

Sawflies (Hym.: Symphyta) of Hayk Mirzayans Insect Museum with four new records for the fauna of Iran

Mohammad Khayrandish^{1&*} & Ebrahim Ebrahimi²

1- Department of Plant Protection, Faculty of Agriculture, Shahid Bahonar University, Kerman, Iran & 2- Insect Taxonomy Research Department, Iranian Research Institute of Plant Protection, Agricultural Research, Education and Extension Organization (AREEO), Tehran 19395-1454, Iran.

*Corresponding author, E-mail: m.khayrandish@uk.ac.ir

Abstract

A total of 60 species of Symphyta were identified and listed from the Hayk Mirzayans Insect Museum, Iran, of which the species *Abia candens* Konow, 1887; *Pristiphora appendiculata* (Hartig, 1837); *Macrophya chrysur* (Klug, 1817) and *Tenthredopsis nassata* (Geoffroy, 1785) are newly recorded from Iran. Distribution data and host plants are here presented for 37 sawfly species.

Key words: Symphyta, Tenthredinidae, Argidae, sawflies, Iran.

زنبورهای تخم‌ریز اره‌ای (Hym.: Symphyta) موجود در موزه حشرات هایک میرزیانسانس با

گزارش چهار رکورد جدید برای فون ایران

محمد خیراندیش^{۱*} و ابراهیم ابراهیمی^۲

۱- گروه گیاه‌پزشکی، دانشکده کشاورزی، دانشگاه شهید باهنر، کرمان و ۲- بخش تحقیقات رده‌بندی حشرات، مؤسسه تحقیقات گیاه‌پزشکی ایران، سازمان تحقیقات، ترویج و آموزش کشاورزی، تهران.

* مسئول مکاتبات، پست الکترونیکی: m.khayrandish@uk.ac.ir

چکیده

در مجموع ۶۰ گونه از زنبورهای تخم‌ریز اره‌ای از موزه حشرات هایک میرزیانسانس، ایران، بررسی و شناسایی شدند که گونه‌های *Macrophya chrysur* (Klug, 1817) و *Tenthredopsis nassata* (Geoffroy, 1785) برای اولین بار از ایران گزارش شده‌اند. اطلاعات مربوط به پراکنش و گیاهان میزبان ۳۷ گونه از زنبورهای تخم‌ریز اره‌ای ارائه شده است.

واژگان کلیدی: Symphyta, Tenthredinidae, Argidae, زنبورهای تخم‌ریز اره‌ای، ایران.

دریافت: ۱۳۹۶/۴/۳۰، پذیرش: ۱۳۹۶/۸/۶.

Introduction

The suborder Symphyta (Insecta: Hymenoptera) includes plant-feeding sawflies, horntails and parasitic orussid wasps (Orussidae), which parasitize wood-boring insects (Smith, 1988). Sawflies are economically important insects which contain major forest and horticulture pests with wide distribution in the world (Viitasaari, 2002). There are about 800 genera and more than 8000 species within 14 families of sawflies in the world, where about 1800 species in 11 families occur in the West Palaearctic region (Taeger *et al.*, 2010). Major faunistic works on this group were conducted by Mallach (1931), Zirngiebl (1956), Benson (1968), Chevin (1985) and Khayrandish *et al.* (2015, in press). Prior to this work, 178 species, 60 genera and 9 families of sawflies had been recorded from Iran (Khayrandish *et al.*, 2017).

Material and Methods

Sawfly specimens of the Hayk Mirzayans Insect Museum (HMIM), located at the Iranian Research Institute of Plant Protection (IRIPP), Tehran, Iran, were examined and about 300 specimens were identified to species level. The specimens were mostly collected by the entomologists of the Insect Taxonomy Research Department of IRIPP between 1945 and 2013. The identifications were made possible using the keys by Gussakovskij (1935), Benson (1951, 1952, 1958, 1962, 1968), Quinlan & Gauld (1981), Zhelochovtsev & Zinovjev (1993) and Zombori (1981, 1982a, 1982b, 1984).

Results

We have identified 60 sawfly species, and record here the species *Abia candens* Konow, 1887; *Pristiphora appendiculata* (Hartig, 1837); *Macrophya chrysura* (Klug, 1817) and *Tenthredopsis nassata* (Geoffroy, 1785) for the first time from Iran.

Family Argidae

Arge cingulata (Jakowlew, 1891)

Material examined: (4 ♂, 3 ♀); IRAN, Kermanshah province, Rijab, Sarab-e Eskandar, 22.VI.1968, (1 ♀), leg.: Dezfulian; Kerman province, Bam, Dehbakri, 2200m, 1.V.1973, (1 ♀), leg.: Borumand; Tehran province, Varamin, 15.VIII.1965, (2 ♀), leg.: unknown; Alborz province, Taleghan, Kalanak, 1800m, 26.VI.1991, (3 ♀), leg.: Ebrahimi & badii.

Distribution: Iran (Alborz, Gilan and Mazandaran provinces) (Khayrandish *et al.*, 2017), East Palaearctic (Taeger *et al.*, 2010), Tajikistan, Turkestan and Uzbekistan (Ushinskij, 1936; Benson, 1968).

Host plant: Unknown.

Arge cyanocrocea (Forster, 1771)

Material examined: (4 ♂, 4 ♀); IRAN, East Azerbaijan province, Kaleybar, Vaighan, 1600m, 23.V.2004, (2 ♂, 1 ♀), leg.: Gilasian & Ghayurfar; Gilan province, Asalem, 18.V.1972, (1 ♀), leg.: Abai; Kermanshah province, Rijab, Sarab-e Eskandar, 12.VI.1968, (1 ♂, 1 ♀), 22.VI.1968, (1 ♀), leg.: Dezfulian; Mazandaran province, Noshahr, 25.VI.1973, (1 ♀), leg.: Abai.

Distribution: Iran (Gilan, Lorestan and Mazandaran provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plants: ?*Rubus* Linnaeus and *Sanguisorba officinalis* Linnaeus (Rosaceae) (Taeger *et al.*, 1998).

***Arge melanochra* (Gmelin, 1790)**

Material examined: (4 ♂, 3 ♀); IRAN, East Azerbaijan province, Kaleybar, Vaighan, 1440m, 5.VIII.1992, (1 ♀), leg.: Parchami-Araghi & Badii; East Azerbaijan province, Kaleybar, Ainanlu, 1345m, 10.VIII.2005, (1 ♀), leg.: Gilasian & Ebrahimi; Fars province, Dasht-e Arjan, Bonroud, 4.VI.1968, (1 ♀), leg.: Mirzayans; Kermanshah province, Rijab, 12.VI.1968, (2 ♀), 3.VII.1967, (1 ♀), leg.: Dezfulian; Mazandaran province, Neka, Doab, 3.VII.2004, (1 ♀), leg.: Zarghami.

Distribution: Iran (Alborz, Qazvin, Gilan, Mazandaran and Golestan provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: *Crataegus laevigata* Poiret (Rosaceae) (Taeger *et al.*, 1998).

***Arge nigripes* (Retzius, 1783)**

Material examined: (1 ♀); IRAN, East Azerbaijan province, Khoda Afarin, 350m, 11.VIII.1992, (1 ♀), leg.: Parchami-Araghi & Badii.

Distribution: Iran (Taeger & Blank, 2011), West Palaearctic (Taeger *et al.*, 2010).

Host plants: *Fragaria* and *Rosa* (Rosaceae) (Taeger *et al.*, 1998).

***Arge ochropus* (Gmelin, 1790)**

Material examined: (16 ♂, 7 ♀); IRAN, East Azerbaijan province, Khoda Afarin, 350m, 9.VIII.1992, (1 ♀), leg.: Parchami-Araghi & Badii; East Azerbaijan province, Tabriz, 5.VII.1967, (1 ♀), leg.: Arghand; Gilan province, 10 km N. Baresar, 1156m, 30.VI.2003, (1 ♀), leg.: Moghadam & Naserzadeh; Gilan province, Astara, 30.VII.1980, (4 ♂, 2 ♀); leg.: Abai; Gilan province, Astaneh, 24.VI.1973, (1 ♀), leg.: Abai; Mazandaran province, Tonekabon Lab., 26.VI.1971, (3 ♂, 1 ♀), leg.: unknown; Mazandaran province, Amol, 1972, (1 ♀), leg.: unknown; Mazandaran province, Chalus Rd., Haryjan, 2050m, 27.VI.1998, (2 ♀), leg.: Mofidi; Tehran province, 15.V.1965, (1 ♀), leg.: Safavi; Tehran province, Ewin, 17.VII.1978, (2 ♀), leg.: unknown; Tehran province, Ewin, 10.IX.1969, (1 ♀), leg.: Abai; Tehran province, 12.VII.1952, (1 ♀), leg.: unknown.

Distribution: Iran (Alborz, East Azerbaijan, Fars, Gilan, Golestan and Qazvin provinces) (Khayrandish *et al.*, 2017), West Palaearctic and Nearctic (Taeger *et al.*, 2010).

