moravvej *et al.* 2016).

#### Chalcididae: Haltichellinae

##### Genus *Antrocephalus* Kirby, 1883

##### *Antrocephalus hypsopygiae* Masi, 1928

**Material examined:** 1♀, Hormozgan province, Roodan (SarKahnan), 27°25'N, 57°07'E, 08.vi.2013, in mixed Lime and Mango garden, leg. T. Tavakoli; 1♂, Hormozgan province, Roodan (Band e Mola), 27°25'N, 57°09'E, 16.vi.2013, in Lime garden, leg. T. Tavakoli; 1♂, 24.vi.2013, same data, 1♀, Hormozgan province, Roodan (SarKahnan), 27°24'N, 57°07'E, 26.vi.2013, in mixed Lime and Mango garden, leg. T. Tavakoli.

**General distribution:** Palaearctic (Lotfalizadeh *et al.* 2012; Noyes 2016)

**Comments:** The genus *Antrocephalus* with more than 120 described species that most species are distributed in Palaearctic. The main hosts are moth families such as Tortricidae, Pyralidae and Crambidae (Noyes 2016).

In Iran, *Antrocephalus hypsopygiae* is known from Kerman province (south-eastern Iran) and in a rice field infested by *Chilo suppressalis* Walker (Lepidoptera: Crambidae) and *Naranga aenescens* Moore (Lepidoptera: Noctuidae) from border of Caspian Sea in the North of Iran (Lotfalizadeh *et al.* 2012). This species has recently been recorded from East-Azarbaijan province, northwestern Iran (Lotfalizadeh 2014).



**Figures 1–4.** *Dirhinus excavatus* Dalman, 1818: 1. Female in lateral view, 2. Antenna; 3. Mesosoma in dorsal view, 4. Leg and gaster in lateral view.

**Genus *Hockeria* Walker, 1834**

***Hockeria bifasciata* Walker, 1834**

**Material examined:** 1♀, Hormozgan province, Roodan (Poshteh), 27°26'N, 57°09'E, 04.iv.2013, in mixed Lime and Mango garden, leg. T. Tavakoli

**General distribution:** Palaearctic (Noyes 2016). New for the Iranian fauna.

**Comments:** *Hockeria* has a worldwide distribution, with 106 known species, that currently 33 species reported from the Palaearctic region (Noyes 2016). A number of regional keys to species of *Hockeria* have been published: for central Asia (Nikol'skaya 1952, 1960), Europe (Bouček 1982) and Oriental (Narendran 1989). *Hockeria bifasciata* can be distinguished from other Palaearctic species by the following combination of characters: Abdomen shorter than total

length of thorax and head; Carina on last abdominal tergite almost 1.5 times longer than distance between pygostyles; Forewings with light-colored apex, colorless base, and two colorless spots; Body length 2.0 to 5.0 mm (Nikol'skaya 1952) (Fig. 5–8).

Species of *Hockeria* are normally primary parasitoids of Lepidoptera (Narendran, 1989), although some species attack members of Hymenoptera, Strepsiptera, Diptera and Neuroptera (Halstead 1990).

***Hockeria unicolor* Walker, 1834**

**Material examined:** 1♂, Hormozgan province, Roodan (SarKahnan), 27°25'N, 57°07'E, 18.vii.2013, in mixed Lime and Mango garden, leg. T. Tavakoli; 1♀, Hormozgan province, Roodan (Poshteh), 27°26'N, 57°09'E, 04.vi.2013, in mixed Lime and Mango garden, leg. T. Tavakoli



**Figures 5-8.** *Hockeria bifasciata* Walker, 1834: 5. Female in lateral view, 6. Antenna, 7. Forewing, 8. Mesosoma in dorsal view.

**General distribution:** Afrotropical region, Palaearctic (Noyes 2016).

**Comments:** *Hockeria unicolor* is a polyphagous parasitoid of several families of microlepidoptera (Lotfalizadeh *et al.* 2012; Lotfalizadeh 2014; Noyes 2016).

