



Entomofauna

ZEITSCHRIFT FÜR ENTOMOLOGIE

Band 32, Heft 22: 329-336

ISSN 0250-4413

Ansfelden, 29. April 2011

Check-list of Iranian Platygasteridae (Hymenoptera, Platygastroidea)

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Abstract

In this paper a check-list of Iranian Platygasteridae (Hymenoptera, Platygastroidea) is given. The list is based on a detailed study of all available published data, as well as on new records. A total of 17 species from 7 genera (*Allotropia* FOERSTER, *Amitus* HALDEMAN, *Isolia* FOERSTER, *Inostemma* HALIDAY, *Metanopedias* BRUES, *Platygaster* LATREILLE and *Synopeas* FOERSTER) are presented. Of these *Allotropia mecrida* (WALKER) is a new record for Iran. Additionally, synonyms, host records and general distribution are given.

Zusammenfassung

Vorliegende Arbeit behandelt das Vorkommen der Platygasteridae (Hymenoptera, Platygastroidea) im Iran. Die Auswertung vorhandener Literatur wie auch die Bearbeitung neuen Materials ergaben 17 Arten aus 7 Gattungen (*Allotropia* FOERSTER, *Amitus* HALDEMAN, *Isolia* FOERSTER, *Inostemma* HALIDAY, *Metanopedias* BRUES, *Platygaster* LATREILLE und *Synopeas* FOERSTER). *Allotropia mecrida* (WALKER) erwies sich als neu für die iranische Fauna.. Synonyme, Angaben zu Wirtstieren sowie zur Verbreitung vervollständigen die Arbeit.

Introduction

The Platygastroidea comprises two families of parasitoids, Scelionidae and Platygasteridae, and nearly 4500 described species, of these 1153 in Platygasteridae, but several thousand further species are thought to exist. They parasitize a diverse array of insects as well as spiders (AUSTIN et al. 2005). The majority of species in Platygasteridae (all Platygasterinae) attack gall flies (Diptera, Cecidomyiidae), ovipositing either in the egg or early larva of the host and completing their development in the larvae (egg-larval or egg-pupal parasitoids). Some of the platygasterids are powerful parasitoids of whiteflies and mealybugs (Homoptera). Species of *Amitus* parasitize Aleyrodidae, and those of *Allotropa* are probably the dominant parasitoids of *Pseudococcus* in Asia (MASNER & HUGGERT 1989; GERLING 1990; WHARTON 1993). But the information available indicates that several basal lineages of Platygasteridae are also endoparasitoids of eggs, largely of Coleoptera. Most biological information comes from a few studies on Holarctic species of *Platygaster* and *Inostemma* (Platygasterinae) that are solitary koinobionts in cecidomyiid hosts. These taxa oviposit into eggs or newly emerged larvae, but development is delayed until the host larva is almost fully grown. In at least some cases the parasitoid develops preferentially in particular host tissues, such as brain, nerve cord, and gut. Few species are gregarious within their host, and polyembryony has been confirmed for only one species, *Platygaster zosine* (LEIBY 1924; HILL & EMERY 1937; MASNER 1995; STRAND & GRBIC 1997), a parasitoid of the Hessian fly. The biology of the Sceliotrachelinae is even less known than that of the Platygasterinae. The genera that parasitize coleopteran eggs and Fulgoroidea are solitary idiobiont endoparasitoids and are thought to develop in a way similar to that of scelionids (MASNER 1995). Most appear to be solitary, but at least one species of *Allotropa* is gregarious in a mealybug host (AUSTIN et al. 2005).

The fauna of Iranian Platygasteridae was poorly studied (GHAHARI et al. 2004, 2006; SAKENIN et al. 2008a, b, c; EBRAHIMI 2008, SAMIN et al. 2010), therefore the present research was conducted for collecting and presenting all the data on this taxon as a check-list.

Materials and Methods

The published data on family Platygasteridae in Iran is summarized. The checklist comprises the following data: the valid taxa name, published records with provincial distribution, synonyms, host data and general distribution. Iranian provinces are given in alphabetical order in the lists. The classification of subfamilies follows VLUG (1985, 1995), MASNER & HUGGERT (1989) and BUHL (2001).

Results

So far a total of 17 species from 7 genera and 2 subfamilies of Platygasteridae have been determined from the fauna of Iran. The list of species with other data, including synonyms, hosts in the world and general distribution are given as below.

Family Platygastriidae (WESTWOOD 1840)

Subfamily Sceliotrachelinae BRUES 1908

Genus Allotropa FOERSTER 1856

***Allotropa mecrida* (WALKER 1835)**

Material examined: Iran (Unknown locality), 2 specimens, det. P.N. Buhl. New record for Iran.

Host in the world: *Planacoccus citri* (RISSO) on *Ficus carica* L. and *Vitis vinifera* L., Pseudococcid on *Betula nana* L., *Paroudablis piceae* LOEW on *Picea* sp., *Phenacoccus aceris* SIGN., *Spinococcus calluneti* LINDGR., *Spilococcus nanae* SCHMUTTERER, *Trionymus perrisii* SIGN.