Host plants: Larvae are oligophagous feeding on *Rosa canina* Linnaeus, *R. gallica* Linnaeus, *R. rubiginosa* Linnaeus, *R. majalis* Herrmann and *R. pimpinellifolia* Linnaeus (Rosaceae) (Taeger *et al.*, 1998).

***Arge rustica* (Linnaeus, 1758)**

Material examined: (1 ♀); IRAN, Fars province, Fasa, Mianjangal, 29.IV.1971, (1 ♀), leg.: Safavi & Zairi.

Distribution: Iran (Mazandaran province) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plants: ?*Alnus* Miller (Betulaceae); *Quercus robur* Linnaeus (Fagaceae); ?*Salix* Linnaeus (Salicaceae) (Taeger *et al.*, 1998).

***Arge simulatrix* Konow, 1887**

Material examined: (1 ♂, 1 ♀); IRAN, Golestan province, Golestan National Park, Sulegerd, 1100m, 1.VI.1986, (1 ♀), leg.: Pazuki; Kohkiluyeh & Boyerahmad province, Yasuj, Tolegorgi, 2000m, 4.V.1985, (1 ♂), leg.: Mirzayans & Hashemi.

Distribution: Iran (Mazandaran province) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

***Kokujewia ectrapela* Konow, 1902**

Material examined: (1 ♂, 2 ♀); IRAN, Ardabil province, Neor lake, 2363-2450m, 21.VI.1973, (1 ♂, 1 ♀); leg.: Rajabi; East Azerbaijan province, Kiamaki mountain, 12.VI.1973, (1 ♀), leg.: Rajabi.

Distribution: Iran (West Azerbaijan, East Azerbaijan and Lorestan provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plants: *Romex* spp. (Polygonaceae) (Karimpour, 2015; Karimpour & Razmi, 2010).

Family Cephidae

***Calameuta* nr. *filiformis* (Eversmann, 1847)**

Material examined: (1 ♀); IRAN, Lorestan province, 90km S. Khoramabad, 800m, 6.V.1976, (1 ♀), leg.: Lavallee.

Distribution: Iran (East Azerbaijan and Gilan provinces) (Khayrandish *et al.*, 2017), Palaearctic (Taeger *et al.*, 2010).

Host plants: Larvae are oligophagus feeding on *Phragmites australis* (Cavanilles) *Phalaris arundinacea* Linnaeus, *Arrhenatherum elatius* (Linnaeus), *Elytrigia repens* (Linnaeus) and *Calamagrostis epigejos* (Linnaeus) (Poaceae) (Taeger *et al.*, 1998).

***Cephus pygmaeus* (Linnaeus, 1767)**

Material examined: (14 ♂, 17 ♀); IRAN, Alborz province, Karaj, University farm, 22.IV.1991, (1 ♂, 2 ♀), leg.: Ebrahimi; Alborz province, Karaj, 1992, (1 ♀), leg.: unknown; Alborz province, Karaj, 7.V.1990, (1 ♂, 2 ♀), leg.: Ebrahimi; Alborz province, Karaj, Hesarak, 6.V.1975, (1 ♀), leg.: Zairi; East Azerbaijan province, Kaleybar, 1200m, 23.V.2004, (1 ♀), leg.: Ghayurfar & Gilasian; Fars province, Eghlid, Khosroshirin, 2300m, 22.V.1995, (1 ♀), leg.: Sarafrazi, Badii & Hashemi; Fars province, Shiraz, Kavar, 13.V.1993, (1 ♀), leg.: unknown; Ghom province, 4.3km S. Fordo, 2150m, 5.VI.1984, (2 ♂, 1 ♀), leg.: Pazuki & Hashemi; Golestan province, Gorgan, 2.V.1965, (1 ♂, 1 ♀), leg.: Safavi; Golestan province, Gorgan, 25.V.1994, (1 ♀), leg.: Ahmadi; Isfahan province, Kabutarabad, date unknown,

(1 ♀), leg.: Haghshenas; Kohkiluyeh-Boyerahmad province, Kakan, Hoseinkhani, 26.V.1995, (1 ♀), leg.: Sarafrazi, Badii & Hashemi; Lorestan province, Pol-e-Dokhtar, 30.IV.1974, (1 ♀), leg.: Zairi; Razavi Khorasan province, Shabestar, 8.V.1994, (1 ♀), leg.: Ahmadzadeh; Razavi Khorasan, Qaen, 22.IV.1985, (1 ♀), leg.: Zare; Tehran province, Kahrizak, Ghaleh-No, 850m, 17.V.1991, (1 ♂, 3 ♀), leg.: Ebrahimi & Badii; Tehran province, Robat Karim, Yagheh, 1000m, 19.V.1992, (1 ♂, 1 ♀), leg.: Ebrahimi & Badii; Tehran province, Varamin, 30.IV.1968, (1 ♂, 2 ♀), leg.: Morales.

Distribution: Iran (Alborz, Golestan, Markazi, Qazvin and Tehran provinces) (Khayrandish *et al.*, 2017), Algeria, Egypt (Taeger & Blank, 2011) and North America (Middlekauff, 1969).

Host plants: Associated with several Poaceae, sometimes regarded as a pest of crops for example *Avena sativa* Linnaeus, *Bromus secalinus* Linnaeus, *Hordeum vulgare* Linnaeus, *Secale cereale* Linnaeus and *Triticum aestivum* Linnaeus (Farahbakhsh, 1961; Middlekauff, 1969; Ghadiri, 1993; Modarres Awal, 1997). *Lepidium draba* Linnaeus, *Sysimbrium sophia* Linnaeus, (Brassicaceae), *Lisaea heterocarpa* Boissier (Apiaceae) and *Euphorbia heterophylla* Linnaeus (Euphorbiaceae) are cited as hosts by Modarres Awal (1997) but these data supposedly refer to flowers visit by adults.

***Trachelus tabidus* (Fabricius, 1775)**

Material examined: (2 ♀); IRAN, Fars province, Firouzabad, 15.IV.1990, (1 ♀), leg.: Ebrahimi; Fars province, Shiraz, Kavar, 15.IV.1990, (1 ♀), leg.: unknown.

Distribution: Iran (Alborz, Fars, Qazvin and Tehran provinces) (Khayrandish *et al.*, 2017), West Palaearctic and Nearctic (Taeger *et al.*, 2010).

Host plants: Larvae feed on various grains such as *Triticum aestivum*, *Hordeum vulgare*, *Secale cereale*, *Avena sativa* and various wild grasses (Gussakovskij, 1935; Berland, 1941; Benson, 1951; Farahbakhsh, 1961; Middlekauff, 1969; Burggraaf-Van Nierop & Achterberg, 1990; Zhelochovtsev & Zinovjev, 1993; Modarres Awal, 1997). *Hordeum* Linnaeus, *Avena* Linnaeus, *Secale* Linnaeus, *Triticum* Linnaeus (Taeger *et al.*, 1998).

Family Cimbicidae

***Abia candens* Konow, 1887**

Synonyms: *Abia (Abia) symballophthalma* Semenov, 1892; *Abia (Abia) candens* forma *subopaca* Kangas, 1946.

Material examined: (2 ♀); IRAN, Gilan province, Assalem, 18.V.1965, (2 ♀), leg.: Safavi.

Distribution: Iran (new record), West Palaearctic (Taeger *et al.*, 2010).

Host plant: *Knautia arvensis* (Linnaeus) (Caprifoliaceae) (Taeger *et al.*, 1998).

***Corynis obscura* (Fabricius, 1775)**

Material examined: (1 ♂); IRAN, Tehran province, Damavand, Nava, 12.VII.1976, (1 ♂), leg.: Lavallee.

Distribution: Iran (Gussakovskij, 1935; Muche, 1973), Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

Family Megalodontesidae***Megalodontes nr. olivieri* (Brulle, 1846)**

Material examined: (1 ♂); IRAN, Gilan province, Astara, 30.VII.1967, (1 ♂), leg.: Pazuki & Mirzayans.

Distribution: Iran (Gilan province) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

Family Orussidae***Pesudoryussus henschii* (Mocsáry, 1910)**

Material examined: (1 ♂); IRAQ, Musel, 13.V.1968, (1 ♂), leg.: unknown.

Distribution: Iran (Fars and Lorestan provinces) (Khayrandish *et al.*, 2017), Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

Family Siricidae***Tremex fuscicornis* (Fabricius, 1787)**

Material examined: (2 ♂); IRAN, Gilan province, Talesh, 100m, 12.VIII.1991, (1 ♂), leg.: Parchami-Araghi & Hashemi; Golestan province, Golestan National Park, Almeh, 1650m, 17.VII.1996, (1 ♂), leg.: Ebrahimi & Nazari.

Distribution: Iran (Alborz and Razavi Khorasan provinces) (Khayrandish *et al.*, 2017), Palaearctic, Oriental and Neotropic (Taeger *et al.*, 2010).

