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A faunistic study of Chalcidoidea (Hymenoptera) from Guilan province and adjacent areas, northern Iran

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Abstract

The fauna of Chalcidoidea (Hymenoptera) of Guilan province, northern Iran, was studied for this paper. In total, 36 species from nine families were collected and determined: Aphelinidae (4 genera, 5 species), Azotidae (one species), Chalcididae (4 genera, 5 species), Encyrtidae (7 genera, 8 species), Eulophidae (4 genera, 5 species), Eupelmidae (2 genera, 2 species), Mymaridae (4 genera, 5 species), Perilampidae (2 genera, 4 species), and Tetracampidae (one species). Five species (two species of Mymaridae and three species of Perilampidae) are new records from Iran.

Key words: Hymenoptera, Chalcidoidea, fauna, distribution, new records, Guilan, Iran.

Zusammenfassung

Die vorliegende Arbeit behandelt die Fauna der Chalcidoidea (Hymenoptera) in der nordiranischen Provinz Guilan. Insgesamt wurden 36 Arten aus sieben Familien nachgewiesen: Aphelinidae (4 Gattungen, 5 Arten), Azotidae (eine Art), Chalcididae (eine Gattung, 5 Arten), Encyrtidae (7 Gattungen, 8 Arten), Eulophidae (4 Gattungen, 5 Arten), Eupelmidae (2 Gattungen, 2 Arten), Mymaridae (4 Gattungen, 5 Arten), Perilampidae (2 Gattungen, 4 Arten) und Tetracampidae (eine Art). Die Arten *Stethynium triclavatum* ENOCK, 1909, *Mymar pulchellum* CURTIS, 1832 (Mymaridae) *Brachyelatus viridis* HOFFER & NOVICKY, 1954; *Perilampus auratus* (PANZER, 1798) und *Philomodes paphius* HALIDAY, 1862 (Perilampidae) sind Erstnachweise für die Fauna des Iran.

Introduction

Chalcidoid wasps (Hymenoptera: Chalcidoidea) are a fascinating group of insects, which show exquisite life histories and diverse types of host relationships (citation). They are believed to have originated in the Upper Jurassic period (NARENDRAN et al. 2007). The superfamily Chalcidoidea is one of the largest groups of parasitoid wasps with about 22,000 valid species in over than 2,000 genera world-wide (NOYES 2016), with an

estimated 500,000 species (HERATY et al. 2013). Although some species are plant feeders or associated to plant galls, the large majority are primary parasitoids of other insects and arachnids and as such, they are important participants in nature's own control system for regulating arthropod populations. Over than 800 chalcid species have been associated with targeted biological control programs (GREATHEAD 1986; GODFRAY 1994; GIBSON et al. 1997; BELLOWES & FISHER 1999).

Guilan province (37.2774°N 49.5890°E) in northern Iran lies along the Caspian Sea, just west of the Mazandaran province, east of the Ardabil province, north of the Zanjan and Qazvin provinces. This province has a humid temperate climate with a comparatively abundant annual rainfall (average: 1800 mm). The Alborz mountain range provides further diversity to the land, in addition to the Caspian coasts. The amount of humidity is quite high in the warm seasons of the year, and Guilan is known for its moderate, mild and Mediterranean-like climate. The aim of this research is the faunistic survey of some families of Chalcidoidea (Aphelinidae, Azotidae, Chalcididae, Encyrtidae, Eupelmidae, Mymaridae, Perilampidae, and Tetracampidae) in some regions of Guilan province and adjacent regions (northern Iran).

Materials and Methods

The specimens of chalcidoids were collected by sweeping nets and Malaise traps from different regions of Guilan province (northern Iran). Also some parasitoids were obtained through the rearing of their hosts in optimum conditions (27±1°C, 70±5% RH, 16: 8 L: D) in an incubator for emergence of parasitoids. The specimens were preserved in 75% ethanol after emergence and were examined by a stereoscopic binocular microscope. In this paper, classification, nomenclature and distributional data were taken from NOYES (2017).

