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## **A study on the Braconidae (Hymenoptera: Ichneumonoidea) from West Azarbaijan province, Northwestern Iran**

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**Abstract:** This paper deals with the fauna of the family Braconidae (Hymenoptera) from West Azarbaijan province (northwestern Iran). In total 29 species from 8 subfamilies Agathidinae (2), Alysiinae (3), Aphidiinae (6), Braconinae (3), Doryctinae (4), Hormiinae (2), Microgastrinae (7), Rogadinae (2) were collected.

**Key words:** Hymenoptera, Braconidae, West Azarbaijan, Fauna, Iran.

### **Introduction**

Braconid wasps (Hymenoptera: Ichneumonoidea: Braconidae) are one of the powerful biological control agents whose importance in decreasing the pests population density has been well proved (WHARTON 1993; GHAHARI et al. 2006). The Iranian Braconidae were studied rather well in recent years (see GHAHARI et al. 2009a, b, c, d, 2010; FALLAHZADEH & SAGHAEI (2010), but Iran is a large country with various geographical regions and climates, and therefore conducting the faunistic surveys in different provinces is necessary for establishing the full species composition of the family. In this paper, the fauna of West Azarbaijan province (located in North West of Iran, bordering with Turkey, Iraq and Armenia, and the provinces of East Azarbaijan, Zanzan and Kurdistan) is dealt with. It covers an area of 43,660 km<sup>2</sup>, and the climate is largely influenced by the rainy winds of the Atlantic Ocean and Mediterranean. According to existing meteorological data, local temperatures vary within the province. The highest temperature reaches 34 °C in July, and the lowest temperature is -16 °C in January.

### **Materials and Methods**

The materials were collected by Malaise traps and sweeping net from different regions of West Azarbaijan province, and killed with ethyl acetate. Aphid parasitoid samples on various hosts were collected at random from live and mummified aphids on different host plants. Plant samples with aphids containing parasitoids were placed in plastic boxes to obtain adult parasitoids. The emerging parasitoids were transferred with a fine brush into Eppendorf tubes containing 75% ethyl alcohol. The braconid specimens were mounted on triangular labels and were examined with a stereoscopic binocular microscope. Classification, nomenclature, distribution and host records of Braconidae suggested by

YU et al. (2012) have been followed. For later additions and changes, the exact references are given.

## Results

In total 29 braconid species from eight subfamilies were collected from West Azarbaijan province. The list of species is given below alphabetically, with distribution and host records data.

### Subfamily *Agathidinae*

#### *Agathis anglica* MARSHALL, 1885

**Material examined:** West Azarbaijan province: Takab (1822 m), 1♀, unknown date.

**Distribution outside Iran:** Albania (FISCHER 1957 as *Agathis albanica*; NIXON 1986), Armenia, Azerbaijan, Mongolia, Tajikistan, Ukraine (KOKUJEV 1895 as *Agathis longicauda*), Austria, Bulgaria, Cyprus (NIXON 1986), China (CHOU & SHARKEY 1989 as *Agathis taiwanensis*), Croatia (SHENEFELT 1970; PAPP 2009a), Cyprus (NIXON 1986; PAPP 1998), Europe (FISCHER 1968), France, Kazakhstan, Morocco, Poland, Romania, Slovenia, Spain, Sweden, Switzerland, Taiwan (YU et al. 2012), Finland, Germany, The Netherlands (SHENEFELT 1970), Greece (NIXON 1986; PAPP 2007), Hungary (KOKUJEV 1895 as *Agathis longicauda*; SHENEFELT 1970), Israel (PAPP 2011-2012), Italy (KOKUJEV 1895 as *A. longicauda*; NIXON 1986), Macedonia (PAPP 2009a), Montenegro, Serbia (KOKUJEV 1895 as *A. longicauda*; ŽIKIĆ et al. 2010), Russia (KOKUJEV 1895 as *A. longicauda*; SZÉPLIGETI 1904 as *A. longicauda*; TOBIAS 1963 as *A. caucasica*; FISCHER 1968 as *A. causicus*; SHENEFELT 1970), Syria (FISCHER 1957, 1968 as *A. syriaca*; PAPP 2011-2012), Turkey (FISCHER 1957 as *A. syriaca*; ZETTEL & BEYARSLAN 1992; ÇETIN ERDOĞAN 2013), UK (SZÉPLIGETI 1904; SHENEFELT 1970; NIXON 1986), former Yugoslavia (KOKUJEV 1895 as *A. longicauda*; SHENEFELT 1970), Greece (PAPP 2007).

**Host records:** This species was reported as a parasitoid of *Epinotia mercuriata* (FRÖLICH) (Lepidoptera: Tortricidae) (NIXON 1986). YU et al. has also reported it as a parasitoid of a large number of lepidopterous hosts: *Agonopterix nervosa* (HAWORTH), *A. pallorella* ZELLER (Depressariidae), *Apoaerema anthyllidella* (HÜBNER), *Nothris verbascella* (DENIS & SCHIFFERMÜLLER), *Pexicopia malvella* HÜBNER, *Syncopacma taeniolella* ZELLER (Gelechiidae), *Coleophora adjunctella* HODGKINSON, *C. albitarsella* ZELLER, *C. argentula* STEPHENS, *C. discordella* ZELLER, *C. laricella* (HÜBNER), *C. lusciniapenella* TREITSCHKS (Coleophoridae), *Epinotia mercuriana* FRÖLICH (TORTRICIDAE), *Loxostege sticticalis* (LINNAEUS), *Pyrausta aurata* SCOPOLI (Pyralidae).

#### *Agathis varipes* THOMSON, 1895

**Material examined:** West Azarbaijan province: Bookan (1379 m), 1♂, summer 2008.

**Distribution outside Iran:** Europe (north up to Finland, Sweden, The Netherlands and England and including the Mediterranean region), Turkey, Caucasus, Central Asia (SIMBOLOTTI & VAN ACHTERBERG 1999), Slovakia (NIXON 1986 as *Agathis ariadne*), Russia (SHESTAKOV 1928 as *A. dissimilis*), Mongolia, Russia, Tajikistan, Uzbekistan (TELENGA 1955 as *A. glabricollis*), Mongolia (FISCHER 1968 as *A. lederi*), Ukraine (IVANOV 1899 as *A. rufipes*), Kazakhstan, Mongolia (TOBIAS 1963 as *A. serratulae*), Hungary, Kazakhstan, Russia, Tajikistan, Ukraine, Uzbekistan (KOKUJEV 1895 as *A. simulatrix*), Greece (PAPP 2003, 2007), Mongolia (PAPP 1967 as *A. malvacearum*; PAPP 1971 as *A. tadzhica* and as *A. mongolica*; PAPP 2009b), England (NIXON 1986; BROAD & SHAW 2009), Macedonia (PAPP 2009a), Germany, Sweden (NIXON 1986), Turkey (ÇETIN ERDOĞAN 2013).

**Host records:** *Metzneria lapella* (LINNAEUS) (Lepidoptera: Gelechiidae) (NIXON 1986; SIMBOLOTTI & VAN ACHTERBERG 1999), *Myelois cirrigerella* (ZINCKEN) (Lepidoptera: Pyralidae) (NIXON 1986), *Apodia bifractella* (DUPONCHEL), possibly *Ptocheuusa paupella* (ZELLER) (Lepidoptera: Gelechiidae), *Adela barbatella* ZELLER (Lepidoptera: Incurvariidae) (SIMBOLOTTI & VAN ACHTERBERG 1999).

### Subfamily A l y s i i n a e

#### *Alysia (Anarcha) rufidens* NEES, 1834

**Material examined:** West Azarbaijan province: Myandoab (1339 m), 3 ♂♂, June 2007. West Azarbaijan province: Ourmieh (1430 m), 2 ♂♂, August 2007. West Azarbaijan province: Khoy (1153 m), 2 ♂♂, August-September 2008.

**Distribution outside Iran:** Austria, Sweden (THOMSON 1845 as *Alysia (Anarcha) puncticollis*; FISCHER 1993 as *A. puncticollis*), Spain (TORMOS 1987; DOCAVO et al. 2006; PASCUAL 2010), England (MARSHALL 1889; BROAD & SHAW 2009), Ireland (FISCHER 1993 as *A. puncticollis*; BROAD & SHAW 2009), Israel (PAPP 2011-2012), Bulgaria (THOMSON 1845 as *A. puncticollis*; PAPP 2011-2012), Greece (PAPP 2007), Austria (FISCHER 1973), Western Europe (FISCHER 1993).

**Host records:** *Delia floralis* (FALLEN), *D. quadripila* (STEIN), *Ensina sonchi* (LINNAEUS), *Tephritis eggeri* (FRAEUNFELD) (YU et al. 2012).

#### *Dacnusa (Dacnusa) pubescens* (CURTIS, 1826)

**Material examined:** West Azarbaijan province: Siah-Cheshmeh (1807 m), 1 ♀, May 2007. West Azarbaijan province: Piranshahr (1466 m), 1 ♀, July 2008.

**Distribution outside Iran:** Serbia (ŽIKIĆ et al. 2000), Czech Republic (LOZAN et al. 2010), England, Scotland, Ireland (BROAD & SHAW 2009), Greece (PAPP 2007), Macedonia (PAPP 2009b).

#### *Phaenocarpa brevipalpis* (THOMSON, 1895)

**Material examined:** West Azarbaijan province: Ourmieh (1371 m), 2 ♂♂, June-July 2006.

**Distribution outside Iran:** Greece (PAPP 2007), Hungary, Sweden, Mongolia, Russia, Israel (PAPP 2011-2012).

### Subfamily A p h i d i i n a e

#### *Aphidius matricariae* HALIDAY, 1834

**Material examined:** West Azarbaijan province: Hassanloo (1288 m), 4 ♀♀, 3 ♂♂, June-July 2008.

**Distribution outside Iran:** Cosmopolitan (YU et al. 2012). Israel (SCHLINGER & MACKAEUR 1963; AVIDOV & KOTTER 1966; ROSEN 1967; MESCHELOFF & ROSEN 1990b), from the Mediterranean region to Jordan River valley and the Dead Sea (MESCHELOFF & ROSEN 1990b), Serbia (ŽIKIĆ et al. 2000), Slovenia (KOS et al. 2009), Spain (TIZADO & NUÑEZ 1991), Turkey (ÇETIN ERDOĞAN et al. 2008), India (SAMIN et al. 2011), India (STARÝ & BHAGAT 1978; AGARWALA et al. 1980; TAKADA & RISHI 1980; RAYCHAUDHURY et al. 1982; SAHA et al. 1982; STARÝ & GHOSH 1975, 1978, 1979, 1983; DAS & CHAKRABARTI 1990; BHAGAT & AHMAD 1995; SINGH et al. 1999; SUBHRANI et al. 2006; AKHTAR et al. 2011), England (DALLA TORRE 1898; MARSHALL 1899), Greece (KAVALLIERATOS et al. 2004).

**Host records:** *Acyrtosiphon lambersi* Leclant on *Glaucium flavum* (STARÝ et al. 1973), *Acyrtosiphon primulae* Theobaldi on *Primula* sp. (STARÝ et al. 1973), *Amegosiphon platycaudum* (Narzikulov) (NAZARI et al. 2012), *Anoecia* sp. on *Agropyrum* sp. (STARÝ 1973), *Aphis affinis* Del Guercio on *Mentha* sp. (STARÝ & KADDOU 1971; STARÝ 1973), on *Mentha longifolia* (RAKHSANI et al. 2012), *Aphis craccivora* KOCH (STARÝ & KADDOU 1971; RAKHSANI et al. 2008), on *Melilotus officinalis* (KAVALLIERATOS et al. 2001, 2006), on *Citrus reticulata*, *Citrus sinensis* (STARÝ et al. 1973), on *Capsella bursa-pastoris* (TALEBI et al. 2009), on *Solanum nigrum* (SAHA et al. 1982; BHAGAT & AHMAD 1995), *Aphis crepidis* (BÖRNER) (STARÝ et al. 2000), *Aphis dlabolai* HOLMAN (BARAHOEI et al. 2013), *Aphis euphorbiae* KALTENBACH on *Euphorbia seguiriiana* (RAKHSANI et al. 2008; TALEBI et al. 2009; MOSSADEGH et al. 2011; BARAHOEI et al. 2013), *Aphis fabae* Scopoli on *Chenopodium glaucum*, *Euonymus japonicus*, *Galium aparine*, *Rumex crispus*, *Rumex acetosa*, *Plantago lanceolata* (KAVALLIERATOS et al. 2001, 2006; STARÝ 2006; RAKHSANI et al. 2008; TALEBI et al. 2009; MOSSADEGH et al. 2011; TAHERI & RAKHSANI 2013; NAZARI et al. 2012; BARAHOEI et al. 2013), on *Rumex nepalensis* (AGARWALA et al. 1980), *Aphis formosa* GMELIN on *Salix caprea* (STARÝ 2006), *Aphis frangulae* KALTENBACH on *Veronica*, *Symphytum* (STARÝ et al. 1973), *Aphis hederiae* KALTENBACH on *Hedera helix*, *Hedera* sp. (STARÝ et al. 1973; MESCHELOFF & ROSEN 1990b), *Aphis helianthi* MONELL (SCHLINGER & HALL 1960), *A. gossypii* GLOVER (STARÝ 1979; STARÝ et al. 2000), on *Capsella bursa-pastoris*, *Citrus aurantium*, *Citrus deliciosa*, *Citrus sinensis*, *Duranta plumieri*, *Gladiolus italicus*, *Hibiscus syriacus*, *Lapsana communis*, *Pyrus communis*, *Pyrus Malus*, *Solanum tuberosum*, *Malva neglecta* (KAVALLIERATOS et al. 2001, 2006), on *Hibiscus esculentus* (AGARWALA et al. 1980), on *Carduus argentata*, on *Duranta repens*, on *Lamium amplexicaule*, on *Salvia* sp., on *Veronica* sp. (MESCHELOFF & ROSEN 1990b), on *Catalpa bignonioides* (TALEBI et al. 2009), on *Solanum melongena* (SUBHRANI et al. 2006), *Aphis intybi* KOCH (TAHERI & RAKHSANI 2013; BARAHOEI et al. 2013), on *Cichorium intybus* (TOMANOVIĆ et al. 2003), *Aphis lamiorum* BÖRNER on *Lamium rubrum* (STARÝ 1973), *A. nasturtii* KALTENBACH (NAZARI et al. 2012), *Aphis parietariae* THEOBALD on *Parietaria judaica* (STARÝ & KADDOU, 1971), on *Parietaria* sp. (STARÝ 1973), on *Parietaria diffusa* (KAVALLIERATOS et al. 2001, 2006), *Aphis plantaginis* GOEZE (BARAHOEI et al. 2013), *Aphis pomi* DE GEER (RAKHSANI et al. 2008; RAKHSANI et al. 2012a; BARAHOEI et al. 2013), *Aphis punicae* PASSERINI (NAZARI et al. 2012; BARAHOEI et al. 2013), *Aphis ruborum* BÖRNER on *Rubus ulmifolius* (STARÝ et al. 1973; KAVALLIERATOS et al. 2001, 2006), *Aphis spiraeicola* PATCH on *Citrus sinensis* (STARÝ et al. 1973), on *Senecio bicolor* spp. *cineraria* (KAVALLIERATOS et al. 2001, 2006), on *Bidens pilosa*, *Gynura angulosa* (AGARWALA et al. 1980), *Aphis triticealis* HILLE Ris Lambers on *Euphorbia helioscopia* (STARÝ 1973), *Aphis umbrella* (BÖRNER) on *Malva neglecta*, *Malva sylvestris* (SCHLINGER & MACKAUER 1963; STARÝ et al. 2000; KAVALLIERATOS et al. 2001, 2006; RAKHSANI et al. 2008; TALEBI et al. 2009; NAZARI et al. 2012), *Aphis urticata* GMELIN on *Urtica dioica* (STARÝ et al. 1973; KAVALLIERATOS et al. 2001, 2006), *Aphis zizyphae* on *Ziziphium spinachristi* (MESCHELOFF & ROSEN 1990b), *Aphis* sp. on *Vinca minor* (KAVALLIERATOS et al. 2001, 2006), on *Lamium* sp., *Clematis jackmanii*, *Galium aparine*, *Lycium europaeum* (TOMANOVIĆ et al. 2003), *Aspidaphis porosiphon* BÖRNER on *Festuca rubra* (STARÝ 1973), *Aulacorthum solani* KALTENBACH on *Ranunculus* (STARÝ et al. 1973), on *Prunus cerasifera*, *Senecio vernalis* (TOMANOVIĆ et al. 2003), on *Capsicum annuum*, *Malva neglecta*, *Salvia splendens* (KAVALLIERATOS et al. 2001, 2006), *Brachycaudus amygdalinus* (SCHOUTEDEN) (RAKHSANI et al. 2012; NAZARI et al. 2012), on *Prunus dulcis* (KAVALLIERATOS et al. 2001, 2006), on *Polygonum equisetiforme*, on *Amygdalus communis* (MESCHELOFF & ROSEN 1990b), *Brachycaudus cardui* (L.) RAKHSANI et al. 2008; RAKHSANI 2012), on *Calendula arvensis*, *Carduus australis*, *Carduus crispus*, *Carduus nutans*, *Carduus pycnocephalus*, *Carduus toleus armatus*, *Onopordum illyricum*, *Senecio bicolor cineraria* (KAVALLIERATOS et al. 2001, 2006), on *Carduus delbergii* (RAYCHAUDHURI et al. 1982), *Brachycaudus divaricata* SHAPOSHNIKOV (JAFARI-AHMADABADI et al. 2011; JAFARI-AHMADABADI & MODARRES 2012), *Brachycaudus helichrysi* (KALTENBACH) on *Matricaria perforata* (STARÝ 2006), on *Crysanthemum parthenifolium*, *Tanacetum vulgare*, *Senecio vulgaris* (STARÝ 2006), on *Solidago virgaurea* (TOMANOVIĆ et al. 2003), on *Cynoglossum creticum*, *Stellaria media*, *Calendula arvensis*, *Carduus australis*, *Carduus crispus*, *Carlina corymbosa graeca*, *Chamomilla recutita*, *Chrysanthemum coronarium*, *Chrysanthemum uliginosum*, *Cirsium creticum*, *Cirsium italicum*, *Cirsium tuberosum*, *Cirsium vulgare*, *Gazania eigens*, *Leucanthemum vulgare*, *Silybum marianum*, *Citrus aurantium*, *C. limon*, *Cynoglossum creticum* (KAVALLIERATOS et al. 2001, 2006),

