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Updated checklist of Pteromalidae (Hymenoptera: Chalcidoidea) of Iran, with some new records

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ABSTRACT. An updated checklist of 129 species in 62 genera belonging to 10 subfamilies of Pteromalidae (Hymenoptera: Chalcidoidea) known from Iran is presented. One genus, *Trychnosoma* Graham, 1957 and three species, *Systasis ephedrae* Dzhanokmen, 1982; *Trychnosoma punctipleura* Thomson, 1878 and *Spalangia rugulosa* Förster, 1850 are newly recorded for the fauna of Iran. Hosts and distributional data in Iran are also presented.

Key words: Catalogue, distribution, hosts, Iran, new records, Pteromalidae

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Introduction

The Pteromalidae is one of the largest families in the Chalcidoidea superfamily, including over 3,545 species belonging to 588 genera (Noyes, 2016). The pteromalids are primary or secondary parasitoids attacking other insect groups such as Coleoptera, Diptera, Lepidoptera, Hymenoptera, Hemiptera and some Arachnida in their various stages of development (Bouček & Rasplus, 1991; Desjardins, Rejier & Mitter, 2007). A few species of this family are phytophagous (Farooqi & Menon, 1972). Some of them develop in the seeds of plants, others are gall maker and others develop as inquilines in galls caused by other insects (Dehdar & Madjdzadeh, 2016). They play an important role in the control of

insect pests and several species have been employed successfully in biological control programs all over the world (Greathead, 1986; Debach & Rosen, 1991; Bouček & Rasplus, 1991).

The first publication on Pteromalidae of Iran were made by Davachi and Chodjai (1968) who presented the first list of Iranian parasitoids that included only seven pteromalid species. Several species records were initially published by Steffan (1968) and Sharifi and Javadi (1971). After these few initial works, more contributions have been carried out for collecting and identifying the Iranian Pteromalidae in various regions of Iran by several researchers (Goldansaz, Esmaili & Ebadi,

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1996; Lotfalizadeh & Ahmadi, 1998, 2000; Sadeghi & Askary, 2001; Mashhadi-Jafarloo & Talebi-Chaichi, 2002; Sadeghi & Ebrahimi, 2002; Habibpour, Kamali & Meidani, 2002; Jalilvand & Gholipour, 2002; Sadeghi & Ebrahimi, 2002; Mehrnejad, 2002, 2003; Rezaei, Moharrampour & Talebi, 2003; Lotfalizadeh, 2002 a; Lotfalizadeh, 2002 b; Lotfalizadeh, 2004; Hadi, Kazemi & Lotfalizadeh, 2016; Lotfalizadeh, Alehosein & Fallahzadeh, 2017). Lotfalizadeh and Gharali (2008) presented first informative checklist which reported 78 species of Pteromalidae from different parts of Iran including biological and geographical distribution data. They compared the composition of species with those of the world and the Palaearctic region. Recently other records have been added to the pteromalid fauna of Iran (Alemansour, Asadi & Alehosein, 2010; Hesami et al., 2010; Nazemi-Rafie & Lotfalizadeh, 2010; Mitroiu, Abolhassanzadeh & Madjdzadeh, 2011; Hasani, Mitroiu & Madjdzadeh, 2011; Dehdar & Madjdzadeh, 2013; Mahdavi & Madjdzadeh, 2013; Alipanah, Nazemi-Rafie & Lotfalizadeh, 2013; Lotfalizadeh & Hosseini, 2014; Lotfalizadeh & Gharali, 2014; Ebrahimi, 2014; Bayegan et al., 2014; Ziaaddini et al., 2014; Hashemi & Lotfalizadeh, 2014; Lotfalizadeh, 2015; Mahdavi, Madjdzadeh & Mitroiu, 2015; Lotfalizadeh, Bayegan & Zargarani, 2016). Universal Chalcidoidea database provided pteromalid species of Iran (Noyes, 2016), but the results of some studies on this family in Iran were not included in the database. The aim of this paper is to present an updated checklist of pteromalid species, their hosts as well as their distribution in Iran.

Material and methods

The updated checklist is provided based on reviewing all literatures on the distribution and host records of Pteromalidae in Iran.

Synonyms, worldwide distributions and extralimital host information for the species are not included because these data are readily accessible in Universal Chalcidoidea Database (Noyes, 2016). Some recently collected specimens were identified by second author and were added to Iranian fauna of Pteromalidae. The species are arranged alphabetically. Seventy-seven pteromalid species were reported in the Universal Chalcidoidea Database, but here 49 other species (marked with an asterisk, *) are added to the previous records. The new genera and species records for Iran are marked with two asterisks (**). The classification and taxonomic arrangement follow Noyes (2016).

The material was collected during 2007-2013 from different parts of Iran, and they are held in the Department of Plant Protection, East-Azarbaijan Research & Education Center for Agriculture & Natural Resources, Tabriz, Iran. The individuals were collected using different methods including Malaise trap, pan trap and sweep net. Identification was made by HL using keys provided by Bouček (1963), Bouček and Rasplus (1991) and Dzhankov (1996).

Results

Checklist of Pteromalidae of Iran

Family Pteromalidae Dalman, 1820

Subfamily 1. Asaphinae Ashmead, 1904

Genus: *Asaphes* Walker, 1834

1. *Asaphes suspensus* (Nees, 1834)

Host: This species is hyperparasitoid of *Pemphigus spyrothecae* Passerini, 1860 (Hem.: Aphididae) via *Monoctonia vesicarii* Tremblay, 1991 (Hym.: Braconidae, Aphidiinae) on *Populus nigra* (Ghafouri-Moghaddam, Lotfalizadeh & Rakhshani, 2014).

Distribution in Iran: East-Azarbaijan (Lotfalizadeh & Gharali, 2008), Kerman (Mitroiu, Abolhassanzadeh & Madjdzadeh,

2011; Kordestan (Dehdar & Madjdzadeh, 2013) and Ardabil provinces (Ghafouri-Moghaddam, Lotfalizadeh & Rakhshani, 2014).

2. *Asaphes vulgaris* Walker, 1834*

Host: Unknown

Distribution in Iran: Kordestan province (Nazemi Rafie, Alipanah & Lotfalizadeh, 2011).

Subfamily 2. Cerocephalinae Gahan, 1946

Genus: *Theocolax* Westwood, 1832

3. *Theocolax elegans* Westwood, 1874

Host: Unknown

Distribution in Iran: Khuzestan (Habibpour, Kamali & Meidani, 2002; Lotfalizadeh and Gharali, 2008), Mazandaran (Lotfalizadeh & Hosseini, 2013) and East-Azərbayjan provinces (Lotfalizadeh & Hosseini, 2013).

4. *Theocolax formiciformis* Westwood, 1832*

Host: Reared on pupae of the rice weevil, *Sitophilus oryzae* Linnaeus, 1763 (Col.: Curculionidae) (Assemi & Shojai, 2004).

Distribution in Iran: Mazandaran (Assemi & Shojai, 2004).