General distribution: Palaearctic.

Genus Amitus HALDEMAN 1850

***Amitus fuscipennis* MCGOWN & NEBEKER 1978**

Iranian record: GHAHARI et al. 2006.

Host in Iran: *Trialeurodes lauri* (SIGNORET), *Trialeurodes vaporariorum* WESTWOOD (Homoptera: Aleyrodidae).

Host in the world: *Trialeurodes abutiloneus* HALDEMAN, *Trialeurodes vaporariorum* (WESTWOOD) on *Conyza* sp., *Parietaria* sp., *Sonchus* sp. and *Urtica* sp.

Distribution in Iran: Golestan, Mazandaran.

General distribution: Holarctic.

***Amitus hesperidum* SILVESTRI 1927**

Iranian record: GHAHARI et al. 2004, 2006.

Host in Iran: *Aleurocanthus woglumi* ASHBY (Homoptera: Aleyrodidae).

Host in the world: *Aleurocanthus woglumi* ASHBY on *Citrus* spp., *Aleurocanthus citriperdus* QUAINANCE & BAKER, *Aleurocanthus spiniferus* (QUAINANCE).

Distribution in Iran: Mazandaran.

General distribution: Palaearctic.

***Amitus longicornis* (FOERSTER 1878)**

Synonym: *Zacrita longicornis* FOERSTER 1878.

Iranian record: GHAHARI et al. 2004, 2006.

Host in Iran: *Aleurolobus wunni* (RYBERG) (Homoptera: Aleyrodidae).

Host in the world: *Aleurochiton aceris* (MODEER), *Aleurochiton complanatus* BAERENSPRUNG, *Aleurolobus wunni* (RYBERG), *Aleurolobus asari* WÜNN, *Asterobemisia carpini* (KOCH), *Bemisia silvatica* DANZIG, *Pealius quercus* (SIGNORET).

Distribution in Iran: Guilan.

General distribution: Palaearctic.

***Amitus minervae* SILVESTRI 1911**

Iranian record: GHAHARI et al. 2004, 2006; SAMIN et al. 2010.

Host in Iran: *Aleurochiton acerinus* HAUPT and *Aleurochiton aceris* MODEER (Homoptera: Aleyrodidae).

Host in the world: *Aleurolobus olivinus* (SILVESTRI), *Aleurolobus wumni* RYBERG on *Clematis vitalba* L., *Aleurochiton aceris* (MODEER) on *Acer platanoides* L.

Distribution in Iran: Guilan.

General distribution: Palaearctic.

***Amitus spiniferus* BRÈTHES 1914**

Synonym: *Passalida spiniferus* BRÈTHES 1914, *Amitus blanchardi* DESANTIS 1941.

Iranian record: GHAHARI & HATAMI 2000; GHAHARI et al. 2006.

Host in Iran: *Aleurocanthus spiniferus* QUAINANCE (Homoptera: Aleyrodidae).

Host in the world: *Aleurothrixus floccosus* (MASKELL).

Distribution in Iran: Isfahan.

General distribution: Holarctic.

Genus *Isolia* FOERSTER 1878

***Isolia foersteri* SZABO 1959**

Iranian record: SAKENIN et al. 2008a.

Distribution in Iran: Semnan.

General distribution: Palaearctic.

Subfamily Platygastriinae HALIDAY 1833

Genus *Inostemma* HALIDAY 1833

***Inostemma hyperici* DEBAUCHE 1947**

Iranian record: SAKENIN et al. 2008a, b.

Host in the world: Collected in the flowers of *Hypericum* L.

Distribution in Iran: Mazandaran.

General distribution: Palaearctic.

***Inostemma mediterraneum* (KIEFFER 1916)**

Synonym: *Brachinostemma mediterraneum* KIEFFER 1916.

Iranian record: SAKENIN et al. 2008c; SAMIN et al. 2010.

Host in the world: *Stefaniella atriplicis* KIEFFER on *Atriplex halimus* L.

Distribution in Iran: East Azarbayjan.

General distribution: Palaearctic, Ethiopia.

***Inostemma reticulatum* SZELENYI 1938**

Iranian record: SAKENIN et al. 2008a.

Host in the world: *Dasineura brassicae* (WINNERTZ) on *Brassica* sp.

Distribution in Iran: Golestan.

General distribution: Palaearctic.

Genus *Metanopedias* BRUES 1910

***Metanopedias lasiopterae* (KIEFFER 1916)**

Synonym: *Disynopeas lasiopterae*, *Metanopedias britannicus* JACKSON 1966.

Iranian record: SAKENIN et al. 2008a.

Host in the world: *Lasioptera graminicola* KIEFFER on *Calamagrostis lanceolata* ROTH.

Distribution in Iran: Mazandaran.

General distribution: Palaearctic.

Genus *Platygaster* LATREILLE 1809

***Platygaster demades* (WALKER 1835)**

Iranian record: SAMIN et al. 2010.

Material examined: East Azarbaijan province: Arasbaran, 778 m, 14 specimens, det. P.N. Buhl, October 2007.

