

The family Torymidae (Hymenoptera: Chalcidoidea) of Kerman province, Southeastern Iran

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Abstract. The family Torymidae (Hymenoptera: Chalcidoidea) is an important group because of its role as agricultural pests or biocontrol agent pests in many ecosystems. Fauna of this family was studied in the northern areas of Kerman province (Southeastern Iran). In this study eight species belonging to seven genera were collected and identified. Their taxonomic, biological and distributional data are presented. Within collected specimens, two species are new records for the Iranian fauna: *Pseudotorymus militaris* (Boheman) and *Torymoides kiesewetteri* (Mayr).

Key words: Fauna, Torymidae, Hymenoptera, new records, Iran.

Introduction

The family Torymidae with 986 described species (Noyes, 2012) and a wide range of hosts is considered as one of important families of the superfamily Chalcidoidea from the biological and morphological perspective. The family contains two subfamilies, Toryminae which includes 55 genera and Megastigminae with 12 genera. Members of this family are both entomophagous and phytophagous (Grissell 1995). The subfamily Megastigminae includes primarily phytophagous species which are associated with seeds of coniferous trees and rosaceous plants (Roques & Skrzypczynska 2003). The subfamily Toryminae includes entomophagous species, especially on gall forming Hymenoptera and Diptera (Grissell 1995). The torymid fauna of Iran is not investigated completely. The same situation seems to be true for other taxa of Hymenoptera too, where new records and new species have been recently published (Lotfalizadeh 2008, Lotfalizadeh et al. 2009, Hasani et al. 2011, Lashkari- Bod et al. 2011, Mitroiu et al. 2011, Mohammadi- Khoramabadi et al. 2011, Zargaran et al. 2011, Farahani et al. 2012, Ghahari & Huang 2012, Lotfalizadeh & Fakhrzadeh 2012, Samin & Asgari 2012). The first record of Torymidae from Iran is given by Peck et al. (1963). A few torymids have been included in catalogues and revisional works (Grissell 1979, Roques & Skrzypczynska 2003). The literatures concerned to Iranian fauna of Torymidae are limited to the publications of Ebrahimi & Ahmadian (2002), Nikdel et al. (2004), Noyes (2012), Rakhshani et al. (2003a,b), Modares Awal (1997), Grissell (1979), Roques & Skrzypczynska (2003), Gharali & Zerova (2004), Azizkhani et al. (2005), Baur (2005), Delvare (2005), Askew et al. (2006), Hesami et al. (2008) and Nieves-Aldrey et al. (2008). With recent publications the number of Torymidae species in Iran reached to 36 species belonging to 13 genera to date (Lotfalizadeh & Gharali 2005, Stojaneva & Ghahari, 2009). The aim of the present study is a contribution to the knowledge of the torymid wasps that recently collected from Kerman Province located in Southeastern Iran.

Material and methods

The torymid specimens were collected from northern areas of Ker-

man Province where there are varied climatic conditions during 2008-2012 using sweeping net and rearing parts of plants, such as galls on *Rosa beggeriana* Schrenk. The specimens were preserved in 75% Alcohol and then were mounted following Noyes (1989). The specimens were identified using Askew (2000, 2002), Bouček (1970a, 1978), Graham & Giswilt (1998), Grissell (1995, 2000), Steffan (1952) and Zerova & Seryogina (1998, 1999). The abbreviations used in the description of the species are: OOL: ocellar-ocular distance i. e. the distance between a lateral ocellus and the closest eye; POL: postocellar distance i. e. the distance between the lateral ocelli; SMV: submarginal vein length; MV: marginal vein length; PMV: postmarginal vein length; STV: stigma vein length; T1: first tergum.

Results and discussion

The list of torymid wasps of Kerman Province includes eight species belonging to seven genera from which two are new records for Iran. New records for Kerman province marked with one asterisk and new records for Iranian fauna marked with two asterisks (Table 1).

Table 1. Collected species of Torymidae from Kerman Province.

