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A checklist of Platygastridae and Scelionidae (Hymenoptera, Platygastroidea) of Iran

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ABSTRACT. Iranian species of the superfamily Platygastroidea (Hymenoptera) belonging to two families Platygastridae, (12 genera, 35 species) and Scelionidae (13 genera, 46 species), are reviewed. The recorded platygastroid species from Iran represent a very small assemblage of the world fauna, and certainly not the complete list from Iran. Except for a few recently described species, the others are found in many other countries as well. The known distribution for 27 species (77.1%) of Platygastridae of Iran is restricted to the Palaearctic region, while a smaller percentage was found in the Afrotropical (14.3%) and Nearctic (8.6%) regions. The distributions of 77.8% of Iranian scelionids are strictly Palaearctic, while the remaining scelionids were found also in the Nearctic (11.1%), Oriental (11.1%), Afrotropical (8.9%), Australasian (2.2%) and Neotropic regions (2.2%). Considering the sporadic treatment of platygastroids in Iran, it is evident that major parts of the country, including the eastern third, remain unexplored.

Key words: Distribution, fauna, egg parasitoids, biological control.

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INTRODUCTION

Platygastroidea (Hymenoptera, Proctotrupomorpha) contains about 6,500 valid species belonging to 264 genera. It is the third largest superfamily of parasitoid Hymenoptera after Ichneumonoidea and Chalcidoidea, and its true diversity is estimated at around 10,000 species (Masner, 1993; Johnson, 2013). It comprises seven extant families (Chen et al., 2021), the result of an intensive analysis following years of instability in the higher classification (Sharkey, 2007; McKellar & Engel, 2012; Talamas et al., 2019). Most species belong to Platygastridae, and Scelionidae, and these are the only taxa known from Iran. Scelionidae is a diverse group of egg parasitoids with about 4,000 described species belonging to 167

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genera and are associated with nine orders of insects (Odonata, Orthoptera, Mantodea, Embiidina, Hemiptera, Coleoptera, Neuroptera, Lepidoptera and Diptera) as well as spiders (Muesebeck, 1979). Masner and Huggert (1989) revised Platygastridae to include only Platygastrinae and Sceliotrachelinae. They considered Inostemmatinae to be a symplesiomorphic assemblage and transferred its genera into the remaining two subfamilies. The great majority of platygastrids are larval or egg-larval parasitoids of gall midges (Diptera, Cecidomyiidae) (Masner & Huggert, 1989; Murchie et al., 1999). Others are nymphal parasitoids of sternorrhynchous Hemiptera (Aleyrodidae), with a small number as egg parasitoids of beetles and planthoppers (Auchenorrhynchous Hemiptera). Sparasionidae is a much smaller family, containing five extant genera, of which only *Sparasion* Latreille is known from the Palaearctic region.

Many species of both Scelionidae and Platygastridae are known to be natural enemies of invasive or noxious pest species of economic importance (Orr, 1988; Clarke, 1990; Radjabi, 2000; Hernández-Suárez et al., 2003; Abbasipour, 2004; Ogah et al., 2010; Tillman, 2011; Abram et al., 2012). Several attempts have been made for biological control of insect pests through introduction (Waterhouse, 1998; Ehler, 2002; Abram et al., 2020; Conti et al., 2021) and augmentation (Sharififar, 2000; Askarianzadeh et al., 2008; Khan et al., 2014; Abdi et al., 2015; Forouzan et al., 2018, 2020) of scelionids, as well as the surveys to find methods for their conservation (Safavi, 1960, 1973; Radjabi, 2000; Amir-Maafi et al., 2002; Jamshidnia et al., 2010; Sayadmansour et al., 2009). To a lesser extent, species of Platygastridae have also been candidates for conservation biological control programs (Chavalle et al., 2015, 2018; McLennan, 2021; Abram et al., 2022). Some scelionids are known to attack the eggs of predatory insects, e.g., *Chrysoperla carnea* (Stephens, 1836) (Neuroptera, Chrysopidae) (Shahpouri Arani et al., 2005) and *Podisus maculiventris* (Say, 1832) (Hemiptera, Pentatomidae) (Allahyari et al., 2004) and have thus been considered hampering agents that may disrupt the effectiveness of a biological control program.

Considering the importance of scelionids in biological control, a study of their faunistics in Iran has started to provide background data on their occurrence and ecology, especially as it relates to taxa associated with the insect orders Hemiptera (Alexandrov, 1947a, 1947b; Vaezi, 1950, Safavi, 1973, Radjabi & Amir-Nazari, 1989; Radjabi, 1994, 2000, 2001; Iranipour & Johnson, 2010; Shafaei et al., 2011; Mehrnejad, 2013; Mohammadpour et al., 2015, 2016; Ranjbar et al., 2021), Lepidoptera (Abbasipour et al., 1991; Abbasipour, 2004; Jamshidnia et al., 2010; Jamshidnia & Sadeghi, 2014), and Orthoptera (Khajehzadeh, 2002, 2004; Khajehzadeh & Ghazavi, 2000; Khajehzadeh & Azmayeshfard, 2005). A few species records have been documented from sporadic faunistic studies in Iran (Iranipour et al., 1998; Noori et al., 2003; Shahpouri Arani et al., 2005; Rakhshani et al., 2008; Shamsi et al., 2014a, 2014b, 2015a, 2015b; Lotfalizadeh et al., 2016; Lotfalizadeh, 2018). However, considering the size and habitat diversity of Iran, relatively little is known about its platygastroid fauna. The cause of this has its roots both within and outside of the country. Generally speaking, the taxonomy of platygastroids in the Palaearctic region is plagued by the "superficial description impediment" (sensu Meier et al., 2021) in which the descriptions of species are insufficient to diagnose them. The remedy involves time-consuming revisionary work that requires the examination and characterization of primary type species. When such taxonomic rigor is not employed, species are often diagnosed in comparison to centuries-old descriptions that are unreliable at best. The taxonomy of *Trissolcus* (Scelionidae) provides a recent example that exemplifies the depth of the problem. In the revision of this genus by Talamas et al. (2017), more than half of the names in the Palaearctic region were treated as junior synonyms, and numerous species were found to be present across the Palaearctic land mass. For genera that have never been thoroughly revised in the Palaearctic, and for which many primary types have not been examined, this work must be done so that proper name usage is established. Very little was studied regarding the fauna of Platygastridae of Iran (Ghahari & Hatami, 2000; Fallahzadeh et al., 2007; Ebrahimi, 2008; Ghahari & Buhl, 2011; Buhl, 2015b) until recent faunistic and taxonomic works in northwestern provinces revealed the presence of many species of Platygastridae, including new taxa (Lotfalizadeh, 2018; Asadi-Farfar et al., 2016, 2017, 2019, 2020a, 2020b, 2021a, 2021b).

Though the above-mentioned contributions significantly increased the knowledge of the fauna of Iranian Platygastroidea, recent compilations of species records in Iran (Iranipour, 2021) reflect only a discrete and small assemblage of the playgastroid species compared to the vast habitat and ecological variation in Iran. One major issue preventing the initiation of robust programs for biological pest control and insect conservation is the lack of adequate and reliable faunistic data both in the local sense and regarding broader biogeography. This review is an attempt to summarize the available data on Platygastroidea of Iran, supplemented with taxonomic considerations, biogeographical data and a faunistic analysis.

MATERIAL AND METHODS

All available published records on the occurrence of species of Platygastroidea (Platygastridae and Scelionidae) from Iran are compiled. Data about the general and provincial distribution of each species were harvested from the relevant literature. These data are presented directly and also used for the faunistic comparisons in the discussion of biogeography. Distribution maps for the species of Scelionidae and Platygastridae that occurred in Iran were generated by province. Classification and nomenclature of the Platygastridae and Scelionidae followed Masner and Huggert (1989) and Chen et al. (2021), respectively. Wherever accessible, the taxonomic history (original descriptions) and the depositories for the type specimens of the recorded species are provided, indicated by the following acronyms: **BMNH** – The Natural History Museum, London, UK; **CNC** – Canadian National Collection, Ottawa, Canada; **DABH** – Department of Applied Biology, University of Helsinki, Finland; **FSCA** – Florida State Collection of Arthropods, Gainesville, Florida, USA; **HMIM** - Hayk Mirzayans Insect Museum, Iranian Research Institute of Plant Protection, Tehran, Iran; **HNHM** – Hungarian Natural History Museum, Budapest, Hungary; **MNHN** – Muséum National d'Histoire Naturelle, Paris, France; **MRSN** – Museo Regionale di Scienze Naturali di Torino, Italy; **MZLU** – Zoological Museum, Lund University, Sweden; **MSNG** – Natural History Museum, Genova Italy "Giacomo Doria"; **NHMW** – Naturhistorisches Museum in Vienna, Austria; **NHRS** – Naturhistoriska Riksmuseet, Entomology, Stockholm, Sweden; **NMEG** – Naturkundemuseum Erfurt, Erfurt, Germany; **NMINH** – National Museum of Ireland, Dublin; **NPC-IARI** – National Pusa Collection, Indian Agricultural Research Institute, New Delhi, India; **OXUM** – Oxford University Museum of Natural History, Oxford, England; **USNM** – United States Museum of Natural History, Washington D.C., USA; **ZISP** – Zoological Institute of the Russian Academy of Sciences, Saint Petersburg, Russia and **ZMUC** – Zoologiske Museum, Copenhagen, Denmark.

RESULTS

Taxonomic hierarchy

Class Insecta Linnaeus, 1758

Order Hymenoptera Linnaeus, 1758

Superfamily Platygastroidea Haliday, 1833

Family Platygastridae Haliday, 1833

Subfamily Platygastrinae Haliday, 1833

Genus *Inostemma* Haliday, 1833

Inostemma Haliday, 1833:270. Type species: *Psilus boscii* Jurine, 1807.

Inostemma contariniae (Szelenyi, 1938)

Inostemma contariniae Szelenyi, 1938:121, Holotype ♀. – HNHM.
https://zenodo.org/record/7640591#.Y-utM3bMJaQ

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2020a).

Zoogeographical distribution. Nearctic (Canada - Greathead & Greathead, 1992), Palaearctic (Austria - Greathead & Greathead, 1992; Finland - Koponen & Huggert, 1982, Silfverberg, 1986, Buhl, 2004c; Italy - Greathead & Greathead, 1992; Netherlands - Carl, 1980; Romania - Fabritius & Grellmann, 1971, Popovici & Fabritius, 2007; Denmark - Buhl, 1999).

Inostemma discessus (Szelenyi, 1939)

Inocerota discessus Szelenyi, 1939:121, Holotype ♀. – HNHM.
https://zenodo.org/record/7640604#.Y-uuEHbMJaQ

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2020a).

Zoogeographical distribution. Palaearctic (Romania - Fabritius & Grellmann, 1971, Popovici & Fabritius, 2007; Hungary, Russia - Fabritius & Grellmann, 1971, Kozlov, 1978).

Inostemma koponeni Buhl, 2005

Inostemma koponeni Buhl, 2005:75, Holotype ♀. – DABH.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2020a).

Zoogeographical distribution. Palaearctic (Finland, Poland - Buhl, 2005).