**Genus *Lasiochalcidia* Masi, 1929**

***Lasiochalcidia cincticornis* (Walker, 1871)**

**Material examined:** 1♀, Hormozgan province, Roodan (SarKahnan), 27°25'N, 57°07'E, 04.vi.2013, in mixed Lime and Mango garden, leg. T. Tavakoli

**General distribution:** Palaearctic (Noyes, 2016).

**Comments:** The genus *Lasiochalcidia* contains 22 described species that are the

best-known parasitoids of ant lions (Steffan 1961, 1966; Noyes 2016), and another host reports are very doubtful (Lotfalizadeh *et al.* 2012). *Lasiochalcidia cincticornis* has already been reported from Sistan-Baluchestan and East-Azərbayjan provinces (Lotfalizadeh *et al.* 2012; Lotfalizadeh 2014).

***Lasiochalcidia dargelasii* (Latreille, 1805)**

**Material examined:** 1♂, Hormozgan province, Roodan (SarKahnan), 27°24'N, 57°07'E, 04.vi.2013, in mixed Lime and Mango garden, leg. T. Tavakoli; 1♂, 1♀, 25.vi.2013, same data; 1♂, Hormozgan province, Roodan (Band e Mola), 27°25'N, 57°09'E, 08.vi.2013, in Lime garden, leg. T. Tavakoli; 1♀, 16.vi.2013, same data

**General distribution:** Palaearctic, Oriental (Noyes 2016).

**Comments:** *Lasiochalcidia dargelasii* has previously been reported from Plum garden in Kerman province, southeastern Iran (Rajabiet *al.* 2011).

***Lasiochalcidia indescrupta* Bouček, 1952**

**Material examined:** 1♀, Hormozgan province, Roodan (SarKahnan), 27°25'N, 57°07'E, 08.vi.2013, in mixed Lime and Mango garden, leg. T. Tavakoli

**General distribution:** Europe (Bouček 1952; Noyes 2016).

**Comments:** It has hitherto been reported from northern Iran (Lotfalizadeh *et al.* 2012). The record of this species from southern Iran shows the wider distribution of this species in the Iranian plateau

***Lasiochalcidia pubescens* (Klug, 1834)**

**Material examined:** 1♂, Hormozgan province, Roodan (SarKahnan), 27°24'N, 57°07'E, 04.vi.2013, in mixed Lime and Mango garden, leg. T. Tavakoli;

**General distribution:** West Palaearctic (Noyes 2016).

**Comments:** It has hitherto been reported from orange orchard in Kerman province, southeastern Iran (Rajabi *et al.* 2011).

**Genus *Neochalcis* Kirby, 1883**

***Neochalcis fertoni* (Kieffer, 1899)**

**Material examined:** 1♂, Hormozgan province, Roodan (Band e Mola), 27°25'N, 57°09'E, 24.vi.2013, in Lime garden, leg. T. Tavakoli; 1♂, Hormozgan province, Roodan (SarKahnan), 27°24'N, 57°07'E, 25.vi.2013, in mixed Lime and Mango garden, leg. T. Tavakoli

**General distribution:** Palaearctic (Noyes 2016).

**Comments:** The genus *Neochalcis* contains 10 described species that most species distributed in Central Asia and Europe (Nikol'skaya 1960; Noyes 2016). So far, only

one species *Neochalcis fertoni* has been reported from northwestern Iran (Lotfalizadeh *et al.* 2012). The presence of *N. fertoni* in southern Iran indicates the wider distribution of this species in the Iranian plateau.

**Genus *Proconura* Dodd, 1915**

***Proconura nigripes* (Fonscolombe, 1832)**

**Material examined:** 1♀, Hormozgan province, Roodan (Band e Mola), 27°25'N, 57°09'E, 16.vi.2013, in Lime garden, leg. T. Tavakoli

**General distribution:** Palaearctic (Noyes 2016).

**Comments:** *Proconura* is an old world genus with approximately more than 30 known species. This genus has very different hosts from various orders of insects such as Lepidoptera, Diptera, Hymenoptera and Coleoptera (Noyes 2016). It is exactly diversified in the arid regions around the Mediterranean Basin however present also in the Oriental, Australasian and Afrotropical regions (Delvere *et al.* 2011).