Subfamily	Genus	Species
Megastigminae	<i>Megastigmus</i>	<i>M. rosae</i> Bouček*
Toryminae	<i>Idiomacromerus</i>	<i>I. terebrator</i> (Masi)*
	<i>Microdontomerus</i>	<i>M. annulatus</i> (Spinola)*
	<i>Monodontomerus</i>	<i>M. obscurus</i> Westwood*
	<i>Pseudotorymus</i>	<i>P. medicaginis</i> (Mayr)*
		<i>P. militaris</i> (Boheman)**
	<i>Torymoides</i>	<i>T. kiesewetteri</i> (Mayr)**
<i>Torymus</i>	<i>T. bedeguaris</i> (Linnaeus)	

Subfamily: Megastigminae

Megastigmus rosae Bouček, 1971*

Material examined: Iran: Kerman province, Kouhpayeh, N30°30'53.1" E57°9'55.2", 2519m, 29.V.2009, ex. *Diplolepis fructuum* on *R. beggeriana* (F. Abolhasanzadeh), 7♀♀.

Biology: In the present study this species was reared from galls of *R. beggeriana*. It also already was reared from seeds of *Rosa canina* L. in East-Azərbayjan Province (Lotfalizadeh & Gharali 2005).

Distribution: It is widely distributed in the Palaearctic (Noyes 2012). Seven species of the genus *Megastigmus* have been reported from Iran (Lotfalizadeh & Gharali 2005, Stojaneva & Ghahari, 2009, Fallahzadeh et al. 2009). This is the first record of this species from Kerman Province.

Subfamily: Toryminae

Idiomacromerus terebrator (Masi, 1916)*

Material examined: Iran: Kerman province, Kerman, N29°48'5.4" E56°57'28.4", 2205m, 6.V.2011, (F. Abolhasanzadeh), 3♀♀. Iran: Kerman province, Kouhbanan, N31°26'8.3" E56° 7'22.7", 1910m, 12.VI.2011, (F. Abolhasanzadeh), 2♀♀. Iran: Kerman province, Kouhpayeh, N30°30'42.2" E57°11'8.6", 2558 m, 5.V.2011, (F. Abolhasanzadeh), 1♀. Iran: Kerman province, Mahan, N30°2'20.9" E57°17'38.5", 1936 m, 17.VI.2011, (F. Abolhasanzadeh), 1♀. Iran: Kerman province, Sang-e-Sayad, N29°37'13.8" E56°53'2.9", 2748 m, 13.VI.2011, (F. Abolhasanzadeh), 2♀♀ & 1♂.

Biology: This Holarctic species was collected by sweep-net. It was also already collected on different families of plants such as Gramineae and Fabaceae grown under fruit trees in East-Azerbaijan Province (Lotfalizadeh & Gharali, 2005).

Distribution: This species is distributed in Holarctic region (Noyes 2012). This is the first record of this species from Kerman Province.

This species is similar to *I. perplexus* (Gahan), but in *I. terebrator* the stigmal vein is slightly clouded and ovipositor is longer. Three species *I. papaveris* (Förster), *I. perplexus* (Gahan) and *I. terebrator* are known from northern parts of Iran (Lotfalizadeh & Gharali 2005).

Microdontomerus annulatus (Spinola, 1808)*

Material examined: Iran: Kerman province, Kerman, N29°48'5.4" E56°57'28.4", 2205m, 6.V.2011, (F. Abolhasanzadeh), 1♀. Iran: Kerman province, Kouhbanan, N31°26'8.3" E56° 7'22.7", 1910m, 12.V.2011, (F. Abolhasanzadeh), 2♀♀.

Biology: This species was reared from safflower capitula as a parasitoid of three species of fruit flies, *Acanthophilus helianthi* (Rossi), *Chaetorellia carthami* Stackelberg and *Terellia serratulae* (Linnaeus) (Diptera: Tephritidae) (Lotfalizadeh & Gharali 2005).

Distribution: It is widely distributed in the Palaearctic region (Noyes, 2012). This species was already reported from Iran (Lotfalizadeh & Gharali, 2005). This is the first record of this species from Kerman Province.

Grissell (1995) believes that it is difficult to distinguish this genus from *Idiomacromerus* but he separated them based on the presence of occipital carina in *Idiomacromerus* whereas it is absent in *Microdontomerus* (Grissell 2005).

Monodontomerus obscurus Westwood, 1833*

Material examined: Iran: Kerman province, Kerman, N30°00'14.8" E57°12'04", 1700 m, 24.IV.2011, (F. Abolhasanzadeh), 1♀. Iran: Kerman province, Kerman, N30°00'14.8" E57° 12'04", 1700 m, 13.VIII.2011, (F. Abolhasanzadeh), 1♀.