Results

In total, 36 species of Chalcidoidea from nine families (Aphelinidae, Azotidae, Chalcididae, Encyrtidae, Eulophidae, Eupelmidae, Mymaridae, Perilampidae, Tetracampidae) were collected and determined from some regions of Guilan province and adjacent areas. Two species of Mymaridae: *Stethynium triclavatum* ENOCK, 1909, *Mymar pulchellum* CURTIS, 1832, and three species of Perilampidae: *Brachyelatus viridis* HOFFER & NOVICKY, 1954, *Perilampus auratus* (PANZER, 1798), and *Philomides paphius* HALIDAY, 1862, are new records for Iran.

Family A p h e l i n i d a e THOMSON, 1876

Genus *Aphelinus* DALMAN, 1820

Aphelinus flaviventris KURDJUMOV, 1913

Material examined: Guilan province, Lahijan, 37°14'N 50°02'E, 3♀♀, 16-18 May 2014, ex *Macrosiphum* sp. (Homoptera: Aphididae).

Distribution outside Iran: Azerbaijan, Croatia, Czech Republic, France, Georgia, Hungary, Kazakhstan, Moldova, Romania, Serbia, Spain, Sweden, UK, USA.

Genus *Aphytis* HOWARD, 1900

***Aphytis melinus* DEBACH, 1959**

Material examined: Guilan province, Lahijan, 37°14'N 50°02'E, 2♀♀, 16-18 May 2014, ex *Aspidiotus nerii* BOUCHÉ, 1833 (Hemiptera: Diaspididae). Guilan province, Amlash, 36°59'N 50°09'E, 3♀♀, 11 June 2010, ex *Parlatoria pergandii* COMSTOCK, 1881 (Hemiptera: Diaspididae). Guilan province, Roodsar, 36°42'N 50°18'E, 2♀♀, 9-10 July 2011, ex *Aspidiotus destructor* SIGNORET, 1869 (Hemiptera: Diaspididae).

Distribution outside Iran: Argentina, Australia, Chile, China, Cyprus, France, Georgia, Greece, India, Israel, Italy, Mexico, Morocco, Netherlands, Pakistan, Paraguay, Peru, South Africa, Spain, Turkey, USA, Uruguay, former Yugoslavia.

Genus *Coccobius* RATZEBURG, 1852

***Coccobius varicornis* (HOWARD, 1881)**

Material examined: Guilan province, Roodsar, 36°42'N 50°18'E, 2♀♀, 9-10 July 2011, *Aspidiotus destructor* SIGNORET, 1869 (Hemiptera: Diaspididae). Guilan province, Rasht, 37°16'N 49°42'E, 3♀♀, 25-26 August 2013, ex *Coccus hesperidum* LINNAEUS, 1758 (Hemiptera: Coccidae).

Distribution outside Iran: Canada, Italy, Sri Lanka, USA.

Genus *Encarsia* FÖRSTER, 1878

***Encarsia lounsburyi* (BERLESE & PAOLI, 1916)**

Material examined: Guilan province, Roodbar (Vishan), 36°49'N 49°35'E, 2♀♀, 13 July 2011, ex *Parlatoria oleae* (COLVÉE, 1880) (Hemiptera: Diaspididae). Guilan province, Roodsar, 36°42'N 50°18'E, 2♀♀, 9-10 July 2011, ex *Chrysomphalus dictyospermi* (MORGAN, 1889) (Hemiptera: Diaspididae). Guilan province, Langrood (Javardeh), 37°09'N 50°08'E, 3♀♀, 2♂♂, 16-18 May 2014, ex *Lepidosaphes ulmi* (LINNAEUS, 1758) (Hemiptera: Diaspididae). Guilan province, Lahijan, 37°14'N 50°02'E, 4♀♀, 16-18 May 2014, ex *Parlatoria ziziphi* (LUCAS, 1853) (Hemiptera: Diaspididae).