Genus *Metaclisis* Förster, 1856

Metaclisis Förster, 1856:106, 109. Type species: *Metaclisis areolatus* Förster, 1856.

Metaclisis iranica Buhl, 2019

Metaclisis iranica Buhl, 2019:3, Holotype ♀. – NMEG.

Distribution in Iran. Kohgiluyeh & Boyerahmad (Buhl, 2020).

Zoogeographical distribution. Iran.

Genus *Leptacis* Förster, 1856

Leptacis Förster 1856: 107. Type species: *Ichneumon tipulae* Kirby, 1798.

Leptacis laodice (Walker, 1835)

Platygaster laodice Walker, 1835:211, Lectotype ♀. – NMINH.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2016).

Zoogeographical distribution. Afrotropical (United Arab Emirates - Timokhov, 2019a), Palaearctic (Finland - Koponen et al., 2016, Buhl & Koponen, 2003c; Georgia - Timokhov, 2019a; Germany - Buhl et al., 2016b; Ireland (Buhl & O'Connor, 2008, O'Connor et al., 2004; Isle of Man - Buhl & Bennett, 2009; North Korea –Timokhov, 2019b; Russia - Timokhov, 2019a; South Korea - Timokhov, 2019b; United Kingdom - Walker, 1835, Buhl & Notton, 2009).

Leptacis ozines (Walker, 1835)

Platygaster ozines Walker, 1835:230–231, Lectotype ♂. – NMINH.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Palaearctic (Germany - Buhl et al., 2016b; Ireland - O'Connor et al., 2004; Isle of Man - Buhl & Bennett, 2009; Latvia - Buhl, 2016; North Korea - Buhl, 2006b; United Kingdom - Walker, 1835, Notton, 2008, Buhl & Notton, 2009).

Leptacis vlugi Buhl, 1997

Leptacis vlugi Buhl, 1997:455, Holotype ♀. – ZMUC.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Palaearctic (Canary Islands - Buhl & Koponen, 2003b; Denmark - Buhl, 1997; Buhl, 1999; Finland - Buhl, 2005; Germany - Buhl et al., 2016b; Ireland - Buhl & O'Connor, 2010; Isle of Man - Buhl et al., 2016a, Buhl & Bennett, 2009; Latvia - Buhl, 2016; Madeira - Buhl & Koponen, 2003b; Poland - Buhl & Jałoszyński, 2017; Portugal, Spain - Buhl & Koponen, 2003b; United Kingdom - Buhl & Notton, 2009).

Genus *Piestopleura* Förster, 1856

Piestopleura Förster, 1856:144. Type species: *Platygaster catillus* Walker, 1835.

Piestopleura iranica Asadi & Buhl, 2021

Piestopleura iranica Asadi & Buhl, 2021:7, Holotype ♂. – HMIM.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021b).

Zoogeographical distribution. Iran.

Genus *Platygaster* Latreille, 1809

Platygaster Latreille, 1809:31. Type species: *Scelio ruficornis* Latreille, 1805.

Platygaster arabica Buhl, 2007

Platygaster arabica Buhl, 2007:331, Holotype ♀. – ZMUC.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Afrotropical (United Arab Emirates - Buhl, 2007), Palaearctic (Iran).

Platygaster azarbaijanica Buhl & Asadi, 2021

Platygaster azarbaijanica Buhl & Asadi, 2021:31, Holotype ♀. – HMIM.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Iran.

Platygaster breviscapa Buhl, 2009

Platygaster breviscapa Buhl, 2009:68, Holotype ♀. – BMNH.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Palaearctic (Croatia - Buhl, 2009; Buhl et al., 2016a; Finland - Koponen et al., 2016; United Kingdom – Buhl & Notton, 2009, Buhl et al., 2016a).

Platygaster dryope Walker, 1836

Platygaster dryope Walker, 1835:266, Lectotype ♀ [♂]. – BMNH.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Palaearctic (Ireland - Walker, 1835; Isle of Man - Buhl & Bennett, 2009, Buhl et al., 2016a; Denmark - Buhl, 1999, 2006a; Finland - Koponen et al., 2016; Germany - Buhl et al., 2016b; Poland - Buhl & Jałoszyński, 2017).

Platygaster gladiator Zetterstedt, 1838

Platygaster gladiator Zetterstedt, 1838, Lectotype ♀. – MZLU.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Palaearctic (British Isles - Buhl & Notton, 2009, Murchi et al., 1999;

Denmark - Buhl, 1999, Buhl, 2006a; Finland - Koponen et al., 2016; Norway - Vlug, 1995).

Platygaster harteni Buhl, 2007

Platygaster harteni Buhl, 2007:334, Holotype ♀. – ZMUC.

Distribution in Iran. East Azarbaijan, South Khorasan (Asadifarfar et al., 2021a); Fars (Buhl, 2015b).

Zoogeographical distribution. Afrotropical (United Arab Emirate - Buhl, 2015b), Palaearctic (Iran).

Platygaster karimpouri Asadi & Buhl, 2021

Platygaster karimpouri Buhl & Asadi, 2021:34, Holotype ♀. – HMIM.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Iran.

Platygaster lotfalizadehi Buhl & Asadi, 2021

Platygaster lotfalizadehi Buhl & Asadi, 2021:36, Holotype ♀. – HMIM.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Iran.

Platygaster nisus (Walker, 1836)

Platygaster nisus Walker, 1835:260, Lectotype ♀. – NMINH.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Palaearctic (Canary Islands - Buhl & Koponen, 2003b; Germany - Buhl et al., 2016b; Ireland - Vlug, 1985; Isle of Man - Buhl & Bennett, 2009; Latvia - Buhl, 2016; Madeira - Buhl & Koponen, 2003b; Mongolia - Buhl & Choi, 2006; North Korea - Buhl, 2006b; Poland - Buhl & Jałoszyński, 2016; Portugal, Spain - Buhl & Aldrey, 2000, Buhl & Koponen, 2003b; South Korea - Buhl & Choi, 2006; Buhl & Jałoszyński, 2016; United Kingdom - Buhl & Notton, 2009).

Platygaster papei Buhl, 2007

Platygaster papei Buhl, 2007:335, Holotype ♀. – ZMUC.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Afrotropical (United Arab Emirates - Tourenq et al., 2009), Palaearctic (Iran - Asadi-Farfar et al., 2021a).

Platygaster rugosiceps Buhl, 1994

Platygaster rugosiceps Buhl, 1994:331, Holotype ♂. – ZMUC.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Palaearctic (Austria - Buhl, 1994; Denmark – Buhl, 1999, Buhl, 2006a; Finland - Buhl & Koponen, 2003c; Iberian Peninsula - Buhl & Nieves-Aldrey, 2000; North Korea, South Korea - Buhl & Choi, 2006; Spain - Buhl & Nieves-Aldrey, 2000; Sweden - Buhl, 1998a).

Genus *Synopeas* Förster, 1856

Synopeas Förster, 1856:108. Type species: *Synopeas inermis* Thomson, 1859.

Synopeas calecai Buhl & Asadi, 2021

Synopeas calecai Buhl & Asadi, 2021:42, Holotype ♀. – HMIM.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Iran.

Synopeas cryptus Buhl, 2004

Synopeas cryptus Buhl, 2004:143, Holotype ♀. – HNHM.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Palaearctic (Finland - Koponen et al., 2016; Mongolia - Buhl, 2004b).

Synopeas euryale (Walker, 1835)

Platygaster euryale Walker, 1835:229, Lectotype ♀. – NMINH.
https://zenodo.org/record/7442815#.Y5s9-IfMJaQ

Distribution in Iran. East Azarbaijan, West Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Palaearctic (Ireland - Buhl & Notton, 2009; Finland - Koponen et al., 2016; Germany - Buhl et al., 2016b; Lativa - Buhl, 2016; Poland - Buhl & Jaloszynski, 2017; Mongolia - Buhl, 2004b; North Korea, South Korea - Buhl & Choi, 2006; United Kingdom - Buhl et al., 2016b).

Synopeas inerme Thomson, 1859

Synopeas inermis Thomson, 1859:74, Lectotype ♀. – MZLU
https://www.flickr.com/photos/127240649@N08/40186879880/in/photolist-24ebgij-26YPBXi-24ebgfo-26YPC1z

Distribution in Iran. East Azarbaijan, Fars, West Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Palaearctic (Denmark - Buhl, 1999; Ireland - O'Connor & Buhl, 2016; Latvia- Buhl, 2016; Russia - Timokhov, 2019b; Spain, Poland - Buhl & Jałoszyński, 2016; United Kingdom - Buhl et al., 2016b).

Synopeas lugubre Thomson, 1859

Synopeas lugubre Thomson, 1859:74, Lectotype ♀. – MZLU.
https://www.flickr.com/photos/127240649@N08/41928288562/in/photolist-26T4rtb-24cj3x5-26T4rqW

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Palaearctic (Germany - Buhl et al., 2016b; Ireland - Buhl & O'Connor, 2009, Buhl et al., 2016a; Poland - Buhl & Jałoszyński, 2016; United Kingdom - Notton, 2008).

Synopeas pinnei Buhl, 2009

Synopeas pinnei Buhl, 2009:80, Holotype ♀. – ZMUC.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Palaearctic (Denmark - Buhl, 2018; Germany - Buhl, 2018, Buhl et al., 2016a, Buhl, 2018; Latvia - Buhl, 2016; Sweden - Buhl, 2018).

Synopeas rhanis (Walker, 1835)

Platygaster rhanis Walker, 1835:225–226, Lectotype ♀. – NMINH.
https://zenodo.org/record/7442827#.Y5s-3ofMJaQ

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021a).

Zoogeographical distribution. Palaearctic (Ireland - O'Connor et al., 2004, Buhl & Notton, 2009); Isle of Man - Buhl & Bennett, 2009; Latvia - Buhl, 2016; Mongolia - Buhl, 2004a; Poland - Buhl & Jaloszynski, 2017; South Korea - Buhl & Choi, 2006; United Kingdom - Walker, 1835).

Synopeas tarsa (Walker, 1835)

Platygaster tarsa Walker, 1835:227–228, Lectotype ♀. – NMINH.
https://zenodo.org/record/7442844#.Y5s_zYfMJaQ

Distribution in Iran. Hormozgan (Ebrahimi, 2008).

Zoogeographical distribution. Palaearctic (Belgium - Popovici & Popescu, 2006; Vlug, 1995; Germany -

Buhl et al., 2016b; Ireland - Buhl & O'Connor, 2009; Isle of Man - Buhl & Bennett, 2009; Romania - Popovici & Popescu, 2006, Popovici & Fabritius, 2007; Russia - Timokhov, 2019b; United Kingdom - Buhl et al., 2016b).

Genus *Trichacis* Förster, 1856

Trichacis Förster, 1856:108, 115. Type species: *Platygaster pisis* Walker, 1835.

Trichacis marandicus Asadi & Buhl, 2021

Trichacis marandicus Asadi & Buhl, 2021:4, Holotype ♀. – HMIM.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2021b).

Zoogeographical distribution. Iran.

Trichacis persicus Asadi & Buhl, 2021

Trichacis persicus Asadi & Buhl, 2021:2, Holotype ♀. – HMIM.

Distribution in Iran. East Azarbaijan, West Azarbaijan (Asadi-Farfar et al., 2021b).