*Helianthus annuus*, *Cynoglossum* sp., *Conyza* sp. (MESCHELOFF & ROSEN 1990b), on *Ageratum conyzoides* (AGARWALA et al. 1980; BHAGAT & AHMAD 1995), on *Prunus amygdalus*, *Prunus persicae* (DAS & CHAKRABARTI 1990), *Prunus* sp. (STARÝ & GHOSH 1975), *Brachycaudus lychnidis* L. on *Melandryum album* (STARÝ et al. 1973), *Brachycaudus klugkisti* Börner on *Melandryum rubrum* (STARÝ 1973), *Brachycaudus persicae* (PASSERINI) on *Prunus persica* (KAVALLIERATOS et al. 2001, 2006; RAKHSHANI 2012), *Brachycaudus tragopogonis* (KALTENBACH) (BARAHOEI et al. 2013), *Brachycaudus* sp. on *Matricaria* sp. *Matricaria perforata* (STARÝ 1973, 2006), on *Reseda* sp. (MESCHELOFF & ROSEN 1990b), *Brevicoryne brassicae* L. on a cruciferous plant (MESCHELOFF & ROSEN 1990b), *Capitophorus carduius* WALKER (SAHA et al. 1982), on *Carduus nutans* (STARÝ 1973), *Carduus vulgare* (TOMANOVIĆ et al. 2003), *Capitophorus formosartemisiae* on *Artemisia* sp. (SAHA et al. 1982), *Diphorodon cannabis* (BÖRNER) on *Cannabis sativa* (RAYCHAUDHURI et al. 1982; SAHA et al. 1982), *Capitophorus eleagni* (DEL GUERCIO) on *Carduus crispus* (KAVALLIERATOS et al. 2001, 2006), on *Cynara scolymus*, *Cirsium arvense* (STARÝ 1973), on *Notobasis syriaca*, *Sylibum marianum* (MESCHELOFF & ROSEN 1990b), *Capitophorus hippophaes* (WALKER) on *Polygonum* sp. (TOMANOVIĆ et al. 2003), on *Eleagnus commutata* (STARÝ 1973), *Capitophorus hippophaeus indicus* on *Polygonum chinense* (STARÝ & GHOSH 1978), *Capitophorus horni* BÖRNER on *Cirsium arvense*, *Cynarscolymus* (STARÝ 1973), *Capitophorus inulae* (PASSERINI) on *Dittrichia viscosa*, *Inula conyza* (KAVALLIERATOS et al. 2001, 2006), on *Inula salicina* (STARÝ et al. 1973), on *Inula viscose* (MESCHELOFF & ROSEN 1990b), *Capitophorus similis* VAN DER GOOT on *Eleagnus angustifolia* (RAKHSHANI et al. 2008; TALEBI et al. 2009), *Capitophorus* spp. on *Polygonum persicaria*, *Cirsium arvense* (TOMANOVIĆ et al. 2003), on *Carduus nutans*, *Cynara scolymus* (STARÝ 1973), on *Hippophae rhamnoides* (STARÝ et al. 1973), on *Eleagnus angustifolia* (STARÝ 2006), *Diphorodon cannabis* (BÖRNER) on *Cannabis sativa* (RAYCHAUDHURI et al. 1982; SAHA et al. 1982), *Diphorodon* sp. on *Cannabis sativa* (RAYCHAUDHURI et al. 1982), *Diuraphis noxia* (Kurdjumov) on *Hordeum vulgare* (STARÝ et al. 2000; STARÝ 2006), *Dysaphis devectora* (WALKER) (STARÝ et al. 2000), *Dysaphis plantaginea* (PASSERINI) on *Pyrus communis* (STARÝ et al. 2000; KAVALLIERATOS et al. 2001, 2006; MOSSADEGH et al. 2011; RAKHSHANI 2012), on *Malus* sp. (STARÝ 1973), *Dysaphis pyri* (Boyer de Fonscolombe) (STARÝ et al. 2000), *Eucarozia elegans* on *Salvia officinalis* (FERRARI) (RAKHSHANI et al. 2008; TALEBI et al. 2009; BARAHOEI et al. 2013), *Galiobium langei* BÖRNER on *Galium verum*, *Galium* sp. (STARÝ 1973), *Hayhurstia atriplicis* L. on *Chenopodium* sp. (STARÝ 1973), *Hyalopterus amygdali* (BLANCHARD) JAFARI-AHMADABADI et al. 2011; JAFARI-AHMADABADI & MODARRES 2012; NAZARI et al. 2012), *Hyalopterus pruni* (Geoffroy) (STARÝ et al. 2000; MOKHTARI et al. 2000), *Hydaphis hofmanni* BÖRNER on *Galium mallugo*, *G. verum* (STARÝ 1973, 2006), *Hyperomyzus lactucae* (L.) (MOSSADEGH et al. 2011), *Liniosiphon asperulophagus* HOLMAN on *Asperula odorata* (STARÝ 1973), *Liniosiphon galii* MAMONTOVA-SOLUCHA on *Galium mollugo aristatum*, *Galium silvaticum alatum* (STARÝ 1973), *L. galiophagus* WIMSHURST on *Galium silvaticum* (STARÝ 1973), *Lipaphis erysimi* (KALTENBACH) on *Erysimum graecum*, *Sisymbrium orientale* (KAVALLIERATOS et al. 2001, 2006; MOSSADEGH et al. 2011), on *Brassica napus* (STARÝ & GHOSH 1978), *Lipaphis lepidii* NEVSKY (STARÝ 1979; STARÝ et al. 2000; MOSSADEGH et al. 2011), *L. pseudobrassica* (DAVIS) (BARAHOEI et al. 2013), *Macrosiphoniella pseudoartemisiae* on *Artemisia* sp. (SAHA et al. 1982), *Macrosiphum euphorbiae* THOMAS on *Fumaria capreolata*, on *Senecio vernalis* (MESCHELOFF & ROSEN 1990b), *Metopolophium dirhodum* (WALKER) (STARÝ et al. 2000; RAKHSHANI et al. 2008; NAZARI et al. 2012; TAHERI & RAKHSHANI 2013), *Myzus ajugae* SCHOUREDEN on *Ajuga reptans* (STARÝ 1973), on *Ajuga genevensis* (STARÝ 2006), *Myzus brassicae* SULZER on *Amaranthus* sp., *Anthemis* sp., *Bougainvillea spectabilis*, *Brassica oleracea* var. *capitata*, *Brassica* sp., *Chenopodium* sp., *Convolvulus* sp., *Datura stramonium*, *Echium angustifolium*, *Erodium* sp., *Galium tricornutum*, *Gerbera jamesonii*, *Lamium amplexicaulem*, *Lathyrus* sp., *Lycopersicum esculentum*, *Ochradenus baccatus*, *Oxalis pes-caprae*, *Salvia* sp., *Senecia vernalis*, *Sylibum marianum*, *Solanum* sp., *Sonchus oleraceus*, *Withania somnifera* (MESCHELOFF & ROSEN 1990b), *Myzus cerasi* FABRICIUS on *Prunus cerasus* (STARÝ 1973, 2006), on *Prunus avium*, *Prunus cerasus* (KAVALLIERATOS et al. 2001, 2006; TOMANOVIĆ et al. 2003), on *Phlox dummondii* (BHAGAT & AHMAD 1995), *Myzus cerasi veronicae* WALKER on *Galium mallugo* (STARÝ 1973; STARÝ et al. 1973), *Myzus cymbalariae* STROYAN on *Cymbalaria muralis* (TOMANOVIĆ et al. 2003), *Myzus dycei* CARVER on *Urtica* sp. (STARÝ & GHOSH 1975; SAHA et al. 1982), *Myzus langei* (BÖRNER) on *Galium lucidum* (TOMANOVIĆ et al. 2003), *Myzus lythri* (SCHRANK) on *Lythrum salicaria* (TOMANOVIĆ et al. 2003), *Myzus mali* (FERSERARI) on *Malus sylvestris* (MESCHELOFF & ROSEN

1990b), *Myzus ornatus* LAING on *Sonchus* sp. (SAHA et al. 1982), *Myzus persicae* (SULZER) on *Antirrhinum majus*, *Calendula arvensis*, *Capsicum annum*, *Cardaria draba*, *Carduus crispus*, *Chaenomeles japonica*, *Chamomilla recutita*, *Chrysanthemum coronarium*, *Malva neglecta*, *Citrus aurantium*, *Nicotiana tabacum*, *Phacelia tanacetifolia*, *Prunus persica*, *Raphanus sativus*, *Rumex crispus*, *Sisymbrium irio*, *Sisymbrium orientale*, *Tulipa* sp., *Urtica urens* (KAVALLIERATOS et al. 2001, 2006), on *Solanum tuberosum*, *Prunus cerasifera* (TOMANOVIĆ et al. 2003; TALEBI et al. 2009; NAZARI et al. 2012; RAKHSHANI 2012; BARAHOEI et al. 2013), on *Asparagus sprengeri*, *Pilea grandiflora*, *Bougenvillea* sp., *Begonia* sp., *Prunus persica*, *Artemisia annua*, *Beta maritima*, *Convolvulus* sp., *Lepidium draba*, *Cineraria* sp., *Brassica oleracea*, *Urtica urens*, *Solanum tuberosum* (STARÝ 1973), on *Arum* sp., *Citrus* sp., *Senecio* sp. (STARÝ & KADDOU 1971; STARÝ et al. 1973), on *Brassica napus* (STARÝ & GHOSH 1975; AGARWALA et al. 1980), on *Brassica oleracea* var. *capitata* (SUBHRANI et al. 2006), on *Solanum tuberosum* (SUBHRANI et al. 2006), on *Descorina sofia* (TAKADA & RISHI 1980), on *Lysoperslicon esculentum*, *Triticum aestivum* (SINGH et al. 1999), *Myzus ranunculinus* WALKER on *Ranunculus* sp. (STARÝ et al. 1973), *Myzus varians* DAVIDSON on *Prunus persica* (STARÝ 1973), on *Clematis vitalba* (KAVALLIERATOS et al. 2001, 2006), *Myzus unifoliae* (SHINJI) on *Rubia cardifolia* (BHAGAT & AHMAD 1995), *Myzus* sp. on *Stellaria media* (TOMANOVIĆ et al. 2003), on Rubiaceae plants (STARÝ & GHOSH 1978), *Neomyzus circumflexus* BUCKTON on *Euonymus japonica* (STARÝ 1973, 2006), *Ovatus insitus* (WALKER) on *Lycopus europaeus* (STARÝ 1973, 2006), *Ovatus Crataegarius* (WALKER) on *Mentha spicata*, *Crataegus monogyna* (KAVALLIERATOS et al. 2001, 2006), *Ovatus mentharius* (VAN DER GOOT) on *Mentha* sp. (TOMANOVIĆ et al. 2003; RAKHSHANI et al. 2008; RAKHSHANI 2012), *Phorodon cannabis* PASSERINI (STARÝ & BHAGAT 1978; STARÝ & GHOSH 1983), on *Canabis sativa* (TAKADA & RISHI 1980), *Phorodon humuli* (SCHRANK) (SCHLINGER & MACKAUER 1963; STARÝ et al. 2000), on *Humulus lupulus*, *Prunus cerasifera* (STARÝ 1973; TOMANOVIĆ et al. 2003), *Rhopalomyzus* sp. (STARÝ 1973), *Rhopalosiphum maidis* (FITICH) on *Bromus madritensis*, *Hordeum distichon*, *Hordeum marinum*, *Hordeum vulgare* (STARÝ et al. 2000; KAVALLIERATOS et al. 2001, 2006; NAZARI et al. 2012; BARAHOEI et al. 2013), on *Sorghum halepense* (MESCHELOFF & ROSEN 1990b), *Rhopalosiphum nymphaeae* (L.) on *Alisma plantago-aquatica* (STARÝ et al. 2000; TOMANOVIĆ et al. 2003), *Rhopalosiphum padi* (L.) (STARÝ 1973), on *Bromus madritensis*, *Bromus ramosus*, *Hordeum distichon*, *Hordeum murinum*, *Hordeum vulgare*, *Lolium perene*, *Piptatherum miliaceum*, *Triticum durum* (STARÝ et al. 2000; KAVALLIERATOS et al. 2001, 2006; RAKHSHANI 2012; NAZARI et al. 2012; TAHERI & RAKHSHANI 2013; BARAHOEI et al. 2013), *Schizaphis graminum Rondani* on *Hordeum murinum* (STARÝ 1973; STARÝ et al. 2000; RAKHSHANI et al. 2008, 2012b), *Schizaphis rosazebdoi* (Ilharco) on *Typha australis* (MESCHELOFF & ROSEN 1990b), *Sipha maydis* (Passerini) (STARÝ et al. 2000), *Shinjia pteridifoliae* (Shinji) on *Pteridium* sp. (STARÝ & GHOSH 1979), *Sipha burakowskii* HOLMAN & SZELEGIEWICZ on grass (SAHA et al. 1982), *Sitobion avenae* (F.) on *Hordeum vulgare* (KAVALLIERATOS et al. 2001, 2006; RAKHSHANI et al. 2008; BARAHOEI et al. 2013), *Sitobion fragariae* (WALKER) (BARAHOEI et al. 2013), on *Avena sterilis*, *Bromus madritensis*, *Bromus ramosus*, *Bromus sterilis*, *Hordeum murinum*, *Piptatherum miliaceum* (KAVALLIERATOS et al. 2001, 2006), *Toxoptera aurantii* (BOYER de FONSCOLOMBE) on *Citrus aurantium* (KAVALLIERATOS et al. 2001, 2006), *Wahlgreniella nervata* (GILLETTE) (BARAHOEI et al. 2013). In Iran it was reported from *Schizaphis graminum* and *Rhopalosiphum padi* (BAGHERI et al. 2008). In Greece, it was reported from *Toxoptera aurantii* (BOYER de FONSCOLOMBE) on orange trees (KAVALLIERATOS et al. 2004).

### *Aphidius transcaspicus* TELENGA, 1958

**Material examined:** West Azarbaijan province: Ourmieh (1371 m), 2♀♀, July 2006.

**Distribution outside Iran:** Holarctic (Yu et al. 2012). Turkey (Çetin Erdoğan et al. 2008), India (Bhagat & Ahmad 1995; Akhtar et al. 2011).

**Host records:** *Aphis* sp. on *Prunus domestica* (BHAGAT & AHMAD 1995), *Hyalopterus amygdali* (BLANCHARD) on *Prunus dulcis* (KAVALLIERATOS et al. 2001, 2006), *Hyalopterus amygdali* (RAKHSHANI et al. 2008; MOSSADEGH et al. 2011; RAKHSHANI et al. 2012; JAFARI-AHMABADI et al. 2011; JAFARI-AHMABADI & MODARRES 2012; TAHERI & RAKHSHANI 2013; BARAHOEI et al. 2013), *Hyalopterus pruni* (GEOFFROY) on *Phragmites australis* (KAVALLIERATOS et al. 2001, 2006), on *Phragmites communis*, *Prunus* sp., *Prunus persica*, *Prunus armeniaca*

(STARÝ 1973), *Prunus cerasifera* (STARÝ & KADDOU 1971), *Prunus spinosa*, *Prunus domestica* (STARÝ 2006), *Hyalopterus pruni* (BODENHEIMER & SWIRSKI 1957; TELENGA 1958; LUZHETZKI 1960; STARÝ 1964, 1965a, 1966; MOKHTARI et al. 2000; STARÝ et al. 2000; RAKHSHANI et al. 2008, 2012; JAFARI-AHMABADI et al. 2011; JAFARI-AHMABADI & MODARRES 2012; RAKHSHANI 2012; NAZARI et al. 2012; TOMANOVIĆ et al. 2012; TAHERI & RAKHSHANI 2013; BARAHOEI et al. 2013), *Melanaphis donacis* PASSERINI on *Arundo donax* (STARÝ 1964, 1973; STARÝ & KADDOU 1971; TOMANOVIĆ et al. 2012; BARAHOEI et al. 2013).

### ***Diaeretiella rapae* (M'INTOSH, 1855)**

**Material examined:** West Azarbaijan province: Ourmieh (1376 m), 6♀ ♀, 3♂ ♂, July 2006. West Azarbaijan province: Mahabad (1359 m), 4♀ ♀, 2♂ ♂, June 2007. West Azarbaijan province: Oshnaviyeh (1462 m), 3♂ ♂, September 2007.

**Distribution outside Iran:** Cosmopolitan (YU et al. 2012). Israel (BODENHEIMER 1930; MESCHELOFF & ROSEN 1988, 1990b), Serbia (ŽIKIĆ et al. 2000), Belgium (WESMAEL 1835), Slovenia (KOS et al. 2009), Turkey (ÇETIN ERDOĞAN et al. 2008), Japan (TAKADA 1968), China (STARÝ et al. 2010), Continental U.S., Europe, North Africa, Australia, New Zealand (BEARDSLEY 1961), Hawaii (FULLAWAY 1913; BEARDSLEY 1961), India (ANONYMOUS 1968; ATWAL et al. 1969, 1971; STARÝ & GHOSH 1975, 1978; RAO et al. 1969, 1970; SETHUMADHAVEN & DHARMADHIKARI 1969; TAKADA & RISHI 1980; AGARWALA et al. 1980; SAHA et al. 1982; BATRA & WAHDI 1962; DAS & CHAKRABART 1990; BHAGAT & AHMAD 1995; SINGH et al. 1999; AKHTAR et al. 2006, 2011; SUBHRANI et al. 2006), Brazil, Argentina (COSTA LIMA 1962), England (MARSHALL 1899), North America (SMITH 1944 as *Diaeretus rapae* (CURTIS)), Costa Rica (MEJIAS et al. 2011), Belgium (WESMAEL 1835), Greece (KAVALLIERATOS et al. 2004), Montenegro, Greece, Serbia, Macedonia (TOMANOVIĆ et al. 2003).