Distribution outside Iran: Argentina, Australia, Bermuda, Brazil, Canada, Chile, China, Cuba, Republic of Dominica, Egypt, France, Haiti, Indonesia, Italy, Madeira, Malawi, Mexico, Morocco, Mozambique, New Caledonia, Peru, Philippines, Puerto Rico, Senegal, Switzerland, Trinidad & Tobago, Turkey, USA, Venezuela.

***Encarsia perniciosi* (TOWER, 1913)**

Material examined: Guilan province, Siahkal, 36°56'N 49°54'E, 4♀♀, 12 July 2011, ex *Quadraspidotus perniciosus* (COMSTOCK, 1881) (Hemiptera: Diaspididae). Guilan province, Lahijan, 37°14'N 50°02'E, 3♀♀, 16-18 May 2014, ex *Lepidosaphes beckii* (NEWMAN, 1869) (Hemiptera: Diaspididae). Guilan province, Fooman, 37°13'N 49°19'E, 3♀♀, 16 July 2014, ex *Aonidiella aurantii* (MASKELL, 1879) (Hemiptera: Diaspididae).

Distribution outside Iran: Argentina, Australia, Austria, Azerbaijan, Bermuda, Brazil, Bulgaria, Canada, Caucasus, Chile, China, Croatia, Czech Republic, Egypt, France, Georgia, Germany, Greece, Hungary, India, Israel, Italy, Korea, Mexico, Moldova, Pakistan, Portugal, Russia, Serbia, Slovakia, Slovenia, South Africa, Spain, Switzerland, Turkey, USA, Uruguay, former Yugoslavia.

Family A z o t i d a e NIKOLSKAYA & YASNOSH, 1966

Genus *Ablerus* HOWARD, 1894

***Ablerus perspicuosus* GIRAULT, 1916**

Material examined: Guilan province, Lahijan, 37°14'N 50°02'E, 3♀♀, 16-18 May 2014, ex *Chrysomphalus aonidum* (LINNAEUS, 1758) (Hemiptera: Diaspididae). Guilan province, Roodbar (Sangrud), 36°49'N 49°35'E, 2♀♀, 13 July 2011, ex *Saissetia oleae* (OLIVIER, 1791) (Hemiptera: Coccidae).

Distribution outside Iran: Argentina, China, Egypt, France, India, Israel, Italy, Japan, Serbia, Thailand, Turkey, USA.

Family C h a l c i d i d a e LATREILLE, 1817

Genus *Anachalcis* STEFFAN, 1951

***Anachalcis rubra* STEFFAN, 1951**

Material examined: Qazvin province, Moalem Kelayeh, 36°44'N 50°41'E, 1♀, 26 April 2015.

Distribution outside Iran: Bulgaria, Caucasus, Greece, Macedonia, Montenegro, Turkey.

Genus *Euchalcis* DUFOUR, 1861

***Euchalcis miegii* DUFOUR, 1861**

Material examined: Guilan province, Lahijan (Kord-Mahaleh, 37°16'N 50°03'E, 1♀, 16-18 May 2014.

Distribution outside Iran: Albania, Algeria, Armenia, Greece, Israel, Italy, Jordan, Kirgizia, Spain, Tunisia, Turkey.

Genus *Neochalcis* KIRBY, 1883

***Neochalcis osmicida* (SAUNDERS, 1873)**

Material examined: Mazandaran province, Tonekabon, Jangale-2000, 2♀♀, 1♂, 14 August 2014.

Distribution outside Iran: Albania, Czech Republic, France, Greece, Hungary, Italy, Kazakhstan, Russia, Slovakia, Switzerland, Tunisia, Ukraine, USSR.

Genus *Psilochalcis* KIEFFER, 1905

***Psilochalcis ligustica* (MASI, 1929)**

Material examined: Guilan province, Siahkal, 36°56'N 49°54'E, 1♀, 12 July 2011.
Guilan province, Roodsar, 36°42'N 50°18'E, 2♀♀, 9-10 July 2011.

Distribution outside Iran: Caucasus, Central Asia, Croatia, Cyprus, Czech Republic, Greece, Hungary, India, Italy, Romania, Slovakia, Syria, Tunisia, Turkey, former USSR.