*Proconura nigripes* has already been reported as parasitoid of several species of moths from families Gelechiidae, Pyralidae and Yponomeutidae (Bouček 1966; Noyes 2016). In Iran, it was reared from *Schneidereria pistaciicola* (Danilewski, 1955) (Lepidoptera: Gelechiidae) (Davatchi 1958).

**Genus *Psilochalcis* Kieffer, 1905**

***Psilochalcis ligustica* (Masi, 1929)**

**Material examined:** 1♀, Hormozgan province, Roodan (SarKahnan), 27°25'N, 57°07'E, 18.vii.2013, in mixed Lime and Mango garden, leg. T. Tavakoli

**General distribution:** Palaearctic, Oriental (Noyes 2016).

**Comments:** The genus *Psilochalcis* with about 55 species is well represented in the Palaearctic region from where most of the known species have been recorded. Most well-known hosts of this genus are Lepidoptera and especially from two families Pyralidae and Crambidae (Noyes 2016).

**Table 1.** List of the Chalcididae (Hymenoptera: Chalcidoidea) known from Iran.

Subfamily	Genera and species	References
<b>I. Chalcidinae</b>		
	<b>Genus <i>Brachymeria</i> Westwood, 1829</b>	
	<i>B. albicrus</i> (Klug, 1834)	Hasanshahi <i>et al.</i> (2013)
	<i>B. argenteopilosa</i> (Radoszkowski, 1876)	Rajabi <i>et al.</i> (2011)
	<i>B. ceratoniae</i> Delvare, 2011	Delvare <i>et al.</i> (2011)
	<i>B. excarinata</i> Gahan, 1925	Lotfalizadeh <i>et al.</i> (2012)
	<i>B. femorata</i> (Panzer, 1801)	Lotfalizadeh <i>et al.</i> (2012)
	<i>B. hibernalis</i> Askew, 1991	Lotfalizadeh (2012)
	<i>B. lasus</i> (Walker, 1841)	Lotfalizadeh <i>et al.</i> (2012)
	<i>B. moerens</i> (Ruschka, 1922)	Ghahari <i>et al.</i> (2016)
	<i>B. minuta</i> (Linnaeus, 1767)	Lotfalizadeh <i>et al.</i> (2012)
	<i>B. obtusata</i> (Förster, 1859)	Lotfalizadeh <i>et al.</i> (2012)
	<i>B. parvula</i> (Walker, 1834)	Rajabi <i>et al.</i> (2011)
	<i>B. persica</i> (Masi, 1924)	Lotfalizadeh <i>et al.</i> (2012)
	<i>B. podagrica</i> (Fabricius, 1787)	Rajabiet <i>al.</i> (2011)
	<i>B. rufigaster</i> (Masi, 1924)	Lotfalizadeh <i>et al.</i> (2012)
	<i>B. rugulosa</i> (Förster, 1859)	Lotfalizadeh <i>et al.</i> (2012)
	<i>B. secundaria</i> (Ruschka, 1922)	Lotfalizadeh (2013)
	<i>B. tibialis</i> (Walker, 1834)	Lotfalizadeh <i>et al.</i> (2012)
	<i>B. vitripennis</i> (Förster, 1859)	Lotfalizadeh <i>et al.</i> (2012)
	<b>Genus <i>Chalcis</i> Fabricius, 1787</b>	
	<i>C. biguttata</i> Spinola, 1808	Lotfalizadeh <i>et al.</i> (2012)
	<i>C. sispes</i> (Linnaeus, 1761)	Lotfalizadeh <i>et al.</i> (2012)
	<b>Genus <i>Cratocentrus</i> Cameron, 1907</b>	
	<i>C. tomentosus</i> (Nikol'skaya, 1952)	Lotfalizadeh <i>et al.</i> (2012)
	<b>Genus <i>Trigonura</i> Sichel, 1866</b>	
	<i>T. ninae</i> (Nikol'skaya, 1952)	Lotfalizadeh <i>et al.</i> (2012)
	<i>T. ruficaudis</i> (Cameron, 1913)	Lotfalizadeh and Khalghani (2008)
<b>II- Dirhininae</b>		
	<b>Genus <i>Dirhinus</i> Dalman, 1818</b>	
	<i>D. bakeri</i> (Crawford, 1914)	Moravvej <i>et al.</i> (2016)
	<i>D. excavates</i> Dalman, 1818	Current study
	<i>D. hesperidum</i> (Rossi, 1790)	Rajabi <i>et al.</i> (2011)
	<i>D. himalayanus</i> Westwood, 1836	Lotfalizadeh <i>et al.</i> (2012)
	<i>D. wohlfahrtiae</i> Ferrière, 1935	Lotfalizadeh <i>et al.</i> (2012)
<b>III- Haltichellinae</b>		
	<b>Genus <i>Antrocephalus</i> Kirby, 1883</b>	
	<i>A. hypsopygiae</i> Masi, 1928	Lotfalizadeh <i>et al.</i> (2012)
	<b>Genus <i>Belaspida</i> Masi, 1916</b>	
	<i>B. obscura</i> Masi, 1916	Lotfalizadeh <i>et al.</i> (2012)
	<i>B. nigra</i> (Siebold, 1856)	Lotfalizadeh <i>et al.</i> (2012)
	<b>Genus <i>Haltichella</i> Spinola, 1811</b>	
	<i>H. rufipes</i> (Olivier, 1791)	Rajabi <i>et al.</i> (2011)
	<b>Genus <i>Hockeria</i> Walker, 1834</b>	
	<i>H. bifasciata</i> Walker, 1834	Current study