Zoogeographical distribution. Iran.

Subfamily Sceliotrachelinae Brues, 1908

Genus *Afrisolia* Masner & Huggert, 1989

Afrisolia Masner & Huggert, 1989:34. Type species: *Afrisolia obesa* Masner & Huggert, 1989.

Afrisolia sp.

Distribution in Iran. East Azarbaijan (Lotfalizadeh, 2018).

Zoogeographical distribution. Restricted to Afrotropical (van Noort et al., 2021; Masner & Huggert, 1989).

Genus *Allotropa* Förster, 1856

Allotropa Förster, 1856:109. Type species: *Inostemma mecrida* Walker, 1835.

Allotropa conventus Maneval, 1936

Allotropa conventus Maneval, 1936:196, Holotype ♂ & Paratype ♀. – MNHN.
https://zenodo.org/record/7442771#.Y5s8OYfMJaQ and *https://zenodo.org/record/7442778#.Y5s8hYfMJaQ*

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2020a).

Zoogeographical distribution. Palaearctic (Canary Islands - Buhl & Koponen, 2003a; Denmark - Buhl, 1999; Finland - Buhl & Koponen, 2003c; France - Maneval, 1936; Iceland - Buhl, 2002; Madeira - Buhl & Koponen, 2003b; Moldavia - Kozlov, 1978; Norway - Johnson, 2013; Portugal - Vlug, 1995; Romania - Popovici, 2005, Popovici & Fabritius, 2007).

Allotropa mecrida (Walker, 1836)

Inostemma mecrida Walker, 1836:273, Lectotype ♂. – NHMW.
https://zenodo.org/record/7442861#.Y5tA8YfMJaQ

Distribution in Iran. Fars (Fallahzadeh et al., 2007).

Zoogeographical distribution. Nearctic (USA - Roltsch et al., 2006), Palaearctic (Egypt - Gonzalez et al., 2003, Roltsch et al., 2007, Hendawy et al., 2013; Germany - Ferrière, 1957, Buhl et al., 2016b; Isle of Man - Buhl & Bennett, 2009; Romania - Fabritius & Grellmann, 1971, Russia - Timokhov, 2019b; Spain - Buhl, 1998b; Turkmenistan - Niiazov, 1970; United Kingdom - Buhl & Notton, 2009).

Genus *Amitus* Haldeman, 1850
Amitus Haldeman, 1850:109. Type species: *Amitus aleurodinis* Haldeman, 1850.

Amitus spiniferus (Brethes, 1914)
Passalida spiniferus Brethes, 1914.

Distribution in Iran. Isfahan (Ebrahimi, 2008).

Zoogeographical distribution. Nearctic (USA - MacGown & Nebeker, 1978, Mexico - Debach & Rosen, 1976), Oceanic (Easter Island - Ripa et al., 1995); Palaearctic (France - Viggiani & Mazzone, 1982; Italy - Isidoro et al., 2001, Viggiani & Mazzone, 1982; Spain - Viggiani & Mazzone, 1982, Soto et al., 1999).

Genus *Fidiobia* Ashmead, 1894
Fidiobia Ashmead, 1894:170. Type species: *Fidiobia flavipes* Ashmead, 1894.

Fidiobia hofferi Kozlov, 1978
Fidiobia hofferi Kozlov, 1978:656, Paralectotype, ♀. – MNHN.

Distribution in Iran. Fars (Asadi-Farfar et al., 2019, 2020a).

Zoogeographical distribution. Palaearctic (European Russia - Kozlov, 1978; Czech Republic - Lemarie, 1958, Kozlov, 1978, Popovici et al., 2022; Finland - Koponen & Huggert, 1982, Popovici & Buhl, 2010; Romania - Popovici et al., 2022; Sweden - Koponen & Huggert, 1982, Popovici & Buhl, 2010; Ukraine - Popovici et al., 2022).

Genus *Isolia* Förster, 1878
Isolia Förster, 1878:35, 46. Type species: *Isolia foersteri* Szabó, 1959.

Isolia mongolica (Kozlov, 1972)
Sceliotrachelus mongolicus Kozlov, 1972:469, Holotype, ♀. – ZISP.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2020a).

Zoogeographical distribution. Palaearctic (Mongolia - Veenakumari et al., 2018).

Family Scelionidae
Subfamily Scelioninae

Genus *Aradophagus* Ashmead, 1893
Aradophagus Ashmead, 1893:138,166. Type species: *Aradophagus fasciatus* Ashmead, 1893.

Aradophagus trjapitzini (Masner & Huggert, 1979)
Ladora trjapitzini Masner & Huggert, 1979:1098, Holotype, ♀. – ZISP.

Distribution in Iran. East Azarbaijan (Asadi-Farfar et al., 2017).

Zoogeographical distribution. Palaearctic (Central Asia – [Kazakhstan] - Masner & Huggert, 1979).

Genus *Baeus* Haliday, 1833
Baeus Haliday, 1833:1, 270. Type species: *Baeus seminulum* Haliday, 1833.

Baeus seminulum Haliday, 1833
Baeus seminulum Haliday, 1833:270, Holotype ♀. – NMINH.
https://zenodo.org/record/7434321#.Y8mH2RfMJaQ

Distribution in Iran. East Azarbaijan (Shamsi et al., 2014a), Fars (Iranpoor Pariz et al., 2015).

Zoogeographical distribution. Nearctic (Canada - Muesebeck, 1979), Palaearctic (Belgium - Debauche, 1947; Finland - Buhl, 1995, Hellén, 1971; France - Pintureau & Al-Nabhan, 2003, Cavro, 1950, Rollard, 1991; Georgia - Timokhov, 2019b; Germany - Pintureau & Al-Nabhan, 2003; Greenland - Buhl, 1995, 2015a; Iceland - Buhl, 2015b; Ireland - O'Connor & Notton, 2013, Buhl et al., 2016a; Italy - Johnson, 2013; Moldavia - Buhl, 2015b; Netherlands - Sijstermans, 2020; Portugal - Johnson, 2013; Romania - Fabritius & Popovici, 2007; Russia - Kozlov, 1971, Buhl, 2015b; Ukraine - Kononova & Fursov, 1999; United Kingdom - Buhl et al., 2016a).

Genus *Baryconus* Förster, 1856

Baryconus Foerster, 1856:101, 104. Type species: *Baryconus floridanus* Ashmead, 1887.

Baryconus europaeus (Kieffer, 1908)

Hoploteleia europaeus Kieffer, 1908:176, Holotype ♂. – MSNG.
https://zenodo.org/record/7626513#.Y-VF3nbMJaQ

Distribution in Iran. East Azarbaijan (Lotfalizadeh et al., 2016; Lotfalizadeh, 2018)

Zoogeographical distribution. Afrotropical (United Arab Emirates - Popovici et al., 2013a), Oriental (India - Popovici et al., 2013a), Palaearctic (Croatia, Cyprus, France, Italy, Japan, Madeira, Morocco, Spain - Popovici et al., 2013a; Germany - Awad et al., 2021; Hungary - Kieffer, 1908, 1926, Kononova & Kozlov, 2008; Kazakhstan, Vietnam, Maldives - Timokhov, 2019b; Romania - Spiridon et al., 2019; Russia - Kononova & Kozlov, 2008).

Genus *Calliscelio* Ashmead, 1893

Calliscelio Ashmead, 1893: 45, 209, 218. Type-species: *Calliscelio laticinctus* Ashmead, 1893, original designation.

Calliscelio ruficollis (Szelényi, 1941)

Calotelea ruficollis Szelényi, 1941: 166. Holotype ♀. – HNHM.

Distribution in Iran. East Azarbaijan (Lotfalizadeh et al., 2016; Lotfalizadeh, 2018).

Zoogeographical distribution. Palaearctic (Europe - Popovici et al., 2013b; Hungary - Szelényi, 1941; Romania - Popovici, 2004, Fabritius & Popovici, 2007).

Genus *Aneuroscelio* Kieffer, 1913

Aneuroscelio Kieffer, 1913:14. Type species: *Aneuroscelio rufipes* Kieffer, 1913.

Aneuroscelio kiefferi (Priesner, 1951)

Doddiella kiefferi Priesner, 1951:127, Holotype ♀. – USNM.

Distribution in Iran. Fars (Fallahzadeh & Popovici, 2016).

Zoogeographical distribution. Palaearctic (Egypt - Priesner, 1951).

Genus *Gryon* Haliday, 1833

Gryon Haliday, 1833:1, 271. Type species: *Gryon misellus* Haliday, 1833.

Gryon monspeliense (Picard, 1924)

Hadronotus monspeliensis Picard, 1924:107, Holotype ♀. – MNHN.
https://zenodo.org/record/4509056#.Y5tNv4fMJaQ

Distribution in Iran. Tehran, Hamedan, Lorestan, Markazi (Radjabi & Amir-Nazari, 1989).

Zoogeographical distribution. Palaearctic (Azerbaijan, Egypt, Kazakhstan, Morocco - Timokhov, 2019b; France - Picard, 1924; Moldova - Gîrneț, 2006; Romania - Fabritius & Popovici, 2007, Popovici et al., 2014; Russia - Timokhov, 2019b; Turkey - Lodos, 1986, İslamoğlu, 2012, Çetin et al., 2014; Uzbekistan - Timokhov, 2019b).

Gryon pedestre (Nees, 1834)

Teleas pedestris Nees von Esenbeck, 1834:293, Syntype ♀. – ZMUC.
https://mbd-db.osu.edu/hol/collecting_units/0eae5d1d-dda6-3aaa-e053-0100007f2cc9

Distribution in Iran. Tehran (Modarres Awal, 1997).

Zoogeographical distribution. Palaearctic (Denmark - Kieffer, 1926; Ireland - O'Connor & Notton, 2013; Germany - Nees, 1834; Netherlands - Peeters, 2020; Romania - Fabritius & Popovici, 2007; Scotland - Kieffer, 1908).

Gryon solutum Kononova, 2001

Gryon solutus Kononova [*in* Kononova & Petrov], 2001:1472.

Distribution in Iran. East Azarbaijan (Lotfalizadeh, 2018).

Zoogeographical distribution. Palaearctic (Germany - Ulrich, 1999; Romania – Fabritius & Popovici, 2007).

Genus *Hadronotus* Förster, 1856

Hadronotus Förster, 1856:101, 105. Type species: *Hadronotus exsculptus* Förster, 1861.

Hadronotus muscaeformis (Nees, 1818)

Teleas muscaeformis Nees von Esenbeck, 1834:290, Lectotype ♀. – OXUM.
https://zenodo.org/record/7443131#.Y5tP4IfMJaQ

Distribution in Iran. East Azarbaijan (Lotfalizadeh, 2018).

Zoogeographical distribution. Palaearctic (Azerbaijan, Israel - Timokhov, 2019b; Czech Republic - Mineo, 1981; Kazakhstan, Kyrgyzstan - Timokhov, 2019b; Romania - Fabritius & Popovici, 2007; Russia, Tajikistan, Turkey, Turkmenistan, Uzbekistan - Timokhov, 2019b).

Genus *Idris* Förster, 1856

Idris Förester, 1856:102, 105. Type species: *Idris flavicornis* Forester, 1856.