***Psilochalcis rufitarsis* (ILLIGER, 1807)**

Material examined: Guilan province, Fooman, 37°13'N 49°19'E, 2♀♀, 1♂, 9 September 2012.

Distribution outside Iran: Central Asia, Croatia, Cyprus, France, Hungary, Italy, Kazakhstan, Moldova, Slovakia, Spain, Sweden, Syria, Transcaucasus, Turkey, Ukraine, former USSR.

Family Encyrtidae WALKER, 1837

Genus *Anicetus* HOWARD, 1896

***Anicetus annulatus* TIMBERLAKE, 1919**

Material examined: Guilan province, Roodbar (Sangrud), 36°49'N 49°35'E, 2♀♀, 2♂♂, 14 July 2011, ex *Saissetia oleae* (OLIVIER, 1791) (Hemiptera: Coccidae).

Distribution outside Iran: Albania, Australia, Bermuda, China, Colombia, Croatia, Cuba, Dominican Republic, Haiti, Hawaii, Honduras, India, Jamaica, Japan, Mexico, Russia, Taiwan, Thailand, Trinidad & Tobago, USA, former Yugoslavia.

Genus *Copidosoma* RATZEBURG, 1844

***Copidosoma agrotis* (FONSCOLOMBE, 1832)**

Material examined: Guilan province, Lahijan (Amir-Kelayeh), 37°14'N 50°02'E, 2♀♀, 16-18 May 2014, ex *Agrotis segetum* (DENIS & SCHIFFERMÜLLER, 1775) (Lepidoptera: Noctuidae).

Distribution outside Iran: Andorra, Armenia, Austria, China, Croatia, Czech Republic, Denmark, Europe, Finland, France, Georgia, Germany, Hungary, Italy, Kazakhstan, Mongolia, Norway, Russia, Slovakia, Spain, Sweden, Switzerland, Turkey, Turkmenistan, UK, former USSR, former Yugoslavia.

***Copidosoma truncatellum* (DALMAN, 1820)**

Material examined: Guilan province, Langrood (Galeshkalam), 37°09'N 50°08'E, 4♀♀, 16-18 May 2014, *Zeuzera pyrina* (LINNAEUS, 1761) (Lepidoptera: Cossidae).

Distribution outside Iran: Andorra, Argentina, Austria, Brazil, Canada, Cape Verde Islands, Caribbean (including West Indies), Chile, China, Colombia, Cuba, Czech Republic, Denmark, Egypt, Europe, Finland, France, Georgia,

Germany, Greece, Hawaii, Hungary, Italy, Macedonia, Mexico, Montenegro, Nearctic, Netherlands, Norway, Poland, Puerto Rico, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, UK, USA, Uruguay, former USSR, Venezuela, former Yugoslavia.

Genus *Encyrtus* LATREILLE, 1809

***Encyrtus swederi* DALMAN, 1820**

M a t e r i a l e x a m i n e d : Guilan province, Langrood, 37°09'N 50°08'E, 2♀♀, 16-18 May 2014, ex *Coccus hesperidum* LINNAEUS, 1758 (Hemiptera: Coccidae).

D i s t r i b u t i o n o u t s i d e I r a n : Armenia, Azerbaijan, Brazil, Bulgaria, Croatia, Czech Republic, Finland, France, Georgia, Germany, Hungary, Mongolia, Montenegro, Norway, Russia, Serbia, Slovakia, Spain, Sweden, Switzerland, Ukraine, United Kingdom, former Yugoslavia.

Genus *Ericydnus* WALKER, 1837

***Ericydnus apterogenes* MAYR, 1876**

M a t e r i a l e x a m i n e d : Guilan province, Roodbar (Vishan), 36°49'N 49°35'E, 1♂, 13 July 2011.

D i s t r i b u t i o n o u t s i d e I r a n : Austria, Czech Republic, France, Georgia, Germany, Norway, Norway, Romania, Slovakia, Sweden, Turkey, UK.