**Table 1.** Continued

<i>H. confusa</i> Nikol'skaya, 1960	Lotfalizadeh <i>et al.</i> (2012)
<i>H. magna</i> Bouček, 1952	Kazemi and Lotfalizadeh (2014)
<i>H. singularis</i> Bouček, 1952	Lotfalizadeh (2014)
<i>H. susterai</i> Bouček, 1952	Rajabi <i>et al.</i> (2011)
<i>H. unicolor</i> Walker, 1834	Lotfalizadeh <i>et al.</i> (2012)
<b>Genus Kriechbaumerella Dalla Torre, 1897</b>	
<i>K. gracilis</i> (Nicol'skaya, 1952)	Lotfalizadeh <i>et al.</i> (2012)
<i>K. hofferi</i> (Bouček, 1952)	Lotfalizadeh <i>et al.</i> (2012)
<b>Genus Lasiochalcidia Masi, 1929</b>	
<i>L. cincticornis</i> (Walker, 1871)	Lotfalizadeh <i>et al.</i> (2012)
<i>L. dargelasii</i> (Latreille, 1805)	Rajabi <i>et al.</i> (2011)
<i>L. indscripta</i> Bouček, 1952	Lotfalizadeh <i>et al.</i> (2012)
<i>L. pubescens</i> (Klug, 1834)	Rajabi <i>et al.</i> (2011)
<i>L. sparsibarbis</i> Bouček, 1956	Lotfalizadeh <i>et al.</i> (2012)
<b>Genus Neochalcis Kirby, 1883</b>	
<i>N. fertoni</i> (Kieffer, 1899)	Lotfalizadeh <i>et al.</i> (2012)
<b>Genus Neohybothorax Nikol'skaya, 1960</b>	
<i>N. hetera</i> (Walker, 1834)	Lotfalizadeh <i>et al.</i> (2012)
<b>Genus Proconura Dodd, 1915</b>	
<i>P. barbara</i> (Masi, 1929)	Lotfalizadeh (2014)
<i>P. caryobori</i> (Hanna, 1934)	Lotfalizadeh <i>et al.</i> (2012)
<i>P. incongruens</i> (Masi, 1932)	Lotfalizadeh <i>et al.</i> (2012)
<i>P. nigripes</i> (Fonscolombe, 1832)	Lotfalizadeh <i>et al.</i> (2012)
<i>P. persica</i> Delvare, 2011	Delvare <i>et al.</i> (2011)
<b>Genus Psilochalcis Kieffer, 1905</b>	
<i>P. benoisti</i> (Steffan, 1948)	Rajabi <i>et al.</i> (2011)
<i>P. ceratoniae</i> Delvare, 2011	Delvare <i>et al.</i> (2011)
<i>P. ligustica</i> (Masi, 1929)	Lotfalizadeh <i>et al.</i> (2012)
<i>P. nigerrima</i> (Masi, 1929)	Rajabi <i>et al.</i> (2011)
<i>P. subaenea</i> (Masi, 1929)	Lotfalizadeh <i>et al.</i> (2012)
<i>P. subarmata</i> (Förster, 1855)	Rajabi <i>et al.</i> (2011)
<i>P. subjecta</i> (Nicol'skaya, 1960)	Lotfalizadeh <i>et al.</i> (2012)
<i>P. zarudnyi</i> (Nicol'skaya, 1960)	Lotfalizadeh <i>et al.</i> (2012)
<b>Genus Tancoryphus Cameron, 1905</b>	
<i>T. tibialis</i> (Nicol'skaya, 1960)	Lotfalizadeh <i>et al.</i> (2012)