Host plants: Larvae are polyphagous feeding on *Acer* Linnaeus (Aceraceae), *Salix*, *Picea* Miller (Pinaceae), *Ulmus* Linnaeus (Ulmaceae), *Robinia* Linnaeus (Fabaceae) and *Juglans regia* Linnaeus (Juglandaceae) (Shahmohammadi *et al.* 2008); *Prunus x yedoensis* Matsumura (Rosaceae), *Ulmus propinqua* Koidzumi and *Zelkova serrata* (Thunberg) (Ulmaceae), *Acer negundo* Linnaeus, *Alnus japonica* (Thunberg), *Betula* and *Carpinus betulus* Linnaeus (Betulaceae), *Celtis sinensis* Persoon (Cannabaceae), *Quercus* Linnaeus and *Fagus sylvatica* Linnaeus (Fagaceae), *Salix* and *Populus tremula* Linnaeus (Salicaceae) (Taeger *et al.*, 1998).

Family Tenthredinidae**Subfamily Allantinae*****Allantus viennensis* (Schrank, 1781)**

Material examined: (4 ♂, 2 ♀); IRAN, Gilan province, Astara, 4.VII.1980, (1 ♂, 1 ♀), leg.: Abai; Gilan province, Rasht, Rice Research Institute of Iran, 1998, (1 ♂, 1 ♀), leg.: unknown;

Golestan province, Gorgan, 24.V.1981, (1 ♂), leg.: Abai; Golestan province, Golestan National Park, Sulegerd, 1150m, 20.VII.1996, (1 ♂), leg.: Ebrahimi & Nazari.

Distribution: Iran (Alborz, Gilan, Qazvin, Mazandaran and Tehran provinces) (Khayrandish *et al.*, 2017), Palaearctic and Nearctic (Taeger *et al.*, 2010).

Host plants: Larve feed on *Rosa* spp. and *Rubus* spp. (Berland, 1947; Zhelochovtsev & Zinovjev, 1993; Liston, 1995; Modarres Awal, 1997; Lacourt, 1999). This species lives on several species of *Rosa* but *Rubus* is not confirmed as host (Taeger *et al.*, 1998).

***Ametastegia alabastria* (Konow, 1898)**

Material examined: (1 ♂, 1 ♀); IRAN, Mazandaran province, Sirgah, Lafor, 180m, 3.VI.2003, (1 ♂), leg.: Gilasian & Hagiesmailian; Mazandaran province, Ramsar, Eshkatechal, 1200m, 28.V.2003, (1 ♂), leg.: Gilasian & Nematian.

Distribution: Iran (Gilan and Mazandaran provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

***Ametastegia persica* Khayrandish, Talebi & Blank**

Material examined: (1 ♂, 9 ♀); IRAN, Gilan province, Rudsar, Rahimabad, Ziaz Village, 12.VII.2010, (1 ♂), 14.VI.2010, (1 ♀); Gilan province, Rudsar, Rahimabad, Orkom Village, 26.VII.2010, (1 ♀); Mazandaran province, Ramsar, Eshkatechal, 1200m, 28.V.2003, (3 ♀), leg.: Gilasian & Nematian; Mazandaran province, Amol, Haraz Rd., Mangel, 980m, 22.V.2005, (1 ♀), leg.: Serri & Naserzadeh; Mazandaran province, Nour, Chamestan, Gaznasara Rd., 16.VIII.2011, (1 ♀), Mazandaran province, Nour, Chamestan, Tangehvez village, 24.V.2011, (1 ♀), 3.VIII.2011, (1 ♀); Malaise trap, leg.: Khayrandish.

Distribution: Iran (Gilan and Mazandaran provinces) (Khayrandish *et al.*, 2017, 2015).

Host plant: Unknown.

***Athalia ancilla meridiana* Benson, 1954**

Material examined: (1 ♀); IRAN, Ardabil province, Parsabad, 80m, 17.V.2004, (1 ♀), leg.: Gilasian & Ghayourfar.

Distribution: Iran (Khayrandish *et al.*, 2017), Palaearctic (Taeger *et al.*, 2010).

Host plants: *Diplotaxis* spp., *Raphanus raphanistrum* Linnaeus, *Sisymbrium* spp. and *Sinapis* spp. (Brassicaceae) (Taeger *et al.*, 1998).

***Athalia armeniaca* (Zombori, 1978)**

Material examined: (1 ♂); IRAN, Tehran province, Rudbar, Chasran, Garmabdar, 2370m, 28.V.1991, (1 ♂), leg.: Ebrahimi & Badii.

Distribution: Iran (Alborz, Gilan, Mazandaran and Tehran provinces (Khayrandish *et al.*, 2017),

West Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

***Athalia cordata* Serville, 1823**

Material examined: (3 ♂, 2 ♀); IRAN, East Azerbaijan province, Lighvan, Sahand Mt., 2440m, 3.III.1992, (1 ♂, 1 ♀), leg.: Parchami-Araghi & Badii; Kerman province, Jiroft, Allahabad-e-Rezvan, 11.II.1997, (1 ♂), leg.: Mofidi & Atabay; Mazandaran province, Kelardasht, Rudbarak, Vandarbon, 2500m, 23.V.2003, (1 ♂), leg.: Gilasian & Nematian; West Azerbaijan province, Maku, Siahcheshmeh, Tazehkand, 1700m, 21.VIII.1994, (1 ♂), leg.: Ebrahimi & sarafrazi.

Distribution: Iran (East Azerbaijan, Gilan and Mazandaran provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plants: *Ajuga reptans* Linnaeus (Lamiaceae), *Antirrhinum* Linnaeus and *Plantago* Linnaeus (Plantaginaceae) (Liston 1995); Labiatae and Plantaginaceae (Zhelochovtsev & Zinovjev, 1993); *Ajuga* spp., *Antirrhinum* spp., *Misopates orontium* (Linnaeus) (Plantaginaceae), *Teucrium scorodonia* Linnaeus (Lamiaceae), *Plantago* spp. (Lacourt, 1999), *Misopates orontium*, *Antirrhinum majus* Linnaeus, *Ajuga reptans*, *Plantago* are confirmed as hosts for *Athalia cordata* and other species are not clear (Taeger *et al.*, 1998).

***Athalia liberta* (Klug, 1815)**

Material examined: (3 ♂, 1 ♀); IRAN, Gilan province, Anzali, 4.VI.1948, (1 ♂), leg.: Sharif; Gilan province, Rezvanshahr, 34m, 24.VI.2003, (1 ♂), leg.: Moghadam & Naserzadeh; Mazandaran province, Amol, 1972, larva collected on 15.V.1972, (1 ♂), leg.: unknown; West Azerbaijan province, Maku, 8.VI.1971, (1 ♂), leg.: Arghand.

Distribution: Iran (southwestern) (Benson, 1962, 1968; Dadurian, 1962); Alborz, Qazvin, Gilan, Golestan and Mazandaran provinces (Khayrandish *et al.*, 2017), Palaearctic (Taeger *et al.*, 2010).

Host plants: *Sisymbrium* spp., *Alliaria petiolata* (M. Bieberstein) and *Cardamine* spp. (Brassicaceae) (Berland, 1947; Zhelochovtsev & Zinovjev, 1993; Liston, 1995; Lacourt, 1999). *Arabidopsis thaliana* (Linnaeus), *Alliaria petiolata*, *Cardamine hirsuta* Linnaeus, *Sisymbrium officinale* (Linnaeus) are as hosts for *A. liberta* but other species of *Cardamine* and *Sisymbrium* are not confirmed (Taeger *et al.*, 1998).

***Athalia rosae* (Linnaeus, 1758)**

Material examined: (8 ♂, 5 ♀); IRAN, Ardabil province, Moghan, 6.VIII.1964, (1 ♂), leg.: Damanabi; East Azerbaijan province, Mianeh, Bozghush, 2250m, 29.VII.1992, (1 ♀), leg.: Parchami-Araghi & Badii; East Azerbaijan province, Lighvan, Sahand Mt., 2440m, 3.VIII.1992, (1 ♀), leg.: Parchami-Araghi & Badii; Gilan province, Astara, 30.VII.1967, (1 ♀), leg.: Pazukil & Arghand; Mazandaran province, Amol, Emamzadeh Abdollah Rd, 21.VI.2004, (4 ♂, 2 ♀), leg.: Zargham; Mazandaran province, Ramsar, Kurusbon, 2200m, 30.VI.1998, (1 ♀), leg.: Mofidi; Tehran province, Damavand, Nava, 12.VII.1976, (1 ♀), leg.: Lavallee; GERMANY, Bonn, Huchem, 12.VIII.1990, (1 ♀), leg.: Boroumand.