Biology: The reported Palaearctic hosts include: *Hoplitis* (*Hoplitis*) *adunca* (Panzer, 1798) and *Osmia rufa* (Linnaeus, 1758) (Megachilidae) (Steffan 1952), *Eumenes pomiformis* (Fabricius 1781) (Vespididae) in the nest of *Chlicodomas* sp. (Megachilidae) and in the nest of *Sceliphron destillatorium* (Illiger, 1807) (Sphecidae) (Bouček 1970b), *Megachile wil-*

lughbiella (Kirby, 1802) (Megachilidae) (Holm & Skou 1972), *Xylocopa fenestrata* (Anthophoridae) (Sihag 1992). The reported Nearctic hosts include: *Osmia cornuta* (Latreille, 1805), *O. lignaria* Say, 1837 and alfalfa leafcutter bee, *Megachile rotundata* (Fabricius, 1787) (Megachilidae) (Grissell 1995).

Distribution: It is reported from Palaearctic, Nearctic and Oriental regions (Lotfalizadeh & Gharali 2005). This species was already collected by sweep net in a cotton field in Ilam Province (Lotfalizadeh & Gharali, 2005). This is the first record of this species from Kerman Province.

Beside this species, three species of the genus *Monodontomerus* (*M. aereus* Walker, *M. aeneus* Fonscolombe) and *M. vicicellae* (Walker) has been reported from Iran (Lotfalizadeh & Gharali 2005, Fallahzadeh et al. 2009).

Pseudotorymus medicaginis (Mayr, 1874)*

Material examined: Iran: Kerman province, Kouhbanan, N31°26'8.3" E56°7'22.7", 1910 m, 12.VI.2011, (F. Abolhasanzadeh), 1♀.

Biology: This species is a parasitoid of gall-making Cecidomyiidae (Diptera) that was collected in alfalfa fields (*Medicago sativa* L.) in East-Azerbaijan (Lotfalizadeh & Gharali, 2005) and from Cecidomyiidae galls on *Medicago* sp. in Romania (Popescu et al. 2002). It was already reported on root galls of Fabaceae from Mongolia, Austria and Ukraine (Noyes, 2012).

Distribution: This species is distributed in Palaearctic region (Noyes 2012). This is the first record of this species from Kerman Province.

This species is morphologically close to *P. euphorbiae*, but they can be separated by the second funicular segment. In *P. medicaginis* the second funicular segment is equal to the first funicular segment, but in *P. euphorbiae* it is shorter.

Most important characters of this species are as follow: Mesoscutum rugulose with irregular sculpture, basal vein of forewing with at most 4 hairs, basal cell open below, costal cell with at most 3 hairs on upper surface at apex, hind femur with small tooth, ovipositor shorter than gaster (0.85× of gaster) and it's index is 1.65 (the ratio of length of ovipositor sheath to metatibia). Five species of the genus *Pseudotorymus* known from Iran: *P. euphorbiae* Zerova and Seryogina, *P. medicaginis* (Mayr), *P. militaris* (Boheman), *P. regalis* Askew and *P. stachidis* (Mayr) (Lotfalizadeh & Gharali 2005, Fallahzadeh et al. 2009).

Pseudotorymus militaris (Boheman, 1834)** (Fig.1.A, B)

Material examined: Iran: Kerman province, Bidkhan, N29°33'859" E56°30'678", 3051 m, 23.V.2011, (F. Abolhasanzadeh), 3♀♀. Iran: Kerman province, Hotkan, N30°51'1.4" E56° 48'2.7", 2220 m, 4.VI.2011, (S. M. Madjdzadeh), 1♀.

Biology: The type specimen was associated with grasses (Grissell 1995). This species was considered to be associated with *Salix* (Nikol'skaya & Zerova 1978).

Distribution: This species is distributed in Czech Republic, Europe, Germany, Sweden, Turkey, Ukraine and United Kingdom (Noyes, 2012). It is reported for the first time from Iran.