Subfamily 3. Cleonyminae Walker, 1837

Genus: *Callocleonymus* Masi, 1940

5. *Callocleonymus pulcher* Masi, 1940*

Host: Reared from *Ruguloscolytus mediterraneus* Eggers, 1922 (Col.: Scolytidae) and *Xylopertha reflexicauda* Lesne, 1937 (Col.: Bostrichidae) (Lotfalizadeh & Khalghani, 2008).

Distribution in Iran: East Azarbaijan province (Lotfalizadeh & Khalghani, 2008).

Genus: *Chalcedectus* Walker, 1852

6. *Chalcedectus balachowskyi* Steffan, 1968

Host: It is a parasitoid of larvae of *Osphranteria coerulescens* Redtenbacher, 1850 (Col.: Cerambycidae) on *Rosa* sp.. It was reared on the Rosaceae branch borer (Sharifi & Javadi, 1971).

Distribution in Iran: (no locality cited) (OILB, 1971; Steffan, 1968; Sharifi & Javadi, 1971).

7. *Chalcedectus sinaiticus* (Masi, 1936)

Host: Unknown.

Distribution in Iran: Hormozagan province (Lotfalizadeh, Alehosein & Fallahzadeh, 2017).

Genus: *Cleonymus* Latreille, 1809

8. *Cleonymus laticornis* Walker, 1837*

Host: *Cleonymus laticornis* is parasitic on xylophagous beetles (Graham, 1969). It was collected from Coleoptera pupa probably belongs to Cerambycidae family on *Prunus divaricata* Ledeb by Damavandian and Feli Kohikheili (2015).

Distribution in Iran: Mazandaran province (Damavandian & Feli Kohikheili, 2015).

Genus: *Heydenia* Förster, 1856

9. *Heydenia pretiosa* Förster, 1856

Host: It is a parasitoid of xylophagous beetles (Buprestidae, Scolytidae, Cerambycidae and Curculionidae (Davatchi & Chodjai, 1968; Herting, 1973). It was reared from *Xylopertha reflexicauda* Lesne, 1937 (Lotfalizadeh & Gharali, 2008). This specie was also reared from *Ruguloscolytus mediterraneus* Eggers, 1922 and *Phloeosinus bicolor* Brulle, 1832 on fruit trees and *Biota orientalis* L. Endl. (Davatchi & Chodjai, 1968).

Distribution in Iran: East-Azərbayjan (Lotfalizadeh & Gharali, 2008) and Alborz provinces (Davatchi & Chodjai, 1968).

Genus: *Oodera* Westwood, 1874

10. *Oodera monstrum* Nikol'skaya, 1952*

Host: It is parasitoid of xylophagous beetles, mainly Buprestidae (Nazemi-Rafie, Alipanah & Lotfalizadeh, 2011; Alipanah, Nazemi-Rafie & Lotfalizadeh, 2013).

Distribution in Iran: Kordestan province (Nazemi-Rafie, Alipanah & Lotfalizadeh, 2011; Alipanah, Nazemi-Rafie & Lotfalizadeh, 2013).

Genus: *Notaninus* Walker, 1837

11. *Notaninus vanharteni* Gibson, 2015

Host: It was reared on *Dorema ammoniacum* (D. Don.) (Apiaceae) (Lotfalizadeh, Alehosein & Fallahzadeh, 2017).

Distribution in Iran: Fars province (Lotfalizadeh, Alehosein & Fallahzadeh, 2017).

Subfamily 4. Colotrechninae Thomson, 1876

Genus: Colotrechnus Thomson, 1878

12. Colotrechnus viridis Masi, 1921*

Host: This species was reared on safflower attacked by fruit flies, *Acanthiophilus helianthi* Rossi, 1794, *Chaetorella carthami* Stackelberg, 1929, *Terellia luteola* Wiedemann, 1830 and *Urophora mauritanica* Macquart, 1851 (Dip.: Tephritidae) (Lotfalizadeh & Gharali, 2008, 2014).

Distribution in Iran: Ilam (Lotfalizadeh & Gharali, 2008, 2014), East-Azarbaijan and Chaharmahal-e-Bakhtiari provinces (Lotfalizadeh & Gharali, 2014).

Subfamily 5. Eunotinae Ashmead, 1904

Genus: Anogmus Förster, 1856

13. Anogmus laricis Bouček, 1966*

Host: This species is considered as parasitoid of some Anthomyiidae (Dip.) (Bahri-Motlagh, lotfalizadeh & Mehrvar, 2012).

Distribution in Iran: East-Azarbaijan province (Bahri-Motlagh, lotfalizadeh & Mehrvar, 2012).

Genus: Eunotus Walker, 1834

14. Eunotus nigriclavus Förster, 1856

Host: *Acantholecnium haloxyloni* Hott. (Hem.: Coccidae) (Haeselbarth, 1983).

Distribution in Iran: Northwest of Iran (Haeselbarth, 1983).

Genus: Moranila Cameron, 1883

15. Moranila californica (Howard, 1881)

Host: This species is reported as egg predator of *Saissetia oleae* Oliver, 1791, *Ceroplastes floridensis* Comstock, 1881 and *Parthenolecanium* sp. (Davoodi et al., 2004; Jalilvand et al., 2013; Ebrahimi, 2014).

Distribution in Iran: Tehran (Davoodi et al., 2004), Guilan (Ebrahimi, 2014) and Kkermanshah provinces (Jalilvand et al., 2013).

Subfamily 6. Miscogastrinae Walker, 1833

Genus: Halticoptera Spinola, 1811

This genus has been synonymized with *Halticopterina* Erdös, 1946 (Mitroiu, 2014).

16. Halticoptera aenea (Walker, 1833)

Host: It is reported as a parasitoid of Agromyzidae in Iran by OILB (1971).

Distribution in Iran: Kordestan province (OILB, 1971; Dehdar & Madjdzadeh, 2013).

17. Halticoptera circulus (Walker, 1833)

Host: Unknown

Distribution in Iran: East-Azarbaijan (Lotfalizadeh & Gharali, 2008) and Kerman provinces (Mitroiu, Abolhassanzadeh & Madjdzadeh, 2011).

18. Halticoptera longipetiolus Hedqvist, 1975*

Host: Unknown

Distribution in Iran: Kordestan province (Nazemi-Rafie, Alipanah & Lotfalizadeh, 2011).

19. Halticoptera cf. patellana Dalman, 1818*

Host: Unknown

Distribution in Iran: East-Azarbaijan province (Lotfalizadeh & Gharali, 2008).

20. Halticoptera polita Walker, 1834*

Host: It is reported as parasitoid of *Phyllonorycter populifoliella* Treitschke, 1833 (Lep.: Gracillariidae) on *Populus* spp. (Sadeghi & Lotfalizadeh, 2012).

Distribution in Iran: West-Azarbaijan province (Sadeghi & Lotfalizadeh, 2012).

21. Halticoptera violacea Askew, 1972*

Host: Unknown

Distribution in Iran: Hormozgan province (Lotfalizadeh & Gharali, 2008).