Idris aureonitens Szabo, 1965

Idris aureonitens Szabo, 1965:372, Holotype ♀. – HNHM.

Distribution in Iran. East Azarbaijan (Shamsi et al., 2014a, 2014b; Lotfalizadeh, 2018).

Zoogeographical distribution. Palaearctic (Greece - Huggert, 1979a; Mongolia - Szabó, 1973, Huggert, 1979b).

Idris clypealis Huggert, 1979

Idris clypealis Huggert, 1979:35, Holotype ♀. – CNC.

Distribution in Iran. East Azarbaijan (Lotfalizadeh, 2018).

Zoogeographical distribution. Palaearctic (Cape Verde - Huggert, 1979a),

Idris desertorum (Priesner, 1951)

Megacolus desertorum Priesner, 1951:122, Holotype ♀, Paratypes ♂. – USNM.

Distribution in Iran. East Azarbaijan (Lotfalizadeh, 2018).

Zoogeographical distribution. Palaearctic (Egypt - Huggert, 1979a).

Idris diversus (Wollaston, 1858)

Telenomus diversus Wollaston, 1858:26, Holotype ♀.; *Telenomus flavicornis* Wollaston, 1858:26, Holotype ♂. – BMNH

Distribution in Iran. East Azarbaijan (Lotfalizadeh, 2018).

Zoogeographical distribution. Afrotropical (South Africa - Sundholm, 1970), Palaearctic (Iceland - Huggert, 1979a).

Idris rufescens (Kieffer, 1908)
Acolus rufescens Kieffer, 1908:184, Holotype: ♀. – MSNG.
https://zenodo.org/record/7626501#.Y-VDNnbMJaQ

Distribution in Iran. East Azarbaijan (Shamsi et al., 2014a, 2014b; Lotfalizadeh, 2018).

Zoogeographical distribution. Palaearctic (Italy - Bin, 1974; Portugal - Pintureau & Al-Nabhan, 2003; Spain - Huggert, 1979a).

Genus *Psix* Kozlov & Lê, 1976
Psix Kozlov & Lê, 1976. Type species: *Psix abnormis* Kozlov & Lê (1976).

Psix saccharicola Mani, 1941
Telenomus saccharicola Mani, 1941:26, Holotype ♀. – NPC-IARI.

Distribution in Iran. Kerman (Mehrnejad, 2013; Mohammadpour et al., 2016; Tavanpour et al., 2017; Gholamalizadeh et al., 2020; Ranjbar et al., 2021).

Zoogeographical distribution. Afrotropical (Madagascar - Johnson & Masner, 1985), Oriental (India - Johnson & Masner, 1985, Singh et al., 2012), and Palaearctic (Iran).

Genus *Scelio* Latreille, 1805
Scelio Latreille, 1805:13, 226. Type species: *Scelio rugulosus* Latreille, 1805.

Scelio flavibarbis (Marshall, 1874)
Aleria flavibarbis Marshall, 1874:208, Holotype ♀.

Distribution in Iran. Khuzestan (Khajehzadeh & Ghazavi, 2000; Khajehzadeh, 2002, 2004; Khajehzadeh & Azmayeshfard, 2005).

Zoogeographical distribution. Palaearctic (Bulgaria - Kononova & Kozlov, 2008; Corsica - Marshall, 1874; France - Kononova & Kozlov, 2008; Italy - Bin, 1974; Kazakhstan, Russia, Ukraine - Kononova & Kozlov, 2008).

Scelio rugosulus Latreille, 1805
Scelio rugosulus Latreille, 1805:227, Holotype: ♀. – MRSN.

Distribution in Iran. East Azarbaijan (Shamsi et al., 2014a, 2014b, 2015a; Lotfalizadeh, 2018).

Zoogeographical distribution. Palaearctic (France - Notton, 2007, Kozlov, 1988, Kononova & Kozlov, 2008; Georgia - Timokhov, 2019b; Hungary, Ireland - Kozlov, 1988, Kononova & Kozlov, 2008; Japan, Kazakhstan - Timokhov, 2019b; Moldova - Gîrneț, 2007; Romania - Fabritius & Popovici, 2007, Popovici & Popovici, 2008; Russia - Kozlov, 1988, Kononova & Kozlov, 2008; Turkmenistan - Timokhov, 2019b; Ukraine - Kozlov, 1988, Kononova & Kozlov, 2008; Netherlands - Polaszek, 1996).

Subfamily: Teleasinae Ashmead, 1893

Genus *Teleas* Latreille, 1809
Teleas Latreille, 1809:4, 32. Type species: *Scelio clavicornis* Latreille, 1805.

Teleas rugosus Kieffer, 1908
Teleas rugosus Kieffer, 1908:195, Holotype ♀. – MSNG.
https://zenodo.org/record/7626509#.Y-VGBnbMJaQ

Distribution in Iran. East Azarbaijan (Shamsi et al., 2015b; Lotfalizadeh, 2018)

Zoogeographical distribution. Palaearctic (Armenia - Timokhov, 2019b; Italy - Bin, 1974; Kazakhstan - Timokhov, 2019b; Romania - Fabritius & Popovici, 2007; Russia - Kieffer, 1908; Turkey - Fabritius, 1970; Ukraine - Telenga, 1959, Kononova & Plastun, 1991).

Teleas szaboi Fabritius, 1964

Teleas szaboi Fabritius, 1964:70, Holotype ♀. – HNHM.

Distribution in Iran. East Azarbaijan (Lotfalizadeh, 2018)

Zoogeographical distribution. Palaearctic (Romania - Fabritius & Popovici, 2007, Fabritius, 1964; Russia - Timokhov, 2019b).

Subfamily Telenominae Thomson, 1860

Genus *Telenomus* Haliday, 1833

Telenomus Haliday, 1833:1, 271. Type species: *Telenomus brachialis* Haliday, 1833.

Telenomus acrobates Giard, 1895

Telenomus acrobates Giard, 1895:77–78, Holotype ♀.

Distribution in Iran. Tehran (Shahpouri Arani et al., 2005; Talebi et al., 2006).

Zoogeographical distribution. Palaearctic (China - Timokhov, 2019b; France - Giard, 1895, Alrouechdi et al., 1981; Germany, Italy, Japan - Ryu & Hirashima, 1985, Kazakhstan, Moldova - Dyurich et al., 2009; Mongolia - Timokhov, 2019b; Romania - Teodorescu & Maican, 2014; Russia - Gokhman & Timokhov, 2020, Spain - Pascual-Ruzit et al., 2007; Turkey - Kasap & Atlihan, 2007; Uzbekistan - Timokhov, 2019b).

Telenomus angustatus (Thomson, 1860)

Phanurus angustatus Thomson, 1860:172–173, Lectotype ♀. – MZLU.
https://www.flickr.com/photos/127240649@N08/50121696568/in/photolist-2jn5Nbi-2jn9Rcp-2jn5Nbd

Distribution in Iran. East Azarbaijan (Lotfalizadeh, 2018).

Zoogeographical distribution. Palaearctic (Austria - Kozlov & Kononova, 1983; Georgia - Timokhov, 2019b; Italy - Mineo, 2004; Romania - Johnson, 1984; Russia - Gokhman & Timokhov, 2020; former USSR - Kozlov & Kononova, 1983).

Telenomus busseolae Gahan, 1922

Telenomus busseolae Gahan, 1922:23, Holotype, ♀. – BMNH.

Distribution in Iran. Khozestan (Abbasipour et al., 1991; Abdul Razzagh, 1995; Modarres Awal, 1997; Abbasipour, 2004; Jamshidnia et al., 2010; Esfandiari & Soleyman-Nejadian, 2012; Nikpay et al., 2014; Cheraghi et al., 2018).

Zoogeographical distribution. Afrotropical (Soudan - Risbec, 1950; South Africa – Gahan, 1922, Polaszek & Kimani, 1990), Australasian (Australia – Murphy et al., 2007), and Palaearctic (Iraq - Polaszek et al., 1993; Israel - Kozlov & Kononova, 1983; Turkey - Sertkaya & Kornosor, 2003, Bayram, 2003).

Note. This species was recorded from Iran as *Platytelenomus hylas* Nixon, 1938 (Abbasipour et al., 1991; Abbasipour, 2004; Ranjbar & Kamali, 2005; Askarianzadeh et al., 2008; Sayadmansour et al., 2009).

Telenomus chloropus (Thomson, 1860)

Phanurus chloropus Thomson 1860:173, Holotype: ♀. – MZLU.
https://www.flickr.com/photos/127240649@N08/50121706063/in/photolist-2jn5QZV-2jn5RvE-2jn5Rux-2jn9UwL-2jn5QZQ/

Distribution in Iran. Isfahan (Farahbakhsh, 1961; Safavi, 1973; Modarres Awal, 1997), Mazandaran (Mohaghegh Neyshabouri, 1993), Qazvin (Noori et al., 2003), Tehran (Shojaei, 1968, 1989; Modarres Awal, 1997).

Zoogeographical distribution. Nearctic (USA – Johnson, 1984), Palaearctic (Armenia, Azerbaijan - Kozlov & Kononova, 1983; Kononova, 1995; France – Johnson, 1984; Georgia - Kozlov & Kononova, 1983; Kononova, 1995; Hungary - Johnson, 1984; Ireland - O'Connor & Mineo, 2009, Buhl et al., 2016a; Japan - Johnson, 1984, Clark, 1990; Kazakhstan - Viktorov, 1966, Kozlov & Kononova, 1983; Latvia - Buhl, 2016;

Moldavia, Russia - Viktorov, 1966, Kozlov & Kononova, 1983; Spain - Johnson, 1984; Turkey - Lodos, 1961; Ukraine – Kieffer, 1926, Kozlov & Kononova, 1983; United Kingdom - Javahery, 1968, Buhl et al., 2016a).

Note. This species was recorded from Iran as *Telenomus sokolowi* (Mayr, 1940) (Farahbakhsh, 1961; Shojaei, 1968, 1989; Safavi, 1973): *https://zenodo.org/record/7443068#.Y5tL4YfMJaQ*

Telenomus chrysopae Ashmead, 1893

Telenomus chrysopae Ashmead, 1893:159. Lectotype ♂. – USNM.

Distribution in Iran. Isfahan (Rakhshani et al., 2008).

Zoogeographical distribution. Nearctic (USA - Johnson & Bin, 1982, Ruberson et al., 1995), Palaearctic (Netherlands - Johnson & Bin, 1982), Oriental (Taiwan - Chou & Wu, 1988).

Telenomus harpyiae Mayr, 1879

Telenomus harpyiae Mayr, 1879:711, Holotype ♀. – NHMW.

Distribution in Iran. East Azarbaijan (Lotfalizadeh, 2018).

Zoogeographical distribution. Oriental (India - Casals, 2005), and Palaearctic (Armenia, Azerbaijan, Georgia - Timokhov, 2019b; Germany - Kieffer, 1912; Israel - Timokhov, 2019b; Moldova - Gîrneț, 2007, 2012; Romania - Fabritius & Popovici, 2007; Russia - Timokhov, 2019b; Spain - Casals, 2005).