Distribution: Iran (Alborz, East Azerbaijan, Golestan and Mazandaran provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plants: Larvae are oligophagus feeding on *Armoracia rusticana* Gaertner, Meyer & Scherbius, *Barbarea* W. T. Aiton, *Brassica juncea* (Linnaeus), *Brassica napus* Linnaeus, *Brassica nigra* Linnaeus, *Brassica rapa* Linnaeus, *Rorippa amphibian* (Linnaeus), *Sinapis alba* Linnaeus, *Sisymbrium officinale*, *Brassica oleracea* Linnaeus, *Raphanus raphanistrum* Linnaeus, *Sinapis arvensis* Linnaeus (Brassicaceae) and *Tropaeolum majus* Linnaeus (Tropaeolaceae) (Taeger *et al.*, 1998).

Subfamily Heterarthrinae***Fenusa ulmi* Sundevall, 1847**

Material examined: (5 ♀); IRAN, Tehran province, Evin, 16.V.1970, (5 ♀), leg.: Abai.

Distribution: Iran (Tehran province) (Khayrandish *et al.*, 2017), Palaearctic and Nearctic (Taeger *et al.*, 2010).

Host plants: *Ulmus glabra* Hudson, *U. minor* Miller, *U. foliacea* Gilibert, ?*U. americana* Linnaeus, *U. elliptica* Kokh and *U. rubra* Muhlenberg (Ulmaceae) (Taeger *et al.*, 1998).

Subfamily Nematinae***Cladius pectinicornis* (Geoffroy, 1785)**

Material examined: (2 ♀); IRAN, Gilan province, Siyahmazgi, Khorramkesh, 262m, 25.VI.2003, (1 ♀), leg.: Moghadam & Naserzadeh; Golestan province, Golestan National Park, Yakhtikalan, 21.VII.1996, (1 ♀), leg.: Atabay.

Distribution: Iran (Alborz, Gilan, Qazvin and Mazandaran provinces) (Khayrandish *et al.*, 2017), Palaearctic, Nearctic and Oriental (Taeger *et al.*, 2010).

Host plants: *Rosa*, *Fragaria*, *Potentilla palustris*, *Filipendula ulmaria* (Linnaeus), *Sanguisorba minor* Scopoli, *Alchemilla vulgaris* Linnaeus (Rosaceae), *Lamiastrum galeobdolon* (Linnaeus) (Lamiaceae) (Berland, 1947; Benson, 1958; Zhelochovtsev & Zinovjev, 1993; Liston, 1995; Lacourt, 1999); ?*Filipendula ulmaria*, ?*Galeobdolon luteum*

(Linnaeus) (Rosaceae), ?*Sanguisorba minor*, ?*Alchemilla vulgaris*, ?*Fragaria*, ?*Potentilla palustris* Linnaeus (Rosaceae) (*Comarum palustre*), *Rosa hybrida* Linnaeus, *Rosa luciae* Franchet & Roehbrune, *Rosa multiflora* Thunberg, *Rosa wichuraiana* Crepin, *Rosa canina*, *Rosa acicularis* Lindley (Taeger *et al.*, 1998); *Rosa* (Liston & Späth, 2005).

***Craesus persicus* Beneš, 1981**

Material examined: (20 , 7); IRAN, Mazandaran province, Sari, 27.IV.1977, (14 , 4), 12.IV.1977, (1), Mazandaran province, Noshahr, 11.XII.69 (collecting the larvae), Tehran, Evin, 30.V.1970 (appearance of adult), (6 , 2), leg.: Abai.

Distribution: Iran (Alborz, Gilan and Mazandaran provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: *Alnus subcordata* C.A. von Meyer (Beneš, 1981).

***Nematus oligospilus* Forster, 1854**

Material examined: (1); IRAN, Tehran province, Evin, 16.IV.1994, (1), leg.: Abai.

Distribution: Iran (Alborz and Qazvin provinces) (Khayrandish *et al.*, 2017), Palaearctic, Nearctic, Neotropical, Afrotropical and Australasian (Taeger *et al.*, 2010).

Host plants: Larvae are oligophagus feeding on *Salix fragilis*, *S. pentandra* Linnaeus, *S. alba*, *S. caprea* and *S. hastata* Linnaeus (Benson, 1958; Zhelochovtsev & Zinovjev, 1993; Liston, 1995; Taeger *et al.*, 1998; Lacourt, 1999).

***Nematus* sp.**

Material examined: (1 , 1); IRAN, Alborz province, Karaj, 24.V.1991, (1), leg.: Boroumand; Mazandaran province, Sari, 18.XII.1996, (1), leg.: Abai.

***Pristiphora platycerus* (Hartig, 1840)**

Material examined: (2 , 1); IRAN, Mazandaran province, Noshahr, 10.VI.1970, (1), leg.: Mostofipour; Mazandaran province, Tonekabon vicinity, 20.V.1973, (1 , 1); leg.: Abai.

Distribution: Iran (Alborz, Gilan, Golestan, Isfahan, Markazi, Mazandaran and Tehran provinces) (Khayrandish *et al.*, 2017), Palaearctic (Taeger *et al.*, 2010).

Host plants: *Populus tremula*, *P. italica*, *P. sieboldii* Miquel and *Salix alopechroa* (Taeger *et al.*, 1998).

***Pristiphora appendiculata* (Hartig, 1837)**

Synonyms: *Tenthredo* (*Nematus*) *pallicornis* T.W. Harris, 1835; *Tenthredo* (*Nematus*) *labrata* T.W. Harris, 1835; *Nematus flavipes* Dahlbom, 1835; *Nematus appendiculatus* Hartig, 1837; *Nematus fuscicornis* Hartig, 1837; *Nematus enervis* Herrich-Schäffer, 1840; *Nematus cathoraticus* Förster, 1854; *Nematus pallicornis* Norton, 1861; *Nematus labratus*

Norton, 1861; *Nematus pallicornis* var. *Labratus* Norton, 1862; *Nematus vitreipennis* Kawall, 1864; *Pristiphora grossulariae* Walsh, 1866; *Nematus peletieri* André, 1880; *Nematus hypobalius* Zaddach, 1884; *Nematus pumilus* Zaddach, 1884; *Nematus ghiliani* Costa, 1894.

Material examined: (2 ♀); IRAN, Ardabil province, Bile-Daragh, 1750m, 16.VIII.1991, (1 ♀), leg.: Hashemi & Parchami-Araghi; Khuzestan province, Haft Tapeh, 26.IV.1976, (1 ♀), leg.: Lavalée.

Distribution: Iran (new record), Palaearctic and Nearctic (Taeger *et al.*, 2010).

Host plants: *Ribes* spp. (*R. alpinum*, *R. rubrum*, *R. uva-crispa*) (Taeger *et al.*, 1998).

Subfamily Selandriinae

Aneugmenus coronatus (Klug, 1818)

Material examined: (2 ♀, 5 ♂); IRAN, Gilan province, Rasht, Azizi, 8m, 23.VI.2003, (2 ♀), leg.: Maghdam & Naserzadeh; Gilan province, Fuman, Pishhesar village, 95m, 24.VI.2003, (1 ♀), leg.: Moghadam & Naserzadeh; Mazandaran province, Kelardasht, Taydareh, Mazuchal, 24.V.2003, (1 ♀), leg.: Gilasian & Nematian; Mazandaran province, Kelardasht, Taydareh, Mazuchal, 23.VII.2002, (1 ♀), leg.: Moghadam & Nematian; Mazandaran province, Ramsar, Eshkatechal, 1200m, 26.V.2003, (1 ♀), leg.: Gilasian & Nematian; Mazandaran province, Tonekabon, Sehezar, Ash-Mahaleh, 760m, 7.IX.1990, (1 ♀), leg.: Ebrahimi & Badii.

Distribution: Iran (Gilan and Mazandaran provinces) (Khayrandish *et al.*, 2017), Palaearctic (Taeger *et al.*, 2010).

Host plants: *Dryopteris filix-mas* (Linnaeus) (Dryopteridaceae), *Aspidium* Swartz (Tectariaceae), *Athyrium filix-femina* (Linnaeus) (Athyraceae), *Pteridium aquilinum* (Linnaeus) (Dennstaedtiaceae) (Taeger *et al.*, 1998).

Dolerus hispanicus Mocsari, 1881

Material examined: (3 ♀, 1 ♂); IRAN, East Azerbaijan province, Kaleybar, Gheshlagh, 9.VIII.2005, (2 ♀, 1 ♂); leg.: Gilasian & Ebrahimi; East Azerbaijan province, Ahar, 5.VI.1978, (1 ♀), leg.: Hashemi & Zairi.

Distribution: Iran (Kordestan province) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: ?*Equisetum ramosissimum* Desfontaines (Lacourt, 1999).