This species could be identified from first species by following characters: Mesoscutum relatively finely and evenly sculptured, forewing basal vein with at most 4 hairs, basal cell open below, costal cell with at most 3 hairs on upper surface at apex, ovipositor sheath shorter than gaster (0.6× of

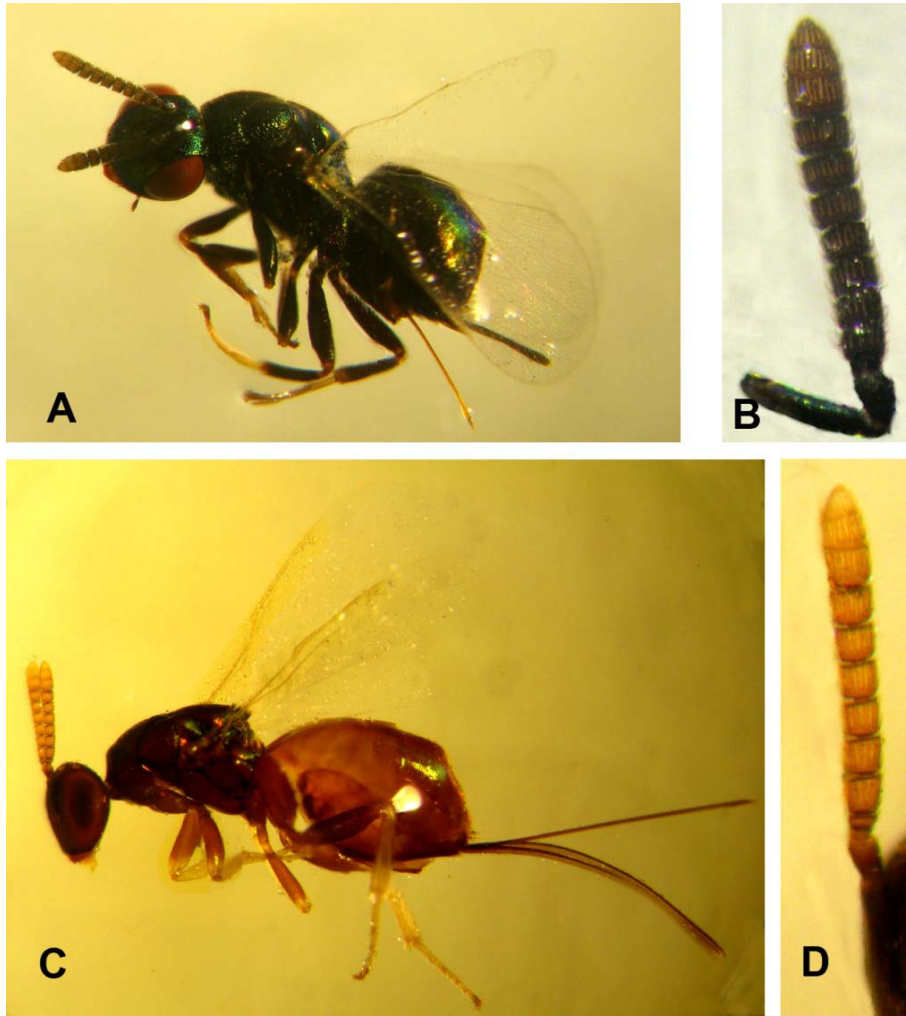


Figure 1. *Pseudotorymus militaris*: A- female in lateral view, B- female antenna, *Torymoides kiesewetteri*: C- female in lateral view, D- female antenna.

gaster), ovipositor index: 1.

Torymoides kiesewetteri (Mayr, 1874)** (Fig.1.C, D)

Material examined: Iran: Kerman province, Bardsir, N31°23'25.7" E56°29'36.8", 2022 m, 10.VI.2009, (F. Abolhasanzadeh), 2♀. Iran: Kerman province, Sirch, N30°11'47.6" E57°33'44.4", 1971m, 27.VIII.2009, (F. Abolhasanzadeh), 1♀. Iran: Kerman province, Rafsanjan, N30° 22'8.2" E55° 23'59.8", 2387 m, 20.V.2011, (F. Abolhasanzadeh), 1♀.

Biology: The biology of the genus *Torymoides* is poorly known but most of them have been reared on gall forming insects such as Cecidomyiidae and Tephritidae (Diptera) (Rivosecchi 1960, Szczepanski 1983, Kapoor & Agarwal 1983, Agrawal & Kapoor 1989, Narendran 1994).

Distribution: This species is distributed in Palearctic and Oriental region (Noyes 2012). It is reported for the first time from Iran.