**Host records:** *Amegosiphon platicaudum* (NARZIKULOV) (NAZARI et al. 2012), *Aphis craccivora* KOCH (BARAHOEI et al. 2014), on *Asparagus stipularis* (MESCHELOFF & ROSEN 1990b), on *Solanum tuberosum* (BHAGAT AND AHMAD, 1991), *Aphis acetosae* L. (STARÝ et al. 1971), *Aphis affinis* DEL GUERCIO (STARÝ & KADDOU 1971), *Aphis arbuti* FERRARI (STARÝ et al. 1971), *Aphis chloris* KOCH (STARÝ 1966), *Aphis clematidis* KOCH (STARÝ 1966), *Aphis confusa* WALKER (STARÝ et al. 1973), *Aphis craccivora* KOCH), *Aphis cytisorum* HARTIG (STARÝ et al. 1971), *Aphis fabae* SCOPOLI (BARAHOEI et al. 2013) on *Chenopodium* sp., *Cirsium arvense* (STARÝ 2006), on *Cardaria draba* (KAVALLIERATOS et al. 2001, 2006), *Aphis frangulae* Koch (MACKAUER 1960), *Aphis fumanae* REMAUDIERE & LECLANT (STARÝ et al. 1971), *Aphis gossypii* GLOVER on *Citrus aurantium*, *C. deliciosa* (KAVALLIERATOS et al. 2001, 2004, 2006; BARAHOEI et al. 2014), *Aphis hederiae* KALTENBACH (STARÝ et al. 1971), *Aphis idaei* VAN DER GOOT (ACHVLEDIANI 1964), *Aphis medicaginis* KOCH (ACHVLEDIANI 1964), *Aphis nasturtii* KALTENBACH, *Aphis nerii* BOYER de FONSCOLOMBE, *Aphis parietariae* THEOBALD (TREMBLAY 1967), *Aphis punicae* PASSERINI (NAZARI et al. 2012), *Aphis nerii* BOYER de FONSCOLOMBE on *Nerium aleander* (KAVALLIERATOS et al. 2001, 2006), *Aphis ruborum longisetosus* BASU on *Punica granatum* (SAHA et al. 1982), *Aphis salviae* WALKER, *Aphis sanguisorbae* SCHRANK (STARÝ et al. 1973), *Aphis solanella* THEOBALD (BARAHOEI et al. 2013), *Aphis spiraeicola* PATCH (STARÝ et al. 1971), *Aphis schneideri* (BÖRNER) on *Ribes sanguineum* (STARÝ 2006), *Aphis spiraeicola* PATCH on *Brassicae compestris* (KAVALLIERATOS et al. 2004), *Aphis tirucallis* HILLE RIS LAMBERS (STARÝ et al. 1971), *Aphis umbrella* (BÖRNER) (BARAHOEI et al. 2013), *Aphis urticae* Fabricius (STARÝ 1966), *Aphis verbasci* Schrank (STARÝ et al. 1973), *Aphis vitalbae* Ferrari (STARÝ et al. 1971), *Aphis viicis* Ferrari (TREMBLAY 1967), *Aphis* sp. on *Polygonum aviculare* (STARÝ 2006), on *Caspicum annuum* (VIERECK, 1911), *Aspidaphis adjuvans* (WALKER) on *Polygonum equisetiforme* (MESCHELOFF & ROSEN 1990b), *Aulacortum solani* KALTENBACH on *Malva neglecta* (KAVALLIERATOS et al. 2001, 2006), *Brachycaudus amygdalinus* (Schouteden) (STARÝ 1979; STARÝ et al. 2000), on *Prunus dulcis* (KAVALLIERATOS et al. 2001, 2006), on *Polygonum equisetifome*, *Prunus amygdalus* (MESCHELOFF & ROSEN 1990b), *Brachycaudus cardui* (L.) (STARÝ 1979; STARÝ et al. 2000), on *Calendula arvensis*, *Carduus australis*, *Carduus crispus*, *Carduus pycnocephalus* (KAVALLIERATOS et al. 2001, 2006), *Brachycaudus helichrysi* (KALTENBACH) on *Stellaria media*, *Carduus crispus*, *Carlina corymbosa* spp. *graeca*, *Chrysanthemum coronarium*, *Chrysanthemum uliginosum*, *Cirsium creticum*, *Cirsium tuberosum*, *Cirsium vulgare*, *Leucanthemum vulgare*, *Onopordum illyricum* (KAVALLIERATOS et al. 2001,

2006), on *Matricaria perforata*, *Senecio vulgaris* (STARÝ 2006), on *Prunus amygdalus* (DAS & CHAKRABARTI 1990), *Brachycaudus helichrysi* var. *warei* (THEOBALD) on *Melilotus sulcata* (KAVALLIERATOS et al. 2001, 2006), *Brachycaudus* sp. on *Rumex acetosella*, *Matricaria perforata* (STARÝ 2006), *Brachycorynella asparagi* (MORDVILKO) on *Asparagus officinalis* (STARÝ 2006), *Brevicoryne brassicae* (L.) (STARÝ 1965), on *Brassica oleracea* var. *botrytis*, *Brassica oleracea* var. *capitata* (KAVALLIERATOS et al. 2001, 2006), on *Brassica napus*, *Sinapis arvensis*, *Alliaria vulgaris* (STARÝ 2006, BARAHOEI et al. 2014), on *Brassica nigra*, *Raphanus sativus* (SAHA et al. 1982), on *Descorina sofia* (TAKADA & RISHI 1980), *Brachyunguis tamaricis* Lichtenstein (STARÝ et al. 1971), *Capitophorus carduinus* WALKER (STARÝ RÝ & KADDOU 1971), *Capitophorus inulae* (PASSERINI) (TREMBLAY 1967), *Dysaphis lappae cynarae* (THEOBALD), *Hyalopterus pruni* Geoffroy (ACHVLEDIANI 1964), *Diuraphis noxia* (KURDJUMOV) on *Hordeum vulgare* (STARÝ 2006; BARAHOEI et al. 2014), *Hayhurstia atriplicis* (L.) on *Chenopodium* sp. (STARÝ 1965, 2006; BARAHOEI et al. 2014), *Lipaphis erysimi* (KALTENBACH) on *Erysimum graveum*, *Sisymbrium orientale* (BARAHOEI et al. 2014), *Lipaphis fritzmuelleri* BÖRNER on *Sisymbrium loeselli* (STARÝ 2006), *Lipaphis lepidii* (NEVSKY) on *Cardaria draba* (KAVALLIERATOS et al. 2001, 2006; BARAHOEI et al. 2014), *Lipaphis pseudobrassicae* (DAVIS) (BARAHOEI et al. 2013), *Melanaphis donacis* (PASSERINI) (SHARMA 1965), *Metopolophium dirhodum* (WALKER) on *Zea mays* (STARÝ 2006; RAKHSHANI et al. 2008b), *Myzus cerasi* FABRICIUS (ACHVLEDIANI 1964), *Myzus beybienkoi* (NARZYKULOV) (BARAHOEI et al. 2014), *Myzus persicae* (SULZER) on *Solanum tuberosum*, *Beta vulgaris*, *Capsicum* sp. (STARÝ 2006), on *Chamomilla recutita*, *Chrysanthemum coronarium*, *Chrysanthemum segetum*, *Brassica nigra*, *Cardaria draba*, *Sisymbrium irio*, *Sisymbrium orientale*, *Phacelia tanacetifolia*, *Malva neglecta*, *Prunus persica*, *Citrus aurantium*, *Citrus sinensis*, *Antirrhinum majus*, *Nicotiana tabacum*, *Urtica urens* (KAVALLIERATOS et al. 2001, 2006; BARAHOEI et al. 2014), *Myzus* sp. on *Cerastium tomentosum*, *Myosoton aquaticum*, *Urtica urens* (STARÝ 2006), *Rhopalosiphum maidis* (Fitch) on *Hordeum distichon* var. *nudum*, *Hordeum vulgare*, *Triticum durum* (KAVALLIERATOS et al., 2001, 2006; BARAHOEI et al. 2014), *Rhopalosiphum padi* (L.) on *Bromus romosus*, *Hordeum murinum*, *Hordeum vulgare*, *Triticum durum* (STARÝ 2006; KAVALLIERATOS et al. 2001, 2006; BARAHOEI et al. 2014), *Salusaphis scirpus* Theobald (STARÝ et al. 2000), *Schizaphis graminum* (Rondani) on *Triticum vulgare* (STARÝ 2006; BARAHOEI et al. 2014), *Schizaphis scirpi* (PASSERINI) on *Typha angustifolia* (STARÝ 2006), *Schizaphis typhaeae* LAING on *Typha* sp. (STARÝ 2006), *Sitobion avena* (FABRICIUS) (BARAHOEI et al. 2014), *Sitobion* sp. on *Lolium* sp. (STARÝ 2006), *Toxoptera aurantii* (BOYER de FONSCOLOMBE) on *Citrus aurantium* (KAVALLIERATOS et al. 2001, 2006), *Uroleucon sonchi* (GEOFFR.) on *Sonchus* sp. (STARÝ & KADDOU 1971), *Uroleucon* sp. on *Crepis biennis*, *Petasites* sp. (STARÝ 2006).

### ***Lysiphlebus fabarum* (MARSHALL, 1896)**

**Material examined:** West Azarbaijan province: Naqadeh (1334 m), 3 ♀ ♀, July 2007.

**Distribution outside Iran:** Transpalearctic, Australian (YU et al. 2012). Israel (MESCHELOFF & ROSEN 1990a), Serbia (ŽIKIĆ et al. 2000), Slovenia (KOS et al. 2009), Turkey (ÇETIN ERDOĞAN et al. 2008), England (MARSHALL 1899), Serbia, Montenegro, Macedonia, Bosnia & Herzegovina, Bulgaria, Greece, Croatia, Turkey (TOMANOVIĆ et al. 2003).

**Host records:** *Acyrtosiphon ilka* EASTOP (STARÝ 1979; STARÝ et al. 2000), *Acyrtosiphon gossypii* MORDVILKO (BARAHOEI et al. 2013), on *Sophora alopecuroides* (RAKHSHANI et al. 2013), *Acyrtosiphon kondoi* SHINJI (STARÝ et al. 2001), *Acyrtosiphon lactucae* (PASSERINI) (STARÝ et al. 2000), *Aphis acetosae* L. (BARAHOEI et al. 2014), on *Rumex* sp. (RAKHSHANI et al. 2013), *Aphis affinis* del GUERCIO on *Mentha* sp. (STARÝ & KADDOU 1971), *Mentha longifolia* (RAKHSHANI et al. 2013; BARAHOEI et al. 2014), *Aphis alexandrae* (NEVSKY) on *Carthamus axycantha* (RAKHSHANI et al. 2013), *Aphis althaeae* (NEVSKY) (STARÝ 1979; STARÝ et al. 2000; RAKHSHANI et al. 2012b), *Aphis anthemidis* BÖRNER (TALEBI et al. 2009; NAZARI et al. 2012), on *Antemmis nobilis*, *Achillea* sp., *Alhagi maurorum*, *Amaranthus blitoides*, *Amaranthus caudatus*, *Anagallis arvensis*, *Astragalus* sp., *Atriplex* sp., *Capsella bursa-pastoris*, *Cardaria draba*, *Celosia cristata*, *Chenopodium* sp., *Elaeagnus angustifolia*, *Erodium deserti* (RAKHSHANI et al. 2013), *Aphis chloris* KOCH on *Hypericum triquetrifolium* (MESCHELOFF & ROSEN 1990a), *Aphis craccivora* KOCH (CHEN & SHI 2001), on *Vicia angustifolia*, *Glycyrrhiza glabra*, *Astragalus* sp. (STARÝ & KADDOU 1971), on *Medicago orbicularis*, *Anthyllis* (STARÝ et al. 1979), on *Cardaria*

*draba*, *Melilotus alba*, *Melilotus neopolitana*, *Melilotus officinalis*, *Melilotus sulcata*, *Robinia pseudoacacia*, *Alhagi maurorum*, *Glycerhizzia aspera*, *Glycerhizzia glabra*, *Gundelia tournefortii*, *Kochia scaparia*, *Medicago sativa*, *Medicago arborea*, *Medicago disciformis*, *Melilotus officinalis*, *Peganum harmala*, *Portulaca oleracea*, *Robinia pseudoacacia*, *Sophora alopecuroides*, *Sophora molis*, *Tragopogon graminifolius*, *Torilis arvensis*, *Trogonella foenum-graecum*, *Vicia villosa* (STARÝ 1979; KAVALLIERATOS et al. 2001, 2006; RAKHSHANI et al. 2013; BARAHOEI et al. 2014), on *Astragalus sinensis*, *Kochia scoparia* (STARÝ et al. 2000), on *Amarantus blitoides*, *Amarantus retroflexus*, *Amarantus* sp., *Anthemis* sp., *Asparagus stipularis*, *Medicago* sp., *Ononis antiquorum*, *Ononis nutrix* (GAHARI), *Aphis davletshinae* HILLE RIS LAMBERS on *Malva parviflora*, *Alcea* sp. (RAKSHANI et al. 2012; 2013), *Aphis elongata* (NEVSKY) on *Artemisia absinthium* (RAKSHANI et al. 2013), *Aphis epilobii* KALTENBACH (NAZARI et al. 2012), on *Epilobium angustifolium* (RAKSHANI et al. 2013), *Aphis euonymi* FABRICIUS (TALEBI et al. 2009) on *Arctium lappa* (RAKSHANI et al. 2013), *Aphis euphorbiae* KALTENBACH on *Euphorbia aucheri*, *Aphis euphorbicola* REZWANI and LAMPEL on *Euphorbia aelleni*, *Carduus onopordiodes*, *Carduus arabicus*, *Centaurea iberica* (RAKSHANI et al. 2012, 2013; BARAHOEI et al. 2013), *Aphis epilobaria* THEOBALD on *Epilobium hirsutum* (MESCHELOFF & ROSEN 1990a), *Aphis fabae* SCOPOLI on *Chenopodium* sp., *Carduus pycnocephalus*, *Turgenia latifolia* (STARÝ & KADDOU 1971), *Rumex obtusifolius*, *Rumex pulcher*, *Rumex crispus*, *Galium mollugo*, *Galium verticillatum*, *Galium aparinae*, *Chenopodium album*, *Chenopodium bonus-henricus*, *Ammi majus*, *Torilis arvensis* (KAVALLIERATOS et al. 2001, 2006; BARAHOEI et al. 2014), on *Amarantus* sp., *Cirsium arvense*, *Solanum nigrum*, *Ammi visnaga*, *Arctotis* sp., *Carduus argentata*, *Chrysanthemum* sp., *Cynara scolymus*, *Medicago* sp., *Mesymbrianthemum acinacifolium*, *Silybum marianum*, *Solanum luteum* (RAKSHANI et al. 2012), on *Hibiscus trionum*, on *Lawsonia inermis*, (TALEBI et al. 2009), *Aphis fabae cirsiacanthoidis* (Schränk) on *Carduus australis*, *Cirsium arvense*, *Cirsium creticum*, *Ptilosteman strictus*, *Silybum marianum* (KAVALLIERATOS et al. 2001, 2006), on *Cirsium lygrophilum*, *Cirsium vulgare*, *Cousinia* sp., *Amaranthus retroflexus*, *Arctium lappa*, *Beta vulgaris*, *Brassica rapa*, *Cenopodium album*, *Citrus aurantifolia*, *Glycyrrhiza glabra*, *Hibiscus trionum*, *Lawsonia inermis* (RAKSHANI et al. 2013), *Aphis fabae fabae* SCOPOLI on *Ligustrum vulgare*, *Phaseolus vulgaris*, *Raphanus sativus*, *Rosa damascena*, *Rumex acetosa*, *Rumex crispus*, *Salsola canescens*, *Silybum marianum*, *Sinapis arvensis*, *Spinacia oleracea*, *Vicia faba*; *Aphis fabae solanella* THEOBALD on *Solanum nigrum*; *Aphis gerardianae* MORDVILKO on *Euphorbia aelleni*, *Calendula persica*, *Chrysanthemum* sp., *Cucumis sativus*, *Cucurbita pepo*, *Lamium* sp., *Malva neglecta*, *Mirabilis jalapa* (RAKSHANI et al. 2012a, 2013), *Aphis gossypii* GLOVER (CHEN & SHI 2001), on *Mirabilis jalapa*, *Nerium oleander*, *Lonicera alpigena*, *Lapsana communis*, *Hibiscus mutabilis*, *Malva sylvestris*, *Chaenomeles japonica*, *Citrus aurantium* (KAVALLIERATOS et al. 2001, 2006; RAKSHANI et al. 2012a, 2013; BARAHOEI et al. 2014), on *Amaranthus retroflexus*, *Amaranthus* sp., *Anchusia aegyptiaca*, *Anchusia italic*, *Carduus argentata*, *Centurea* sp., *Chrysanthemum* sp., *Ferula* sp., *Gossypium* sp., *Gundelia tournefortii*, *Laminum amplexicaule*, *Trifolium* sp. (MESCHELOFF & ROSEN 1990a), on *Rosa damascene* (TALEBI et al. 2009), *Aphis hederae* Kaltenbach on *Hedera helix* (MESCHELOFF & ROSEN 1990a), *Aphis idaei* VAN DER GOOT on *Rubus idaeus* (KAVALLIERATOS et al. 2001, 2006), *Aphis intybi* KOCH on *Cichorium intybus*, *Marabium* sp. (RAKSHANI et al. 2013; BARAHOEI et al. 2014), *Aphis medicaginis* Koch (CHEN & SHI 2001), *Aphis nasturtii* KALTENBACH, *Plantago lanceolata* (RAKSHANI et al. 2013; BARAHOEI et al. 2014), *Aphis nerii* BOYER DE FONSCOLOMBE on *Nerium oleander* (TALEBI et al. 2009; BARAHOEI et al. 2014), *Aphis origani* PASSERINI on *Mentha longifolia*; *Aphis plantaginis* GOEZE on *Plantago lanceolata*; *Aphis pomi* De GEER (BARAHOEI et al. 2014), *Aphis punicae* PASSERINI on *Punica granatum* (MESCHELOFF & ROSEN 1990a; BARAHOEI et al. 2014), *Aphis ruborum* (BÖRNER) on *Rubus sanctus* (STARÝ & KADDOU 1971), *Rubus hirtus*, *Rubus ulmifolius*, *Rubus idaeus* (KAVALLIERATOS et al. 2001, 2006; RAKHSHANI et al. 2013; BARAHOEI et al. 2014), *Aphis rumicis* LINNAEUS on *Rumex crispus* (RAKSHANI et al. 2013; BARAHOEI et al. 2014), *Aphis salviae* WALKER (STARÝ 1979; STARÝ et al. 2000), *Aphis solanella* Theobald on *Cestrum nocturnum*, *Solanum nigrum*, *Centaurea solstitialis*, *Rumex conglomeratus*, *Torilis stocksiana* (STARÝ & KADDOU 1971), *Aphis spiraeicola* Patch on *Crataegus monogyna* (RAKSHANI et al. 2013), *Aphis taraxacicola* (Börner) (BARAHOEI et al. 2014), *Aphis terricola* Rondani on *Anthemis arvensis*, *Malva neglecta* (RAKSHANI et al. 2013), *Aphis umbrella* BÖRNER on *Malva neglecta* and *Malva sylvestris*; *Aphis urticata* GMELIN on *Urtica dioica*, *Carduus arabicus* (KAVALLIERATOS et al. 2001, 2006; BARAHOEI et al. 2014), *Aphis* sp. (STARÝ 1979, STARÝ et al. 2000), on *Matricaria chamomilla*, *Pyrethrum leptophyllum* (STARÝ et al. 2000), *Brachycaudus*