Dolerus hyrcanus Benson, 1968

Material examined: (9 ♀, 2 ♂); IRAN, Alborz province, Karaj, 26.VIII.1988, (1 ♀), leg.: Ghadiri; Alborz province, Karaj, Farm University, 22.IV.1991, (1 ♀), leg.: Ebrahimi; Golestan province, Kordkuy, Radekan, Jahan-Nama, 1600m, 24.IX.1992, (5 ♀), leg.: Ebrahimi & Badii; Golestan province, Golestan National Park, Tang-e-Gol, 630m,

15.IV.1997, (2), leg.: Nazari; Mazandaran province, Ramsar, Eshkatechal, 1200m, 28.V.2003, (1), leg.: Gilasian & Nematian; Mazandaran province, Kelardasht, Vandarbon, 2500m 24.V.2003, (1), leg.: Gilasian & Nematian.

Distribution: Iran (Gilan, Markazi and Mazandaran provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

***Strongylogaster multifasciata* (Geoffroy, 1785)**

Material examined: (1); IRAN, Mazandaran province, Sari, Polesefid, Sutekola Rd., Sangdeh, 1365m, 28.V.2005, (1), leg.: Serri & Naserzadeh.

Distribution: Iran (Gilan, Golestan, Lorestan and Mazandaran provinces) (Khayrandish *et al.*, 2017), Palaearctic and Oriental (Taeger *et al.*, 2010).

Host plants: *Dryopteris* Adanson (Dryopteridaceae), *Matteuccia struthiopteris* (Linnaeus) (Onocleaceae), *Aspidium*, *Polystichum* Roth (Dryopteridaceae), *Pteridium aquilinum* (Taeger *et al.*, 1998).

Subfamily Tenthredininae

***Macrophya alboannulata* (Costa, 1859)**

Material examined: (6 , 2); IRAN, East Azerbaijan province, Kaleybar, Daresi, 1300m, 23.VI.2002, (1), leg.: Serri & Hajiesmailian; Mazandaran province, Ramsar, Durmod, 1125m, 4.VII.2000, (1), leg.: Ebrahimi & Mofidi; Mazandaran province, Amol, Haraz, Mangol Rd., 1000m, 22.V.2005, (1), leg.: Naserzadeh & Serri; Mazandaran province, Ghaemshahr, Shirgah, 241m, 23.V.2005, (1), leg.: Naserzadeh & Serri; Mazandaran province, Ramsar, Eshkatechal, 1200m, 28.V.2000, (2 , 2), leg.: Gilasian & Nematian.

Distribution: Iran (Gilan, Golestan and Mazandaran provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plants: *Sambucus nigra*, *S. racemosa* and *S. ebulus* (Liston, 1995; Taeger *et al.*, 1998; Lacourt, 1999).

***Macrophya annulata* (Geoffroy, 1785)**

Material examined: (1); IRAN, Golestan province, Golestan forest, 700m, 3.V.1993, (1),

leg.: Pazuki & Badii.

Distribution: Iran (Gilan, Lorestan and Mazandaran provinces) (Khayrandish *et al.*, 2017), Palaearctic (Taeger *et al.*, 2010).

Host plants: *Origanum vulgare* Linnaeus (Lamiaceae); *Potentilla reptans* Linnaeus (Rosaceae), *Rosa* and *Rubus* (Taeger *et al.*, 1998).

***Macrophya arpaklena* Ushinskij, 1936**

Material examined: (6 ♂, 4 ♀); IRAN, East Azerbaijan province, Kaleybar, Vaighan, 1600m, 23.V.2004, (2 ♂), leg: Gilasian & Ghayurfar; East Azerbaijan province, Kaleybar, Daresi, 1300m, 23.VI.2002, (1 ♀); leg.: Serri & Hajiesmailian; Gilan province, Assalem, 18.VII.1972, (2 ♂), leg.: Abai; Golestan province, Golestan forest, Tang-e-Gol, 700m, 17.V.1993, (2 ♂, 1 ♀), leg.: Pazuki & Badii; Golestan province, Golestan National Park, Alme, 1600m, 26.V.1986, (1 ♂, 1 ♀), leg.: Pazuki.

Distribution: Iran (Gilan and Mazandaran provinces) (Khayrandish *et al.*, 2017), Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

***Macrophya blanda* (Fabricius, 1775)**

Material examined: (3 ♂, 1 ♀); IRAN, Khuzestan province, Ahvaz, 1945, (1 ♀), leg.: unknown; Mazandaran province, Sari, Dodangeh, Damadkola, 1100m, 26.V.2005, (1 ♀), leg.: Serri & Naserzadeh; Mazandaran province, Qaemshahr, Shirgah, 240m, 26.V.2005, (1 ♀), leg.: Naserzadeh & Serri; Mazandaran province, 10km E. Baladeh kola, 2450m, 6.VII.2005, (1 ♀), leg.: Moghadam, Serri & Hajiesmailian.

Distribution: Iran (Alborz, Gilan, Qazvin and Mazandaran provinces) (Khayrandish *et al.*, 2017), Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

***Macrophya chrysur* (Klug, 1817)**

Synonyms: *Tenthredo (Allantus) chrysur* Klug, 1817; *Macrophya albimacula* Mocsáry, 1881; *Macrophya pallidilabris* Costa, 1890.

Material examined: (1 ♀); IRAN, Mazandaran province, Kelardasht, Taydareh, Mazuchal, 24.V.2003, (1 ♀), leg.: Gilasian & Nematian.

Distribution: Iran (new record), West Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

***Macrophya cyrus* Benson, 1954**

Material examined: (2 ♀); IRAN, East Azerbaijan province, Tabriz, 7.VII.1968, (1 ♀), leg.: Rajabi; Lorestan province, Pole-e-Dokhtar, Pol-e-Tang, 10.IV.1977, (1 ♀), leg.: Pazuki & Hashemi.

Distribution: Iran (Southwest, Qazvin and Tehran provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

***Macrophya diaphenia* Benson, 1968**

Material examined: (12 ♀); IRAN, East Azerbaijan province, Kaleybar, Vaighan, 1600m, 23.V.2004, (1 ♀), leg.: Gilasian & Ghayurfar; East Azerbaijan province, Ghouschi,

19.VI.1970, (1), leg.: Pazuki; Golestan province, Golestan National Park, Almeh, 1600m, 26.V.1986, (1), leg.: Pazuki; Isfahan province, Kashan, Niasar, 1800m, 1.VI.2005, (3), leg.: Ebrahimi & Hajiesmailian; Tehran province, Evin, 9.VI.1976, (2), leg.: Lavallee; Tehran province, Rudbar-e-Chasran, Garmabdar, 2300m, 13.VII.1993, (2), leg.: Ebrahimi & Parchami-Araghi; Tehran province, Damavand, Cheshmeh-Ala, 17.V.1976, (1), leg.: Zairi & Lavallee; West Azerbaijan province, Orumieh, Ghostro, 20.VI.1970, (1), leg.: Pazuki.

Distribution: Iran (Alborz, Gilan, Lorestan, Qazvin, Mazandaran and Tehran provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

***Macrophya diversipes* (Schrank, 1782)**

Material examined: (5); IRAN, Golestan province, Golestan National Park, Almeh, 1600m, 26.V.1986, (1), leg.: Pazuki; Golestan province, Gorgan, Yakhti- kalan, 7.VI.1986, (1), leg.: Pazuki; Isfahan province, Kashan, Ghohrud, 2380m, 3.VI.2005, (1), leg.: Ebrahimi & Hajiesmailian; Khuzestan province, Ahvaz, 1945, (1), leg.: unknown; Qazvin province, Alamut, Gazorkhan, 2080m, (1), leg.: Ebrahimi, Ardeh & Parchami-Araghi.

Distribution: Iran (Alborz, Gilan, Lorestan and Mazandaran provinces) (Khayrandish *et al.*, 2017), Palaearctic (Taeger *et al.*, 2010).

Host plant: *Fragaria* sp. (Çalma ur & Özbek, 2004a).

***Macrophya postica* (Brullé, 1832)**

Material examined: (4); IRAN, East Azerbaijan province, Kaleybar, Daresi, 1300m, 23.VI.2002, (1), leg.: Serri & Hajiesmailian; Fars province, Cibkhalaj, 23.VI.1967, (1), leg.: Kashkuli; Golestan province, Golestan National Park, Sulegerd, 1100m, 1.VI.1986, (1), leg.: Pazuki; Golestan province, Golestan National Park, Almeh, 1600m, 26.V.1986, (1), leg.: Pazuki.

Distribution: Iran (Alborz, Gilan and Mazandaran provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

***Macrophya rufipes* (Linnaeus, 1758)**

Material examined: (1 , 2); IRAN, East Azerbaijan province, Mianeh, Bochohglou, 1500m, 27.V.2004, (1), leg.: Gilasian & Ghayurfar; Golestan province, Golestan National Park, Almeh, 1600m, 26.V.1986, (1), leg.: Pazuki; Kerman province, Mahan, 2000m, 16.V.1991, (1), leg.: Mirzayans & Badii.

Distribution: Iran (Southwest, Gilan province) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plants: *Vitis vinifera* Linnaeus (Vitaceae), eggs of *M. rufipes* have observed on *Agrimonia* (Rosaceae) (Taeger *et al.*, 1998); *Agrimonia eupatoria* (Linnaeus) (Lacourt, 1999).