Host in the world: *Dasineura mali* KIEFFER on *Malus* spp., *Wachtliella ericina* F. LÖW on *Erica carnea* L.

General distribution: Australian and Palaearctic.

***Platygaster laticeps* THOMSON 1859**

Iranian record: SAMIN et al. 2010.

Material examined: East Azarbaijan province: Arasbaran, 837 m, 1 specimen, det. P.N. Buhl, September 2007.

General distribution: Palaearctic.

***Platygaster oebalus* WALKER 1835**

Iranian record: SAKENIN et al. 2008a, b, c.

Host in the world: *Dasyneura spadicea* (RÜBSAAMEN) on *Vicia cracca* L.

Distribution in Iran: East Azarbaijan, Guilan, West Azarbaijan.

General distribution: Palaearctic.

***Platygaster oleae* SZELENYI 1940**

Iranian record: SAKENIN et al. 2008a.

Host in the world: *Dasineura oleae* LOEW.

Distribution in Iran: Mazandaran.

General distribution: Palaearctic.

***Platygaster pelias* (WALKER 1835)**

Synonym: *Platygaster apicalis* (THOMSON 1859), *Misocyclops ruborum* KIEFFER 1916, *Platygaster crevecoeuri* MANEVAL 1936.

Iranian record: SAKENIN et al. 2008a, b, c.

Host in the world: *Lasioptera rubi* HEEGER on *Rubus* sp.

Distribution in Iran: East Azarbayjan, Golestan, Isfahan.

General distribution: Palaearctic.

Genus *Synopeas* FOERSTER 1856

***Synopeas tarsa* (WALKER 1835)**

Iranian record: EBRAHIMI 2008.

Distribution in Iran: Hormozgan.

General distribution: Palaearctic.

Discussion

This research and also several samplings by the first author and other researchers indicate that there is a diverse fauna of Platygastridae in different regions of Iran, but this interesting family has been poorly studied. Iran is a large country incorporating various geographical regions and climates (fig. 1). Therefore it is expected that a diverse fauna of these beneficial insects remain to be discovered. In addition, the biology and hosts of these cosmopolitan and efficient parasitoids are unknown both in Iran and the world.

Acknowledgements

We are thanks to Dr. N.F. Johnson of USA and L. Masner of Canada for sending the necessary papers. The research was supported by Shahre Rey Islamic Azad University.

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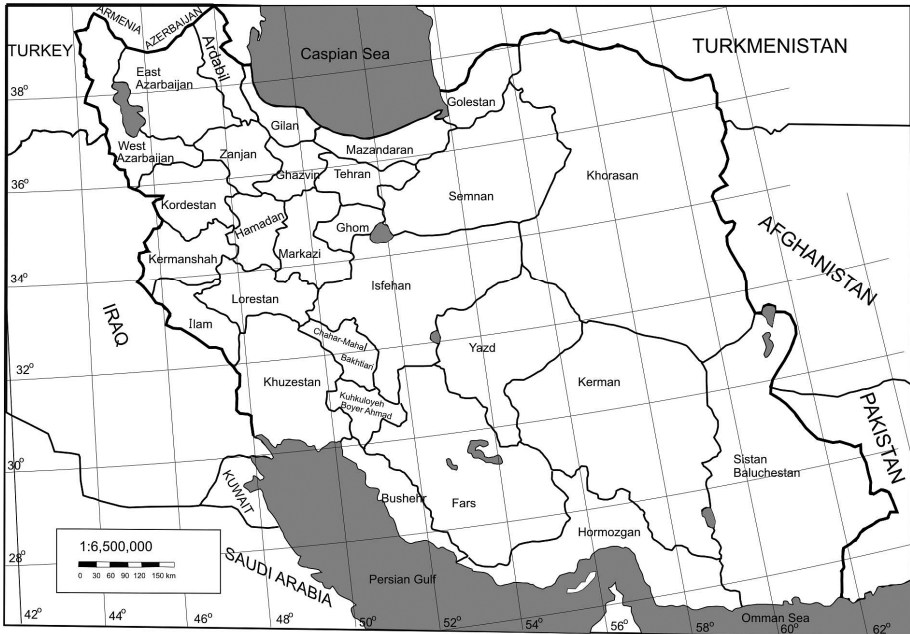


Fig. 1: Map of Iran with boundaries of provinces.

Druck, Eigentümer, Herausgeber, Verleger und für den Inhalt verantwortlich:

Maximilian SCHWARZ, Konsulent f. Wissenschaft der Oberösterreichischen Landesregierung, Eibenweg 6, A-4052 Ansfelden, E-Mail: maximilian.schwarz@liwest.at.

Redaktion: Erich DILLER, ZSM, Münchhausenstraße 21, D-81247 München;
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Jahr/Year: 2011

Band/Volume: [0032](#)

Autor(en)/Author(s): Ghahari Hassan, Buhl Peter Neerup

Artikel/Article: [Check-list of Iranian Platygastriidae \(Hymenoptera, Platyastroidea\) 329-336](#)