22. Halticoptera cf. yoncacus Doğanlar, 2006*

Host: Unknown

Distribution in Iran: Khorasan Razavi province (Hasani, Mitroiu & Madjdzadeh, 2011).

23. Halticoptera moczari (Erdös, 1954)*

Host: In *Medicago sativa* L. field (Lotfalizadeh & Gharali, 2008).

Distribution in Iran: East-Azarbaijan province (Lotfalizadeh & Gharali, 2008).

Genus: *Ksenoplata* Bouček, 1965

24. *Ksenoplata quadrata* Bouček, 1965

Host: It was collected on *Ephedra major* (Hadi, Kazemi & Lotfalizadeh, 2017).

Distribution in Iran: East-Azarbaijan province (Hadi, Kazemi & Lotfalizadeh, 2017).

Genus: *Miscogaster* Walker, 1833

25. *Miscogaster elegans* Walker, 1833*

Host: Unknown

Distribution in Iran: Ilam province (Lotfalizadeh & Gharali, 2008).

26. *Miscogaster rufipes* Walker, 1833*

Host: Unknown.

Distribution in Iran: Ilam province (Lotfalizadeh & Gharali, 2008).

Subfamily 7. Ormocerinae Walker, 1833

Genus: *Systasis* Walker, 1834

27. *Systasis angustula* Graham, 1969*

Host: Unknown.

Distribution in Iran: Ardabil province (Lotfalizadeh & Gharali, 2008).

28. *Systasis* cf. *annulipes* (Walker, 1834)*

Host: Unknown.

Distribution in Iran: East-Azarbaijan province (Lotfalizadeh & Gharali, 2008).

29. *Systasis encyrtoides* Walker 1854

Host: Unknown

Distribution in Iran: Kerman (Mitroiu, Abolhassanzadeh & Madjdzadeh, 2011), Khorasan Razavi (Hasani & Madjdzadeh, 2012) and Kordestan provinces (Dehdar & Madjdzadeh, 2013).

30. *Systasis ephedrae* Dzhankmen, 1982**

Material examined: IRAN, Kordestan province, Sanandaj, Darbandeh, 18-V-2013, sweep net, (H. Lotfalizadeh), 4 ♀♀.

Comments: This species known from Georgia and Kazakhstan as parasitoid of gall-midges (Dip.: Cecidomyiidae) (Noyes, 2016). Four species of this genus have been

reported from Iran (Lotfalizadeh & Gharali, 2008; Hasani & Madjdzadeh, 2012).

Distribution in Iran: Kordestan province (new record for Iran).

31. *Systasis longula* Bouček, 1956*

Host: Unknown. This species was swept on *Malus* sp. in Kordestan province (Dehdar & Madjdzadeh, 2016).

Distribution in Iran: Kordestan province (Dehdar & Madjdzadeh, 2016).

32. *Systasis parvula* Thomson, 1876*

Host: Unknown.

Distribution in Iran: Khorasan Razavi province (Hasani & Madjdzadeh, 2012).

33. *Systasis tenuicornis* Walker, 1834*

Host: Unknown. This species was swept on *Malus* sp. in Kordestan province (Dehdar & Madjdzadeh, 2016).

Distribution in Iran: Kordestan province (Dehdar & Madjdzadeh, 2016).

Subfamily 8. Pteromalinae Dalman, 1820

Genus: *Anisopteromalus* Ruschka, 1912

34. *Anisopteromalus calandrae* (Howard, 1881)

Host: Reared from *Callosobruchus maculatus* Fabricius, 1775 (Col.: Bruchidae) (Haselbarth 1983; Kazemi et al., 2004; Kazemi, Talebi & Fathipour, 2010; Lotfalizadeh & Hosseini, 2013).

Distribution in Iran: Kermanshah, Qazvin, North-Khorasan, Mazandaran and Sistan-baluchestan provinces (Haselbarth 1983; Kazemi et al., 2004; Kazemi, Talebi & Fathipour, 2010; Lotfalizadeh & Hosseini, 2013).

Genus: *Arthrolytus* Thomson, 1878

35. *Arthrolytus glandium* Bouček, 1967*

Host: Unknown.

Distribution in Iran: East-Azarbaijan province (Bahri-Motlagh, lotfalizadeh & Mehrvar, 2012).

36. *Arthrolytus ocellus* (Walker, 1834)*

Host: Reared from galls of *Chilaspis israeli* Sternlicht, 1968 (Hym.: Cynipidae) on *Quercus* sp. (Lotfalizadeh & Gharali, 2008).

Distribution in Iran: Ilam province (Lotfalizadeh & Gharali, 2008).

Genus: *Caenacis* Förster, 1856

37. *Caenacis inflexa* Ratzeburg, 1848

Host: Lotfalizadeh, Rasplus & Delvare (2006) reported this species as a parasitoid of rose leaf gall, *Diplolepis* sp. (?*nervosa*) (Hym.: Cynipidae).

Distribution in Iran: East-Azərbayjan province (Lotfalizadeh, Rasplus & Delvare, 2006; Lotfalizadeh & Gharali, 2008).

Genus: *Caenocrepis* Thomson, 1878

38. *Caenocrepis bothynoderi* Gromakov, 1940

Host: This species is an egg parasitoid of heliotrope weevil, *Pachycerus cordiger* Germar, 1818 (Col.: Curculionidae) (Huber & Vayssieres, 1990; Mitroiu, 2012).

Distribution in Iran: Qazvin province (Huber & Vayssieres, 1990).

Genus: *Callitula* Spinola, 1811

39. *Callitula bicolor* Spinola, 1811*

Host: Unknown.

Distribution in Iran: Kordestan province (Dehdar & Madjdzadeh, 2013).

40. *Callitula ferrierei* Bouček, 1964*

Host: Unknown.

Distribution in Iran: Guilan province (Bayegan et al., 2014).

Genus: *Catolaccus* Thomson, 1878

41. *Catolaccus ater* (Ratzeburg, 1852)*

Host: This species is a primary and secondary parasitoid of different groups of insects but its hosts in Iran are unknown.

Distribution in Iran: Ilam province (Lotfalizadeh & Gharali, 2008).

42. *Catolaccus crassiceps* (Masi, 1911)

Host: This species was reared on cocoon of *Chrysoperla carnea* Stephens, 1836 and *Suaris fedschenkoi* (Mclachlan in Fedchenko, 1875) (Neu.: Chrysopidae) (Lotfalizadeh & Ahmadi, 2000). It was also reared on the cynipid gall wasp, *Diplolepis*

fructuum Rübsaamen, 1882 (Hym.: Cynipidae) (Lotfalizadeh & Gharali, 2008).

Distribution in Iran: Ardabil, East-Azərbayjan, Fars (Lotfalizadeh & Gharali, 2008) and Kordestan provinces (Dehdar & Madjdzadeh, 2013).

Genus: *Cecidostiba* Thomson, 1878

43. *Cecidostiba fungosa* (Geoffroy, 1785)*

Host: Reared from *Chilaspis israeli* Sternlicht, 1968 (Hym.: Cynipidae) on *Quercus brantii* Lindl. (Lotfalizadeh & Gharali, 2008).