*amygdalinus* (SCHOUTEDEN) (BARAHOEI et al. 2014), *Brachycaudus cardui* (L.) on *Arctium lappa*, *Borago officinalis*, *Calendula officinalis*, *Carduus acanthoides*, *Carduus australis*, *Carduus crispus*, *Carduus onopordoides*, *Chrysanthemum morifolium*, *Cirsium arvense*, *Cirsium italicum*, *Onopordum acanthium*, *Brachycaudus helichrysi* (KALTENBACH) on *Cirsium vulgare*, *Ptilostemon strictus*, *Prunus dulcis*, *Tanacetum vulgare*, *Scorzonera isphahanica* (KAVALLIERATOS et al. 2001, 2006; RAKHSHANI et al. 2013; BARAHOEI et al. 2014), *Brachycaudus lychnidis* (L.) on *Lychnis coronaria* (KAVALLIERATOS et al. 2001, 2006), *Brachycaudus persicae* (PASSERINI) (RAKSHANI et al. 2012), *Brachycaudus tragopogon setosus* HILLE RIS LAMBERS (BARAHOEI et al. 2014), *Brachycaudus tragopogonis* (KALTENBACH) on *Tragopon gramifolius*, *Brachyunguis harmalae* Das on *Penganum harmal* (RAKSHANI et al. 2012), *Brachyunguis zygophylli* (NEVSKY) on *Zygophyllum fabago* (RAKSHANI et al. 2013; BARAHOEI et al. 2014), *Brachyunguis* sp. on *Rumex* sp. (STARÝ & KADDOU 1971), *Cyanthum acutum* (TALEBI et al. 2009; RAKHSHANI et al. 2013), *Coloradoa* sp. (STARÝ 1979; STARÝ et al. 2000), *Dysaphis crataegi* (KALTENBACH) (STARÝ 1965), *Dysaphis lappae* KOCH (STARÝ 1965, 1979), *Capitophorus carduius* (WALKER) on *Carduus* sp. (STARÝ & KADDOU 1971), *Dysaphis plantaginea* (PASSERINI) on *Malus domestica* (RAKSHANI et al. 2013; BARAHOEI et al. 2014), *Dysaphis radicola* (MORDVILKO) on *Rheum palmatum*, *Hayhurstia atriplicis* (L.) on *Chenopodium album* (NAZARI et al. 2012; RAKHSHANI et al. 2013), *Hyadaphis coriandri* (PASSERINI) on *Cariandrum sativum* (TALEBI et al. 2009; RAKHSHANI et al. 2013), *Hyalopterus amygdali* (BLANCHARD) (RAKSHANI 2012), *Hyalopterus pruni* (GEOFFROY) (BARAHOEI et al. 2014), *Lipaphis erysimi* (KALTENBACH) on *Capsella bursa pastoris*; *Lipaphis fritzmulleri* BÖRNER on *Sisymbrium irio*; *Lipaphis lepidii* NEVSKY on *Cardaria draba* (TALEBI et al. 2009), *Macrosiphoniella papilata* HOLMAN on *Artemisia biennis*; *Macrosiphoniella sanborni* (GILLETTE); *Macrosiphum rosae* (L.); *Melanaphis sacchari* (ZEHNTER) on *Sorghum halepense*, *Metopolophium dirhodum* on *Rosa domascena* (RAKSHANI et al. 2013); *Myzus beybienkoi* (MARZIKULOV) on *Fraxinus oxycarpa* (TALEBI et al. 2009), on *Lycopersicon esculentum*, *Malva neglecta* (RAKSHANI et al. 2013); *Myzus cerasi* (Fabricius) on *Prunus avium*; *Myzus mumecola* (MATSUMURA) on *Prunus ansu* (STARÝ et al. 2001), *Myzus pesicae* (SULZER) on *Capsicum annuum*, *Nicotiana tabacum*, *Trigonella foenum-graecum*, *Solanum nelongena* (KAVALLIERATOS et al. 2001, 2006; RAKHSHANI et al. 2013), *Pemphigus lichtensteini* Tullgren on *Populus pyramidalis* (STARÝ 1965), *Phorodon humuli* (Schrank) (BARAHOEI et al. 2014), *Protaphis elongate* (Nevsky) on *Artemisia absinthium* (TALEBI et al. 2009); *Protaphis terricola* Walker, *Protaphis* sp. (BARAHOEI et al. 2014), *Rhopalosiphum maidis* (Fitch) on *Triticum durum* (KAVALLIERATOS et al. 2001, 2006), *Rhopalosiphum nymphaeae* (L.), *Rhopalosiphum padi* (L.) on *Triticum aestivum* (RAKSHANI et al. 2013), *Salusaphis scirripus* THEOBALD; *Salusaphis* sp. (BARAHOEI et al. 2014), *Toxoptera aurantii* (BOYER de FONSCOLOMBE) on *Citrus aurantium*, *Citrus sinensis* (KAVALLIERATOS et al. 2001, 2006; RAKHSHANI et al. 2013), *Uroleucon jaceae* (L.) on *Carlina corymbosa* spp. (KAVALLIERATOS et al. 2001, 2006).

### ***Monoctonus mali* VAN ACHTERBERG, 1989**

**Material examined:** West Azarbaijan province: Seroo (1622 m), 2 ♀ ♀, May 2008.

**Distribution outside Iran:** Western Palaearctic (Yu et al. 2012). Nearctic, Neotropical, Oceanic, Oriental, Palaearctic (Czech Republic, Netherlands, Serbia, Turkey, former Yugoslavia). The Netherlands (VAN ACHTERBERG 1989), Slovenia (KOS et al. 2009).

**Host records:** Parasitoid of *Rhopalosiphum incertum* (WALKER) on Maloideae (Rosaceae: *Malus*, *Pyrus*, *Sorbus*, *Crataegus*), and *Aphis fabae* SCOPOLI on *Viburnum* (VAN ACHTERBERG 1989); *Dysaphis reamuri* (MORDVILKO) on *Pyrus communis*; *Dysaphis* sp. on *Malus domestica*; *Rhopalosiphon insertum* WALKER on *Malus domestica* (TOMANOVIĆ et al. 2007).

### ***Praon volucre* (HALIDAY, 1833)**

**Material examined:** West Azarbaijan province: Myandoab (1331 m), 2 ♀ ♀, 1 ♂, June 2007.

**Distribution outside Iran:** Transpalearctic, Oriental, Neotropical (YU et al., 2012). Israel (MACKAEUR 1959a, b; ROSEN 1964, 1966, 1967, 1969; AVIDOV & HARPAZ 1969;

MESCHELOFF & ROSEN 1989), Serbia (ŽIKIĆ et al. 2000), Slovenia (KOS et al. 2009), Turkey (ÇETİN ERDOĞAN et al. 2008), Japan (TAKADA 1968), India (SUBBA RAO & SHARMA 1960; STARÝ & BHAGAT 1978; STARÝ & GHOSH 1983; DAS & CHAKRABARTI 1991; AKHTAR et al. 2011), England (MARSHALL 1899), Greece (KAVALLIERATOS et al. 2004), Serbia, Montenegro, Macedonia, Bosnia & Herzegovina, Bulgaria, Greece, Croatia, Turkey (TOMANOVIĆ et al. 2003).

**H o s t r e c o r d s :** *Acyrtosiphon caraganae* (CHOLODKOVSKII) on *Caragana arborescens*, *Robinia pseudoacacia*; *Acyrtosiphon euphorbiae* BÖRNER on *Euphorbia polychroma* (STARÝ 2006), *Acyrtosiphon lactucae* (PASSERINI) on *Lactuca serriola* (KAVALLIERATOS et al. 2001, 2006; RAKHSHANI et al. 2007), *Acyrtosiphon lambersi* LECLANT et REMAUDIERE (STARÝ et al. 1973), *Acyrtosiphon pisum* (HARRIS) (HAMID et al. 1974; RAKHSHANI et al. 2006a, 2007a), *Acyrtosiphon* sp. on *Spiraea vanhouttei* (STARÝ 2006); *Amphorophora amurensis* (MORDVILKO) (= *Amphorophora rubiphaga* TAKAHASHI) on *Rubus* sp. (WATANABE & TAKADA 1964), *Amphorophora catharinae* (NEVSKY) on *Rosa* sp. (RAKHSHANI et al. 2012b; BARAHOEI et al. 2014), *Amphorophora rubi* (KALTENBACH) on *Rubus fruticosus* (KAVALLIERATOS et al. 2001, 2006), *Apellia tragopogonis* (MESCHELOFF & ROSEN 1989), *Aulacorthum magnoliae* (ESSIG & KUWANA) (WATANABE & TAKADA 1964), *Aulacorthum solani* KALTENBACH (STARÝ 1966), *Aphis affinis* del GUERCIO on *Mentha longifolia* (RAKHSHANI et al. 2012b), *Aphis arbuti* FERRARI (STARÝ et al. 1971), *Aphis craccivora* KOCH on *Calicotome villosa*, *Emex spinosa* (MESCHELOFF & ROSEN 1989), on *Caragana arborescens*, *Vicia* sp. (STARÝ 2006), on *Medicago sativa*, *Robinia pseudoacacia* (RAKHSHANI et al. 2012b), on *Melilotus sulcata* (KAVALLIERATOS et al. 2001, 2006; BARAHOEI et al. 2014), *Aphis dlabolai* HOLMAN (BARAHOEI et al. 2014), *Aphis epilobiaria* THEOBALD on *Epilobium hirsutum*; *Aphis fabae* SCOPOLI on *Calendula* sp., *Solanum luteum* (MESCHELOFF & ROSEN 1989), on *Vicia faba*, *Pitosporum tobira*, *Rumex crispus*, *Galium aparine* (KAVALLIERATOS et al. 2001, 2006), on *Impatiens noli-tangere*, *Impatiens glandulifera*, *Chenopodium* sp., *Beta vulgaris*, *Euonimus europaeae*, *Galium aparine*, *Matricaria perforata* (STARÝ 2006; BARAHOEI et al. 2014), *Aphis fabae cirsicanthoidis* Scopoli on *Cirsium arvensis* (RAKHSHANI et al. 2012b), on *Carduus australis*, *Silybum marianum*; *Aphis fabae solanella* THEOBALD on *Solanum nigrum* (KAVALLIERATOS et al. 2001, 2006), on *Solanum nigrum* (TALEBI et al. 2009), on *Solanum lycopersicum*, *Solanum nigrum*, *Vicia fabae*, *Chenopodium album* (RAKHSHANI et al. 2012b), *Aphis gossypii* GLOVER on *Viburnum tinus*, *Citrus aurantium*, *Citrus delicosa* (KAVALLIERATOS et al. 2001, 2006; BARAHOEI et al. 2014), *Aphis grossulariae* KALTENBACH on *Ribes grossularia*; *Aphis intybi* VAN DEN GOOT on *Cichorium intybus* (STARÝ 2006), *Aphis pomi* de GEER (RAKHSHANI et al. 2012b), *Aphis solanella* THEOBALD (BARAHOEI et al. 2014), *Aphis spiraephaga* F.P. MÜLLER on *Spiraea vanhouttei* (STARÝ 2006), *Aphis syringae* TAKAHASHI on *Syringa vulgaris*, *Syringa emodi*, *Syringa reticulata* (WATANABE & TAKADA 1967), *Aphis umbrella* (BÖRNER) on *Malva neglecta* (KAVALLIERATOS et al. 2001, 2006), *Aphis urticata* GMELIN on *Urtica dioica* (RAKHSHANI et al. 2012b), *Aphis viticis* FERRARI on *Vitex agnus castus* (KAVALLIERATOS et al. 2001, 2006), *Aphis zizyphi* THEOBALD on *Ziziphus spina-christi*; *Aphis* sp. on *Polygonum equisetiforme* (MESCHELOFF & ROSEN 1989), *Aulacorthum solani* (KALTENBACH) on *Cornus* sp. (WATANABE & TAKADA 1967), on *Pelargonium* sp. (STARÝ 2006), on *Cirsium vulgare*, *Sonchus oleraceus*, *Malva neglecta*, *Citrus aurantium*, *Urtica pilulifera*, *Urtica urens* (KAVALLIERATOS et al. 2001, 2006), *Aulacorthum solani aegopodii* Börner on *Aegopodium podagraria* (STARÝ 2006); *Brachycaudus amygdalini* (Schouteden) on *Amygdalus arabica* (RAKHSHANI et al. 2007; BARAHOEI et al. 2014), *Brachycaudus cardui* (L.) on *Carduus pycnocephalus* (KAVALLIERATOS et al. 2001, 2006; RAKHSHANI et al. 2012b), *Brachycaudus helichrysi* (Kaltenbach) on *Carduus crispus*, *Chrysanthemum coronarium*, *Onopordum illyricum* (KAVALLIERATOS et al. 2001, 2006), on *Calendula officinalis* (RAKHSHANI et al. 2007), on *Silene alba*, *Silene* sp. (STARÝ 2006; BARAHOEI et al. 2014), *Brachycaudus lychnidis* L. (STARÝ et al. 1973), *Brachycaudus persicae* (PASSERINI) (RAKHSHANI et al. 2012b), *Brachycaudus populi* (del Guercio) on *Silene vulgaris*; *Brachycaudus tragopogonis* (Kaltenbach) on *Tragopogon* sp.; *Brachycaudus* sp. on *Glaucium oxylobium* (MESCHELOFF & ROSEN 1989), on *Prunus persica*, *Matricaria perflorata*; *Brachycrynella asparagi* (MORDVILKO), on *Asparagus officinalis*; *Brevicoryne brassicae* (L.) on *Brassica oleracea* var. *capitata* (STARÝ 2006), *Capitophorus elaeagnii* (del GUERCIO) on *Carduus crispus*; *Corylobium avellanae* (SCHRANK) on *Corylus avellana* (KAVALLIERATOS et al. 2001, 2006), *Diuraphis noxia* (KURJUMOV) on *Triticum aestivum* (RAKHSHANI et al. 2007), on *Hordeum vulgare* (STARÝ 2006; BARAHOEI et al. 2014), *Dysaphis pyri* (BOYER de FONSCOLOMBE) (RAKHSHANI et al. 2012b), *Dysaphis* sp. on *Malus domestica*;

*Hyadaphis* sp. on *Conium maculatum* (STARÝ 2006), *Eucarazzia elegans* (FERRARI) (STARÝ et al. 1971), *Hyalopterus amygdali* (E. BLANCHARD) on *Prunus dulcis* (KAVALLIERATOS et al. 2001, 2006), on *Prunus amygdalinus* (RAKSHANI et al. 2007), *Hyalopterus pruni* (GEOFFROY) on *Phragmites australis*, *Prunus domestica*, *Prunus padus*, *Prunus armeniaca*, *Prunus persica* (RAKSHANI et al. 2007), on *Phragmites australis*, *Prunus domestica*, (STARÝ & KADDOU 1971; KAVALLIERATOS et al. 2001, 2006; STARÝ 1965, 2006; BARAHOEI et al. 2014), *Hyperomyzus lactucae* (L.) (BARAHOEI et al. 2014), on *Sonchus* sp. (STARÝ 1965), *Lactuca oleracea*, *Lactuca serriola* (MESCHELOFF & ROSEN 1989), *Sonchus asper*, *Sonchus oleraceus*, *Sonchus palustris* (KAVALLIERATOS et al. 2001, 2006), on *Ribes nigrum* (STARÝ 2006), *Hyperomyzus picridis* BÖRNER (STARÝ 1966; TREMBLAY 1967), *Hyperomyzus* sp. on *Ribes alpinum*, *Ribes nigrum*, *Sonchus* sp. (STARÝ 2006), *Impatiens asiaticum* NEVSKY on *Impatiens parviflora*, *Impatiens glandulifera*; *Impatiens balsamines* (KALTENBACH) on *Impatiens noli-tangere*; *Liniosiphon galiophagus* (Wimshurst) on *Galium silvaticum*; *Liniosiphon fritzmülleri* BÖRNER on *Sisymbrium loeselii* (STARÝ 2006), from *Lipaphis erysimi* (STARÝ & GHOSH 1983), *Longiunguis donacis* (PASSERINI) on *Arundo donax* (STARÝ & KADDOU 1971), *Macrosiphoniella riedeli* SZELEGIEWICZ on *Centaurea* sp. (MESCHELOFF & ROSEN 1989), *Macrosiphoniella* sp. on *Achillea* sp. (STARÝ 1965), *Macrosiphum akebiae* SHINJI on *Stauntonia hexaphylla* (WATANABE & TAKADA 1967), *Macrosiphum euphorbiae* (THOMAS) on *Leucanthemum vulgare*, *Sonchus oleraceus*, *Domex crispus*, *Citrus aurantium*, *Licopersicon esculentum*, *Solanum tuberosum* (KAVALLIERATOS et al. 2001, 2006), on *Cucumis sativus*, *Euphorbia cyparissias*; *Macrosiphum funestum* (MACCHIATI) on *Rubus* sp.; *Macrosiphum ibarae* MATSUMURA on *Rosa* sp. (WATANABE & TAKADA 1967), *Macrosiphum prenanthidis* BÖRNER on *Prenanthes purpurea*; *Macrosiphum rosae* (L.) on *Rosa* sp. (STARÝ & KADDOU 1971), *Knautia arvensis* (STARÝ 1965, 2006), on *Rosa hybrid* (TALEBI et al. 2009), on *Rosa arvensis*, *Rosa canina* (KAVALLIERATOS et al. 2001, 2006; BARAHOEI et al. 2014), *Macrosiphum sorbi* (MATSUMURA) on *Sorbaria sorbifolia* (TAKADA 1968), *Macrosiphum* sp. on *Euphorbia* sp. (STARÝ 2006; RAKSHANI et al. 2012b), *Melanaphis donacis* PASSERINI (STARÝ & KADDOU 1971), *Metopolophium dirhodum* (WALKER) (BARAHOEI et al. 2014), on *Avena sterilis* (KAVALLIERATOS et al. 2001, 2006), on *Zea mays*, *Hordeum vulgare*; *Metopeurum fuscoviride* STROYAN on *Tanacetum vulgare*; *Microlophium carnosum* (BUCKTON) on *Urtica dioica* (STARÝ 2006), on *Urtica pilulifera*, *Urtica urens*; *Myzocallis castanicola* BAKER on *Castanea sativa* (KAVALLIERATOS et al. 2001, 2006); *Myzus beybienkoi* (NARZYKULOV) (STARÝ et al. 2000); *Myzus persicae* (SULZER) on *Nicotiana* sp. (STARÝ 1965), on *Caryophila* sp., *Nicotiana tabacum*, *Capsicum annuum* (RAKSHANI et al. 2007), on *Prunus persica*, *Citrus aurantium*, *Antirrhinum majus*, *Nicotiana tabacum*, *Urtica urens* (KAVALLIERATOS et al. 2001, 2006; BARAHOEI et al. 2014); *Myzus varians* DAVIDSON on *Clematis vitalba*; *Ovatus crataegarius* (WALKER) on *Mentha spicata* (KAVALLIERATOS et al. 2001, 2006); *Phorodon humuli* (SCHRANK) on *Prunus pericae* (RAKSHANI et al. 2007; 2012a), on *Humulus lupulus*, *Prunus domestica*, *Prunus spinosa*; *Rhopalomyzus lonicerae* (Siebold) on *Lonicera* sp.; *Rhopalomyzus poae* (GILLETTE) on *Lonicera alpigena*; *Rhopalosiphoninus* sp. on *Oxalis acetosella* (STARÝ, 2006), *Rhopalosiphum maidis* Fitch on *Zea mays* (RAKSHANI et al. 2007; BARAHOEI et al. 2014); from *Rhopalosiphum padi* (L.) on *Hordeum murinum*, *Piptatherum miliaceum*, *Triticum durum* (KAVALLIERATOS et al. 2001, 2006), on *Triticum aestivum* (RAKSHANI et al. 2007), on *Prunus padus*, *Hordeum vulgare*; *Schizaphis graminum* (RONDANI) on *Triticum aestivum*, *Triticum durum*, *Bromis tectorum*, *Avena* sp. (RAKSHANI et al. 2007), *Sitobion avenae* (Fabricius) on *Triticum aestivum*, *Avena sativa*, *Secale cereale*, *Hordeum vulgare* (STARÝ 2006; RAKSHANI et al. 2007; BARAHOEI et al. 2014), *Sitobion fragariae* (WALKER) on *Melica* sp. (STARÝ 1965), on *Bromus madritensis*, *Hordeum murinum*; *Toxoptera aurantii* (BOYER de FONSCOLOMBE) on *Citrus aurantium* (KAVALLIERATOS et al. 2001, 2006), *Trilobaphis* sp. on *Carex flava* (STARÝ 2006), *Uroleucon aeneum* (HILLE RIS LAMBERS) on *Carlina corymbosa* (KAVALLIERATOS et al. 2001, 2006), *Uroleucon cichorii* (Koch) (RAKSHANI et al. 2012a), *Uroleucon composita* (THEOBALD), *Uroleucon jaceae* (L.) (BARAHOEI et al. 2014), *Uroleucon ochropus* (HILLE RIS LAMBERS) (STARÝ 1965), *Uroleucon sonchi* (L.) on *Sonchus aurantium*, *Sonchus palustris*, *Sonchus asper* (KAVALLIERATOS et al. 2001, 2006; RAKSHANI et al. 2007; BARAHOEI et al. 2014).