***Macrophya nr. superba* Tischbein, 1852**

Material examined: (1 ♀, 2 ♂); IRAN, Golestan province, Gorgan, Yakhti- kalan, 7.VI.1986, (1 ♀), leg.: Pazuki; Qazvin province, Alamut, Kashkdasht, 1470m, 19.VI.1995, (1 ♀), leg.: Parchmi, Ardeh & Ebrahimi; Razavi Khorasan province, Mashhad, Torogh, 9.VII.1973, (1 ♀), leg.: Zare.

Distribution: Iran (Qazvin province) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

Remarks. The specimens are very similar to *M. superba* but differ in stripes and spots on thorax and abdomen increasing the likelihood of being an undescribed species.

***Rhogogaster nr. picta* (Klug, 1817)**

Synonyms: *Tenthredo* (*Allantus*) *picta* Klug, 1817; *Tenthredo breviscula* Costa, 1859.

Material examined: (1 ♀); IRAN, Qazvin province, Qazvin, VI.1948, (1 ♀), leg.: Taghizadeh.

Distribution: West Palaearctic (Taeger *et al.*, 2010).

Host plant: *Sarothamnus scoparius* (Taeger *et al.*, 1998).

***Rhogogaster viridis* (Linnaeus, 1758)**

Material examined: (2 ♀); IRAN, East Azerbaijan province, Kaleybar, Youzband, 1500m, 4.VII.1997, (1 ♀), leg.: Barari & Mofidi; Mazandaran province, Amol, Baladeh-Alamdeh Rd. Noj, 1718m, 4.VII.2005, (1 ♀), leg.: Serri, Moghadam & Hajiesmailian.

Distribution: Iran (Alborz province) (Khayrandish *et al.*, 2017), Palaearctic, Nearctic and Oriental (Taeger *et al.*, 2010).

Host plants: *Circaea* Tournefort (Onagraceae), *Frangula alnus* Miller (Rhamnaceae), *Populus*, *Quercus*, *Ranunculus* Linnaeus (Ranunculaceae), *Rubus*, *Stellaria*, *Betula*, *Alnus incana*, *Salix caprea*, *S. viminalis* Linnaeus, *Vicia cracca* Linnaeus (Fabaceae), *Filipendula ulmaria* (Taeger *et al.*, 1998).

***Tenthredo bifasciata* O. F. Muller, 1766**

Material examined: (2 ♀); IRAN, Golestan province, Golestan National Park, Cheshmeh Bidi, 13.VI.2000, (1 ♀), leg.: Moghadam, Ebrahimi & Mofidi; West Azerbaijan province, Orumieh, Ghostro, 28.V.1969, (1 ♀), leg.: Abai.

Distribution: Iran (Gilan, Qazvin and Mazandaran provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: *Aegopodium?* Linnaeus (Apiaceae) (Liston, 1995).

***Tenthredo cinctipleuris* (Enselin, 1910)**

Material examined: (1 ♂); IRAN, Ardabil province, Biesavar, 750m, 19.V.2004, (1 ♂), leg.: Ghayourfar & Gilasian.

Distribution: Iran (Alborz and Mazandaran provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

***Tenthredo distinguenda* (Stein, 1885)**

Material examined: (1 ♂); IRAN, East Azerbaijan province, Kaleybar, Vaighan, 1600m, 23.V.2004, (1 ♂), leg.: Gilasian & Ghayourfar.

Distribution: Iran (Gilan province) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

***Tenthredo excellens* (Konow, 1886)**

Material examined: (3 ♂); IRAN, Golestan province, Golestan National Park, Almeh, 1600m, 26.V.1986, (2 ♂), leg.: Pazuki; Mazandaran province, Kandovan, 2600m, 3.VII.1995, (1 ♂), leg.: Sarafrazi & Badii.

Distribution: Iran (Gilan, Khorasan, Qazvin, Mazandaran and Semnan provinces) (Khayrandish *et al.*, 2017), Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

***Tenthredo longipes* (Konow, 1886)**

Material examined: (2 ♂); IRAN, Mazandaran province, Ramsar, Eshkatechal, 1200m, 28.V.2000, (2 ♂), leg.: Gilasian & Nematian.

Distribution: Iran (Gilan and Mazandaran provinces) (Khayrandish *et al.*, 2017), Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

***Tenthredo persica* (André, 1882)**

Material examined: (2 ♂); IRAN, Qazvin province, Alamout, 2080m, 8.VI.1995, (2 ♂), leg.: Ebrahimi, Ardeh & Parchami-Araghi.

Distribution: Iran (Alborz, Qazvin and Tehran provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: ?*Lepidium* (Lacourt, 1999).

***Tenthredo vestita* André, 1881**

Material examined: (2 ♂, 1 ♀); IRAN, East Azerbaijan province, Kaleybar, 1200m, 22.V.2004, (1 ♂), leg.: Ghayourfar & Gilasian; Mazandaran province, Sari, Dodangeh,

Damadcola, 1100m, 26.V.2005, (1 ♀), leg.: Serri & Naserzadeh; Mazandaran province, Ramsar, Eshkatechal, 1200m, 28.V.2000, (1 ♀), leg.: Gilasian & Nematian.

Distribution: Iran (Gilan and Golestan provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: Unknown.

***Tenthredo zonula* Klug, 1817**

Material examined: (4 ♀); IRAN, Golestan province, Golestan National Park, Almeh, 1590m, 6.V.1999, (1 ♀), leg.: Mofidi, Barari & Manzari; Golestan province, Golestan forest, Marghzar, 1900m, 21.V.1988, (1 ♀), leg.: Pazuki; Golestan province, Golestan National Park, Khajenarenj, 4.V.1999, (1 ♀), leg.: Moghadam, Barari & Manzari; Mazandaran province, Kandovan, 2600m, 3.VII.1995, (1 ♀), leg.: Sarafrazi & Badii.

Distribution: Iran (Alborz, Fars, Khorasan, Lorestan, Qazvin and Zanjan provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: *Hypericum perforatum* Linnaeus (Hypericaceae) (Taeger *et al.*, 1998).

***Tenthredopsis nassata* (Geoffroy, 1785)**

Synonyms: *Tenthredo nassata* Linnæus, 1767; *Tenthredo alneti* Schrank, 1781; *Tenthredo perlata* Geoffroy, 1785; *Tenthredo apicaris* Geoffroy, 1785; *Tenthredo subulata* Gmelin, 1790; *Tenthredo melanorhoea* Gmelin, 1790; *Tenthredo napata* Turton, 1802; *Tenthredo (Allantus) instabilis* Klug, 1817; *Tenthredo fulviceps* Stephens, 1835; *Perineura brevispina* Thomson, 1870; *Tenthredopsis lividiventris* Cameron, 1881; *Tenthredopsis saundersi* Cameron, 1881; *Tenthredopsis inornatus* Cameron, 1881; *Tenthredopsis albomaculatus* Cameron, 1881; *Tenthredopsis dorsivittatus* Cameron, 1881; *Perineura scutellaris* var. *flavo-guttata* Magretti, 1882; *Thomsonia josephi* Konow, 1884; *Thomsonia obscura* Konow, 1884; *Thomsonia raddatzi* Konow, 1884; *Thomsonia elegans* Konow, 1884; *Tenthredopsis gibberosa* Konow, 1887; *Tenthredopsis fenestrata* Konow, 1890; *Tenthredopsis dorsalis* var. *biguttata* Konow, 1890; *Tenthredopsis dorsalis* var. *diluta* Konow, 1890; *Tenthredopsis raddatzi* var. *indocilis* Konow, 1890; *Tenthredopsis raddatzi* var. *dorsata* Konow, 1890; *Tenthredopsis raddatzi* var. *vittata* Konow, 1890; *Tenthredopsis raddatzi* var. *maura* Konow, 1890; *Tenthredopsis raddatzi* var. *sagmaria* Konow, 1890; *Tenthredopsis nassata* var. *rufata* Konow, 1890; *Tenthredopsis austriaca* var. *obscurata* Konow, 1890; *Tenthredopsis dorsalis* var. *tirolensis* Konow, 1892; *Tenthredopsis konowi* Strobl, 1896; *Tenthredopsis nassata* var. *pleurosternalis* Enslin, 1913; *Tenthredopsis parvula* var. *atripleuris* Enslin, 1913; *Tenthredopsis parvula* var. *atrilobis* Enslin, 1913; *Tenthredopsis parvula* var. *atريفemoribus* Enslin, 1913; *Tenthredopsis parvula* var. *rubriventris* Enslin, 1913; *Tenthredopsis parvula* var. *atramentaria* Enslin, 1913; *Tenthredopsis austriaca* var. *rufofemorata* Enslin, 1913; *Tenthredopsis austriaca* var. *albata* Enslin, 1913; *Tenthredopsis austriaca* var. *candida* Enslin, 1913; *Tenthredopsis nassata* var.

metapleuris Enslin, 1913; *Tenthredopsis nassata* var. *trichrome* Enslin, 1913; *Tenthredopsis tristior* Morice, 1914; *Tenthredopsis inornata* var. *melanaspis* Enslin, 1918; *Tenthredopsis nassata* var. *nigerrima* Endre, 1927; *Tenthredopsis parvula* var. *nigrilobis* Zirngiebl, 1937; *Tenthredopsis fenestrata* forma *quadripunctata* Gregor; *Tenthredopsis dubia* forma *scutellaris* Gregor, 1941; *Tenthredopsis nassata* var. *martialis* Pic, 1948; *Tenthredopsis nassata* var. *buyssoni* Pic, 1948; *Tenthredopsis virgineus* Muche, 1965; *Tenthredopsis coqueberti ulanbatorensis* Muche, 1965.