The genus *Torymoides* characterized by antennal formula: 11263, posterior margin of mesepimeron sinuate, hind tibia with two unmodified spurs. Important characters of *T. kiesewetteri* are: scape and pedicel dark metallic green, vertex narrow and rugulose, POL 3x OOL, first four funicular segments not subequal, forewing with SMV: MV: PMV: STV=

84:58:9:5, T1 slightly incised posteriorly, exerted part of ovipositor longer than gaster.

Torymus bedeguaris (Linnaeus, 1758)

Material examined: Iran: Kerman, Sarcheshmeh, N 29°59'52" E 55°51'26", 2564m, 17.IX.2008, (M. Rajabi), 8♀♀ & 1♂. Iran: Kerman, Sarcheshmeh, N30°31'55" E57°13'44", 2515m, 25.IV.2009, (M. Rajabi), 50♀♀ & 87♂♂.

Biology: It is a common parasitoid of gall-making Cynipidae on *Rosa*. *Torymus bedeguaris* was reared from *Diplolepis fructuum* (Rubs.) on *Rosa canina* L. in East-Azərbayjan Province (Lotfalizadeh & Gharali, 2005) and on *R. beggeriana* in Kerman Province (Lotfalizadeh et al., 2012) for the first time.

Distribution: This species is widely distributed in the Palearctic and Nearctic region (Noyes 2012). This species was also already reported from Tehran Province by Rakhshani et al. (2003).

This species belongs to the *bedeguaris* species group (Graham & Gijswijt 1998). Lotfalizadeh & Gharali (2005) and Fallahzadeh et al. (2009) listed five *Torymus* species for the Iranian fauna: *T. auratus* (Müller), *T. bedeguaris*, *T. erucarum* (Schrank), *T. geranii* (Walker) and *T. lapsanae* (Hoffmeyer).