Telenomus heydeni Mayr, 1879

Telenomus heydeni Mayr, 1879:706, Lectotype ♂. – NHMW.
https://zenodo.org/record/7442921#.Y5tEC4fMJaQ

Distribution in Iran. West Azarbaijan (Parvizi & Javan Moghaddam, 1988).

Zoogeographical distribution. Palaearctic (Austria - Mayr, 1879; Germany - Kieffer, 1926; Ireland - O'Connor & Mineo, 2006; Kazakhstan, Moldavia - Gokhman & Timokhov, 2020; North Africa - Pintureau et al., 2003; Russia - Gokhman & Timokhov, 2020; Turkmenistan - Timokhov, 2019b).

Telenomus hofmanni Mayr, 1879

Telenomus hofmanni Mayr, 1879:172, Lectotype ♀. – NHMW.
https://zenodo.org/record/7442953#.Y5tINIfMJaQ

Distribution in Iran. East Azarbaijan (Lotfalizadeh, 2018).

Zoogeographical distribution. Palaearctic (Armenia, Azerbaijan, Georgia, Japan, Kazakhstan, Kyrgyzstan - Timokhov, 2019b; Romania - Fabritius & Popovici, 2007; Russia, Turkmenistan, Uzbekistan - Timokhov, 2019b).

Telenomus minimus Ashmead, 1893

Telenomus minimus Ashmead, 1893:152, Holotype ♀. – USNM.

Distribution in Iran. Mazandaran (Behdad, 1982, Modarres Awal, 1997)

Zoogeographical distribution. Palaearctic (Moldavia, Russia -Kozlov & Kononova, 1983).

Telenomus pentopherae Mayr, 1879

Telenomus pentopherae Mayr, 1879:706, Lectotype ♂. – NHMW.
https://zenodo.org/record/7443299#.Y5tb_ofMJaQ

Distribution in Iran. East Azarbaijan (Lotfalizadeh, 2018).

Zoogeographical distribution. Palaearctic (Germany - Nixon, 1989).

Telenomus politus (Thomson, 1861)

Phanurus politus Thomson 1861:173.

Distribution in Iran. Isfahan (Modarres Awal, 1997).

Zoogeographical distribution. Palaearctic (Russia - Kozlov, 1978; Sweden - Thomson, 1861; Turkey - Açikgöz & Gözüaçik, 2021; Ukraine - Ryakhovskii, 1959).

Telenomus punctatissimus (Ratzeburg, 1844)

Teleas punctatissimus Ratzeburg, 1844:188, Syntype ♀. – NHMW.
https://zenodo.org/record/7443015#.Y5tJMofMJaQ

Distribution in Iran. East Azarbaijan (Lotfalizadeh, 2018).

Zoogeographical distribution. Palaearctic (Romania - Fabritius & Popovici, 2007; Russia - Timokhov, 2019b).

Genus *Trissolcus* Ashmead, 1893

Trissolcus Ashmead, 1893:138, 161. Type species: *Telenomus brochymenae* Ashmead, 1893.

Trissolcus agriope (Kozlov & Lê, 1976)

Aporophlebus agriope Kozlov & Lê, 1976, Holotype ♀. – ZISP.

Distribution in Iran. Kerman (Hashemi Rad, 1999; Mehrnejad, 2013; Mohammadpour et al., 2015, 2016; Tavanpour et al., 2017; Ziaaddini et al., 2022).

Zoogeographical distribution. Palaearctic (Turkmenistan - Kozlov & Kononova, 1983).

Trissolcus basalis (Wollaston, 1858)

Telenomus basalis Wollaston, 1858:25, Holotype: ♀. – BMNH.
https://zenodo.org/record/7552230#.Y8mJ_xfMJaQ

Distribution in Iran. Alborz (Iranipour et al., 1998), East Azarbaijan (Lotfalizadeh, 2018), Kerman (Tavanpour et al., 2017), Isfahan (Shojaei, 1968, 1989), Qazvin (Noori et al., 2003), Tehran (Davatchi & Shojaei, 1969, 1989; Amir-Maafi et al., 2002; Radjabi & Amir-Nazari, 1989; Safavi, 1973).

Zoogeographical distribution. Afrotropical (South Africa, Introduced - Annecke & Moran, 1982), Australasian (Australia – Clarke, 1990; New Zealand, Introduced - Cumber, 1951, 1964), Nearctic (USA, introduced - Cullen & Wearne, 1974, Talamas et al., 2017, Balusu et al., 2019), Neotropical (Argentina, introduced - Crouzel & Saini 1983, Brazil - Clarke, 1990, Talamas et al., 2017), Palaearctic (Belgium - Berteloot et al., 2021; Egypt - Clarke, 1990, Timokhov, 2019b; France - Volkoff & Stefano, 1992; Germany - Awad et al., 2021; Italy - Volkoff & Stefano, 1992, Colazza & Bin, 1995; Japan - Timokhov, 2019b; Portugal - Talamas et al., 2017; Romania - Fusu et al., 2013; Russia - Timokhov, 2019b; Serbia - Ivezić et al., 2022; Spain - Canton-Ramos & Callejón-Ferre, 2010; United Kingdom - Barclay, 2004; Ukraine – Kononova, 1992).

Trissolcus cantus Kozlov & Lê, 1977

Trissolcus cantus Kozlov & Lê, 1977, Holotype ♀. – ZISP.

Distribution in Iran. East Azarbaijan (Lotfalizadeh, 2018).

Zoogeographical distribution. Palaearctic (Romania - Fabritius & Popovici, 2007, Popovici, 2004).

Trissolcus colemani (Crawford, 1912)

Telenomus colemani Crawford, 1912:2, Holotype ♀. – USNM.
https://zenodo.org/record/7552244#.Y8mLzRfMJaQ

Distribution in Iran. Kerman (Ranjbar et al., 2021).

Zoogeographical distribution. Oriental (India - Masner & Muesebeck, 1968), Palaearctic (China, France

- Tortorici et al., 2019; Germany - Awad et al., 2021; Greece, Italy - Tortorici et al., 2019; Kazakhstan, Korean Peninsula, Mongolia - Timokhov, 2019b; Pakistan, United Kindgom - Tortorici et al., 2019).

Trissolcus darreh Talamas, 2021

Trissolcus darreh Talamas [*in* Ranjbar et al.], 2021:296, Holotype ♀. – FSCA.
https://zenodo.org/record/7552349#.Y8mVbxfMJaQ

Distribution in Iran. Kerman (Ranjbar et al., 2021).

Zoogeographical distribution. Iran.

Trissolcus esmailii Radjabi, 2001

Trissolcus esmailii Radjabi, 2001:106–107, Holotype ♀. – HMIM.

Distribution in Iran. Fars (Radjabi, 2001)

Zoogeographical distribution. Iran.

Trissolcus mitsukurii (Ashmead, 1904)

Telenomus mitsukurii Ashmead, 1904:72, Holotype ♀. – USNM.
https://zenodo.org/record/7552338#.Y8mUZBfMJaQ

Distribution in Iran. Alborz (Radjabi, 2000), Kerman (Mohammadpour et al., 2016), Khuzestan (Hashemi Rad, 1999, 2009).

Zoogeographical distribution. Palaearctic (France - Bout et al., 2021; Italy - Scala et al., 2022, Scaccini et al., 2020; Peverieri et al., 2018; Japan - Talamas et al., 2017; China - Chen et al., 2020).

Trissolcus oobius (Kozlov, 1972)

Aporophlebus oobius Kozlov, 1970:670, Holotype ♀. – ZISP.

Distribution in Iran. Kerman (Hashemi Rad, 1999; Hashemi Rad et al., 2000; Mohammadpour et al., 2015, 2016).

Zoogeographical distribution. Palaearctic (Armenia - Talamas et al., 2017; Bulgaria - Petrov, 2013; Kazakhstan - Talamas et al., 2017; Moldavia - Kozlov & Kononova, 1983; Mongolia - Kozlov & Lê, 1976, Talamas et al., 2017; Romania - Fabritius & Popovici, 2007).

Note. This species was recorded from Iran as *Trissolcus dryope* (Kozlov & Lê, 1976) (Hashemi Rad et al., 2000; Mohammadpour et al., 2015, 2016) and *Trissolcus niceppe* (Kozlov & Lê, 1976) (Mohammadpour et al., 2016; Ziaaddini et al., 2022).

Trissolcus perepelovi (Kozlov, 1972)

Aporophlebus perepelovi Kozlov, 1972, Holotype ♀. – ZISP.

Distribution in Iran. Kerman (Mohammadpour et al., 2016; Ranjbar et al., 2021).

Zoogeographical distribution. Palaearctic (Mongolia, Turkmenistan - Talamas et al., 2017).

Note. This species was recorded from Iran as *Trissolcus deserticola* (Kozlov, 1972) (Mohammadpour et al., 2016).

Trissolcus rufiventris (Mayr, 1907)

Telenomus rufiventris Mayr, 1907, Lectotype ♀. – NHMW.
https://zenodo.org/record/7552332#.Y8mT4hfMJaQ

Distribution in Iran. Alborz (Iranipour et al., 1998), East Azarbaijan (Lotfalizadeh, 2018), Hamedan (Behdad, 1982), Isfahan (Mehrarvar et al., 2000), Qazvin (Noori et al., 2003), Tehran (Farahbakhsh, 1961; Davatchi & Shojaei, 1969; Martin et al., 1969; Safavi, 1973; Shojaei, 1968, 1989).

Zoogeographical distribution. Palaearctic ([North] Africa - Kozlov & Kononova, 1983, Kononova, 1995;

Bulgaria - Petrov, 2013; Romania, Russia - Voegelé, 1964; Scotland - Kieffer, 1913; Turkey - Koçak & Kilincer, 2003; Kivan & Kiliç, 2006; Koçak, 2007; Koçak et al., 2008; Ukraine - Voegelé, 1964).

Trissolcus saakowi (Mayr, 1903)

Telenomus saakowi Mayr, 1903:397, Lectotype ♀. – NHMW.
https://zenodo.org/record/7552291#.Y8mP2BfMJaQ

Distribution in Iran. Alborz (Iranipour et al., 1998), East Azarbaijan, Kerman, Tehran (Iranipour & Johnson, 2010).

Zoogeographical distribution. Palaearctic (Armenia, Tajikistan - Kozlov & Kononova, 1983; Turkey - Kaya et al., 2009; Turkmenistan - Talamas et al., 2017; Ukraine - Kozlov & Kononova, 1983; Uzbekistan - Kozlov, 1978).

Note. This species was recorded from Iran as *Trissolcus mentha* (Kozlov & Lê, 1977) (Iranipour et al., 1998) and *Trissolcus radjabii* Iranipour, 2010 (Iranipour & Johnson, 2010).

Trissolcus scutellaris (Thomson, 1860)

Telenomus scutellaris Thomson, 1860:171, Lectotype ♀. – NHRS.
https://zenodo.org/record/7552301#.Y8mRRRfMJaQ

Distribution in Iran. Alborz (Iranipour et al., 1998), East Azarbaijan (Banamolaei, 2018a, 2018b, 2018c), Isfahan (Shojaei, 1968, 1989), Kerman (Mehrnejad, 2013; Tavanpour et al., 2017), Tehran (Farahbakhsh, 1961; Amir-Maafi et al., 2002).