Distribution in Iran: Lorestan province (Lotfalizadeh & Gharali, 2008).

Genus: *Cheiopachus* Westwood, 1829

44. *Cheiopachus quadrum* Fabricius, 1787

Host: Parasitoid of the larvae of *Rogulascolytus mediteraneus* Eggers, 1922 (Col.: Scolytidae) and *Xylopertha reflexicauda* Lesne, 1937 (Col.: Bostrychidae) on dead wood of apple tree (Lotfalizadeh & Gharali, 2008).

Distribution in Iran: East-Azərbayjan (Lotfalizadeh & Gharali, 2008), and Kerman provinces (Mitroiu, Abolhassanzadeh & Madjdzadeh, 2011).

Genus: *Chlorocytus* Graham, 1956

45. *Chlorocytus spicatus* (Walker, 1835)*

Host: Unknown

Distribution in Iran: Ilam province (Lotfalizadeh & Gharali, 2008).

Genus: *Conomorium* Masi, 1924

46. *Conomorium ampulum* Walker, 1835

Host: Unknown.

Distribution in Iran: Kordestan province (Nazemi Rafie, Alipanah & lotfalizadeh, 2011; Alipanah, Nazemi-Rafie & Lotfalizadeh, 2013).

47. *Conomorium patulum* (Walker, 1835)

Host: This species reared as a gregarious pupal parasitoid of brown tail moth, *Euproctis chrysorrhoea* Linnaeus, 1758 (Nikdel et al., 2007).

Distribution in Iran: East-Azərbayjan province (Nikdel et al., 2007).

Genus: *Cyrtogaster* Walker, 1833**48. *Cyrtogaster vulgaris* Walker, 1833**

Host: Reared from crucifer leaf miners, *Chromatomyia horticola* Goureau, 1851 and *Liriomyza sativae* Blanchard, 1938 (Dip.: Agromyzidae) (Lotfalizadeh & Gharali, 2008).

Distribution in Iran: East-Azarbaijan, Ardabil (Lotfalizadeh & Gharali, 2008) and Kordestan provinces (Dehdar & Madjdzadeh, 2011).

Genus: *Cyrtoptyx* Delucchi, 1956**49. *Cyrtoptyx cf. latipes* Rondani, 1874**

Host: It was reared from seeds of *Pistacia atlantica* Desf. (Mitroiu, Abolhassanzadeh & Madjdzadeh, 2011).

Distribution in Iran: Kerman (Mitroiu, Abolhassanzadeh & Madjdzadeh, 2011) and Khorasan Razavi provinces (Hasani & Madjdzadeh, 2012).

50. *Cyrtoptyx lichtensteini* (Masi, 1921)*

Host: This species has been reported on *Etiella zinckenella* Treitschke, 1832 (Lotfalizadeh & Hosseini, 2014).

Distribution in Iran: East-Azarbaijan (Lotfalizadeh & Hosseini, 2014).

51. *Cyrtoptyx pistaciae* Nikol'skaya, 1935

Host: It was collected on *Pistacia khinjuk* L. (Jalilvand & Gholipour, 2002).

Distribution in Iran: Qazvin and Lorestan provinces (Jalilvand & Gholipour, 2002; Lotfalizadeh & Gharali, 2008).

Genus: *Dibrachoides* Kurdjumov, 1913**52. *Dibrachoides dynastes* Förster, 1841**

Host: *Hypera postica* Gyllenhal, 1813 (Col.: Curculionidae) (Lotfalazadeh & Gharali, 2008).

Distribution in Iran: Kordestan province (Lotfalizadeh & Gharali, 2008; Dehdar & Madjdzadeh, 2013).

Genus: *Dibrachys* Förster, 1856**53. *Dibrachys affinis* Masi, 1907***

Host: This species was reported as a pupae parasitoid of grape berry moth, *Lobesia botrana* Denis & Schiffermüller, 1775 (Lep.:

Tortricidae) (Lotfalizadeh, Masnadi-Yazdinejad & Saber, 2012a).

Distribution in Iran: East-Azarbaijan province (Lotfalizadeh, Masnadi-Yazdinejad & Saber, 2012a).

54. *Dibrachys microgastris* Bouché, 1834

Host: *Leucoma wiltshirei* Collenette, 1938 (Lep.: Lymanteriidae) and *Kermania pistaciella* Amsel, 1964 (Jafari & Shaigan, 1993). Goldansaz, Esmaili and Ebadi (1996) considered this species as a parasitoid of lesser wax moth, *Achroia grisella* Fabricius, 1794. Mehrnejad (2002, 2003) studied its biological and ecological attributes as a parasitoid of the pistachio twig borer moth, *K. pistaciella* Amsel, 1964 (Lep.: Tineidae). Mashhadi-Jafarloo & Talebi-Chaichi (2002) considered this species as gregarious ectoparasitoid of codling moth (Lotfalizadeh & Gharali, 2008).

Distribution in Iran: East-Azarbaijan (Mashhadi-Jafarloo & Talebi-Chaichi, 2002), Fars (Haeselbarth 1983), Kerman (Jafari & Shaigan, 1993; Mitroiu, Abolhassanzadeh & Madjdzadeh, 2011) and Khorasan Razavi provinces (Hasani & Madjdzadeh, 2012).

55. *Dibrachys lignicola* Graham, 1969*

Host: It was collected from *Salix carmanica* Bornm (Salicaceae) in Rayen, Kerman province by Ziaaddini *et al.* (2014).

Distribution in Iran: Kerman province, Rayen (Ziaaddini *et al.*, 2014).

Genus: *Dinarmus* Thomson, 1878**56. *Dinarmus acutus* (Thomson, 1878)**

Host: Unknown

Distribution in Iran: Kerman province (Mitroiu, Abolhassanzadeh & Madjdzadeh, 2011).

57. *Dinarmus basalis* (Rondani, 1877)

Host: Unknown.

Distribution in Iran: Khorasan Razavi province (Hasani, Mitroiu & Madjdzadeh, 2011; Hasani & Madjdzadeh, 2012).

58. *Dinarmus vagabundus* (Timberlake, 1926)*

Host: This species is a parasitoid of three brachids in Iran (Eslami, 1998)

Distribution in Iran: East-Azarbaijan, Mazandaran and Qazvin provinces (Lotfalizadeh & Hosseini, 2013).

Genus: *Dinotiscus* Ghesquière, 1946

59. *Dinotiscus colon* (Linnaeus, 1758)*

Host: Parasitoid of *Ruguloscolytus mediterraneus* Eggers, 1922 and *Phloeosinus bicolor* Brulle, 1832 (Col.: Scolytidae) (Davatchi & Chodjai, 1968, Shojai, 1998 as *Cheiopachus colon* Linnaeus, 1758).