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References

- Agarwal, M.L., Kapoor, V.C. (1989): New records of some hymenopterous parasites of fruit flies (Diptera: Tephritidae). *Bulletin of Entomology* 27: 193.
- Askew, R.R. (1997): Two new species of *Idiomacromerus* Crawford (Hymenoptera, Chalcidoidea, Torymidae) from Spain. *Miscellanea Zoologica* 20: 65-70.
- Askew, R.R. (2000): Three new species of Microdontomerini (Hym., Chalcidoidea, Torymidae) from Spain and the Canary Islands. *Entomologist's Monthly Magazine* 136: 55-61.
- Askew, R.R. (2002): A new *Pseudotorymus* (Hym., Torymidae) from Britain, with observations on its biology and notes on other British species. *Entomologist's Monthly Magazine* 138: 51-58.
- Askew, R.R., Sadeghi, S.E., Tavakoli, M. (2006): Chalcidoidea (Hym.) in galls of *Diplolepis mayri* (Schlechtendal) (Hym., Cynipidae) in Iran, with the description of a new species of *Pseudotorymus* Masi (Hym., Torymidae). *Entomologist's Monthly Magazine* 142:1-6.
- Azizkhani, E., Rasulian, G.R., Kharazi-Pakdel, A., Sadeghi, S.E., Tavakoli, M., Melika, G. (2005): Report of eight species of parasitoid wasps belonging to Chalcidoidea from cynipid galls on oak trees. *Journal of Entomological Society of Iran* 25 (1): 79-80.
- Baur, H. (2005): Determination list of entomophagous insects nr 14. *Bulletin. Section Régionale Ouest Paléarctique, Organisation Internationale de Lutte Biologique* 28 (11): 1-71.
- Bouček, Z. (1970a): On some British *Megastigmus* (Hym. Torymidae), with a revised key to the west European species. *Entomologist's Gazette* 21: 265-275.
- Bouček, Z. (1970b): Contribution to the knowledge of Italian Chalcidoidea, based mainly on a study at the Institute of Entomology in Turin, with description of some new European species (Hymenoptera). *Memorie della Societa Entomologica Italiana* 49: 35- 102.
- Bouček, Z. (1971): A new species of *Megastigmus* (Hym.: Torymidae) on rose seeds from Central Europe. *Entomologist's Gazette* 22: 43-46.
- Bouček, Z. (1978): A study of the non-podagrionine Torymidae with enlarged hind femora, with a key to the African genera (Hymenoptera). *Journal of the Entomological Society of Southern Africa* 41(1): 91-134.
- Delvare, G. (1999): Abdominal structure in the Podagrionini (Hymenoptera: Chalcidoidea: Torymidae). Implications for the phylogeny of the tribe. Relationships with the constraints of access to the host. *Annales de la Société Entomologique de France* 35(suppl.): 23-26.
- Delvare, G. (2005): A revision of the West-Palaearctic *Podagrion* (Hymenoptera: Torymidae), with the description of *Podagrion bouceki* sp.nov. *Acta Societatis Zoologicae Bohemoslovenicae* 69: 65-88.
- Ebrahimi, E., Ahmadian, H.A. (2002): Report of *Podagrion pachymerum* (Hym.; Torymidae) from Iran. *Proceedings of 15th Iranian Plant Protection Congress*, p. 166.
- Fallahzadeh, M., Narendran, T.C., Saghaei, N. (2009): Insecta, Hymenoptera, Chalcidoidea, Eurytomidae and Torymidae in Iran. *Check List, Campinas* 5(4): 830-839.
- Farahani, S., Talebi, A. A., Rakhshani, E. (2012): New records of *Phanerotomella rufa* (Marshall, 1898) and *Phanerotoma (Phanerotoma) acuminata* Szépligeti, 1908 (Hymenoptera: Braconidae) from northern Iran. *Biharean Biologist* 6(1): 61-64.
- Ghahari, H., Huang, J. (2012): A study of the Pteromalidae (Hymenoptera: Chalcidoidea) from western and northwestern Iran. *Archives of Biological Sciences* 64(1): 353-357.
- Gharali, B., Zerova, M. (2004): Natural enemies of safflower gall wasp, *Isocolus* sp. (Cynipidae: Aylacini) in Ilam province. *Proceedings of 16th Iranian Plant Protection Congress*, p. 55.
- Graham, M.W.R. de V., Gijswijt, M.J. (1998): Revision of the European species of *Torymus* Dalman (s. lat.) (Hymenoptera: Torymidae). *Zoologische Verhandelingen, Leiden* 317: 1-202.
- Grill, D. (1986): The brown-tail moth in Loire Atalantique. *Phytoma* 392: 60-61.
- Grissell, E.E. (1979): Family Torymidae. pp. 748-769. In: Krombein, K.V., Hurd, P.D., Smith, D.R., Burks, B.D. (eds.), *Catalog of Hymenoptera in America North of Mexico* 1, Smithsonian Institution Press, Washington, D.C.
- Grissell, E.E. (1995): Toryminae (Hymenoptera: Chalcidoidea: Torymidae): A redefinition, generic classification and annotated world catalogue of species. *Memoirs on Entomology, International* 2: 474pp.
- Grissell, E.E. (2000): A revision of New World *Monodontomerus* (Hymenoptera: Chalcidoidea: Torymidae). *Contributions of the American Entomological Institute* 32(1):1-90.
- Grissell, E.E. (2005): A review of North American species of *Microdontomerus* Crawford (Torymidae: Hymenoptera). *Journal of Hymenoptera Research* 14(1): 22-65.
- Grissell, E.E., Schauff, M. (1990): A handbook of the families of Nearctic Chalcidoidea (Hymenoptera). *The Entomological Society of Washington*, 85 pp.