Zoogeographical distribution. Palaearctic (Armenia - Kozlov & Kononova, 1983; Austria - Kieffer, 1926, Talamas et al., 2017; Azerbaijan - Kozlov & Kononova, 1983; Bulgaria, Croatia - Talamas et al., 2017; Denmark, - O'Connor & Notton, 2013; France, Georgia, Germany, Greece, Hungary - Talamas et al., 2017; Iraq - Ali, 2011 (as *Trissolcus festivae*); Italy - O'Connor & Notton, 2013, Talamas et al., 2017; Macedonia - Talamas et al., 2017; Moldova - Kozlov & Kononova, 1983, O'Connor & Notton, 2013; Mongolia - Kozlov & Kononova, 1983; Kononova, 1995; Morocco – Voegelé, 1964, Talamas et al., 2017; Portugal - Talamas et al., 2017; Romania – Fabritius, 1974, Fabritius & Popovici, 2007 (as *Trissolcus festivae*); Russia - Kozlov & Kononova, 1983, Kononova, 1995, Talamas et al., 2017; South Korea, Spain, Sweden - Talamas et al., 2017; Syria - Remaudière & Skaf, 1963, Talamas et al., 2017; Turkey - Lodos, 1961, Koçak & Kilincer, 2003, Conti et al., 2004 (as *Trissolcus simoni*), Talamas et al., 2017; Turkmenistan - Talamas et al., 2017; Ukraine - Kozlov & Kononova, 1983, Kononova, 1995, Ukraine - O'Connor & Notton, 2013 (as *Trissolcus festivae*).

Note. This species was recorded from Iran as *Trissolcus festivae* (Viktorov, 1964) (Radjabi, 1994; Iranipour et al., 1998), *Trissolcus simoni* (Mayr, 1879) (Farahbakhsh, 1961; Shojaei, 1968, 1989), *Trissolcus vassilievi* Mayr, 1903 (Martin et al., 1969; Iranipour et al., 1998; Amir-Maafi et al., 2002; Banamolaei, 2015a, 2015b, 2018a, 2018b, 2018c), and *Trissolcus volgensis* Viktorov, 1964 (Mehrnejad, 2013; Tavanpour et al., 2017).

Trissolcus semistriatus (Nees von Esenbeck, 1834)

Teleas semistriatus Nees von Esenbeck, 1834:290, Neotype ♀. – NHMW.
https://zenodo.org/record/7552312#.Y8mSIhfMJaQ

Distribution in Iran. Alborz (Iranipour et al., 1998), Chaharmahal and Bakhtiari (Haghshenas, 2004), East Azarbaijan (Iranipour et al., 2010; Nozad Bonab & Iranipour, 2012; Abdi et al., 2015, Lotfalizadeh, 2018), Fars (Iranipour et al., 1998), Kerman (Mohammadpour et al., 2016; Ranjbar et al., 2021), Qazvin (Radjabi, 1994, Noori & Asgari, 2000, Noori et al., 2003; Noori, 2015), Tehran (Alexandrov, 1947a, 1947b; Zomorrodi, 1962; Shojaei, 1968; Davatchi & Shojaei, 1969; Martin et al., 1969; Amir-Maafi et al., 2002), Zanjan (Taghaddosi & Rajabi, 1998).

Zoogeographical distribution. Palaearctic (Armenia - Timokhov, 2019b; Austria - Kieffer, 1926; Azerbaijan -

Koçak & Kılınçer, 2000, 2003; Denmark - Kieffer, 1926; Ukraine – Kononova, 1992, 1995; Ireland - Buhl & O'Connor, 2011; Morocco - Pintureau et al., 2003; France - Kieffer, 1926; Iraq - Timokhov, 2019b; Ireland - O'Connor & Notton, 2013, Buhl et al., 2016a; Israel - Timokhov, 2019b; Italy - Zapponi et al., 2021; Kazakhstan, Moldavia - Kozlov & Lê, 1988; Morocco - Voegelé, 1964; Pintureau et al., 2003; Portugal - Graham, 1984; Romania - Fabritius, 1974, Fabritius & Popovici, 2007, Talamas et al., 2017; Russia - Kozlov & Lê, 1988; Switzerland - Zapponi et al., 2021; Turkey - Lodos, 1961, Koçak & Kılınçer, 2000, 2003, İslamoğlu, 2012, Tarla, 2018, Kivan & Kiliç, 2006, Sevilay & Kivan, 2018; Ukraine - Kozlov & Lê, 1988; United Kingdom - Javahery, 1968, Buhl et al., 2016a; Uzbekistan - Kozlov & Lê, 1988; China - Chen et al., 2020).

Note. This species was recorded from Iran as *Trissolcus grandis* Thomson, 1801 (Martin et al., 1969; Radjabi, 1994; Iranipour et al., 1998, 2010; Amir-Maafi et al., 2002; Noori et al., 2003; Nozad Bonab & Iranipour, 2012; Noori, 2015) and as *Trissolcus djadetshko* (Ryakhovskii, 1959) (Abdi et al., 2015, Lotfalizadeh, 2018).

Trissolcus tumidus (Mayr, 1879)

Trissolcus tumidus Mayr, 1879:699, 703, Holotype ♀. – NHMW.
https://zenodo.org/record/7552270#.Y8mO8BfMJaQ

Distribution in Iran. Alborz (Iranipour et al., 1998), East Azarbaijan (Lotfalizadeh, 2018), Isfahan (Behdad, 1982), Kerman (Mohammadpour et al., 2016), Khuzestan (Modarres Awal, 1997), Tehran (Shojaei, 1968, 1989), West Azarbaijan (Modarres Awal, 1997).

Zoogeographical distribution. Palaearctic (Afghanistan - Talamas et al., 2017; Armenia - Talamas et al., 2017; Austria - Talamas et al., 2017; Kieffer, 1926; Azerbaijan - Timokhov, 2019b; China - Talamas et al., 2017; Georgia - Kozlov & Kononova, 1983; Italy - Talamas et al., 2017; Japan - Ryu & Hirashima, 1984; Kazakhstan - Kozlov & Kononova, 1983; Morocco - Ryu & Hirashima, 1984; Russia - Talamas et al., 2017; South Korea, Tajikistan, Turkey, Turkmenistan - Talamas et al., 2017; Ukraine - Kozlov & Kononova, 1983; Uzbekistan - Timokhov, 2019b).

Note. This species was recorded from Iran as *Trissolcus cephalotes* (Kozlov & Lê, 1977) (Lotfalizadeh, 2018) and *Trissolcus delucchii* (Kozlov, 1968) (Modarres Awal, 1997; Iranipour et al., 1998; Mohammadpour et al., 2016).

DISCUSSION

An overall summary of the known platygastroids in Iran, with a total number of 81 species, includes 35 species in Platygastridae and 46 species in Scelionidae, representing just over one percent of global diversity. This clearly indicates that insufficient efforts have been made to study this important group of parasitoid wasps in Iran, an issue that was recognized by Iranipour (2021). The known assemblage of the Platygastridae in the country includes six species sporadically recorded from five provinces (Fig. 1A) (Ghahari & Hatami, 2000; Fallahzadeh et al., 2007; Ebrahimi, 2008; Ghahari & Buhl, 2011; Buhl, 2015b) and 30 species recorded during more recent and intensive surveys of the northwestern provinces (Lotfalizadeh, 2018; Asadi-Farfar et al., 2016, 2017, 2019, 2020a, 2020b, 2021a, 2021b). The majority of the country remains unsurveyed. A similar situation was also highlighted for Scelionidae (Fig. 1B), which benefits from more explorations targeting the biocontrol agents of stem borers, the sunn pest and stink bugs (Abbasipour, 2004, Askarianzadeh et al., 2008; Safavi, 1960, 1973; Radjabi, 2000; Amir-Maafi et al., 2002; Jamshidnia et al., 2010; Mehrnejad, 2013; Ranjbar et al., 2021; Mohammadpour et al., 2015, 2016). In both cases, the eastern provinces, occupying one third of the country, lack records of platygastroids, with the sole exception of *Platygaster harteni*, from South Khorasan (Asadifarfar, 2021a).

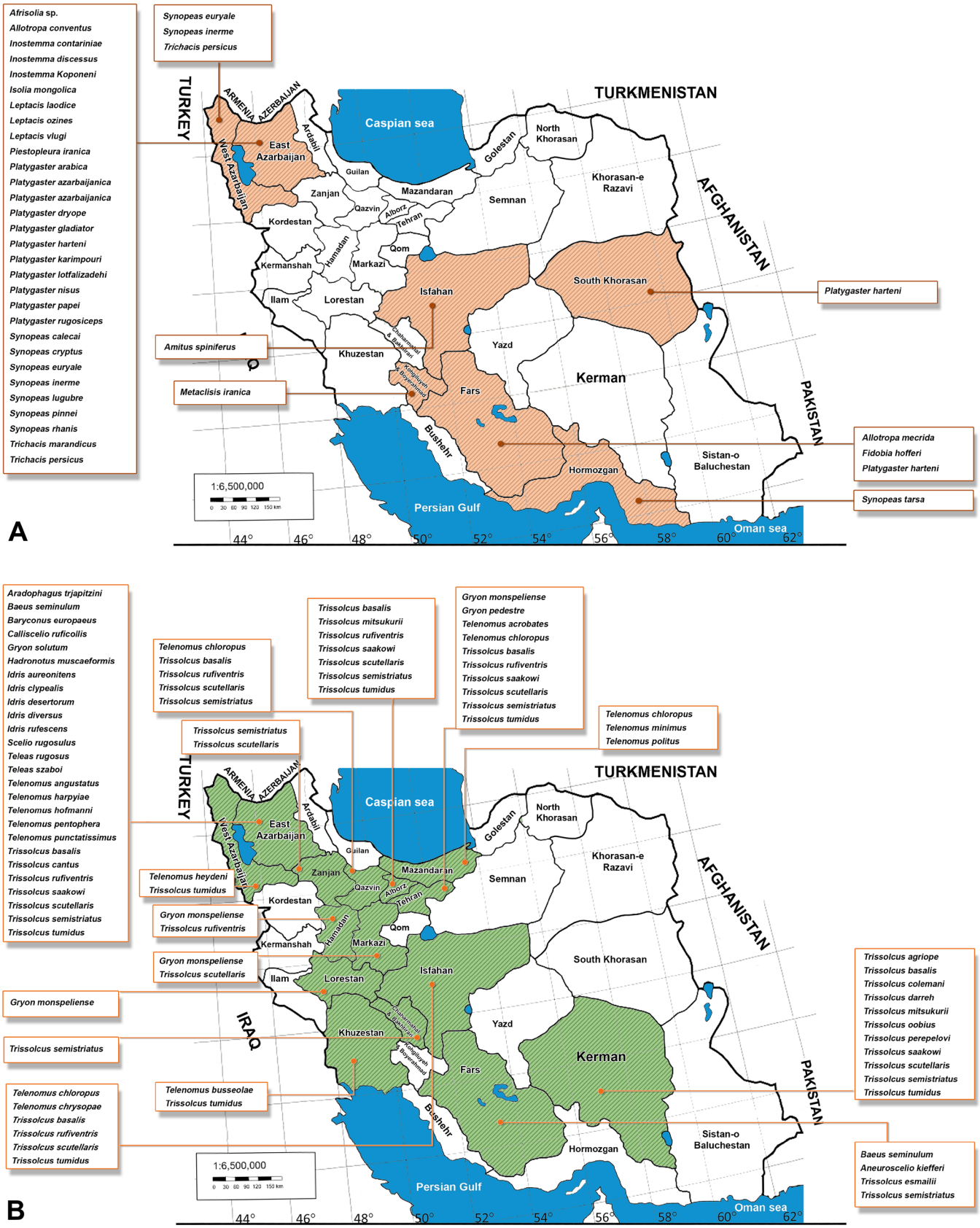

Figure 1. Provincial distribution of the Platygastroidea in Iran. **A.** Platygastridae; **B.** Scelionidae.