Distribution in Iran: Alborz (Shojai, 1998 as *Cheiopachus colon* L.), Ardabil (Davatchi & Chodjai, 1968; Radjabi, 1991; Shojai, 1998 as *C. colon*; Lotfalizadeh & Khalghani, 2008), Kermanshah, Kordestan (Davatchi & Chodjai, 1968 as *C. colon*; Radjabi, 1991; Lotfalizadeh & Khalghani, 2008), East Azarbaijan, Fars, Hamadan, Isfahan, Lorestan, Markazi, Tehran, Zanjan provinces (Davatchi & Chodjai, 1968; Radjabi, 1991; Lotfalizadeh & Khalghani, 2008).

Genus: *Erdoesina* Graham, 1957

60. *Erdoesina alboannulata* (Ratzeburg, 1852)*

Host: Unknown

Distribution in Iran: East-Azarbaijan province (Lotfalizadeh & Gharali, 2008).

Genus: *Euneura* Walker, 1844

61. *Euneura lachni* (Ashmead, 1887)

Host: Hyperparasitoid of Aphididae (Lotfalizadeh & Gharali, 2008).

Distribution in Iran: Iran (OILB, 1971).

Genus: *Gugolzia* Delucchi & Steffan, 1956

62. *Gugolzia bademia* Doğanlar, 2004*

Host: *Eurytoma amygdali* Enderlein, 1907 (Hym.: Eurytomidae) (Lotfalizadeh & Gharali, 2008).

Distribution in Iran: Chaharmahal-e Bakhtiari province (Lotfalizadeh & Gharali, 2008).

63. *Gugolzia harmolitae* Delucchi & Steffan, 1956*

Host: *Tetramesa romana* Walker, 1873 (Hym.: Eurytomidae) (Lotfalizadeh & Gharali, 2008).

Distribution in Iran: Ardabil province (Lotfalizadeh & Gharali, 2008).

Genus: *Hobbya* Delucchi, 1957

64. *Hobbya stenonota* Ratzeburg, 1848

Host: *Diplolepis fructuum* (Rübsaamen) (Hym.: Cynipidae) (Lotfalizadeh, Rajabi & Madjdzadeh, 2012b).

Distribution in Iran: Kerman province (Lotfalizadeh, Rajabi & Madjdzadeh, 2012b).

Genus: *Homoporus* Thomson, 1878

65. *Homoporus fulviventris* Walker 1835

Host: Unknown

Distribution in Iran: Kerman province (Mitroiu, Abolhassanzadeh & Madjdzadeh, 2011).

66. *Homoporus semiluteus* (Walker, 1872)

Host: Its host is unknown but the majority of the Western Palaearctic species of *Homoporus* Thomson are associated with insects that develop in grass stems (Bouček & Rasplus, 1991).

Distribution in Iran: Khorasan Razavi province (Hasani, Mitroiu & Madjdzadeh, 2011; Hasani & Madjdzadeh, 2012).

67. *Homoporus subniger* (Walker, 1835)

Host: Unknown.

Distribution in Iran: East-Azarbaijan province (Lotfalizadeh, 2015).

Genus: *Mesopolobus* Westwood, 1833

68. *Mesopolobus amaenus* (Walker, 1834)

Host: *Leucoma wiltshirei* Collenette, 1938 (Lep.: Lymantriidae) (Haeselbarth, 1983) and rose gall wasp, *Diplolepis mayri* Schlechtendal, 1877 (Hym.: Cynipidae) (Askew, Sadeghi & Tavakoli, 2006).

Distribution in Iran: Fars province (Haeselbarth, 1983).

69. *Mesopolobus arcanus* Askew, 1997*

Host: Parasitoid of *Eurytoma* sp. (Hym.: Eurytomidae) on *Epheda procera* Fisch and Mey (Ephedraceae) (Alemansour, Asadi & Alehosein, 2010).

Distribution in Iran: Fars province (Alemansour, Asadi & Alehosein, 2010).

70. *Mesopolobus deserti* Dzhankov, 1994

Host: Unknown.

Distribution in Iran: Khorasan Razavi province (Hasani, Mitroiu & Madjdzadeh, 2011).

71. *Mesopolobus fasciiventris* Westwood, 1833*

Host: Reared from leaf galls on *Salix pycnostachya* Andersson (Mahdavi & Madjdzadeh, 2013).

Distribution in Iran: Kerman province (Mahdavi & Madjdzadeh, 2013).

72. *Mesopolobus sericeus* (Förster, 1770)*

Host: Collected on *Tamarix* sp. (Hasani & Madjdzadeh, 2012).

Distribution in Iran: Khorasan Razavi province (Hasani & Madjdzadeh, 2012).

73. *Mesopolobus xanthocerus* (Thomson, 1878)*

Host: Collected on Gramineae (Dehdar & Madjdzadeh, 2016).

Distribution in Iran: Kordestan province (Dehdar & Madjdzadeh, 2016).

Genus: *Metastenus* Walker, 1834

74. *Metastenus concinnus* Walker, 1834

Host: *Cryptolaemus montrouzieri* Mulsant, 1853 (Col.: Coccinellidae) (Gharizadeh & Hesami, 2003).

Distribution in Iran: Mazandaran province (Gharizadeh & Hesami, 2003).

Genus: *Mokrzeckia* Mokrzecki, 1934

75. *Mokrzeckia obscura* Graham, 1969

Host: It is a hyperparasitoid of the diamondback moth, *Plutella xylostella* (L.) (Lep.: Plutellidae) and act as parasitoid of *Cotesia vestalis* (Haliday, 1834) (Afiunizadeh, Karimzadeh & Lotfalizadeh, 2013; Afiunizadeh & Karimzadeh, 2015).

Distribution in Iran: Isfahan province (Karimzadeh & Lotfalizadeh, 2013; Afiunizadeh & Karimzadeh, 2015).

Genus: *Muscidifurax* Girault & Sanders, 1910

76. *Muscidifurax raptor* Girault & Sanders, 1910*

Host: House fly pupae (Iranpour, Tirgari & Shayeghi, 1991).

Distribution in Iran: Alborz, Chaharmahal-e Bakhtiari and Hormozgan provinces (Iranpour, Tirgari & Shayeghi, 1991).

Genus: *Nasonia* Ashmead, 1904

77. *Nasonia vitripennis* (Walker, 1836)*

Host: It is a polyembryonic parasitoid of house fly Pupae (Iranpour, Tirgari & Shayeghi, 1991).

Distribution in Iran: Alborz, Chaharmahal-e Bakhtiari and Hormozgan provinces (Iranpour, Tirgari & Shayeghi, 1991).

Genus: *Norbanus* Walker 1843

78. *Norbanus arcuatus* Xiao & Huang, 2001*

Host: *Astragalus meridionalis* Bunge (Fabaceae) (Hesami et al., 2010).

Distribution in Iran: Fars province (Hesami et al., 2010).

79. *Norbanus calabrus* (Masi, 1942)

Host: Unknown.

Distribution in Iran: East-Azarbaijan province (Lotfalizadeh, 2015).