- Hasani, A., Mitroiu, M.D., Madjdzadeh, S.M. (2011): New records of Pteromalidae (Hymenoptera: Chalcidoidea) from Northeastern Iran. *Acta Zoologica Bulgarica* 63(3): 323- 325.
- Hegazi, E.M., Moursi, K.S. (1983): Studies on distribution and biology of the capsule fly, *Acanthiophilus helianthi*, on wild plants in Egyptian Western Desert. *Zeitschrift für Angewandte Entomologie* 96(4): 333-336.
- Hesami, S., Behzadi, M.R., Ebrahimi, E., Miresmaili, S.S., Doganlar, M. (2008): Report of *Torymus lapsanae* (Hym.: Torymidae), a parasitoid of *Diplolepis rosae* (Hym.: Cynipidae) from Iran. *Journal of Entomological Society of Iran, Suppl.* 27: 17-18.
- Holm, S. N., Skou, R. (1972): Studies on trapping, nesting, and rearing of some *Megachile* species (Hymenoptera, Megachilidae) and on their parasites in Denmark. *Entomologica Scandinavica* 3: 169-180.
- Kapoor, V.C., Agarwal, M.L. (1983): Fruit flies and their natural enemies. pp. 104-105. In: Cavalloro, R., (ed.), *Fruit flies of economic importance*. Rotterdam: A. A. Balkema, 642 p.
- Keith, L., Heng-Moss, T. (2003): These heavier duty nets are used to collect insects from grass, trees and shrubs by swinging the net. *Entomology*. <<http://lancaster.unl.edu/4h/fair/countyfairresources12/CollectingInsects.html> (Accessed 25.7.2012)>, 43 pp.
- Lashkari-Bod, A., Rkshani, E., Talebi, A.A., Lozan, A., Žikić, V. (2011): A contribution to the knowledge of Braconidae (Hym., Ichneumonoidea) of Iran. *Biharean Biologist* 5(2):147-150.
- Lotfalizadeh, H., Gharali, B. (2005): Introduction to the Torymidae fauna (Hymenoptera: Chalcidoidea) of Iran. *Zoology in the Middle East* 36:67-72.
- Lotfalizadeh, H., Rasplus J.Y., Delvare, G. (2006): Rose gall wasps and their associated fauna (Hymenoptera) in Iran. *Redia* 89: 73-85.
- Lotfalizadeh, H. (2008): New distribution records for Eucharitidae (Hym.: Chalcidoidea) in Iran. *North-Western Journal of Zoology* 4(1): 134-138.
- Lotfalizadeh, H., Ezzati-Tabrizi, R., Masnadi-Yazdinejad, A. (2009): *Diplolepis fructuum* (Rübsaamen) (Hym.: Cynipidae) a new host for *Exeristes roborator* (Fabricius) (Hym.: Ichneumonidae) in Iran. *Biharean Biologist* 3(2):171-173.
- Lotfalizadeh, H., Fakhrzadeh, N. (2012): A short review of the family Leucospidae (Hym.: Chalcidoidea) in Iran. *Biharean Biologist* 6(1): 51-54.
- Lotfalizadeh, H., Rajabi, M., Madjdzadeh, S. M. (2012): Parasitoids community of *Diplolepis fructuum* (Rübsaamen) (Hym.: Cynipidae) in Kerman Province, with checklist of its associated Hymenoptera fauna in Iran. *North- Western Journal of Zoology* 8(1): 125- 131.
- Mitroiu, M.D., Abolhassanzadeh, F., Madjdzadeh, S.M. (2011): New records of Pteromalidae (Hymenoptera: Chalcidoidea) from Iran, with description of a new species. *North- Western Journal of Zoology* 7(2): 243-249.
- Modares Awal, M. (1997): List of agricultural pests and their natural enemies in Iran. (Revised edition). Ferdowsi University Press, 429 pp.
- Mohammadi-Khoramabadi, A., Talebi, A.A., Farahani, S. (2011): *Hybrizon buccatus* (de Brebisson, 1825), the first record of the subfamily Hybrizontinae (Hymenoptera: Ichneumonidae) from northern Iran. *Biharean Biologist* 5(2):162-163.
- Myartseva, S.N., Trjapitzin, V.A. (1993): The parasitoid *Varzobia tibialis* Nikolskaya (Hymenoptera, Chalcididae) in the fauna of Turkmenistan. *Izvestiya Akademii Nauk Turkmenskoy SSR (Seriya Biologicheskikh Nauk)* 5: 73-74.
- Narendran, T.C. (1994): Torymidae and Eurytomidae of Indian subcontinent. Feroke, India: Printex. 500 pp.
- Nieves-Aldrey, J.L., Hernandez, Nieves, M., Gomez, J.F. (2008): Larval morphology and biology of three European species of *Megastigmus* (Hymenoptera, Torymidae, Megastigminae) parasitoids of gall wasps, including a comparison with the larvae of two seed-infesting species. *Zootaxa* 1746: 46-60.
- Nikdel, M., Sadaghian, B., Dordaei, A. (2004): Collection and identification of brown-tail moth's natural enemies in Arasbaran forest. *The Joint Agriculture and Natural Resources Symposium, Tabriz - Ganja*: 1-5.
- Nikol'skaya, M.N., Zerova, M.D. (1978): Hymenoptera II. Chalcidoidea 9. Torymidae (Callimomiidae). *Opred. Nasek. Evrop. Chasti SSSR*. 358-374.
- Noyes, J.S. (2012): Universal Chalcidoidea Database. <www.nhm.ac.uk/entomology/chalcidooids/index.html> accessed 25.7.2012.
- Peck, O., Boucek, Z., Hoffer, A. (1964): Keys to the Chalcidoidea of Czechoslovakia (Insecta: Hymenoptera). *Memoirs of the Entomological Society of Canada* 34: 1-120.
- Popescu, I.E., Andriescu I, Fusu L., (2002): Contributions to the Knowledge of the Torymid Wasps (Hymenoptera, Chalcidoidea, Torymidae) from "Valea lui David" Hayfields Natural Reserve (Iasi, Romania). pp. 25-32. In: Tomescu, N., Popa, V. (eds.), *In Memoriam "Professor Dr. Doc. Vasile Gh. Radu"* Corresponding Member of Romanian Academy of Sciences, "Babeş-Bolyai" University, Department of Zoology, Presa Universitară Clujană.