Genus *Mayridia* MERCET, 1921

***Mayridia myrlea* (WALKER, 1838)**

M a t e r i a l e x a m i n e d : Guilan province, Rasht (Bijarkhaleh), 37°16'N 49°42'E, 3♀♀, 25-26 August 2013.

D i s t r i b u t i o n o u t s i d e I r a n : Armenia, Azerbaijan, Bulgaria, Croatia, former Czechoslovakia, France, Germany, Hungary, Moldova, Mongolia, Netherlands, Romania, Russia, Spain, Sweden, Tajikistan, Ukraine, UK, former Yugoslavia.

Genus *Microterys* THOMSON, 1876

***Microterys tessellatus* (DALMAN, 1820)**

M a t e r i a l e x a m i n e d : Guilan province, Lahijan, 37°14'N 50°02'E, 1♀, 2♂♂, 16-18 May 2014, ex *Eulecanium tiliae* (LINNAEUS, 1758) (Hemiptera: Coccidae)

D i s t r i b u t i o n o u t s i d e I r a n : Armenia, Austria, Azerbaijan, Bulgaria, Croatia, Czech Republic, Denmark, Georgia, Germany, Greenland, Hungary, Italy, Lithuania, Macedonia, Moldova, Mongolia, Montenegro, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Ukraine, United Kingdom.

Genus *Tetracnemus* WESTWOOD, 1837

***Tetracnemus bifasciatellus* (MERCET, 1919)**

M a t e r i a l e x a m i n e d : Guilan province, Talesh (Lisar protected area), 37°80'N 48°90'E, 3♀♀, 7-8 June 2013, ex *Pseudococcus filamentosus* (COCKERELL, 1893) (Hemiptera: Pseudococcidae).

D i s t r i b u t i o n o u t s i d e I r a n : Armenia, Azerbaijan, Canary Islands, Russia, Slovakia, South Africa, Spain, Sweden.

Family Eulophidae WESTWOOD, 1829

Genus *Colpoclypeus* LUCCHESI, 1941

***Colpoclypeus florus* (WALKER, 1938)**

M a t e r i a l e x a m i n e d : Ardabil province, Bile-Savar (Moradloo), 39°38'N 43°36'E, 2♀♀, 1♂, 23 July 2014.

D i s t r i b u t i o n o u t s i d e I r a n : Armenia, Azerbaijan, Bulgaria, Canada, Czech Republic, France, Germany, Hungary, Italy, Moldova, Morocco, Netherlands, Poland, Romania, Russia, Slovakia, Spain, Sweden, Turkey, Ukraine, UK, USA.

Genus *Aprostocetus* WESTWOOD, 1833

***Aprostocetus crino* (WALKER, 1838)**

M a t e r i a l e x a m i n e d : Guilan province, Talesh (Lisar Protected Area), 37°80'N 48°90'E, 3♀♀, 7-8 June 2013.

D i s t r i b u t i o n o u t s i d e I r a n : Andorra, Bulgaria, China, Croatia, Czech Republic, Denmark, France, Germany, Hungary, Iceland, Ireland, Italy, Moldova, Montenegro, Netherlands, Romania, Russia, Slovakia, Sweden, Turkey, UK, USA, former Yugoslavia.

Genus *Elasmus* WESTWOOD, 1833

***Elasmus flabellatus* (FONSCOLOMBE, 1832)**

M a t e r i a l e x a m i n e d : Mazandaran province, Tonekabon, Jangale-2000, 1♀, 14 August 2014.

D i s t r i b u t i o n o u t s i d e I r a n : Austria, Bosnia Hercegovina, Bulgaria, Croatia, Czech Republic, France, Germany, Greece, Hungary, Israel, Italy, Lebanon, Moldova, Morocco, Netherlands, Portugal, Romania, Russia, Serbia, Slovakia, Spain, Sweden, Turkey, UK, USA, former Yugoslavia.

***Elasmus unicolor* (RONDANI, 1877)**

M a t e r i a l e x a m i n e d : Qazvin province, Takestan (Qarehdash), 36°11'N 49°27'E, 2♀♀, 3 June 2011.