## Subfamily **B r a c o n i n a e**

### ***Bracon (Glabrobracon) atrator* NEES, 1834**

**Material examined:** West Azarbaijan province: Naqadeh (1327 m), 1 ♀, July 2007.

**Distribution outside Iran:** Austria, Germany, Italy (SZÉPLIGETI 1904; YU et al. 2012); Azerbaijan, Belarus, Belgium, Croatia, Czech Republic, Finland, France, Georgia, Ireland, Kazakhstan, Latvia, Lithuania, Moldova, Mongolia, The Netherlands, Poland, Russia, Sweden, Tunisia, former Yugoslavia (YU et al. 2012), Cyprus, Israel (PAPP 2011-2012; YU et al. 2012), Finland, Sweden (THOMSON 1892 as *B. longicauda*; YU et al. 2012), Greece (PAPP 2007; YU et al. 2012), Hungary, Switzerland (Szépligeti 1904 as *B. longicauda* THOMSON; YU et al. 2012), Macedonia (PAPP 2010; YU et al. 2012), Serbia (ŽIKIĆ et al. 2012), Spain (DOCAVO 1964; FALCÓ et al. 1993; YU et al. 2012), Turkey (BEYARSLAN et al. 2005; BEYARSLAN & ÇETIN ERDOĞAN 2012; YU et al. 2012), UK (BROAD & SHAW 2009; YU et al. 2012).

**Host records:** This species was reported as parasitoid of a number of host species of the families Agromyzidae and Tephritidae (Diptera), Curculionidae (Coleoptera), Coleophoridae (Lepidoptera) (FALCÓ et al. 1993). It was reported also reported as a parasitoid of *Gymnepton villosulum* GYLLENHAL, *Apion buddebergi* BEDEL (Coleoptera: Curculionidae), *Tephritis separata* RONDANI, *T. conura* LOEW (Diptera: Tephritidae), *Phytobia flavifrons* (MEIGEN) (Diptera: Agromyzidae), *Coleophora coronillae* ZELLER (Lepidoptera: Coleophoridae) (BEYARSLAN et al. 2005).

### ***Bracon (Glabrobracon) variator* NEES, 1811**

**Material examined:** West Azarbaijan province: Siah-Cheshmeh (1807 m), 1 ♀, May 2007. West Azarbaijan province: Myandoab (1339 m), 2 ♀ ♀, June 2007.

**Distribution outside Iran:** China, Crimea, Czech Republic, Finland, France, Italy, Middle Asia, Mongolia, Romania, Russia, Siberia, Slovakia, the Netherlands, former Yugoslavia (YU et al. 2012), Austria, Sweden (FAHRINGER 1927 as *B. sueciensis* FAHRINGER; YU et al. 2012), Belgium (WESMAEL 1838; SZÉPLIGETI 1904; YU et al. 2012), Croatia, Macedonia (PAPP 2009b), Cyprus (TELENGA 1936 as *B. meridionalis*), Germany, Hungary (SZÉPLIGETI 1904; YU et al. 2012), Greece (PAPP 2003, 2007; LOZAN 2004), Poland (FAHRINGER 1928 as *B. rytrensis*; YU et al. 2012), Serbia (ŽIKIĆ et al. 2012), Spain (MEDINA 1895; MARTINEZ & SAEZ 1874; DOCAVO 1964; FALCÓ et al. 1987, 1993; YU et al. 2012), Switzerland (YU et al. 2012), Turkey (GÜLER & ÇAĞATAY 2001; BEYARSLAN et al. 2005; YU et al. 2012), UK (SZÉPLIGETI 1904; BROAD & SHAW 2009; YU et al. 2012), Scotland, England, Sweden, Denmark, Finland, The Netherlands, France, Germany, Switzerland, Austria, Bohemia, Slovakia, Hungary, Slovenia, Romania, Croatia, Serbia, Macedonia, Kosovo, Albania, Bulgaria, Greece, Portugal, Spain, Italy, Algeria, Tunisia, Syria, Turkey, Jordan, Ukraine, Armenia, Georgia, European Russia, Turkmenistan, Mongolia, Korea (PAPP 2012).

**Host records:** This species was reported as the parasitoid of a large number of insect hosts of the families Anobiidae, Bruchidae and Curculionidae (Coleoptera), Anthomyiidae, Cecidomyiidae, Tephritidae (Diptera), Cynipidae and Tenthredinidae (Hymenoptera), Coleophoridae, Gelechiidae, Lycaenidae, Nymphalidae, Geometridae, Gracillariidae, Phycitidae, Pieridae, Sesiidae and Tortricidae (Lepidoptera) (FALCÓ et al. 1993): *Platyedra subcineria* HAWORTH, *Pexicopia malvella* HÜBNER, *Mesophleps corsicellus* HERRICH-SCHÄFFER (Lepidoptera: Gelechiidae), *Haena bicurvis* HUFNAGEL (Lepidoptera: Noctuidae), *Lithocolletis mespilella* HÜBNER (Lepidoptera: Gracillariidae), *Aegeria andrenaeformis* LASPEYRES (Lepidoptera: Sesiidae), *Coleophora medelichennis* KRONE, *C. coronillae* ZELLER (Lepidoptera: Coleophoridae), *Grapholitha funebrana* TREITSCHKE, *G. Dorsana* FABRICIUS, *Barbara herrichiana* OBRAZTSOV, *Pandenus cerasana* HÜBNER, *Petrova resinella* LATREILLE, *Laspeyresia strobilella* LATREILLE, *Eucosoma cana* HAWORTH (Lepidoptera: Tortricidae), *Etiella zinckenella* TREITSCHKE, *Dioryctia abietella* DENIS & SCHIFFERMÜLLER, *Myelois cribrella* HÜBNER (Lepidoptera: Phycitidae), *Ernobius nigrinus* STURM (Coleoptera: Anobiidae), *Larinus turbinatus* GYLLENHAL, *L. Jaceae* FABRICIUS, *Pissodes validirostris* GYLLENHAL, *Baris cuprirostris* FABRICIUS, *B. laicollis* MARSY, *B. chlorisans* GERMAR, *Magdalis rufa* GERMAR, *Gynetrion tetrum* LATREILLE, *G. asellus*

GRAVENHORST, *Miarus campanulae* LATREILLE, *Sitona longulus* GYLLENHAL, *Ceutorhynchus punctiger* GYLLENHAL (Coleoptera: Curculionidae), *Bruchus laticollis* BOHEMAN, *B. lentis* FRÖLICH, Bruchidae), *Pegohylemyia seneciella* (MEADE) (Diptera: Anthomyiidae), *Noeeta pupillata* (FALLÉN), *Chaetostomella cylindrica* ROBINEAU-DESVOIDY, *Tephritis leontodontis* De GEER, *Sphenella marginata* (FALLÉN) (Diptera: Tephretidae), *Hoplocampa brevis* KLUG (Hymenoptera: Tenthretinidae) (BEYARSLAN et al. 2005).

### ***Pseudovipio castrator* (FABRICIUS, 1798)**

**Material examined:** West Azarbaijan province: Seroo (1616 m), 1♀, unknown date.

**Distribution outside Iran:** Palaearctic species (FALCÓ et al. 1993). Caucasus, Central Asia, South and Central Europe, North Africa, Asia Minor (TOBIAS 1986), Albania, Algeria, Azerbaijan, Croatia, Cyprus, Czech Republic, Egypt, Georgia, Germany, Greece, Moldova, Montenegro, Romania, Slovakia, Sudan, Switzerland, Syria, Ukraine, former Yugoslavia (YU et al. 2012), France, Italy (SZÉPLIGETI 1904 as *Glyptomorpha castrator* KOKUJEV; YU et al. 2012), Hungary (SZÉPLIGETI 1904 as *Glyptomorpha castrator* SZÉPLIGETI; PAPP 1960 as *G. castrator* SZÉPLIGETI; YU et al. 2012), Israel (PAPP 1989, 2011-2012; YU et al. 2012), Kazakhstan, Mongolia (TOBIAS 1986; YU et al. 2012), Russia (SZÉPLIGETI 1904 as *Glyptomorpha castrator* SZÉPLIGETI; YU et al. 2012), Serbia (BELOKOBYSKIJ & ŽIKIĆ 2009; YU et al. 2012), Spain (CEBALLOS 1956; DOCAVO 1964; FALCÓ et al. 1993; YU et al. 2012), Turkey (BEYARSLAN et al. 2005; YU et al. 2012), Greece (PAPP 2007).

**Host records:** It is principally parasitoid of Buprestidae, Cerambycidae and Curculionidae (PRIORE & TREMBLAY 1981) This species was reported as the parasitoid of *Chrysobothris affinis* FABRICIUS, *Buprestis* sp. (Coleoptera: Buprestidae) (TOBIAS 1986; BEYARSLAN et al. 2005, STANKOVIĆ et al. 2010), *Lixus junci* BOHEMAN (Coleoptera: Curculionidae), *Gortyna xentheres* GERMAR (Lepidoptera: Noctuidae) (TOBIAS 1986; BEYARSLAN et al. 2005), *Plagionatus arcuatus* L. (Coleoptera: Cerambycidae) (TOBIAS 1986; BEYARSLAN et al. 2005).

## **Subfamily Doryctinae**

### ***Doryctes leucogaster* (NEES, 1834)**

**Material examined:** West Azarbaijan province: Bookan (1379 m), 1♀, June 2008.  
West Azarbaijan province: Hassanloo (1288 m), 1♂, 1♀, July 2008.

**Distribution outside Iran:** Hungary (PAPP 2008), Caucasus, Central Asia, Siberia, West Europe (TOBIAS 1995), Belgium (WESMAEL 1838 as *Ischiogonus erythrogaster*), Montenegro, Serbia (BELOKOBYSKIJ & ŽIKIĆ 2009), Israel (PAPP 2011-2012), Spain (DOCAVO 1960, 1964; FALCÓ & JIMÉNEZ 1988), Algeria, Romania, Tunisia, Switzerland (MARSHALL 1899 as *D. liogaster*), Georgia, Russia, Ukraine (KOKUJEV 1900 as *D. caucasicus*), Azerbaijan (KOKUJEV 1900 as *D. disputabilis*), Austria, Hungary (SZÉPLIGETI 1902 as *D. marothiensis*), Austria, Hungary, Romania, Serbia (SZÉPLIGETI 1905 as *D. pulchripes*), Israel, Uzbekistan (TELENGA 1941 as *D. turkestanicus*), Croatia (PAPP 2009b), Greece (PAPP 2007). According to YU et al. (2012): Bulgaria, Czech Republic, Denmark, Germany, Greece, Hungary, Italy, Turkey, UK.

**Host records:** It was reported as a parasitoid of *Rhajium inquisitor* LINNAEUS, *Chytus pilosus* FÖRSTER, *Phymatodes variabilis* LINNAEUS, *Acanthocitrus aedilis* LINNAEUS, *Hylotrupes bajulus* LINNAEUS, *Tetropium castaneum* LINNAEUS, *Acanthoderes cinereus* FABRICIUS, *Anaesthetis testacea* FABRICIUS, *Exocentrus lusitanicus* LINNAEUS and other longhorned beetles, furniture beetles *Anobium pertinax* LINNAEUS, *A. punctatus* DEGEER, goldeneyed *Lampra mirifica* MULS., *Chrysobothris affinis* FABRICIUS, *Agrilus* spp. and beetles of other families (*Bothrictichus capucinus* LINNAEUS, *Ptinus fur* LINNAEUS, *Ips typographus* LINNAEUS, *Pissodes notatus* FABRICIUS) as well as some lepidopteran *Pyrausta sticticalis* LINNAEUS (TOBIAS 1995). The following hosts are also reported according to YU et al. (2012): *Agrilus biguttatus* FABRICIUS, *Anthaxia aurlenta* FABRICIUS, *A. manca* LINNAEUS, *Chrysobothris solieri* GORY & LAPORTE, *Lampra mirifica* MULSANT (Coleoptera: Buprestidae), *Anobium pertinax* (LINNAEUS) (Coleoptera: Anobiidae), *Bostrichus capucinus* (LINNAEUS) (Coleoptera: Bostrichidae), *Acanthocitrus aedilis*

(LINNAEUS), *Acanthoderes cinereus* FABRICIUS, *Exocentrus lusinatus* (LINNAEUS), *Hesperophanes cinereus* VILLERS, *Chlorophorus pilosus* FOERSTER, *Hylotrupes bajulus* (LINNAEUS), *Penichroa fuscata* (STEPHENS), *Phymatodes testaceus* (LINNAEUS), *Plagionotus arcuatus* (LINNAEUS), *Rhagium bifasciatum* FABRICIUS, *R. inquisitor* (LINNAEUS), *R. mordax* DEGEER, *Tetropium castaneum* (LINNAEUS) (Coleoptera: Cerambycidae), *Agelastica alni* (LINNAEUS) (Coleoptera: Chrysomelidae), *Opilo domesticus* LINNAEUS (Coleoptera: Cleridae), *Loxotege sticticalis* (LINNAEUS) (Lepidoptera: Pyralidae), *Lymantria dispar* (LINNAEUS) (Lepidoptera: Noctuidae).

### ***Doryctes striatellus* (NEES, 1834)**

**Material examined:** West Azarbaijan province: Shahin-Dezh (1422 m), 1♂, August 2008.

**Distribution outside Iran:** Distributed throughout Palaearctic region (Tobias 1995 as *D. mutilator*), Serbia (BELOKOBYLSKIJ & ŽIKIĆ 2009), England (MARSHALL 1885; BROAD & SHAW 2009), Portugal (PETERSEN-SILVA et al. 2012), Italy (CAMPADELLI & SCARAMOZZINO 1994 as *D. mutilator* (THUNBERG)), Hungary, Russia, Slovakia (MARSHALL 1888 as *D. brachyurus*), Hungary (RATZEBURG 1844 as *Bracon disparator*), UK (CURTIS 1837 as *D. maculipes*), Austria, Belgium, Finland, France, Germany, Hungary, Italy, Poland, Russia, Sweden, Switzerland, Ukraine, UK (NEES 1834 as *Bracon obliteratus*), Austria, Russia, Serbia (KOKUJEV 1902 as *D. petrovskii*), Germany, Hungary, Sweden, Switzerland (Marshall 1897 as *D. rex*), Bulgaria, former Czechoslovakia, Lithuania, Sweden (STRAND 1918 as *D. striatelloides*), Russia (KOKUJEV 1900 as *D. strigatus*), UK (HALIDAY 1836 as *Rogas tabidus*). According to YU et al. (2012): Albania, Armenia, Azerbaijan, Croatia, former Czechoslovakia, Denmark, Finland, France, Georgia, Germany, Greece, Hungary, Ireland, Italy, Italy-Sicily, Kazakhstan, Lithuania, Macedonia, Moldova, Mongolia, The Netherlands, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Turkey, UK, former Yugoslavia, Montenegro, Serbia.