80. *Norbanus cerasiops* (Masi, 1922)

Host: Collected by Malaise trap in Iran. Probably primary parasitoid of beetles of the genera *Lixus* Fabricius, 1801 and *Larinus* Dejean, 1821 (Curculionidae) in stems of *Cirsium* (Mill.), *Carduus* (L.), *Onopordon* (Vill.), *Amaranthus* (L.) or *Crambe* (L.) (Dzhanokmen, 1999; Rizzo & Mitroiu, 2010).

Distribution in Iran: Khorasan Razavi province (Hasani, Mitroiu & Madjdzadeh, 2011).

81. *Norbanus meridionalis* (Masi, 1922)*

Host: Unknown.

Distribution in Iran: West-Azarbaijan province (Lotfalizadeh, 2015).

82. *Norbanus obscurus* (Masi, 1922)**Host:** Unknown.**Distribution in Iran:** East-Azarbaijan, West-Azarbaijan and Kordestan provinces (Lotfalizadeh, 2015).**83. *Norbanus rasplusi* Lotfalizadeh, 2015*****Host:** Probably parasitoid of some seed-eater insects (Coleoptera and Lepidoptera) that attack *Dorema ammoniacum* (D. Don.).**Distribution in Iran:** Recently described based on collection from Iran: Fars and West-Azarbaijan provinces (Lotfalizadeh, 2015).**84. *Norbanus scabriculus* (Nees, 1834)****Host:** Unknown.**Distribution in Iran:** Qazvin province (Lotfalizadeh, 2015).**Genus:** *Pachyneuron* Walker, 1833**85. *Pachyneuron aphidis* (Bouché, 1834)****Host:** This species was reared from *Aphis gossypii* Glover, 1877 on cotton and *Brevicoryne brassicae* (L.) on Rape seed (*Brassica napus* L.).**Distribution in Iran:** Ardabil (Lotfalizadeh & Gharali, 2008), Tehran (Haeselbarth, 1983; Rakhshani *et al.*, 2004), Kerman (Mitroiu, Abolhassanzadeh & Madjdzadeh, 2011) and Khorasan Razavi provinces (Hasani & Madjdzadeh, 2012).**86. *Pachyneuron erzurumicum* Doğanlar, 1986****Host:** Unknown.**Distribution in Iran:** Ilam (Lotfalizadeh & Gharali, 2008), Kerman (Mitroiu, Abolhassanzadeh & Madjdzadeh, 2011) and Khorasan Razavi provinces (Hasani & Madjdzadeh, 2012).**87. *Pachyneuron formosum* Walker, 1833****Host:** Unknown.**Distribution in Iran:** Ilam province (Lotfalizadeh & Gharali, 2008).**88. *Pachyneuron grande* Thomson, 1878****Host:** *Pterocomma populeum* (Kaltenbach, 1843.) (Sadeghi & Ebrahimi, 2001).**Distribution in Iran:** Northern costal region of Iran (Lotfalizadeh & Gharali, 2008).**89. *Pachyneuron groenlandicum* Holmgren, 1872****Host:** This species was reared on *Phleomyzus passerini* Signoret in Iran (Karadj city) by M. Abai (Haeselbarth, 1983).**Distribution in Iran:** Alborz (Haeselbarth, 1983), Ilam (Lotfalizadeh & Gharali, 2008), Khorasan Razavi (Hasani & Madjdzadeh, 2012) and Kerman provinces (Mitroiu, Abolhassanzadeh & Madjdzadeh, 2011).**90. *Pachyneuron leucopiscida* Mani, 1939****Host:** This species is hyperparasitoid of *Aphis gossypii* Glover, 1877 and *Aphis craccivora* Koch, 1854 parasitized by *Lysiphlebus fabarum* (Marshall, 1896) (Lotfalizadeh & Gharali, 2008).**Distribution in Iran:** Fars, Alborz (Ebrahimi, 2014), Tehran (Haeselbarth, 1989) and Kordestan provinces (Dehdar & Madjdzadeh, 2013, 2016).**91. *Pachyneuron muscarum* Linnaeus, 1758****Host:** *Maconellicoccus hirsutus* Green, 1908 is considered as host for this species (Ebrahimi, 2014). This species is considered as hyperparasitoid of *Eulecanium tiliae* (L. 1758), *Parthenolecanium corni* (Bouché, 1844) and other species of Hymenoptera and Diptera and also as primary parasitoid (Jalilvand *et al.*, 2013; Ebrahimi, 2014).**Distribution in Iran:** Fars, Alborz (Ebrahimi, 2014), Tehran (Haeselbarth, 1989) and Kermanshah provinces (Jalilvand *et al.*, 2013).**92. *Pachyneuron nelsoni* Girault, 1928*****Host:** This species is a gregarious parasitoid of hover flies (Dip.: Syrphidae) in pupal stage and was reared from syrphid fly (*Paragus* sp.) pupa by Lotfalizadeh and Gharali (2008).**Distribution in Iran:** East-Azarbaijan (Lotfalizadeh & Gharali, 2008) and Khorasan Razavi provinces (Hasani & Madjdzadeh, 2012).

93. *Pachyneuron solitarium* Hartig, 1838*

Host: This species is hyperparasitoid of *Pemphigus spyrothecae* Passerini, 1860 via *Monoctonia vesicarii* Tremblay, 1991 (Hym.: Braconidae, Aphidiinae) (Ghafouri-Moghaddam, Lotfalizadeh & Rakhshani, 2014).

Distribution in Iran: Ardabil province (Ghafouri-Moghaddam, Lotfalizadeh & Rakhshani, 2014).

Genus: *Peridesmia* Förster, 1856**94. *Peridesmia discus* Walker, 1835***

Host: Unknown.

Distribution in Iran: East-Azərbayjan province (Lotfalizadeh & Gharali, 2008).

Genus: *Pseudocatolaccus* Masi, 1908**95. *Pseudocatolaccus aragonensis* Askew, 2001**

Host: Unknown.

Distribution in Iran: Khorasan Razavi province (Hasani, Mitroiu & Madjdzadeh, 2011).

96. *Pseudocatolaccus nitescens* (Walker, 1834)*

Host: Unknown.

Distribution in Iran: East-Azərbayjan province (Lotfalizadeh & Gharali, 2008).

Genus: *Psychophagus* Mayr, 1904**97. *Psychophagus omnivorus* (Walker, 1835)**

Host: *Hyphantria cunea* Drury, 1773 (Lep.: Arctiidae) (Rezaei, Moharrampour & Talebi, 2003).

Distribution in Iran: Caspian Sea coast (Rezaei, Moharrampour & Talebi, 2003).

Genus: *Pteromalus* Swederus, 1795**98. *Pteromalus albipennis* Walker, 1835***

Host: This species is reared from fruit flies (Dip.: Tephritidae) in safflower experimental field (Lotfalizadeh & Gharali, 2014).

Distribution in Iran: East-Azərbayjan and Chaharmahal-e Bakhtiari provinces (Lotfalizadeh & Gharali, 2014).