*Psilochalcis ligustica* is widely distributed in Palaearctic and Oriental regions (Narendran 1989). In Iran, it has hitherto been reported from Ilam and Qazvin provinces (Lotfalizadeh *et al.* 2012).

### Discussion

Although chalcid wasps are one of the most important groups of insect crop pest parasitoids and have great economic importance (Delvare *et al.* 2011), surprisingly have received little attention in Iran.

Up to now, near to 61 species and 16 genera from three subfamilies Chalcidinae (four genera and 23 species), Dirhininae (one genus and five species) and Haltichellinae (11 genera and 33 species) have been reported from Iran (Table 1) while more than 262 species in 34 genera were recorded from Palaearctic (Noyes 2016). In fact, the chalcidid fauna of Iran is still poorly known. Two subfamilies, Epitraninae and Smicromorphinae, have not been observed in Iran. Before our



study, no chalcidid wasps have been recorded from Hormozgan, although this area is very interesting and it is possible presence elements of the Oriental, Afro-tropical, and Palaearctic regions.

In the current work, *Dirhinus excavatus* is recorded for the first time from Palaearctic region. Prior to our study, only 11 species of this genus have been recorded from this region (Noyes 2016). Moreover, two species *Dirhinus excavatus* and *Hockeria bifasciata* are recorded from Iran for the first time. In addition, all collected species are reported for the first time from Hormozgan province. Because the specimens were collected using Malaise traps, so their biology and host(s) were remain unknown. In addition to faunistic studies, further investigations on the biology of chalcids wasps in Iran are recommended.

### Acknowledgments

The research was supported by Islamic Azad University, Jahrom Branch, Jahrom, Iran and Department of Plant Protection, East-Azərbayjan Agricultural and Natural Resources Research & Education Center, Agricultural Research, Education and Extension Organization (AREEO), Tabriz, Iran. We cordially thank three anonymous reviewers for their valuable comments and recommendations in the earlier version of this paper.

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## فون زنبورهای خانواده Chalcididae (Hymenoptera: Chalcidoidea) در استان هرمزگان، جنوب ایران

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تاریخ دریافت: ۱۰ تیر ۱۳۹۵، تاریخ پذیرش: ۲۳ تیر ۱۳۹۵، تاریخ انتشار: ۲۳ تیر ۱۳۹۵

**چکیده:** در مقاله حاضر، اطلاعات پراکنش ۱۳ گونه زنبور از خانواده Chalcididae (Hymenoptera: Chalcidoidea) متعلق به ۹ جنس از سه زیرخانواده Chalcidinae، Dirhininae و Haltichellinae از استان هرمزگان ارائه می شود. تمامی گونه‌های جمع‌آوری شده برای استان گزارش جدید می‌باشند. دو گونه *Dirhinus excavatus* Dalman, 1818 و *Hockeria bifasciata* Walker, 1834 برای اولین بار از ایران گزارش شد. همچنین گونه *D. excavatus* گزارش جدید برای منطقه پالئارکتیک می‌باشد. در این مقاله همچنین یک لیست به روز شده زنبورهای Chalcididae ایران ارائه شده است.

**واژگان کلیدی:** فون، ایران، پراکنش، تله مالیز، بال غشاییان، Chalcididae