**Host records:** Parasitoid of longhorned beetles: *Tetropium castaneum* LINNAEUS, *T. GABRIELI WEISE*, *T. gracilicorne* RTT., *T. fuscum* FABRICIUS, *Stenostola ferrea* SCHR., *Exocentrus lusitanus* LINNAEUS, *Phymatodes testaceus* LINNAEUS, *P. pusillus* LINNAEUS, *P. alni* LINNAEUS, *Acanthocinus aedilis* LINNAEUS, *Molorchus minor* LINNAEUS, *Callidium abdominale* BON., *C. violaceum* LINNAEUS, *Pogonocherus hispidus* LINNAEUS, *Rhagium inquisitor* LINNAEUS, *Clytus* sp., *Monochamus* sp., *Agapanthia* sp. (Coleoptera: Cerambycidae), goldeneyed *Phaenops cyanea* FABRICIUS, *P. guttulata* GEBL., weevils *Pissodes notataus* FABRICIUS, *P. harynia* HERBST, *Rhynchaenus fagi* LINNAEUS, *R. quercus* LINNAEUS, *R. salicis* LINNAEUS, *R. testaceus* MÜLLER, *R. pilosus* FABRICIUS, *Magdalis violacea* LINNAEUS (Coleoptera: Curculionidae), Stamping beetle *Dorcatoma dresdensis* HERBST, *D. setosella* MULS. & REY., *Ernobius mollis* LINNAEUS, bark beetles *Ips typographus* LINNAEUS, *I. sexdentatus* BÖRN., *I. subelongatus* MOTSCH., *Blastophagus piniperda* LINNAEUS, lepidopterans *Laspeyresia strobilella* L., *Grapholitha funebrana* Tr., hymenopterans *Xiphydrea dromedarius* FABRICIUS, *Xyela pusilla* DAHLBOM (TOBIAS 1995). It was also reported as a parasitoid of *Ernobius mollis* (LINNAEUS), *Dorcatoma dresdensis* HERBST (Coleoptera: Anobiidae), *Anthoxia quadripunctata* (LINNAEUS), *Phaenops cyanea* (FABRICIUS), *P. guttulata* (GEBLER) (Coleoptera: Buprestidae), *Acanthocinus aedilis* (LINNAEUS), *Agapanthia* sp., *Callidium* sp., *C. violaceum* (LINNAEUS), *Clytus* sp., *Exocentrus lusitanus* (LINNAEUS), *Mesosa curculionoides* (LINNAEUS), *Molorchus minor* (LINNAEUS), *Monochamus galloprovincialis* (OLIVIER), *M. sutor* (LINNAEUS), *Phymatodes pusillus* (FABRICIUS), *Ph. testaceus* (LINNAEUS), *Poecilium alni* (LINNAEUS), *Pogonocherus* sp., *P. hispidus* (LINNAEUS), *Rhagium inquisitor* (LINNAEUS), *Semanotus undatus* (LINNAEUS), *Stenostola ferrea* (SCHRANK), *Tetropium castaneum* (LINNAEUS), *T. gabrieli* WEISE, *T. fuscum* (FABRICIUS), *T. gracilicorne* REITTER (Coleoptera: Cerambycidae), *Pissodes barcyniae* (HERBST), *P. notatus* (FABRICIUS), *Rhynchaenus fagi* (LINNAEUS), *R. pilosus* (FABRICIUS), *R. quercus* (LINNAEUS), *R. testaceus* (MÜLLER), *Magdalis violacea* (LINNAEUS), *M. rufa* (GERMAR), *Tachyerges salicis* (LINNAEUS) (Coleoptera: Curculionidae), *Hylurgops palliates* (GYLLENHAL), *Ips typographus* (LINNAEUS), *I. sexdentatus* (BOERNER), *I. subelongatus* MUTSCHULSKY, *Pityogenes bidentatus* (HERBST), *Tomiscus piniperda* (LINNAEUS) (Coleoptera: Scolytidae), *Xyphidria prolongata* (GEOFFROY) (Coleoptera: Xyphidridae) (YU et al. 2012). In Italy, it was reported from *M. galloprovincialis* (CAMPADELLI & SCARAMOZZINO 1994). In Portugal it was reported from *Monochamus galloprovincialis* (PETERSEN-SILVA et al. 2012).

***Rhaconotus aciculatus* RUTHE, 1854**

**Material examined:** West Azarbaijan province: Takab (1822 m), 1♂, 1♀, September 2006.

**Distribution outside Iran:** Israel (PAPP 1988, 2011-2012), Serbia (ŽIKIĆ et al. 2000; BELOKOBYLSKIJ & ŽIKIĆ 2009), Caucasus, Kazakhstan, Central Asia, Western Europe, Pacific Coastal region, Israel, Mongolia (TOBIAS 1995), England (SHAW 1998; BROAD & SHAW 2009), Spain (FALCÓ & JIMÉNEZ 1988), Spain (DOCAVO 1960 as *R. cerdai*), Kazakhstan (TOBIAS 1964 as *R. major*), Mongolia (PAPP 2009a), Azerbaijan, China, Czech Republic, France, Germany, Hungary, Israel, Italy, Kazakhstan, Korea, Kyrgyzstan, Moldova, Mongolia, Russia, Slovakia, Spain, Tajikistan, Ukraine, UK, Uzbekistan, Serbia (YU et al. 2012).

**Host records:** This species was recorded as a parasitoid of *Bruchus* sp. (Coleoptera: Bruchidae) in Israel (LUCAS 1965), *Agrilus viridis* (LINNAEUS), *Anthaxia igockii* OBENBERGER (Coleoptera: Buprestidae), *Caryedon serratus* (OLIVIER) (Coleoptera: Chrysomelidae), *Lixus lukjanovitschi* (Coleoptera: Curculionidae) (YU et al. 2012).

***Spathius curvicaudis* RATZEBURG, 1844**

**Material examined:** West Azarbaijan province: Bookan (1379 m), 2♀, June 2008.  
West Azarbaijan province: Makoo (1637 m), 1♀, unknown date.

**Distribution outside Iran:** Europe (PHILIP et al. 2012), Hungary (PAPP 2008), Transcaucasia, Western Europe, Turkey (TOBIAS 1995), Serbia (BELOKOBYLSKIJ & ŽIKIĆ 2009), Caucasia, Transcaucasia, Western Europe, Turkey (TOBIAS 1995), Azerbaijan, Czech Republic, France, Germany, Hungary, Italy, Lithuania, Moldova, The Netherlands, Poland, Russia, Slovakia, Sweden, Switzerland, Turkey, Ukraine, UK, Serbia (YU et al. 2012).

**Host records:** *S. curvicaudis* RATZEBURG was reported as a parasitoid from *Agrilus biguttatus* (FABRICIUS) (Coleoptera: Buprestidae) on Oak trees in Europe (PHILIP et al. 2012). Parasitoid of longhorned beetles: *Phymatodes testaceus* LINNAEUS, *Xylotrechus pantherinus* SAV., *Callidium aeneum* DEG., *Obrium cantharinum* LINNAEUS, *Clytus* sp., *Pyrrhidium sanguineum* LINNAEUS, *Hedobia pubescens* OLIVIER (Coleoptera: Cerambycidae), bark beetles *Scolytus intricatus* RATZ., *S. morawitzi* SEM., *Ips subelongatus* MOTSCH. (Coleoptera: Curculionidae), goldeneye *Agrilus sulcicollis* LAC., *A. hastulifer* RATZBURG, *A. olivicolor* KSW., *A. subauratus* GEBL., *A. biguttatus* FABRICIUS, *A. roberti* CHEVROLAT (Coleoptera: Buprestidae), horntails *Xiphidria prolongata* GEOFFROY, *X. longicollis* GEOFFROY (Coleoptera: Xiphidriidae) (TOBIAS 1995), *Agrilus biguttatus* FABRICIUS, *A. panonicus* PILLAR & MITTERPACHER, *A. roberti* CHEVROLAT, *A. subauratus*, *A. sulcicollis* LACORDAIRE (Coleoptera: Buprestidae), *Hedobia pubescens* FABRICIUS, *Xestobium plumbeum* ILLIGER (Coleoptera: Anobiidae), *Callidium aeneum* DEGEER, *Phymatodes pusillus* FABRICIUS, *P. testaceus* (LINNAEUS), *Obrium cantharinum* LINNAEUS, *Pyrrhidium sanguineum* (LINNAEUS), *Xylotrechus pantherinus* SAUVENIUS (Coleoptera: Cerambycidae), *Magdalis carbonaria* (LINNAEUS), *Scolytus intricatus* (RATZEBURG) (Coleoptera: Curculionidae), *Xiphidria camelus*, *X. prolongata* (GEOFFROY) (Coleoptera: Xiphidriidae) (YU et al. 2012).

**Subfamily Hormiinae*****Hormius moniliatus* (NEES, 1811)**

**Material examined:** West Azarbaijan province: Piranshahr (1466 m), 2♀, July 2008.

**Distribution outside Iran:** Mongolia (PAPP 2009), Turkey (BEYARSLAN & AYDOĞDU 2013), Belgium (WESMAEL 1838), UK (BROAD & SHAW 2009), Macedonia (PAPP 2010), Greece (PAPP 2007). According to YU et al. (2012): Afghanistan, Armenia, Azerbaijan, Belarus, Belgium, Bulgaria, Canary Islands, Cape Verde Islands, China, Czech Republic, Finland, France, Germany, Greece, Greenland, Hungary, Ireland, Israel, Italy, Japan, Kazakhstan, Korea, Latvia, Lithuania, Macedonia, Moldova, Mongolia, Morocco, The Netherlands, Norway, Poland, Russia, Serbia, Slovakia, Spain, Sweden, Switzerland, Tajikistan, Turkmenistan, Ukraine, UK, Uzbekistan, Vietnam, former Yugoslavia.

***Hormius similis* (SZÉPLIGETI, 1896)**

**Material examined:** West Azarbaijan province: no locality cited, 2♀♀, July 2006.  
West Azarbaijan province: Salmas (1311 m), 1♀, October 2007. West Azarbaijan province: Makoo (1637 m), 3♀♀, unknown date.

**Distribution outside Iran:** All Palearctic region, Taiwan (BELOKOBYLSKIJ 1995), Hungary (PAPP 2008), Caucasus, Kazakhstan, Central Asia, Eastern Siberia, Far East, Western Europe (TOBIAS 1995), Korea (PAPP 2003), Croatia, Greece (PAPP 2007 as *H. moniliatus* var. *similis*). According to YU et al. (2012): Azerbaijan, Bulgaria, China, Croatia, Czech Republic, Germany, Greece, Hungary, Japan, Kazakhstan, Korea, Macedonia, Mongolia, Russia, former Yugoslavia.

**Host records:** Parasitoid of lepidopterans *Pexicopia malvella* HÜBNER (Gelechiide), *Scythris inspersella* HÜBNER (Scythrididae), *Pyrausta aurata* SCOPOLI, *Microstega hyalinalis* HÜBNER, *Loxostege nudalis* HÜBNER (Pyraustidae), *Coleophora trifariella* ZELLER (Cleophoridae), *Archips crataegana* HÜBNER (Tortricidae) (TOBIAS 1995).

**Subfamily Microgastriinae*****Apanteles obscurus* (NEES, 1834)**

**Material examined:** West Azarbaijan province: Seroo (1616 m), 3♀♀, May 2008.

**Distribution outside Iran:** UK (HALIDAY 1834 as *Microgaster arenarius*), Hungary (PAPP 2008), Mongolia (PAPP 2009a), Transpalearctic (TOBIAS 1995), Turkey (BEYARSLAN et al. 2006; GÜCLÜ & ÖZBEK 2011), Croatia, Macedonia (PAPP 2009b), Crete, Greece (PAPP 2007). According to YU et al. (2012): Albania, Armenia, Azerbaijan, Croatia, Czechoslovakia, Denmark, Finland, France, Georgia, Germany, Greece, Hungary, Ireland, Italy, Italy-Sicily, Kazakhstan, Lithuania, Macedonia, Moldova, Mongolia, The Netherlands, Poland, Romania, Russia, Slovenia, Spain, Sweden, Switzerland, Turkey, UK, Montenegro, Serbia.

**Host records:** Parasitoid of *Eurrhynx terrealis* TR. (Lepidoptera: Pyralidae), *Udea ferrugalis* HÜBNER, *Ebulea crocealis* HÜBNER (Lepidoptera: Pyraustidae), *Clepsis strigana* HÜBNER (Lepidoptera: Tortricidae) (TOBIAS 1995).

***Cotesia cuprea* (LYLE, 1925)**

**Material examined:** West Azarbaijan province: Oshnaviyeh (1467 m), 1♂, September 2007.

**Distribution outside Iran:** Hungary (PAPP 2008), Azerbaidjan, Lithuania, Mongolia (PAPP 2009b), Morocco (NIXON 1965 as *Hypomicrogaster semele*), Azerbaijan, England, Finland, France, Germany, Hungary, Lithuania, The Netherlands, Spain (PAPP 1987), Turkey (BEYARSLAN 1988; INANÇ & BEYARSLAN 2001). According to YU et al. (2012): Azerbaijan, Bulgaria, Canary Islands, former Czechoslovakia, Finland, France, Germany, Greece, Hungary, Lithuania, Mongolia, The Netherlands, Poland, Romania, Spain, Switzerland, Turkey, UK.

**Host records:** It was bred from *Simacthis nemorana* HÜBNER (Lepidoptera: Glyptopterigidae) (NIXON 1965). It was reported from *Archips rosana* LINNAEUS (Lepidoptera: Tortricidae) (PAPP 2007).

***Cotesia vanessae* (REINHARD, 1880)**

**Material examined:** West Azarbaijan province: Salmas (1311 m), 2♀♀, October 2007.  
West Azarbaijan province: Piranshahr (1466 m), 2♀♀, July 2008.

**Distribution outside Iran:** Almost throughout the Palearctic region, European part of USSR (TOBIAS 1995 as *Apanteles vanessae*), Czech Republic (LOZAN et al. 2010),

Hungary (PAPP 2008), Austria, England, Finland, Germany, Hungary, Russia (PAPP 1988), Australia, China, North and West Africa (YU et al. 1988), Turkey (INANÇ & BEYARSLAN 2001; ÇETIN ERDOĞAN & BEYARSLAN 2005). According to YU et al. (2012): Afghanistan, Armenia, Austria, Bulgaria, Canary Islands, China, Czech Republic, Ethiopia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Kazakhstan, Latvia, Moldova, Morocco, The Netherlands, Poland, Russia, Serbia, Montenegro, Spain, Turkey, Ukraine, UK, Uzbekistan.

**Host records:** Parasitoid of *Vanessa atalanta* LINNAEUS, *Inachis io* LINNAEUS, *Cynthia cardui* LINNAEUS (Lepidoptera: Nymphalidae), *Spodoptera exigua* HÜBNER, *Mythimna littoralis* CURTIS, *Ochropleura praecox* LINNAEUS, *Dicestra trifolii* HUFNAGEL, *Apamea sordens* HUFNAGEL, *Autophaga gamma* LINNAEUS, *Syngrapha circumflexa* LINNAEUS, *Helicoverpa armigera* HÜBNER, *Mamestra brassicae* LINNAEUS (Lepidoptera: Noctuidae) (TOBIAS 1995).

### ***Protapanteles vitripennis* (CURTIS, 1830)**

**Material examined:** West Azarbaijan province: Myandoab (1339 m), 2♂♂, June 2007.

**Distribution outside Iran:** France (GAUTIER & DRESNAY 1927 as *Apanteles impavidus*), Western Europe, North America (introduced) (TOBIAS 1995 as *Apanteles vitripennis*), Caucasus, Kazakhstan, Siberia, Central Asia (TOBIAS 1995), Belgium (WESMAEL 1837 as *Microgaster fulgriger*), widely distributed in the British Island (NIXON 1973 as *Apanteles vitripennis*), Greece (PAPP 2007 as *Glyapanteles vitripennis*). According to YU et al. (2012): Azerbaijan, Belgium, Bulgaria, Czech Republic, Finland, France, Georgia, Germany, Greece, Hungary, India, Ireland, Italy, Italy-Sicily, Kazakhstan, Kyrgyzstan, Latvia, Pakistan, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Tajikistan, Turkey, Ukraine, UK, Uzbekistan, Yugoslavia-Serbia.

**Host records:** Parasitoid of *Acronicta psi* LINNAEUS, *Eupsilia transversa* HUFNAGEL, *Catocala nupta* LINNAEUS, *Cucullia verbasci* LINNAEUS (Lepidoptera: Noctuidae), *Biston strataria* HUFNAGEL, *Cabera pusaria* LINNAEUS, *Chesias legatella* DENIS & SCHIFFERMÜLLER, *C. rufata* FABRICIUS, *Cleorodes lichenaria* HUFNAGEL, *Alcis repandata* LINNAEUS, *Earophila badiata* DENIS & SCHIFFERMÜLLER, *Operophtera brumata* LINNAEUS, *Thera juniperata* LINNAEUS (Lepidoptera: Geometridae), *Archips rosana* LINNAEUS (Lepidoptera: Tortricidae), *Plutella maculipennis* CURTIS (Lepidoptera: Plutellidae), *Yponomeuta cognatellus* HÜBNER, *Y. padillus* LINNAEUS, *Y. malinellus* ZELLER (Lepidoptera: Yponomeutidae) (TOBIAS 1995). It was reported as a solitary parasitoid of many species of Lepidoptera: *Acronicta psi* (LINNAEUS), *Catocala nupta* (LINNAEUS), *Cucullia verbasci* (LINNAEUS) (Noctuidae), *Biston strataria* (HUFNAGEL), *Cabera pusaria* (LINNAEUS), *Chesias legatella* (SCHIFFERMÜLLER), *C. rufata* (FABRICIUS), *Cleorodes lichenaria* (HUFNAGEL), *Alcis repandata* (LINNAEUS), *Anticlea badiata* (SCHIFFERMÜLLER), *Operophtera brumata* (LINNAEUS), *Thera juniperata* (LINNAEUS) (Geometridae), *Archips rosana* (LINNAEUS) (Tortricidae), *Plutella xylostella* (LINNAEUS) (NIXON 1973).

### ***Microgaster luctuosa* HALIDAY, 1834**

**Material examined:** West Azarbaijan province: Takab (1822 m), 1♂, September 2006.

**Distribution outside Iran:** Hungary (PAPP 2008), Caucasus, Central Asia, Western Europe, Mongolia (TOBIAS 1995 as *Lissogaster curvicrus*), England (HALIDAY 1834), Greece (PAPP 2007 as *Microgaster curvicrus*). According to YU et al. (2012): Austria, Azerbaijan, Bulgaria, Croatia, Finland, Germany, Greece, Hungary, Ireland, Moldova, Mongolia, Poland, Romania, Russia, Sweden, Switzerland, Turkmenistan, UK, Uzbekistan, Serbia.