99. *Pteromalus bedeguaris* (Thomson, 1878)

Host: *Diplolepis mayri* Schlechtendal, 1876 and *Diplolepis fructuum* Rübsaamen, 1882

(Hym.: Cynipidae) (Lotfalizadeh, Rajabi & Madjdzadeh, 2012b).

Distribution in Iran: East-Azərbayjan (Lotfalizadeh & Gharali, 2008) and Kerman provinces (Lotfalizadeh, Rajabi & Madjdzadeh, 2012b).

100. *Pteromalus bifoveolatus* Förster, 1861

Host: Gregarious parasitoid of *Vespa orientalis* L., 1771 (Hym.: Vespidae) (Heidari *et al.*, 2004). Larval parasitoid of *Malocosoma castrense* L., 1758 (Lep.: Lasiocampidae) (Lotfalizadeh & Gharali, 2008).

Distribution in Iran: Alborz province (Heidari *et al.* 2004).

101. *Pteromalus chlorospilus* (Walker, 1834)*

Host: This species is considered as parasitoid of *Oxystoma ochropus* Germar, 1818 (Col.: Brentidae) which is associated with grass pea (*Lathyrus sativa* L.) (Hashemi & Lotfalizadeh, 2014).

Distribution in Iran: Ardabil province (Hashemi & Lotfalizadeh, 2014).

102. *Pteromalus puparum* Linnaeus, 1758

Host: *Pieris brassicae* L. (Lep.: Pieridae) and *Papilio demoleus* L., 1758 (Lep.: Papilionidae) (Farid, 1987; Razmi, Karimpour & Safaralizadeh, 2011).

Distribution in Iran: Tehran (Davatchi & Chodjai, 1968), Urmia (Razmi, Karimpour & Safaralizadeh, 2011) Sistan- Baluchestan (Farid, 1987) and Khorasan Razavi provinces (Hasani & Madjdzadeh, 2012).

103. *Pteromalus sequester* Walker, 1835*

Host: Larval-pupal parasitoid of *Hyphenidium oculatum* Becker, 1913 (Dip.: Tephritidae) (Mohammadi-Khoramabadi *et al.* 2014).

Distribution in Iran: Yazd province (Mohammadi-Khoramabadi *et al.* 2014).

104. *Pteromalus veneris* Dalla Torre, 1898*

Host: *Megachila rotundata* Fabricius, 1787 (Mirabzadeh, 1989).

Distribution in Iran: Iran (no locality cited) (Mirabzadeh, 1989 as *P. venustus* Walker, 1835).

Genus: *Rhaphitelus* Walker, 1834**105. *Rhaphitelus maculatus* Walker, 1834***

Host: This species is reported as a parasitoid of xylophagous beetles and especially as an important agent in control of *Ruguloscolytus mediterraneus* Eggers, 1922 (Col.: Scolytidae) and *X. relexicauda* (Col.: Bostrychidae) in Iran (Lotfalizadeh & Khalghani, 2008).

Distribution in Iran: Markazi, Zanjan, Hamedan, Esfahan (Radjabi, 1991), East-Azarbaijan (Lotfalizadeh & Khalghani, 2008), Alborz and Ardabil provinces (Davatchi & Chodjai, 1968).

Genus: *Schizonotus* Ratzeburg, 1852**106. *Schizonotus sieboldi* Ratzeburg, 1848**

Host: *Melasoma populi* Linnaeus, 1758 (Col.: Chrysomelidae) (Lotfalizadeh & Ahmadi, 1998).

Distribution in Iran: Fars, Ilam (Lotfalizadeh & Gharali, 2008), Alborz provinces (Sadeghi & Askary, 2001).

Genus: *Spaniopus* Walker, 1833**107. *Spaniopus dissimilis* Walker, 1833***

Host: Unknown.

Distribution in Iran: Ilam province (Lotfalizadeh & Gharali, 2008).

108. *Spaniopus polypilus* Graham, 1956*

Host: Unknown.

Distribution in Iran: Ilam province (Lotfalizadeh & Gharali, 2008).

Genus: *Sphegigaster* Spinola, 1811**109. *Sphegigaster cuscatae* Ferrière, 1959**

Host: Unknown.

Distribution in Iran: Khorasan Razavi province (Hasani, Mitroiu & Madjdzadeh, 2011).

110. *Sphegigaster ineus* Mitroiu, 2008*

Host: *Phyllonorycter medicaginella* Gerasimor, 1930 (Lep.: Gracillariidae) (Lotfalizadeh, 2015).

Distribution in Iran: East-Azarbaijan province (Lotfalizadeh, Pourhaji & Zargaran, 2015).

111. *Sphegigaster mutica* Thomson, 1878*

Host: Unknown. This species was swept on *Trifolium* sp. in Kordestan province (Dehdar & Madjdzadeh, 2016).

Distribution in Iran: Kordestan province (Dehdar & Madjdzadeh, 2016).

112. *Sphegigaster nigricornis* Nees, 1834*

Host: Unknown.

Distribution in Iran: East-Azarbaijan and Ilam provinces (Lotfalizadeh & Gharali, 2008).

113. *Sphegigaster orobanchiae* Kurdjumov, 1912

Host: Agromyzidae (Dip.) (OILB, 1971).

Distribution in Iran: Unknown.

114. *Sphegigaster persiana* Mitroiu & Madjdzadeh, 2011

Host: Unknown.

Distribution in Iran: Kerman province (Mitroiu, Abolhassanzadeh & Madjdzadeh, 2011).

115. *Sphegigaster truncata* Thomson, 1878

Host: Unknown

Distribution in Iran: Kerman province (Mitroiu, Abolhassanzadeh & Madjdzadeh, 2011).

Genus: *Stenetra* Masi, 1931**116. *Stenetra* sp.***

Host: Reared from seeds of *Sphora alopecuroides* Linnaeus, 1753 (Lotfalizadeh & Gharali, 2008).

Distribution in Iran: Qazvin province (Lotfalizadeh & Gharali, 2008).

Genus: *Stenomalina* Ghesquière, 1946**117. *Stenomalina* cf. *iera* (Walker, 1844)***

Host: Unknown

Distribution in Iran: Khorasan Razavi province (Hasani & Madjdzadeh, 2012).

Genus *Stenoselma* Delucchi, 1956**118. *Stenoselma nigrum* Delucchi, 1956**

Host: Reared from Buprestidae and Curocolionidae (Coleoptera), Cynipidae (Hymenoptera), Sesiidae (Lepidoptera) (Noyes, 2016).

Distribution in Iran: Kordestan province (Nazemi Rafie, Alipanah & Lotfalizadeh, 2011; Dehdar & Madjdzadeh, 2013).

Genus: *Syntomopus* Walker, 1833

119. *Syntomopus incisus* Thomson, 1878*

Host: Unknown.

Distribution in Iran: Ilam province (Lotfalizadeh & Gharali, 2008).

Genus: *Thureonella* Gijswijt, 1990

120. *Thureonella* sp.*

Host: Unknown

Distribution in Iran: Ilam province (Lotfalizadeh & Gharali, 2008).