Material examined: (1 ♂, 2 ♀); IRAN, East Azerbaijan province, Ahar, Kaleybar, 14.VI.1973, (1 ♀), leg.: Rajabi; Mazandaran province, Ramsar, Eshkatechal, 1200m, 28.V.2000, (2 ♀), leg.: Gilasian & Nematian;

Distribution: Iran (new record), Palaearctic (Taeger *et al.*, 2010).

Host plants: *Carex*, *Dactylis glomerata*, *Deschampsia cespitosa*, *Deschampsia flexuosa*, *Lolium perenne* (Taeger *et al.*, 1998).

***Tenthredopsis ornata* (Serville, 1823)**

Material examined: (3 ♂, 1 ♀); IRAN, East Azerbaijan province, Kaleybar, Vaighan, 1600m, 23.V.2004, (1 ♀), leg.: Gilasian & Ghayurfar; Golestan province, Gonbad, 30.IV.1956, (1 ♂), leg.: Safavi & Arghand; Golestan province, Gorgan, 1.V.1956, (1 ♂), leg.: Safavi; Golestan province, Minoudasht, Golidaghi, 20.V.1965, (1 ♂), leg.: Safavi.

Distribution: Iran (Alborz, Gilan, Golestan and Mazandaran provinces) (Khayrandish *et al.*, 2017), West Palaearctic (Taeger *et al.*, 2010).

Host plant: *Brachypodium silvaticum* (Hudson) (Poaceae) (Lacourt, 1999).

***Tenthredopsis* sp.**

Material examined: (1 ♂, 1 ♀); IRAN, Golestan province, Golestan forest, 700m, 17.V.1993, (1 ♀), leg.: Pazuki & Badii; Golestan province, Gorgan, 1.V.1956, (1 ♂), leg.: Safavi.

Family Xiphydriidae

***Xiphydria prolongata* (Geoffroy, 1785)**

Material examined: (3 ♂); IRAN, Gilan province, Bandar-e-Anzali, 15.VI.1970, (2 ♂), leg.: Farahbakhsh; Gilan province, Bandar-e-Anzali, 15.VI.1990, (1 ♂), leg.: Ebrahimi.

Distribution: Iran (Gilan province) (Khayrandish *et al.*, 2017), Palaearctic and Nearctic (Taeger *et al.*, 2010).

Host plants: *Ulmus*, *Populus*, *Salix caprea* Linnaeus (Taeger *et al.*, 1998).

Discussion

According to the previous studies, 18 species of Argidae, nine species of Cephidae, four species of Cimbicidae, seven species of Megalodontesidae, two species of Orussidae, three species of Pamphiliidae, two species of Siricidae, two species of Xiphydriidae and 131 species of Tenthredinidae have been reported from Iran until now (Khayrandish *et al.*, 2012, 2015, 2017, in press; Khosravi *et al.*, 2014; Taeger & Blank, 2011; Abai, 2009; Shahmohammadi *et al.*, 2008; Wei, 2008; Taeger, 2002; Shinohara, 1997; Modarres Awal, 1997; Ebrahimi, 1995; Shahrokhi & Zare, 1995; Beneš & Abai, 1991; Koch, 1988; Chevin, 1985; Beneš, 1981; Benson, 1968; Zirngiebl, 1956; Gussakovskij, 1935; Mallach, 1931). We have here reported further four species from Iran and increased the total number of sawflies of Iran to 182 species. The species *Ametastegia persica*, *Craesus persicus* and *Macrophya diaphenia* are considered endemic to Iran (Khayrandish *et al.*, 2017). The Iranian fauna of Symphyta is very similar to the countries of western Palaearctic region (Taeger & Blank, 2011; Benson, 1968; Çalma ur & Özbek, 2004a, 2004b; Taeger & Blank, 2011).

Among the reported families, Tenthredinidae with 38 (63.33%), Cephidae with six (10%) genera, Tenthredinidae with 135 (73.77%), and Argidae with 18 (9.84%) species have the highest number of genera (Table 1).

Table 1. Frequency and abundance of sawflies (Hymenoptera: Symphyta) in Iran.

Family	Genera		Species	
	Number	Percentage	Number	percentage
Argidae	4	6.66	18	9.84
Cephidae	6	10	9	4.91
Cimbicidae	3	5	5	2.73
Megalodontesidae	1	1.66	7	3.82
Orussidae	2	3.33	2	1.09
Pamphiliidae	3	5	3	1.64
Siricidae	2	3.33	2	1.09
Tenthredinidae	38	63.33	135	73.77
Xiphydriidae	1	1.66	2	1.09

The provinces of Gilan, with 38 genera and 79 species, Mazandaran, with 32 genera and 78 species, and Alborz, with 23 genera and 43 species, host the highest number of genera and species of sawflies in Iran (Table 2).

Table 2. Frequency and abundance of sawflies (Hymenoptera: Symphyta) in Iranian provinces.

Iranian Provinces	Number of taxa		
	Family	Genus	Species
Alborz	5	23	43
Ardabil	2	4	5
East Azerbaijan	4	9	20
Fars	4	7	9
Gilan	8	38	79
Golestan	3	12	25
Hamadan	1	1	1
Isfahan	2	4	6
Kerman	2	3	3
Kermanshah	2	3	5
Khuzestan	1	2	3
Kohgiluyeh & Boyerahmad	3	3	3
Kordestan	1	2	2
Lorestan	6	11	18
Markazi	2	4	4
Mazandaran	5	32	78
Qazvin	4	16	31
Qom	1	1	1
Razavi Khorasan	3	5	6
Semnan	1	1	2
Sistan & Baluchestan	2	2	2
South Khorasan	1	1	1
Tehran	4	16	23
West Azerbaijan	2	5	6
Zanjan	1	1	1

Acknowledgment

We are grateful to the Iranian Research Institute of Plant Protection (IRIPP) for facilitating this research.

References

- Abai, M.** (2009) *List of pests of forest trees and shrubs of Iran*. 178 pp. Plant Pests and Disease Research Institute, Tehran.
- Beneš, K. & Abai, M.** (1991) A new species of *Croesus* injurious to birch in Iran (Hymenoptera: Tenthredinidae). *Acta entomologica bohemoslovaca* 88, 253–263.
- Beneš, K.** (1981) *Croesus persicus* sp. n. from Iran (Hymenoptera: Tenthredinidae). *Acta entomologica bohemoslovaca* 78, 177–182.

- Benson, R.B.** (1951) Hymenoptera, Symphyta. *Handbooks for the Identification of British Insects* 6(2a), 1–49.
- Benson, R. B.** (1952) Hymenoptera, Symphyta. *Handbooks for the Identification of British Insects* 6(2b), 51–137.
- Benson, R.B.** (1958) Hymenoptera, Symphyta. *Handbooks for the Identification of British Insects* 6(2c), 139–252 + [6] pp.
- Benson, R. B.** (1962) A revision of the Athaliini (Hymenoptera: Symphyta). *Bulletin of the British Museum (Natural History). Entomology series* 11, 333–382.
- Benson, R. B.** (1968) Hymenoptera from Turkey, Symphyta. *Bulletin of the British Museum (Natural History). Entomology series* 22(4), 111–207.
- Berland, L.** (1947) Hyménoptères Tenthredoïdes. *Faune de France* 47, 1–493.
- Burggraaf-Van Nierop, Y. D. & Achterberg, C. Van** (1990) The Cephidae and Argidae of the Netherlands (Hymenoptera). *Zoologische Bijdragen* 39, 3–66.
- Çalma ur, Ö. & Özbek, H. A.** (2004) Contribution to the Knowledge of the Fauna of Tenthredinidae (Symphyta, Hymenoptera) of Turkey Part I: The Subfamily Tenthredininae. *Turkish Journal of Zoology* 28, 37–54.
- Chevin, H.** (1985) Contribution à la faune de l'Iran 26. Hyménoptères Symphytes. *Nouvelle Revue d'Entomologie. Nouvelle Série* 1[1984], 347–351.
- Ebrahimi, E.** (1995) Three new records of Symphyta from Iran. *Proceedings of the 12th Iranian plant protection congress*, pp. 337.
- Farahbakhsh, G.** (1961) *Checklist of important insects and other enemies of plants and agricultural products in Iran*. 153pp. Ministry of Agriculture, Department of Plant Protection, Tehran.
- Ghadiri, V.** (1993) Surveying of infestation and damage of cereal sawfly (*Cephus pygmaeus* L.) in various cultivars of wheat and barley. *Journal of the Entomological Society of Iran* 12–13, 4–5.
- Gussakovskij, V. V.** (1935) Insectes Hyménoptères, Chalastogastra 1. *Fauna SSSR* 2(1), 1–453.
- Karimpour, Y.** (2015) Biology, host specificity and feeding potential of the Dock's leaf defoliator sawfly, *Kokujewia ectrapela* Konow (Hymenoptera: Argidae), a biocontrol agent of *Rumex* spp. (Polygonaceae). *Journal of Entomological Society of Iran* 35(1), 1–10.
- Karimpour, Y. & Razmi, M.** (2010) First report of *Cryptus inquisitor* (Hymenoptera: Ichneumonidae) from Iran. *Journal of Entomological Society of Iran* 29(2), 37–39.
- Khayrandish, M., Talebi, A. A., Blank, S. M. & Fathipour, Y.** (2012) Study of common sawflies of the genus *Ametastegia* (Hymenoptera: Tenthredinidae) in north of Iran with two new species records. *Proceedings of the 20th Iranian plant protection congress*, pp. 161.