**Host records:** Parasitoid of *Agonopterix pallorella* ZELLER (Lepidoptera: Oecophoridae) (TOBIAS 1995), *Cnephasa assedana* DENIS & SCHIFFERMÜLLER, *Olethreutes arbutella* (LINNAEUS) (Lepidoptera: Tortricidae) (YU et al. 2012).

***Microgaster parvistriga* THOMSON, 1895**

**Material examined:** West Azarbaijan province: Seroo (1616 m), 3♂♂, May 2008.

**Distribution outside Iran:** Distributed in Europe, eastwards as far as Armenia, Hungary, Greece (PAPP 2007), Austria, Germany, Italy (BOUCHÉ 1834 as *Microgaster blancardellae*), Germany (RATZEBURG 1848 as *Microgaster flavolimbatus*), Hungary (RATZEBURG 1848 as *Microgaster flavolimbatus*; PAPP 2008), England (MARSHALL 1885 as *Apanteles lautellus*), Belgium (WESMAEL 1837 as *Microgaster lividipes*), Mongolia (PAPP 2009), Caucasus, western Europe (TOBIAS 1995 as *Lissogaster parvistriga*), Armenia, Northern half of Europe, Korea (PAPP 2003). According to YU et al. (2012): Armenia, Bulgaria, Czech Republic, Finland, Germany, Greece, Hungary, Korea, Mongolia, Poland, Romania, Russia, Slovakia, Switzerland, UK.

**Host record:** Parasitoid as *Anacamptis disquei* MEES (Lepidoptera: Gelechiidae) (TOBIAS 1995), *Acleris kochiella* GOEZE, *Anacamptis midella* WOCKE (Lepidoptera: Gelechiidae), *Cosmopterix scribaeilla* ZELLER, *C. zieglerella* (HÜBNER) (Lepidoptera: Cosmopterixidae), *Swammerdamia caesiella* (HÜBNER) (Lepidoptera: Yponomeutidae), *Tortrix viridana* (LINNAEUS) (Lepidoptera: Tortricidae) (YU et al. 2012).

***Pholetesor circumscriptus* (NEES, 1834)**

**Material examined:** West Azarbaijan province: Siah-Cheshmeh (1807 m), 3♀♀, May 2007. West Azarbaijan province: Hassanloo (1288 m), 1♀, July 2008.

**Distribution outside Iran:** Entire Palearctic region (TOBIAS 1995 as *Apanteles circumscriptus*), Hungary (PAPP 2008), N.W. Europe (NIXON 1973 as *Apanteles circumscriptus*), Greece (PAPP 2007), Austria, Germany, Italy (BOUCHÉ 1834 as *Microgaster blancardella*), Germany, Hungary (RATZEBURG 1848 as *Microgaster flavolimbatus*), England (MARSHALL 1885 as *Apanteles lautellus*), Belgium (WESMAEL 1837 as *Microgaster lividipes*). According to YU et al. (2012): Armenia, Austria, Azerbaijan, Belgium, Bulgaria, Croatia, Czech Republic, Finland, Georgia, Germany, Greece, Hungary, Ireland, Israel, Italy, Italy-Sardinia, Italy-Sicily, Korea, Latvia, Lithuania, Madeira Islands, Moldova, The Netherlands, NewZealand, Poland, Romania, Russia, Slovakia, Spain, Switzerland, USA, Ukraine, UK, former Yugoslavia.

**Host records:** Parasitoid of *Elachista gangabella* ZELLER, *E. gleichenella* FABRICIUS, *E. humilis* ZELLER, *E. luticomella* ZELLER (Lepidoptera: Elachistidae), *Lithocolletis blancardella* FABRICIUS, *L. cavella* ZELLER, *L. cerasicolella* H.-S., *L. emberizaepanella* BOUCHÉ, *L. junoniella* ZELLER, *L. lantanella* SCHR., *L. lautella* ZELLER, *L. mespilella* HÜBNER, *L. messaniella* ZELLER, *L. nigrescentella* LOGAN, *L. populifoliella* TR., *L. pomonella* ZELLER, *L. quercifoliella* ZELLER, *L. rajella* LINNAEUS, *L. scabiosella* DOUGL., *L. tenerella* JOANNIS (Lepidoptera: Gracillaridae) (NIXON 1973; TOBIAS 1995). In Iran it was reported as a larval parasitoid of *Lithocolletis blancardella* FABRICIUS (Lepidoptera: Gracillaridae) (BEHDAD 1991; GHAHARI et al. 2010).

**Subfamily Rogadinae*****Aleiodes (Aliodes) signatus* (NEES, 1811)**

**Material examined:** West Azarbaijan province: Seroo (1616 m), 1♀, spring 2008.

**Distribution outside Iran:** Turkey (AYDOGDU & BEYARSLAN 2006), Czech Republic (LOZAN et al. 2010), Hungary (PAPP 2008), Israel (PAPP 1988), Mongolia (PAPP 2009a), Belgium (Wesmael 1838 as *A. geniculator*), England (BROAD & SHAW 2009), Croatia (PAPP 2010), Greece (PAPP 2007).

**Host records:** It was reported as endoparasitoid of lepidopterans: *Arctia caja* LINNAEUS, *A. villisa* LINNAEUS, *Ocnogyna boeticum*, *Coscinia cribrum* LINNAEUS (Arctiidae), *Philudoria potatoria* LINNAEUS (Lasiocampidae), *Orgiysa antica* LINNAEUS, *O. gonostigma* LINNAEUS, *Gynaephora sclenitica*, *Euproctis chrysothoea* LINNAEUS, *E. similis* (Lymntridae), *Autographa gamma* LINNAEUS, *Noctua fimbriata*, *N. pronuba* LINNAEUS, *Acrionicta psi* LINNAEUS (Noctuidae), *Thaumetopoea processionea* LINNAEUS, *T. pityocampa* DENIS & SCHIFFERMÜLLER

(Thaumetopoeidae), *Spilonota ocellana* FABRICIUS (Tortricidae) (AYDOGDU & BEYARSLAN 2006; YU et al. 2012).

***Aleiodes (Neorhogas) ductor* (THUNBERG, 1822)**

**Material examined:** West Azarbaijan province: Naqadeh (1327 m), 1 ♂, unknown date.

**Distribution outside Iran:** Czech Republic (LOZAN et al. 2010), Israel (PAPP 1988), Caucasus, Kazakhstan, Central Asia, Souther Siberia to Far East, Western Europe, Northern Africa, Israel (TOBIA 1995 as *Rogas ductor*), Turkey (BEYARSLAN et al. 2006), Croatia (PAPP 2010), Greece (PAPP 2007).

**Host records:** Parasitoid of *Mamestra brassicae* LINNAEUS, *Autographa gamma* LINNAEUS, *Discestra trifolii* (HUFNAGEL) (Lepidoptera: Noctuidae), *Philudoria potatoria* LINNAEUS (Lepidoptera: Lasiocampidae) (TOBIAS 1995).

### Discussion

In this faunistic survey 29 braconid species were collected from West Azarbaijan province, a result that indicates a high diversity of these parasitoids in this part of Iran. Based on several samplings by Iranian researchers, we are sure that there are many species not found in West Azarbaijan so far. Therefore, we suggest that samplings by standard methods are continued, resulting in new records and probably new species. With attention to high diversity of agricultural ecosystems and therefore various insect pests (especially Lepidoptera, Coleoptera, and Diptera) in West Azarbaijan province, we expect a diverse fauna of these powerful parasitoids in this part of Iran. Braconids are efficient agents of biological control, which have powerful role in pest control in different agroecosystems (SHARKEY 1993; GODFRAY 1994). Conserving of these natural enemies will be resulted in increasing their efficiency in pests control upon the IPM (Integrated Pest Management) and ICM (Integrated Crop Management) programs (Maredia et al. 2003). Of course conservation of natural enemies must be done as a regular and exact program toward the successful results (DE BACH & ROSEN 1991; VAN DRIESCHE & BELLOWS 1996).

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### Zusammenfassung

Vorliegende Arbeit behandelt die Fauna der Braconidae (Hymenoptera) der Provinz West Azarbaijan im Nordwesten des Irans. Insgesamt gelang der Nachweis von 29 Arten aus den 8 Unterfamilien Agathidinae (2), Alysiinae (3), Aphidiinae (6), Braconinae (3), Doryctinae (4), Hormiinae (2), Microgastrinae (7) und Rogadinae (2).

## References

- VAN ACHTERBERG C. (1989): Revision of the subtribe Monoctonina Mackaeur sensu strict (Hymenoptera: Braconidae: Aphidiinae). — *Zoologische Mededelingen* **63**: 1-22.
- ACHVLEDIANI M. (1964): On the research of the family Aphidiidae (Hymenoptera) in the condition of Eastern Georgia. — *Bulletine Akademiya Nauk Gruzinskoi SSR. Tbilisi* **33**: 437-440. [in Russian]
- AGARWALA, B.K., RAYCHAUDHURI D. & D.N. RAYCHAUDHURI (1980): Parasites and predators of aphids in Sikkim and Manipur (northeast India). 3. — *Entomon* **5** (1): 39-42.
- AKHTAR M., DAEY D. & M.K. USMANI (2011): A catalogue of aphid parasitoids (Hymenoptera, Braconidae: Aphidiinae) from India. — *Insecta Mundi* **0151**: 1-31.
- ANONYMOUS (1968): Report for the period October 1, 1976 to December 31, 1967. — *Aphidology Newsletter* **7**: 5.
- ATWAL A.S., CHAUDHARY J.P. & M. RAMZAN (1969): Some preliminary studies in India on the bionomics and rate of parasitisation of *Diaertiella rapae* (Braconidae: Hymenoptera), a parasite aphids. — *Journal of Research (Suppl.)* **6**: 177-182.
- ATWAL A.S., CHAUDHARY J.P. & M. RAMZAN (1971): Mortality factors in the natural population of cabbage-aphid, *Lipaphis erysimi* (KALT.) (Aphididae: Homoptera), in relation to parasites, predators and weather conditions. — *Indian Journal of Agricultural Sciences* **41** (5): 507-510.
- AVIDOV Z. & I. HARPAZ (1969): Plant pests of Israel. — Israel Universities Press, Jerusalem, 549 pp.
- AVIDOV Z. & E. KOTTER (1966): The pests *Carthamus tinctorius* L. in Israel. — *Scripta Hierosolymitana* **18**: 9-26.
- AYDOGDU M. & A. BEYARSLAN (2006): First records of *Aleiodes* WESMAEL, 1838 species in East Marmara region of Turkey (Hymenoptera: Braconidae: Rogadinae). — *Acta Entomologica Slovenica* **14** (1): 81-88.
- BAGHERI M.S., SHAHROKHI S. & P. STÁRY (2008): Introduction of wheat aphids and their parasitoids (Hym.: Aphidiidae and Aphelinidae) in Kermanshah province, Iran. — *Proceedings of 18<sup>th</sup> Iranian Plant Protection Congress, 24-27 August, Hamadan*, p. 84.
- BARAHOEI H., RAKHSHANI E., MADJIZADEH S.M., ALIPOUR A., TAHERI S., NADER E., MOTROVSKI BOGDANOVIC A., PETROVIC-OBRAĐOVIC O., STÁRY P., KAVALLIERATOS N.G. & Z. TOMANOVIC (2013): Afid parasitoid species (Hymenoptera: Braconidae: Aphidiidae) of central submountains of Iran. — *North-Western Journal of Zoology* **9**: 70-93.
- BARAHOEI H., RAKHSHANI E., NADER E., STÁRY P., KAVALLIERATOS N.G., TOMANOVIC Z. & M. MEHRPARVAR (2014): Checklist of Aphidiinae parasitoids (Hymenoptera: Braconidae) and their host aphid associations in Iran. — *Journal of Crop Protection* **3** (2): 199-232.
- BODENHEIMER F. & E. SWIRSKI (1957): The Aphidoidea of the Middle East. — *The Weizmann Science Press, Jerusalem*, 378 pp.
- BATRA H.N. & S.R. WAHDI (1962): Additional notes of insects of economic importance in Kulu Valley, Punjab. India. — *Journal of Entomology* **24**: 135-136.
- BEARDSLEY J.W. (1961): A review of the Hawaiian Entomological Society **17** (3): 333-366.
- BEHDAD E. (1991): Pests of fruit crops in Iran. — *Isfahan Neshat Publication*, 822 pp.
- BELOKOBYLSKIJ S.A. & V. ŽIKIĆ (2009): New data on cyclostomes braconid subfamilies Doryctinae, Exothecinae, Rogadinae and Braconinae (Hymenoptera: Braconidae) of Serbia and neighbouring territories. — *Acta Entomologica Serbica* **14** (1): 65-71.
- BEYARSLAN A. (1988): Untersuchungen über die Fauna von Microgastrinae (Hymenoptera: Braconidae) in Mediterranischen Gebiet der Türkei. IX. — *Ulusel Biyoloji Kongresi*, 235-246.

- BEYARSLAN A., YURTCAN M., ÇETIN ERDOĞAN Ö. & M. AYDOĞDU (2006): A study on Braconidae and Ichneumonidae from Ganos Mountains (Thrace Region, Turkey) (Hymenoptera, Braconidae, Ichneumonidae). — *Linzer biologische Beiträge* **38** (1): 409-422.
- BEYARSLAN A., AYDOĞDU M. & Ö. ÇETIN ERDOĞAN (2008): The subfamily Braconinae in northern Turkey, with new records of *Bracon* species for the western Palaearctic (Hymenoptera: Braconidae). — *Linzer biologische Beiträge* **40** (2): 1341-1361.
- BEYARSLAN A. & Ö. ÇETIN ERDOĞAN (2012): The Braconinae (Hymenoptera: Braconidae) of Turkey, with new locality records and descriptions of two new species of *Bracon* Fabricius, 1804. — *Zootaxa* **3343**: 45-56.
- BEYARSLAN A. & M. AYDOĞDU (2013): Additions to the rare species of Braconidae fauna (Hymenoptera: Braconidae) from Turkey. — *Munis Entomol. & Zool.* **8** (1): 369-374.
- BHAGAT R.C. & M.N. AHMAD (1995): Aphidiid parasitoids (Hymenoptera) of aphids (Homoptera) of Jammu-new records, host range and biological notes. — *Journal of Aphidology* **5** (1-2): 90-96.
- BODENHEIMER F.S. (1930): Die Schädlingfauna Palästinas. — *Monographien zur Angewandten Entomologie* **10**: 438 pp.
- BODENHEIMER F.S. & E. SWIRSKI (1957): The Aphidoidea of the Middle East. — Jerusalem: The Weizmann Science Press, 378 pp.
- BOUCHÉ P.F. (1834): *Naturgeschichte der Insekten, besonders in Hinsicht ihrer ersten Zustände als Larven und Puppen.* — Berlin, 216 pp.
- BROAD G.R. & M.R. SHAW (2009): Checklist of British and Irish Braconidae (Hymenoptera). — <http://www.nhm.ac.uk/resources-rx/files/ichneumonidae-checklist-for-web27752.pdf> (last access January 2013).
- CAMPADELLI G. & E.P.L. SCARAMOZZINO (1994): Parasitic Hymenoptera of xylophagous insects in Romagna. — *Bolletino dell'Istituto di Entomologia della Università degli Studi di Bologna* **48**: 115-121.
- CEBALLOS G. (1956): *Catálogo de los Himenópteros de España.* — *Trabajos del Instituto Español de Entomología.* Madrid, 554 pp.
- ÇETIN ERDOĞAN Ö. (2013): Contributions to the knowledge of Agathidinae fauna of the Eastern Anatolia Region of Turkey. — *Turkish Journal of Zoology* **37**: 195-199.
- ÇETIN ERDOĞAN Ö. & A. BEYARSLAN (2001): The Agathidinae (Hymenoptera: Braconidae) fauna of the Marmara region. — *Turkish Journal of Zoology* **25**: 257-268.
- ÇETIN ERDOĞAN Ö., TOMANOVIĆ Z. & A. BEYARSLAN (2008): New aphid parasitoids (Hymenoptera: Aphidiinae) in the region of Marmara, Turkey. — *Acta Entomologica Serbica* **13** (1-2): 85-88.
- ÇETIN ERDOĞAN O.C., VAN. ACHTERBERG C. & A. BEYARSLAN (2009): On the zoogeographical Distribution of the genus *Agathis* LATREILLE, 1804 (Hymenoptera: Braconidae: Agathidinae) in Turkey. — *Journal of Entomological Research Society* **11** (1): 17-25.
- CHAVALET CONCA R. (1973): *La familia Aphidiidae (Uns. Him.) en España.* Valencia, 312 pp.
- CHOU L.Y. & M.J. SHARKEY (1989): The Braconidae (Hymenoptera) of Taiwan. 1. Agathidinae. — *Journal of Taiwan Museum* **42** (1): 147-223.
- COSTA LIMA A. DA (1912): *Insectos do Brasil.* 12 Tomo Hymenopteros. 2 parte. — *Escolas Nacionais de Agronomia, Seri Dedativa No.* **14**. 393 pp.
- CURTIS J. (1938): *A guide to an arrangement of british insects, being a catalogue of all named species hitherto discovered in Great Britain and Ireland.* Second edition, greatly enlarged. — London, 294 pp. (copied 87-126).
- DALLA TORRE C.G. DE (1898): *Catalogus Hymenopterorum. Volumen IV. Braconidae.* — *Guilelmi Engelmann, Lipsiae*, 323 pp.