D i s t r i b u t i o n o u t s i d e I r a n : Bulgaria, Czech Republic, France, Germany,

Hungary, Israel, Italy, Moldova, Russia, Slovakia, Spain, Sweden, Switzerland, Turkey, Turkmenistan.

Genus *Sympiesis* FÖRSTER, 1856

***Sympiesis dolichogaster* ASHMEAD, 1888**

Material examined: Guilan province, Langrood, 37°09'N 50°08'E, 3♀♀, 16-18 May 2014.

Distribution outside Iran: Armenia, Australia, Austria, Canada, Canary Islands, China, Cuba, Czech Republic, France, Germany, Greece, Hungary, India, Indonesia, Israel, Italy, Japan, Netherlands, Pakistan, Romania, Russia, Slovakia, Sri Lanka, Switzerland, Tadjikistan, Taiwan, Thailand, Ukraine, UK, USA.

Family Eupelmidae WALKER, 1833

Genus *Anastatus* MOTSCHULSKY, 1859

***Anastatus bifasciatus* (GEOFFROY, 1785)**

Material examined: Guilan province, Langrood (Javardeh), 37°09'N 50°08'E, 2♀♀, 1♂, 16-18 May 2014.

Distribution outside Iran: Bosnia Hercegovina, Bulgaria, China, Croatia, Cyprus, Czech Republic, France, Germany, Greece, Hungary, India, Israel, Italy, Japan, Kazakhstan, Kenya, Kirgizia, Korea, Lebanon, Moldova, Montenegro, Morocco, North Africa, Portugal, Romania, Russia, Serbia, Slovakia, Spain, Sweden, Turkey, Ukraine, USA, former Yugoslavia.

Genus *Eupelmus* DALMAN, 1820

***Eupelmus vesicularis* (RETZIUS, 1783)**

Material examined: Guilan province, Talesh, 37°80'N 48°90'E, 2♀♀, 7-8 June 2013.

Distribution outside Iran: Algeria, Andorra, Austria, Bulgaria, Canada, Caucasus, Croatia, Czech Republic, Denmark, England, Finland, France, Germany, Greece, Hungary, Israel, Italy, Kazakhstan, Macedonia, Moldova, Morocco, Netherlands, New Zealand, North Africa, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Transcaucasus, Turkey, Turkmenistan, Ukraine, USA, former Yugoslavia.

Family Myrmidae HALIDAY, 1833

Genus *Anaphes* HALIDAY, 1833

***Anaphes flavipes* (FÖRSTER, 1841)**

Material examined: Mazandaran province, Ramsar (Grasmasar), 36°43'N 50°35'E, 2♀♀, 1♂, 15 September 2015.

Distribution outside Iran: Austria, Belgium, Bulgaria, Canada, Czech Republic, France, Germany, Hungary, Italy, Macedonia, Netherlands, Poland, Romania, Russia, Serbia, Switzerland, UK, Ukraine, USA, former Yugoslavia.

Genus *Ooetonus* HALIDAY, 1833

***Ooetonus hemipterus* HALIDAY, 1833**

Material examined: Guilan province, Roodbar (Sangrud), 36°49'N 49°35'E, 2♀♀, 13 July 2011.

Distribution outside Iran: Austria, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Kirgizia, Morocco, Netherlands, Poland, Romania, Russia, Slovakia, Slovenia, Sweden, Switzerland, Turkey, UK, USA.

***Ooetonus vulgatus* HALIDAY, 1833**

Material examined: Guilan province, Amlash, 36°59'N 50°09'E, 1♀, 11 June 2010.

Distribution outside Iran: Austria, Belgium, Bulgaria, Canada, China, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Madeira, Moldova, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Serbia, Spain, Sweden, Switzerland, UK, USA.

Genus *Stethynium* ENOCK, 1909

***Stethynium triclavatum* ENOCK, 1909**

Material examined: Mazandaran province, Tonekabon, Jangale-2000, 1♀, 1♂, 14 August 2014. **New record for Iran.**

Distribution outside Iran: Belgium, Bermuda, Bulgaria, Canada, China, Denmark, Egypt, France, Germany, Greece, Hawaii, India, Italy, Nepal, Pakistan, Romania, Russia, Switzerland, UK, USA.