Platygastridae and Scelionidae in Iran are represented by 12 and 13 genera, respectively, and half of these genera are known from a single species (Fig. 2). The genera *Platygaster* (11) and *Synopeas* (8) in Platygastridae together with *Trissolcus* (14) and *Telenomus* (12) from Scelionidae, include the majority of the known species. Despite the paucity of data on the known fauna of Iranian platygastroids, simple patterns of faunal analysis can be presented (Fig. 3). The known distributions for 27 species (77.1%) of Platygastridae in Iran are restricted to the Palaearctic, while five species (14.3%) and three species (8.6%) had more expanded distributions into the Afrotropical and Nearctic regions, respectively. Occurrence of the genus *Afrisolia* in Iran is represented by two male specimens of an unidentified species (Lotfalizadeh, 2018). This genus was previously known only from South Africa and it was thought to be endemic to the Afrotropical realm (Masner & Huggert, 1989). Further attempts are needed to collect female specimens in order to identify the species. The known Scelionidae of Iran comprises 35 species (77.8%) with Palaearctic distributions, while the rest were found in a variable and wide range of zoogeographical regions including Nearctic (5 species), Oriental (5 species), Afrotropical (4 species), Australasian (1 species) and Neotropical (1 species) regions. Such a complex species distribution can also be the consequence of biological control programs through which, mainly the species of *Trissolcus* and *Telenomus*, were introduced into new areas.

Both Scelionidae and Platygastridae contain candidates for classical biological control programs, and many of them have been introduced for control of invasive pests. A clear example is *Trissolcus basalis*, which has been recorded in six zoogeographical regions. *Trissolcus basalis* is the representative example which is widely introduced into many countries for control of *Nezara viridula* (L., 1758) (Hemiptera, Pentatomidae) throughout the world (Waterhouse, 1998). Some other species of Scelionidae including, *Trissolcus mitsukurii*, *Trissolcus colemani* (as *T. crypticus*) and *Telenomus chloropus*, have also been widely transported to control the same pest. Attempts were also made to use species of Platygastridae in the framework of classical biological control. Among the species recorded from Iran, a population of *Inostemma contarinae* sourced from Europe (Italy and the Netherlands) was introduced into Canada for control of apple leaf-curling midge, *Dasineura mali* (Kieffer, 1904) (Diptera, Cecidomyiidae) (Greathead & Greathead, 1992). *Amitus spiniferus* (Brèthes, 1914) is a parasitoid of whiteflies that was imported from Mexico to California for Control of *Aleurothrixus floccosus* (Maskell, 1896) (Hemiptera, Aleyrodidae) (DeBach & Roseen, 1976). *Allotropa* sp. nr. *mecrida* (Walker, 1836), sourced from Egypt, was reared and released for the control of the pink hibiscus mealybug, *Maconellicoccus hirsutus* (Green, 1908) (Hemiptera, Pseudococcidae) in USA (Roltsch et al., 2006). Very little is known about the life histories of Platygastridae in Iran. The available data are restricted to the record of *Platygaster harteni* Buhl, 2007 in association with *Stefaniola similata* Mamaev, 1972 (Diptera, Cecidomyiidae) (Asadi-Farfar et al., 2021a) and *Amitus spiniferus* from *Neopealius rubi* Takahashi, 1954 (Hemiptera, Aleyrodidae) (Ghahari & Hatami, 2000). The known host range for the Iranian Scelionidae includes eggs of various pentatomid bugs (Hashemi Rad et al. 2000; Hashemi Rad, 2008; Mehrnejad, 2013; Iranipour & Johnson, 2010; Mohammadpour et al., 2015, 2016), the sunn pest, *Eurygaster integriceps* Puton, 1881 (Hemiptera, Scutelleridae) (Radjabi & Amir-Nazari, 1989; Mohaghegh Neyshabouri, 1993; Iranipour et al., 1998; Taghaddosi & Radjabi, 1998; Fathipour et al., 2000; Mehravar et al., 2000; Noori & Asgari, 2000; Allahyari et al., 2004; Shafaei et al., 2011), the stem borers, *Sesamia* spp. (Abbasipour et al., 1991; Abdul Razzagh, 1995; Sharififar, 2000; Abbasipour, 2004; Jamshidnia et al., 2010), the migratory locust, *Locusta migratoria* L., 1758 (Orthoptera, Acrididae) (Khajehzadeh & Ghazavi, 2000; Khajehzadeh, 2002, 2004) and predatory insects, e.g. *Chrysoperla carnea* (Talebi et al., 2006; Rakhshani et al., 2008). A detailed review can be found in Iranipour (2021).

Historically, significant confusion surrounding *Trissolcus* species stemmed from identification keys that were not reliable (Kozlov, 1988, Radjabi, 2000) and the mass descriptions of new species (Kozlov & Lê, 1976). The comprehensive revision by Talamas et al. (2017), followed by clarification of some species concepts by Tortorici et al. (2019) made it possible to identify species in the Palaearctic region. Many *Trissolcus* species, including those recorded in Iran were consequently considered as synonyms, and these specimens should be revisited to identify them in the light of new diagnostic characters. Despite the thoroughness of these recent taxonomic efforts, Iran still harbored a new species of *Trissolcus*, *T. darreh*, (Ranjbar et al., 2021), highlighting the need to study its rich fauna.

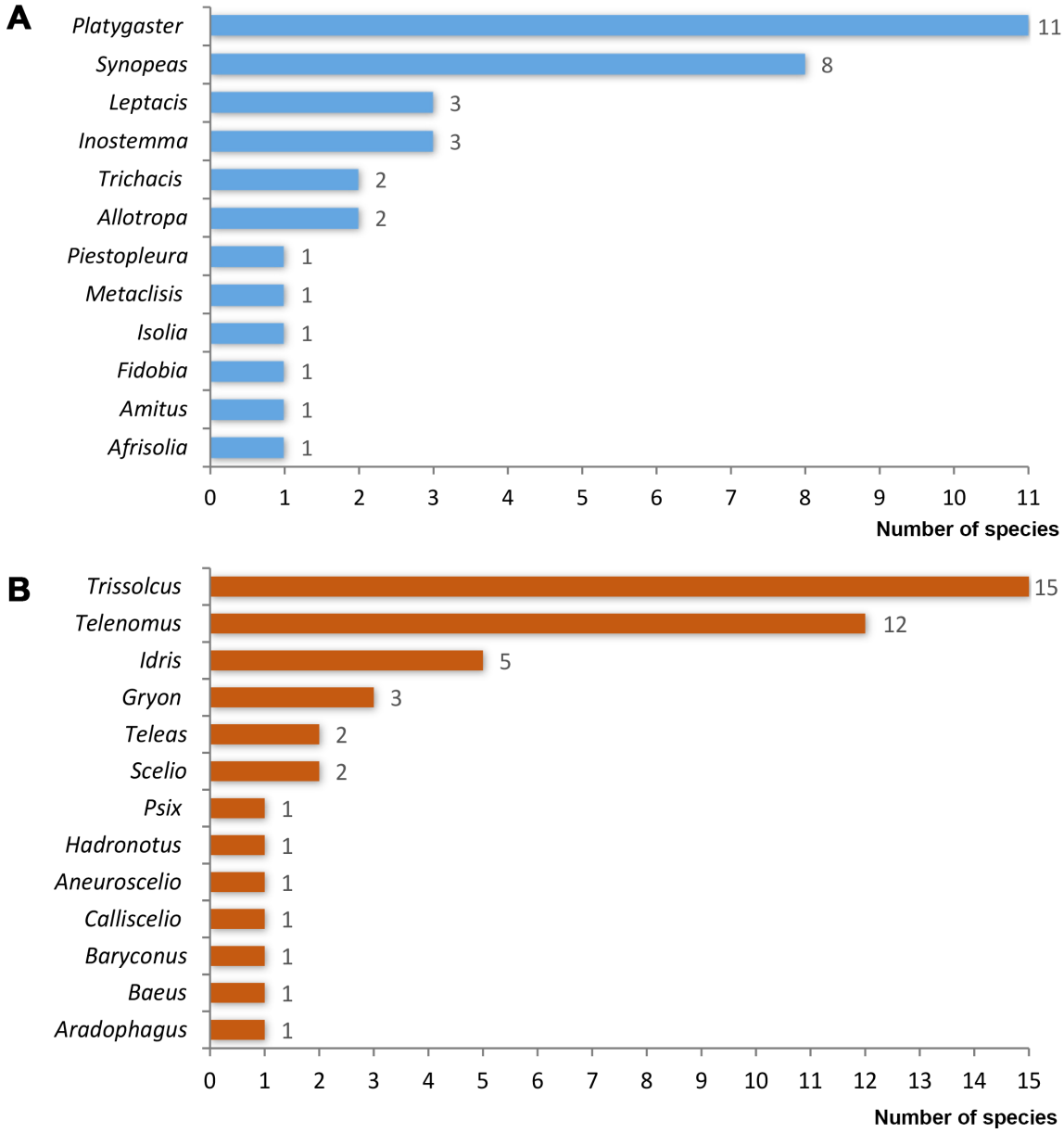

Figure 2. Number of recorded species for the genera of Platygastroidea in Iran. **A.** Platygastridae; **B.** Scelionidae.

Unreliable species records. A parallel series of species of Platygastridae, Scelionidae, and Sparasionidae has been recorded from Iran based on inadequate, irrelevant or unreliable evidence (Table 1). The major problem with these species records is that the specimens have not been identified by expert taxonomists, and, in some cases, identifications cannot be made until the taxa are thoroughly revised at the species level. In addition to a lack of taxonomic support for these records, many of them were published without a peer-review process (Ghahari et al., 2006, 2009; Samin et al., 2010b, 2010c, 2010d, 2011a, 2012, Samin & Asgari, 2012a). Furthermore, the unclear situation of the depositories for the voucher specimens presents an obstacle for re-examining the material. These publications also suffer from a lack of quality illustrations, and none contain an image from a recorded species to be used for comparison. *Psix striaticeps* (Dodd, 1920) is an old-world species distributed widely in the Afrotropical and Oriental regions (Johnson & Masner, 1985), that was recently discovered in the USA (Birkmire et al., 2021). Occurrence of this species in Iran is possible, given that *Psix* was reported from the country (Hashemi Rad, 2008).