- Prinsloo, G.L. (1980): An illustrated guide to the families of African Chalcidoidea (Insecta: Hymenoptera). Republic of South Africa, Department of Agriculture and Fisheries, Scientific Bulletin 395: 1-66.
- Rakhshani, E., Talebi, A., Fathipour, Y., Moharrampour, S. (2003a): The first report of rose seed gall wasp, *Megastigmus aculeatus* Swederus (Hymenoptera: Torymidae) from Iran. Proceedings of the 2nd Applied-Scientific Seminar on Flowers and Ornamental Plants, p. 9.
- Rakhshani, E., Talebi, A., Sadeghi, S.E., Ebrahimi, E., Thuroczy, C. (2003b): Report of five wasps species associated with dog rose galls in Iran. Journal of Entomological Society of Iran 23(1): 107-108.
- Rivosecchi, L. (1960): Note sui parassiti dei Tripetidid II. *Dimeromicrus kiesewetteri* Mayr Parassita di larva del gen. *Myopites* Brebisson. Bolletino di Zoologia agraria e di Bachicoltura 3: 179-200.
- Roques, A., Skrzypczynska, M. (2003): Seed-feeding chalcids of the genus *Megastigmus* Dalman, 1820 (Hym.: Torymidae) native and introduced to the West Palearctic region: taxonomy, host specificity and distribution. Journal of Natural History 37: 127-238.
- Samin, N., Asgari, S. (2012): A study on the fauna of Scelionid wasps (Hymenoptera: Platygastroidea: Scelionidae) in the Isfahan Province, Iran. Archives of Biological Sciences 64 (3): 1073-1077.
- Sihag, R.C. (1992): Behaviour and ecology of the sub-tropical carpenter bee, *Xylocopa fenestrata* F. 4. Parasites, predators and nest destroyers. Indian Bee Journal 53: 30-33.
- Steffan, J.R. (1952): Note sur les espèces européennes et nord africaines du genre *Monodontomerus* Westw. (Hym. Torymidae) et leurs hôtes. Bulletin du Muséum National d'Histoire Naturelle, Paris (2) 24(3): 288-293.
- Stojanova, A., Ghahari, H. (2009): Checklist of Iranian Eurytomidae and Torymidae (Hymenoptera, Chalcidoidea). Linzer Biologische Beiträge 41(1): 845-862.
- Szczepanski, H. (1983): Chalcidoidea (Hymenoptera) in the forests of the Bialowieza National Park. Polskie Pismo Entomologiczne 53: 147-178. [in Polish]
- Zargaran, M.R., Safaralizadeh, M.H., Pourmirza, A.A. (2011): Local distribution and diversity of Cynipid-induced galls in oak forests of Sardasht, Iran. Biharian Biologist 5(1): 46-50.
- Zerova, M.D., Seryogina, L.Y. (1998): Chalcidoid wasps (Hymenoptera, Chalcidoidea) - Ormyridae and Torymidae, (Megastigminae) of the Ukrainian fauna. Vestnik Zoologii Kiev Suppl. 7: 1-65.
- Zerova, M.D., Seryogina, L.Y. (1999): Torymid chalcidoid wasps (Hymenoptera, Chalcidoidea, Torymidae) of tribes Podagronini and Monodontomerini of the Ukrainian fauna. Vestnik Zoologii, Kiev Suppl. 13: 1-130.
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