-
- Khayrandish, M., Talebi, A. A., Blank, S. M. & Fathipour, Y.** (2015) Study on the genus *Ametastegia* Costa (Hymenoptera: Tenthredinidae) in northern Iran with the description of a new species. *Journal of Insects Biodiversity and Systematics* 1(1), 17–32.
- Khayrandish, M., Talebi, A. A., Blank, S.M.** (2017) Checklist of sawflies (Hymenoptera: Symphyta) from Iran. *Journal of Insects Biodiversity and Systematics* 3(3), 165–227.
- Khayrandish, M., Talebi, A. A., Fathipour, Y. & Blank, S. M.** (in press) The sawflies (Hymenoptera: Symphyta) of northern Iran, with description of a new species. *Zootaxa*.
- Khosravi, R. Jalai Sendi, J, Ebrahimi, E & Blank, S. M.** (2014) First record of *Cladius* (*Priophorus*) *rufipes* Serville, 1823 (Hymenoptera: Tenthredinidae) from Iran. *Journal of Entomological Society of Iran* 33(4), 73–75.
- Koch, F.** (1988) Die Gattung *Sterictiphora* Billberg (Insecta: Hymenoptera: Symphyta: Argidae). *Entomologische Abhandlungen* 52(2), 29–61.
- Lacourt, J.** (1999) Répertoire des Tenthredinidae ouest-paléarctiques (Hymenoptera: Symphyta). *Mémoires de la SEF* 3, 1–432.
- Liston, A. D.** (1995) *Compendium of European Sawflies. List of species, modern nomenclature, distribution, food plants, identification literature*. 190 pp. Chalastos Forestry, Gottfrieding.
- Liston, A.D. & Späth, J.** (2005) New data on the sawfly fauna of Corsica with the description of a new species *Pontania cyrnea* sp. nov. (Hymenoptera: Symphyta). *Nachrichtenblatt der Bayerischen Entomologen* 54(1–2), 2–7.
- Mallach, N.** (1931) Beitrag zur Kenntnis der Insektenfauna Nordpersiens. *Entomologisches Nachrichtenblatt* 5, 81–82.
- Middlekauff, W. W.** (1969) The cephid stem borers of California (Hymenoptera: Cephidae). *Bulletin of the California Insect Survey* 11, 1–19.
- Modarres Awal, M.** (1997) *List of agricultural pests and their natural enemies in Iran*. 429 pp. Ferdowsi University Press, Mashad.
- Quinlan, J. & Gauld, I.D.** (1981) Hymenoptera (Symphyta). (except Tenthredinidae). In *Royal Entomological Society of London, Handbooks for the Identification of British Insects* 6(2a), 1–67.
- Shahrokhi, M. B. & Zare, A.** (1995) The biology of barberry sawfly, *Syrista parreyssi* Spinola (Hymenoptera: Cephidae), in Khorasan province. *Proceedings of the 12th Iranian plant protection congress*, pp. 270.
- Shahmohammadi, D., Sadeghi, S. E., Melika, G. & Ali, B.** (2008) Report of *Tremex fuscicornis* (Hymenoptera: Siricidae) from Iran. *Journal of Entomological Society of Iran* 27(2), 11–12. [In Persian with English summary]
- Shinohara, A.** (1997) New or Noteworthy Distribution Records of Six Palaearctic Species of Pamphiliid Sawflies (Hymenoptera). *Bulletin of the National Science Museum, Series A, Zoology* 23(1), 69–72.
-

- Smith, D. R.** (1988) A synopsis of the sawflies (Hymenoptera: Symphyta) of America south of the United States: introduction, Xyelidae, Pamphiliidae, Cimbicidae, Diprionidae, Xiphodriidae, Siricidae, Orussidae, Cephidae. *Systematic Entomology* 13, 205–261.
- Taeger, A.** (2002) The Megalodontesidae of Europe (Hymenoptera: Symphyta). pp. 461–480 in Viitasaari, M. (Ed.) *Sawflies (Hymenoptera: Symphyta) I. A review of the suborder, the Western Palaearctic taxa of Xyeloidea and Pamphilioidea*. 516 pp. Tremex, Helsinki.
- Taeger, A., Altenhofer, E., Blank, S.M., Jansen, E., Kraus, M., Pschorn-Walcher, H. & Ritzau, C.** (1998) Kommentare zur Biologie, Verbreitung und Gefährdung der Pflanzenwespen Deutschlands (Hymenoptera: Symphyta). pp. 49–135 in Taeger, A. & Blank, S.M. (Eds) *Pflanzenwespen Deutschlands (Hymenoptera: Symphyta). Kommentierte Bestandsaufnahme*. 364 pp. Goecke & Evers, Keltern.
- Taeger, A. & Blank, S. M.** (2011) ECatSym—Electronic World Catalog of Symphyta (Insecta: Hymenoptera). Program version 3.10, data version 38 (07.12.2011). Digital Entomological Information, Müncheberg. Available from <http://www.sdei.de/ecatsym/index.html> (accessed 3 January 2013).
- Taeger, A., Blank, S. M. & Liston, A. D.** (2010) World Catalog of Symphyta (Hymenoptera). *Zootaxa* 2580, 1–1064.
- Ushinskij, A. V.** (1936) Materialy k faune Tenthredinodea Turkmenskoj SSR. *Byulleten turkmenskoy zoologicheskoy stantsii, Ashkhabad and Baku* 1, 103–115.
- Viitasaari, M.** (2002) The suborder Symphyta of the Hymenoptera. pp. 12–174 in Viitasaari, M. (Ed.) *Sawflies (Hymenoptera: Symphyta) I. A review of the suborder, the Western Palaearctic taxa of Xyeloidea and Pamphilioidea*. 516 pp. Tremex, Helsinki.
- Wei, M.** (2008) On the genus *Syrista* Konow, with the description of a new species from China (Hymenoptera: Cephidae). *Entomological News* 118(5), 450–458.
- Zhelochovtsev, A. N. & Zinovjev, A. G.** (1993 [1988]) Hymenoptera Part VI Symphyta. [Translation of the book from 1988]. in Medvedev, G.S. (ed.) *Keys to the Insects of the European Part of the USSR. [Opredelitel' Nasekomykh Evropeiskoi Chasti SSSR, Tom III, Pereponchatokrylye, Shestiaia Chast']*. Amerind Publ. Co. Pvt. Ltd., New Delhi 3(6), 1–387.
- Zirngiebl, L.** (1956) Blattwespen aus Iran. *Mitteilungen der Münchner Entomologischen Gesellschaft* 46, 322–326.
- Zombori, L.** (1981) The European genera of Selandriinae and Dolerinae (Hymenoptera: Symphyta: Tenthredinidae). *Acta Zoologica Academiae Scientiarum Hungaricae* 27(3–4), 443–450.
- Zombori, L.** (1982a) The European Genera of Blennocampinae (Hymenoptera: Symphyta: Tenthredinidae). *Acta Zoologica Academiae Scientiarum Hungaricae* 28(1–2), 183–192.

- Zombori, L.** (1982b) The European genera of Tenthredininae (Hymenoptera: Symphyta: Tenthredinidae). *Acta Zoologica Academiae Scientiarum Hungaricae* 28(3–4), 455–460.
- Zombori, L.** (1984) The European genera of Nematinae (Hymenoptera: Symphyta: Tenthredinidae). *Acta Zoologica Hungariae* 30(3–4), 545–550.
-