However, this, and many other reports on the platygastroid fauna of Iran (Table 1) are omitted from this checklist until the occurrences of these species can be verified by examining voucher specimens (See Lotfalizadeh, 2018) or through new sampling surveys in the same areas. It should be noted that the list that we provided is not immune from these problems. Platygastridae that were described from Iranian specimens are naturally included, but there is the possibility that these will eventually be considered junior synonyms, given that *Platygaster* and *Synopeas* have not been revised in the Palaearctic region. These genera have also been flooded with species names that were generated without taxonomic rigor (Buhl, 2001, 2009). The consequences of spuriously erected species names are disastrous, in turn creating an even greater amount of work for subsequent revisions as primary types must be accessed, properly characterized and re-analyzed in a broader context. With the goal of advancing faunistic knowledge, we hope that this will help to promote high standards for the taxonomy of Platygastroidea in Iran. By leveraging the expertise of taxonomists and members of the scientific community, this compilation is set to be a valuable resource in understanding and preserving the rich biodiversity of Platygastroidea in Iran.

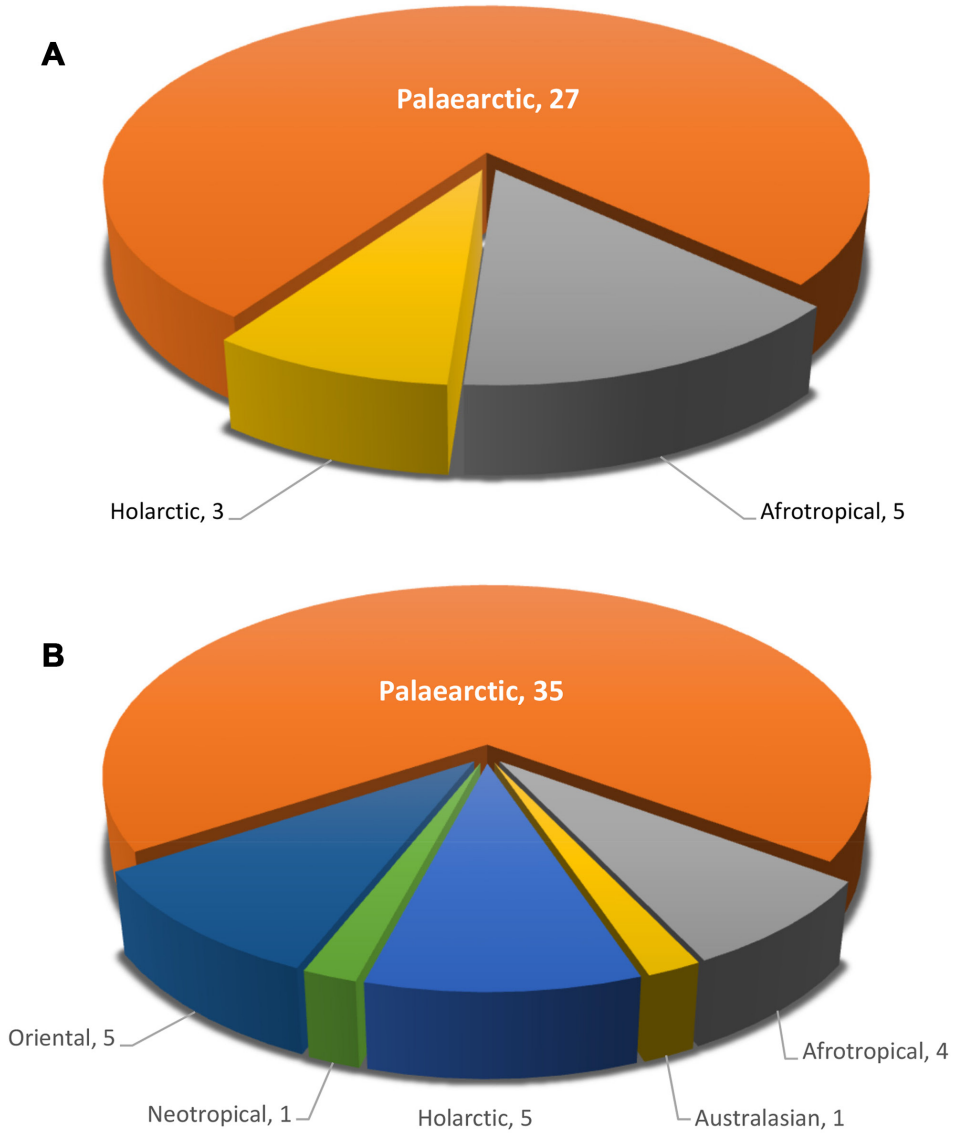

Figure 3. General zoogeographical distribution of the known Platygastroidea from Iran. **A.** Platygastridae, **B.** Scelionidae.

Table 1. Unreliable records of Platygastroidea from Iran.

Suspended records species	References
Platygastridae	
Amitus fuscipennis Mcgown & Nebeker, 1978	Ghahari et al. (2006)
Amitus hesperidum Silvestri, 1927	Ghahari et al. (2006)
Amitus longicornis (Foerster, 1878)	Ghahari et al. (2006)
Amitus minervae Silvestri, 1911	Ghahari et al. (2006); Samin et al. (2010a)
Inostemma hyperici (Debauche, 1947)	(Sakenin et al., 2008a, 2008b)
Inostemma mediterraneum (Kieffer, 1916)	Samin et al. (2010c)
Inostemma reticulatum (Szelenyi, 1938)	Sakenin et al. (2008a)
Isolia foersteri Szabó, 1959	Sakenin et al. (2008a)
Metanopedias lasiopterae (Kieffer, 1916)	Sakenin et al. (2008a)
Platygaster apicalis (Thomson, 1895)	Sakenin et al. (2008a)
Platygaster demades (Walker, 1835)	Samin et al. (2010c)
Platygaster laticeps Thomson, 1859	Samin et al. (2010c)
Platygaster oebalus (Walker, 1836)	Sakenin et al. (2008a)
Platygaster oleae (Szelenyi, 1940)	Sakenin et al. (2008a)
Platygaster pelias (Walker, 1835)	Sakenin et al. (2008a)
Scelionidae	
Anteris simulans (Kieffer, 1908)	Samin et al. (2011b)
Eumicrosoma phaeax (Nixon, 1938)	Samin et al. (2011b)
Gryon fasciatum (Priesner, 1951)	Sakenin et al. (2008a); Samin et al. (2010d)
Paratelenomus saccharalis (Dodd, 1914)	Samin et al. (2012)
Paratelenomus striativentris (Risbec, 1950)	Samin et al. (2012)
Psix abnormis (Kozlov & Lê, 1976)	Samin et al. (2011a); Samin & Asgari (2012a)
Psix lacunatus (Johnson & Masner, 1985)	Samin et al. (2011a); Samin & Asgari (2012b)
Psix striaticeps (Dodd, 1920)	Samin et al. (2011b)
Scelio nitens (Brues, 1906)	Sakenin et al. (2008b); Ghahari et al. (2009)
Scelio poecilopterus (Priesner, 1951)	Samin et al. (2011a)
Scelio remaudierei (Ferrière, 1952)	Ghahari et al. (2009); Samin et al. (2011b, 2012); Samin & Asgari (2012b)
Scelio zolotarevskyi Ferrière, 1930	Sakenin et al. (2008b); Ghahari et al. (2009)
Telenomus benefactor (Crawford, 1911)	Samin et al. (2011a)
Telenomus beneficiens (Zehntner, 1896)	Samin et al. (2010a, 2011a)
Telenomus dignus (Gahan, 1925)	Samin et al. (2010a, 2011a)
Telenomus phalaenarum (Nees et Esenbeck, 1834)	Samin et al. (2010a, 2011b)
Telenomus remus (Nixon, 1937)	Samin et al. (2011a),
Telenomus sechellensis (Kieffer, 1910)	Samin et al. (2010a, 2011b, 2012)
Trissolcus circus Kozlov & Lê, 1976 - a junior Synonym of *Trissolcus flavipes* (Thomson, 1860)	Samin et al. (2010b)
Trissolcus crypticus (Clarke, 1993) – a junior synonym of *Trissolcus colemani* (Crawford, 1912)	Samin et al. (2011a), Ghahari et al. (2011)
Trissolcus manteroi (Kieffer, 1909)	Sakenin et al. (2008a); Samin et al. (2010d, 2011b); Ghahari et al. (2011)
Trissolcus pseudoturesis (Ryakhavskii, 1959) - a junior synonym of *Trissolcus semistriatus* (Nees von Esenbeck, 1823)	Sakenin et al. (2008a); Samin et al. (2010d, 2011b, 2012); Ghahari et al. (2011)
Sparasionidae	
Sparasion emarginatum (Kieffer, 1906)	Samin et al. (2011a)
Sparasion punctatissimum (Kieffer, 1906)	Samin et al. (2011a)
Sparasion subleve (Kieffer, 1906)	Samin et al. (2011a)

AUTHOR'S CONTRIBUTION

The authors confirm their contribution in the paper as follows: F.M.: Compiling the species records and background data; E.R.: Drafting and preparing the manuscript; E.T.: Taxonomic revisions of the species names, drafting and revising the manuscript; M.G.M.: Conceptualization, providing the necessary literature and revising the drafts. All authors read and approved the final version of the manuscript

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AVAILABILITY OF DATA AND MATERIAL

Not applicable.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Not applicable.

CONSENT FOR PUBLICATION

Not applicable.

CONFLICT OF INTERESTS

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

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چک‌لیست زنبورهای دو خانواده Platygastridae و Scelionidae (Hymenoptera, Platygastroidea) در ایران

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چکیده: گونه‌های بالاخانوادهٔ Platygastroidea (Hymenoptera) متعلق به دو خانوادهٔ Platygastridae (۱۲ جنس و ۳۵ گونه) و Scelionidae (۱۳ جنس و ۴۶ گونه) بازبینی شدند. گونه‌های ثبت شده از خانوادهٔ Platygastridae در ایران، بخش بسیار کوچکی از فون جهانی بوده و به طور مشخص، فهرست کاملی از گونه‌های این کشور نیستند. به‌علاوه، به غیر از چند گونه به تازگی توصیف شده، سایرین در کشورهای متعدد دیگر نیز پراکنش دارند. انتشار ۲۷ گونه (۷۷/۱ ٪) از زنبورهای Platygastridae ایران محدود به منطقه پالئارکتیک است، اما بخش کوچکی در مناطق آفروتروپیکال (۱۴/۳ ٪) و نئارکتیک (۸/۶ ٪) نیز ثبت شده‌اند. انتشار ۷۷/۸ درصد از زنبورهای خانواده Scelionidae ایران محدود به منطقه پالئارکتیک بوده، در حالی‌که سایر گونه‌ها در مناطق نئارکتیک (۱۱/۱ ٪)، اورینتال (۱۱/۱ ٪)، آفروتروپیکال (۸/۹ ٪)، استرالازین (۲/۲ ٪) و نئوتروپیکال (۲/۲ ٪) نیز یافت شده‌اند. با توجه به سوابق محدود و پراکنده مطالعات انجام شده روی زنبورهای بالاخانواده Platygastroidea در ایران، به طور مشخص بخش بزرگی از کشور خصوصاً یک سوم شرقی، آن بدون بررسی باقی مانده است.

واژگان کلیدی: انتشار، فون، پارازیتوییدهای تخم، مهار زیستی.