Genus: *Trichomalus* Thomson, 1878

121. *Trichomalus campestris* Walker, 1834*

Host: Apionidae (Col.) (Lotfalizadeh & Gharali, 2008).

Distribution in Iran: East-Azərbayjan province (Lotfalizadeh & Gharali, 2008).

122. *Trichomalus rufinus* Walker, 1835*

Host: Unknown.

Distribution in Iran: East-Azərbayjan province (Lotfalizadeh & Gharali, 2008).

Genus: *Trychnosoma* Graham, 1957**

123. *Trychnosoma punctipleura* (Thomson, 1878)**

Material examined: IRAN, Qazvin province, Qazvin, summer 2010, Pan trap, (H. Lotfalizadeh), 1♀.

Comments: *Trychnosoma punctipleura* is parasitoid of Curculionidae (Col.) in Europe (Noyes, 2016). This is new record of genus and species from Iran.

Distribution in Iran: Qazvin province (new record for Iran).

Genus: *Urolepis* Walker, 1846

124. *Urolepis maritima* Walker, 1834

Host: *Ephydra afganica* (Dahl, 1981) (Dip.: Ephydridae), Agromyzidae, Anthomyiidae, Coelopidae, Ephydridae, Muscidae, Piophilidae, Sarcophagidae, Sepsidae and Syrphidae (Lotfalizadeh & Gharali, 2008).

Distribution in Iran: Mazandaran, Fars (Lotfalizadeh & Gharali, 2008), Tehran and Esfahan provinces (Gibson, 2000).

Subfamily 9. Spalangiinae

Genus: *Spalangia* Latreille, 1805

125. *Spalangia endius* Walker, 1839*

Host: *Musca domestica* Linnaeus, 1758 (Behbahani, Tirgary & Ghasemi, 1995).

Distribution in Iran: Iran (no locality cited) (Behbahani, Tirgary & Ghasemi, 1995).

126. *Spalangia nigroaenea* Curtis, 1839*

Host: Muscidae, Calliphoridae and Sarcophagidae (Lotfalizadeh & Gharali, 2008).

Distribution in Iran: East-Azərbayjan province (Lotfalizadeh & Gharali, 2008).

127. *Spalangia rugulosa* Förster, 1850**

Material examined: IRAN, East-Azərbayjan province, Marand, 28-VII-2007, Malaise trap, (H. Lotfalizadeh), 1♀ and 1♂.

Comments: This species has been reported as parasitoid of Muscidae (Diptera) from Europe (Noyes, 2016). Three species of the subfamily Spalangiinae has been reported from Iran (Lotfalizadeh & Gharali, 2008) but *S. rugulosa* is new record for Iran.

Distribution in Iran: East-Azərbayjan province (new record for Iran).

128. *Spalangia subpunctata* Förster, 1850*

Host: Syrphidae (*Syrietta pipiens* Linnaeus, 1758) and Otitidae (*Physiphora demandata* Fabricius, 1798) (Lotfalizadeh & Gharali, 2008). House fly pupae (Iranpour, Tirgary & shayeghi, 1991).

Distribution in Iran: East-Azərbayjan (Lotfalizadeh & Gharali, 2008), Alborz, Chaharmahal-e Bakhtiari and Hormozgan provinces (Iranpour, Tirgary & shayeghi, 1991).

Subfamily 10. Sycoryctinae

Genus: *Philotrypesis* Förster, 1878

129. *Philotrypesis caricae* (Linnaeus, 1762)*

Host: This species is cleptoparasitoid of the fig wasp, *Blastophaga psenes* Linnaeus, 1758 (Lotfalizadeh, Hosseini & Rasplus, 2014).

Distribution in Iran: Fars province (Lotfalizadeh, Hosseini & Rasplus, 2014).

Discussion

The provided checklist presents 129 species to Iran. One genus, *Trychnosoma* and four species, *Chalcedectus sinaiticus*, *Systasis ephedrae*, *Trychnosoma punctipleura* and *Spalangia rugulosa* are recorded for the first time for pteromalid fauna of Iran. Number of the genera and species of the above mentioned subfamilies in Iran are compared with these numbers in the world represented in Table 1. Iranian fauna of Pteromalidae belongs to 11.5% and 3.6% of the world known genera and species, respectively. The subfamily Pteromalinae is the most abundant subfamily while the subfamily Spalangiinae is the least abundant.

Iran constitutes a large part of the Iranian plateau. It covers an area of 1,623,779 km which is located between the

eastern Mediterranean area and the Oriental region, and contains elements of different fauna so the diverse topography and climate of Iran, from cool and humid mountains to hot and dry deserts, makes the country well suited ecologically for taxonomic studies (Zehzad, Kiabi & Madjnoonian, 2002). Local insects faunistic studies are of considerable importance in obtaining information that will help researchers to maintain, discover and protect the natural environment (Mitroiu, Abolhassanzadeh & Madjdzadeh, 2011). It is evident that the present survey should be considered as an important effort in this direction and add new records which expand our knowledge on faunal diversity of Iran. Apparently the pteromalid fauna of Iran is richer and needs more investigations and samplings in different regions of the country.

Table 1. Number of genera and species of the subfamilies of Pteromalidae in Iran in comparison to the world.

| Subfamily | Number of Genera | | Number of Species | |
|-----------------|------------------|-----------|-------------------|------------|
| | World | Iran | World | Iran |
| Asaphinae | 6 | 1 | 29 | 2 |
| Cerocephalinae | 14 | 1 | 43 | 2 |
| Cleonyminae | 42 | 6 | 284 | 7 |
| Colotrechninae | 20 | 1 | 42 | 1 |
| Eunotinae | 23 | 3 | 91 | 3 |
| Miscogasterinae | 36 | 3 | 340 | 11 |
| Ormocerinae | 42 | 1 | 179 | 7 |
| Pteromalinae | 317 | 44 | 2319 | 91 |
| Spalangiinae | 2 | 1 | 67 | 4 |
| Sycoryctinae | 11 | 1 | 151 | 1 |
| Total | 513 | 62 | 3545 | 129 |

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Conflict of Interests

The authors declare that there is no conflict of interest regarding the publication of this paper.

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لیست به روز شده زنبورهای خانواده Pteromalidae (Hym.: Chalcidoidea) در ایران به همراه چند گزارش جدید

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چکیده: لیست به روز شده ۱۲۹ گونه از ۶۲ جنس متعلق به ۱۰ زیرخانواده از خانواده Pteromalidae (Hym.: Chalcidoidea) ایران ارایه شده است. جنس *Systasis ephedrae* Dzhankmen, و سه گونه *Trychnosoma* Graham, 1957، *Spalangia rugulosa* و *Trychnosoma punctipleura* Thomson, 1878، 1982 برای اولین بار برای فون ایران گزارش می‌شوند. میزبان‌ها و اطلاعات پراکنش این گونه‌ها در ایران ارایه شده‌اند.

واژگان کلیدی: کاتالوگ، پراکنش، میزبان‌ها، ایران، گزارش‌های جدید، Pteromalidae