Genus *Mymar* CURTIS, 1829

***Mymar pulchellum* CURTIS, 1832**

Material examined: Mazandaran province, Tonekabon, Jangal-e 3000, 36°33'N 50°44'E, 2♀♀, 18 September 2012. **New record for Iran.**

Distribution outside Iran: Belgium, Canada, Czech Republic, Denmark, France, Georgia, Germany, Japan, Moldova, Netherlands, New Zealand, Romania, Russia, Sweden, Ukraine, UK, USA.

Family *Perilampidae* FÖRSTER, 1856

Genus *Brachyelatus* HOFFER & NOVICKY, 1954

***Brachyelatus viridis* HOFFER & NOVICKY, 1954**

Material examined: Guilan province, Astara (Baskem-Chal), 38°20'N 48°46'E, 2♀♀, 14 September 2012. **New record for Iran.**

Distribution outside Iran: Austria, Azerbaijan, Czech Republic, Hungary, Moldova, Spain, Ukraine, former USSR.

Genus *Perilampus* DALMAN, 1820

***Perilampus auratus* (PANZER, 1798)**

Material examined: Guilan province, Talesh (Lisar protected area), 37°80'N 48°90'E, 1♀, 7-8 June 2013. **New record for Iran.**

Distribution outside Iran: Caucasus, Croatia, Czech Republic, Germany, Hungary, Kazakhstan, Moldova, Netherlands, Russia, Slovakia, Sweden, Ukraine.

***Perilampus micans* DALMAN, 1820**

Material examined: Guilan province, Amlash, 36°59'N 50°09'E, 2♀♀, 1♂, 11 June 2010.

Distribution outside Iran: Armenia, Croatia, Czech Republic, France, Germany, Hungary, India, Indonesia, Malaysia, Slovakia, Sweden, Transcaucasus, UK, USA.

***Philomides paphius* HALIDAY, 1862**

Material examined: Guilan province, Langrood (Golsefid), 37°09'N 50°08'E, 1♀, 16-18 May 2014. **New record for Iran.**

Distribution outside Iran: Albania, Caucasus, Cyprus, Greece, India, Italy, Kazakhstan, Russia, Spain, Turkmenistan, former Yugoslavia.

Family *Tetracampidae* FÖRSTER, 1856

Genus *Platynocheilus* WESTWOOD, 1837

***Platynocheilus cuprifrons* (NEES, 1834)**

Material examined: Guilan province, Amlash, 36°59'N 50°09'E, 3♀♀, 11 June 2010.

Distribution outside Iran: Algeria, Austria, Canary Islands, Caucasus, Central Asia, Croatia, Czech Republic, Denmark, Egypt, France, Georgia, Germany, Hungary, Ireland (north and south), Italy, Moldova, Montenegro, Netherlands, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Transcaucasus, Turkey, UK, former USSR.

Discussion

The results of this investigation, including three new country records indicate that the fauna of Chalcidoidea is diverse in Guilan province. Most of the collected species are parasitoids of agricultural pests and can have an efficient role in biological control. Since Guilan province contains vast forests and various crop fields and ornamentals, these beneficial insects can be effective in controlling various agricultural pests. Conservation of these natural enemies will result in decreasing pesticides application in different agroecosystems (HOY & HERZOG, 1985; FLINT & DREISTADT 1998). Determining the hosts of these parasitoids is a really important subject which must be attended in order to the establishment of biological control programs. Among the different families of Chalcidoidea, only Aphelinidae (ABD-RABOU et al. 2013), Encyrtidae (FALLAHZADEH & JAPOSHVILI 2017), Eulophidae (TALEBI et al. 2011; HESAMI et al. 2011), Eurytomidae and Torymidae (STOJANOVA & GHAHARI 2009) and Pteromalidae (GHAHARI et al. 2015) have been studied rather well in Iran and catalogued.

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