- DARSOUËI R., KARIMI J. & M. MODARRES-AWAL (2011): Parasitic wasps as natural enemies of aphid populations in the Mashhad region of Iran: New data from DNA barcodes and SEM. — *Arch. Biol. Sci., Belgrade* **63** (4): 1225-1234.
- DAS B.C. & S. CHAKRABART (1990): Role of environmental factors on the abundance of an aphid parasitoid *Aphidius matricariae* HALIDAY (Braconidae: Aphidiinae) in Garhwal range of western Himalaya. — In: MANNA G.K. & B.B. JANA (eds), 'Impacts of environment on animals and aquaculture' University of Kalyani. I-xxxiii, 1-333. Chapter pagination: 277-281.
- DE BACH P. & D. ROSEN (1991): Biological control by natural enemies. — Cambridge University Press, UK, 440 pp.
- DOCAVO A.I. (1960): Especies nuevas de Braconinae de Espana (Hym. Braconidae). — *Eos, Revista Espanola de Entomologia* **36**: 25-39.
- DOCAVO A.I. (1964): Contribución al conocimiento de los Braconidos de España. Subfamilias Braconinae y Cheloniinae. — CSIC. Monograf. Cienc. Mod. 71, Madrid, 215 pp.
- DOCAVO I., TORMOS J., ASIS J.D. & S.F. GAYUBO (1992): Dacnusiini (Hymenoptera, Braconidae, Alysiinae) en la provincial de Valencia (España). — *Miscellanea Zoologica (Barcelona)* **16**: 105-111.
- DOCAVO I., TORMOS F.J. & M. FISCHER (2006): Braconidos de España (Hym., Braconidae). Sintesis general de la familia. Subfamilia Alysiinae. — *Industriás Gráficas ECIR Villa de Madrid*, no. 60, 46980 Paterna (Valencia), 366 pp.
- FAHRINGER J. (1928): Opuscula braconologica. Band 1. Palaearktische Region. — Lieferung 7-9. Opuscula braconologica, Fritz Wagner, Wien, pp. 433-606.
- FALCÓ J.V. & R. JIMÉNEZ (1988): Nuevos datos sobre los Doryctinae (Hym., Braconidae) de la provincia de Valencia. — *Boletín de la Asociación Española de Entomología* **12**: 45-50.
- FALCÓ J.V., MORENO J. & R. JIMÉNEZ (1993): Datos sobre Ciclostominos españoles: 2. Doryctinae (hymenoptera: Braconidae). — *Boletín de la Asociación Española de Entomología* **17** (2): 65-75.
- FALLAHZADEH M. & N. SAGHAEI (2010): Checklist of Braconidae (Insecta: Hymenoptera) from Iran. — *Munis Entomology & Zoology* **5** (1): 170-186.
- FISCHER M. (1957): Beiträge zur Kenntniss paläarktischen Braconidae (Hymenopteren). — *Mitteilungen Münchener Entomologischen Gesellschaft* **47**: 1-21.
- FISCHER M. (1968): Über gezüchtete Raupenwespen (Hymenoptera, Braconidae). — *Pflanzenschutz-Berichte* **37** (7, 8, 9), 97-140 (key for *Agathis*, Palearctic species, as far as Mongolia, China).
- FISCHER M. (1973): *Aspilota*-Wespen aus der weiteren Umgebung von Admont (Hym., Braconidae, Alysiinae). — *Mitteilungen der Abteilung für Zoologie am Landesmuseum Joanneum* **2**: 137-167.
- FISCHER M. (1993): Neubeschreibungen und Wiederbeschreibungen von Kieferwespen (Hym., Braconidae, Alysiinae: Tribus Alysiini) der Alten Welt. — *Linzer biologische Beiträge* **25**: 593-647.
- FULLAWAY D.T. (1913): Preliminary list of the hymenopterous parasites of Coccidae and Aphididae in Hawaii. — *Proceedings of the Hawaiian Entomological Society* **2**: 215-216.
- GHAHARI H., YU D.S. & C. VAN ACHTERBERG (2006): World bibliography of the family Braconidae (Hymenoptera: Ichneumonoidea) (1964-2003). — *NNM Technical Bulletin* **8**, 293 pp.
- GHAHARI H., FISCHER M., ÇETIN ERDOGAN Ö., BEYARSLAN A. & M. HAVASKARY (2009a): A Contribution to the Knowledge of the Braconid-Fauna (Hymenoptera, Ichneumonoidea, Braconidae) of Arasbaran, Northwestern Iran. — *Entomofauna* **30** (20): 329-336.
- GHAHARI H., FISCHER M., ÇETIN ERDOGAN Ö., BEYARSLAN A., HEDQVIST K.J. & H. OSTOVAN (2009b): Faunistic note on the Braconidae (Hymenoptera: Ichneumonoidea) in Iranian alfalfa fields and surrounding grasslands. — *Entomofauna* **30** (24): 437-444.

- GHAHARI H., GADALLAH N.S., CETIN ERDOGAN Ö., HEDQVIST K.J., FISCHER M., BEYARSLAN A. & H. OSTOVAN (2009c): Faunistic note on the Braconidae (Hymenoptera: Ichneumonoidea) in Iranian cotton fields and surrounding grasslands. — *Egyptian Journal of Biological Pest Control* **19** (2): 115-118.
- GHAHARI H., FISCHER M., ÇETIN ERDOĞAN Ö., TABARI M., OSTOVAN H. & A. BEYARSLAN (2009d): A contribution to Braconidae (Hymenoptera) from rice fields and surrounding grasslands of northern Iran. — *Munis Entomology & Zoology* **4** (2): 432-435.
- GHAHARI H., FISCHER M., HEDQVIST K.J., ÇETIN ERDOGAN Ö. & C. VAN ACHTERBERG (2010): Some new records of Braconidae (Hymenoptera) for Iran. — *Linzer biologische Beiträge* **42** (2): 1395-1404.
- GAUTIER C. & M. DU DRESNAY (1927): Description d'un nouvel *Apanteles* (Hym. Braconidae) parasite d'*Enconista miniosaria* DUP. (Lep. Geometridae). — *Bulletin de la Société Entomologique de France* **1926**: 228-232.
- GODFRAY H.C.J. (1994): Parasitoids, behavioral and evolutionary ecology. — Princeton University Press, 473 pp.
- GÜLER Y. & N. CAGATAY (2011): Systematical studies on the genus *Bracon* (*Glabrobracon*) (Hymenoptera: Braconidae, Braconinae) in Ankara province. — *Turkish Journal of Zoology* **25** (3): 275-286.
- GÜÇLÜ C. & H. ÖZBEK (2011): A contribution to the knowledge of the subfamily Brachistinae (Hymenoptera: Braconidae) in Turkey. — *Journal of the Entomological Research Society* **13** (3): 15-26.
- HALIDAY A.A. (1834): Essay on parasitic Hymenoptera. — *Entomological Magazine* **2** (iii): 225-259.
- HALIDAY A.A. (1836): Essay of parasitic Hymenoptera. *Entomological Magazine* **4** (1): 38-59.
- İNANÇ F. & A. BEYARSLAN (2001): A study on Microgastrinae (Hym.: Braconidae) species in Gökçeada and Bozcaada. — *Turkish Journal of Zoology* **25**: 287-296.
- IVANOV P. (1899): Braconids cryptogastres et areolaires des environs de Koupiansk avec tableaux synoptiques des genres et des especes de ces insectes. — *Trudy Obshchestva Ispytatelei Prirody pri Imperatorskom Kharkovskom Universitete* **33**: 273-382.
- JAFARI-AHMADABADI N., KARIMI J., MODARRES AWAL M. & E. RAKHSHANI (2011): Morphological and molecular methods in identification of *Aphidius transcaspicus* Telenga (Hym.: Braconidae: Aphidiinae) parasitoid of *Hyalopterus* spp. (Hom.: Aphididae) with additional data on Aphidiinae phylogeny. — *Journal of Entomological Research Society* **13** (2): 91-103.
- JAFARI-AHMADABADI N. & M. MODARRES AWAL (2012): Aphid parasitoids associations on stone fruit trees in Khorasan-e-Razavi province (Iran) (Hymenoptera: Braconidae: Aphidiinae). — *Munis Entomology and Zoology* **7** (1): 418-423.
- KAVALLIERATOS N.G. & D. LYKOURESSIS (1999): Redescription of *Aphidius transcaspicus* Telenga and its distinction from *Aphidius colemani* Viereck (Hymenoptera Braconidae). — *Bollettino del Laboratorio di Entomologia Agraria Filippo Silvestri* **55**: 105-112.
- KAVALLIERATOS N.G., LYKOURESSIS D., SARLIS G., STATHAS G., SANCHIS SEGOVIA A. & C. ATHANASSIOU (2001): The Aphidiinae (Hymenoptera: Ichneumonoidea: Braconidae) of Greece. — *Phytoparasitica* **29** (4): 306-340.
- KAVALLIERATOS N.G., ATHANASSIOU C.G., TOMANOVIĆ Z., PAPADOPOULOS G.D. & B.J. VAYIAS (2004): Ssonal abundance and effect of predators (Coleoptera: Coccinellidae) and parasitoids (Hymenoptera: Braconidae, Aphidiinae) on *Myzus persicae* (Hemiptera, Aphidoidea) densities on tobacco: a two year study from central Greece. — *Biologia (Bratislava)* **59** (5): 613-619.

- KAVALLIERATOS N.G., TOMANOVIĆ Z., STÁRY P., ATHANASSIOU C.G., FASSEAS O., STANISAVLJEVIĆ L.Z. & M.A. VERONIKI (2005): *Praon* HALIDAY (Hymenoptera: Braconidae: Aphidiinae) of southeastern Europe: Key, host range and phylogenetic relationships. — *Zoologischer Anzeiger* **243**: 181-209.
- KAVALLIERATOS N.G., TOMANOVIĆ Z., SARLIS G., FASSEAS C. & N. EMMANOUEL (2006): A review of the genus *Aphidius* Nees in Greece (Hymenoptera: Braconidae: Aphidiinae) with the description of a new species. — *Journal of Natural History* **40** (17-18): 1179-1197.
- KAZEMZADEH S., RAKHSHANI E. & A. REZWANI (2010): Aphid parasitoids (Hymenoptera, Braconidae, Aphidiinae) fauna of northeastern Khorasan province and the first report of one species from Iran. — *Proceedings of 19<sup>th</sup> Iranian Plant Protection Congress*, 31 July-3 August, 2010.
- KOKUJEV N.R. (1895): Fragments Braconologiques IV-V. — *Trudy Russkago Entomologicheskago Obshchestva* **29**: 363-392.
- KOKUJEV N.R. (1900): Symbolae ad cognitionem Braconidarum Imperii Rossici et Asiae Centralis. III. — *Trudy Russkago Entomologicheskago Obshchestva* **34**: 541-569.
- KOKUJEV N.R. (1902): *Trudy Yaroslav*. — *Estest.-istor. Obshch.* **1**: 5.
- KOS K., TOMANOVIĆ Z. & S. TRDAN (2009): Aphid parasitoids in Slovenia and their significance in biological control. — *Acta Entomologica Slovenica* **17** (1): 5-12.
- KUNDU G.C., SHARMA V.K., ANAND R.A. & S. RAI (1965): New records of *Diaeretiella rapae* (CURTIS) as a parasite of mustard aphid *Lipaphis arysimi* (KALT.) (Hemiptera: Aphididae). — *Indian Journal of Entomology* **27**: 487-498.
- LOZAN A.I. (2004): Braconis wasps from Crete Island (Greece) with description of *Chorebus tobiasi* sp.n. (Hymenoptera: Braconidae). — *Trudy Russkago Entomologicheskago Obshchestva* **75** (1): 122-126.
- LOZAN A.L., BELOKOBYSKIY S., VAN ACHTERBERG C. & M.T. MONGHAM (2010): Diversity and distribution of Braconidae, a family of parasitoid wasps in the Central European peatbogs of South Bohemia, Czech Republic. — *Journal of Insect Science (Tucson)* **10** (16): 1-21.
- LUZHETZKI A.N. (1960): Aphid parasites of Uzbekistan. [In: JACHONTOV V.V., LUZHETZKI A.N. & ALIMDZHANOV R.A. Useful and pest insects of Uzbekistan]. — *Izd. An Uzbekistan SSR*. Tashkent, 89-193. [in Russian]
- MACKAEUR M. (1959a): Die europäischen Arten der Gattungen *Praon* und *Areoparaon* (Hymenoptera: Braconidae, Aphidiinae). — *Eine Monographische Revision Beiträge zur Entomologie* **9**: 810-865.
- MACKAEUR M. (1959b): Einige Blattlatis-Schupfwespen aus Israel (Hymenoptera: Braconidae, Aphidiinae). — *Beiträge zur Entomologie* **9** (7/8): 866-873.
- MAREDA K.M., DAKOUO D. & D. MOTA-SANCHEZ, (2003): Integrated pest management in the global arena. — *Cromwell Press, Trowbridge, U.K.* 512 pp.
- MARSHALL T.A. (1885): Monograph of British Braconidae. Part I. — *Transactions of the Entomological Society of London* **1885**: 1-280.
- MARSHALL T.A. (1889): A monograph of British Braconidae. Part III. — *Transactions of the Entomological Society of London* **1889**: 149-211.
- MARSHALL T.A. (1890): Les Braconides. — In: ANDRÉ E. (ed.) 'Species des Hyménoptères d'Europe et d'Asie, 4, 609 pp. hall, T.A. (1899). Descriptions de Braconides. — *Bulletin du Museum National d'Histoire Naturelle, Paris*, **5**: 372-373.
- MARSHALL T.A. (1900): Les Braconides (Supplement). — In: ANDRÉ E. (ed.), 1897-1900 'Species des Hyménoptères d'Europe et d'Algerie' Paris. Tome 5 bis 369 pp.
- MARTINEZ Y. & F. De P. SAEZ (1874): Lista de los himenópteros por el autor a M. Leon Dufour. — *Actas Soc. Esp. Hist. Nat.* **3**: 30.

- MEDINA M. (1895): Datos para el conocimiento de la fauna himenopterológica española. — Acta Soc. Esp. H. Nat., pp. 11-108, 142-156.
- MEJIAS D.Z., HANSON P.E., STÁRY P. & E. RAKHSHANI (2011): Parasitoid (Hym., Braconidae, Aphidiinae) complex of the black citrus aphid, *Toxoptera citricidius* (KIRKALDY) (Hem., Aphididae) in Costa Rica and its relationships to nearby areas. — Journal of the Entomological Research Society **13** (3): 107-115.
- MESCHELOFF E. & D. ROSEN (1988): Biosystematic studies on the Aphidiidae of Israel (Hymenoptera: Ichneumonoidea). 1. Introduction and key to genera. — Israel Journal of Entomology **22**: 61-73.
- MESCHELOFF E. & D. ROSEN (1989): Biosystematic studies on the Aphidiidae of Israel (Hymenoptera: Ichneumonoidea). 2. The genera *Ephedrus* and *Praon*. — Israel Journal of Entomology **23**: 75-100.
- MESCHELOFF E. & D. ROSEN (1990a): Biosystematic studies on the Aphidiidae of Israel (Hymenoptera: Ichneumonoidea). 3. The genera *Adialytus* and *Lysiphlebus*. — Israel Journal of Entomology **24**: 35-50.
- MESCHELOFF E. & D. ROSEN (1990b): Biosystematic studies on the Aphidiidae of Israel (Hymenoptera: Ichneumonoidea). 4. The genera *Pauesia*, *Diaeretus*, *Aphidius* and *Diaeretiella*. — Israel Journal of Entomology **24**: 51-91.
- MODARRES AWAL M. (1997): Family Braconidae (Hymenoptera), pp. 265-267. — In: MODARRES AWAL M. (ed.), List of agricultural pests and their natural enemies in Iran. Ferdowsi University Press, 429 pp.
- MOKHTARI A., SAHRAGARD A., REZVANI A. & L. SALEHI (2000): Study on five parasitoid species of the stone fruit aphids in Guilan province. — Proceedings of the 14<sup>th</sup> Iranian Plant Protection Congress, p. 278.
- MOSSADEGH M.S., STÁRY P. & H. SALEHIPOUR (2011): Aphid parasitoid in a dry lowland area of Khuzestan, Iran (Hymenoptera: Braconidae: Aphidiinae). — Asian Journal of Biological Science **4**: 175-181.
- NAZARI Y., ZAMANI A.A., MASOUMI S.M., RAKHSHANI E., PETROVIC-OBRAĐOVIC O., STÁRY P. & Ž. TOMANOVIC (2012): Diversity and host association of aphid parasitoid (Hymenoptera: Braconidae: Aphidiinae) in the farmlands of western Iran. — Acta Entomologica Musei Nationalis Pragae **52**: 559-584.
- NEMATOLLAH M.R. (2010): Insect community structure in sunflower fields of Esfahan province, Iran. — Proceedings of 19<sup>th</sup> Iranian Plant Protection Congress, 31 July-3 August, 2010.
- NEES VON ESENBECK C.G. (1834): Hymenopterorum Ichneumonibus affinium monographie, genera Europaea et species illustrantes. I. Stuttgartiae et Tubingae, 320 pp.
- NIXON G.E.J. (1986): A revision of the European Agathidinae (Hymenoptera: Braconidae). — Bulletin of the British Museum (Natural History) (Entomology) Ser. **52** (3): 183-242.
- PAPP J. (1960): A revision of the tribe Braconini ASHM. from the Carpathian Basin (Hymenoptera, Braconidae). — Annales Historico-Naturales Musei Nationalis Hungarici **52**: 367-380.
- PAPP J. (1967): Ergebnisse der zoologischen Forschungen von Dr. Kaszab in der Mongolei 101. Braconidae (Hymenoptera) II. — Acta Zoologica Academiae Scientiarum Hungaricae **13**: 91-226.
- PAPP J. (1971): Results of the zoological explorations of Dr. Kaszab in Mongolia. Hymenoptera: Braconidae II. — Acta Zoologica Academiae Scientiarum Hungaricae **17**: 51-90.
- PAPP J. (1987): A survey of the European species of *Apanteles* FOERSTER (Hymenoptera, Braconidae: Microgastrinae), X. The *glomeratus*-group 2 and the *cultellatus*-group. — Annales Historico-Naturales Musei Nationalis Hungarici **79**: 207-258.
- PAPP J. (1989): A contribution to the braconid fauna of Israel (Hymenoptera), 2. — Israel Journal of Entomology **22** (1988): 45-59.

- PAPP J. (1998): Contributions to the braconid fauna of Cyprus (Hymenoptera, Braconidae: Braconinae). — *Entomofauna* **19**: 241-251.
- PAPP J. (2003): Braconidae (Hymenoptera) from Greece, 5. — *Notes fauniques de Gembloux*, n° **53**: 21–54.
- PAPP J. (2004): A Bkony-hegység gyilkosfűrkész faunájának alapvetése (Hymenoptera: Braconidae). V. Agathidinae, Alysiniinae. — *Folia Musei Historico-Naturalis Bakonyiensis* **21**: 111-154.
- PAPP J. (2007): Braconidae (Hymenoptera) from Greece, 6. — *Notes fauniques de Gembloux* **60** (3): 99-127.
- PAPP J. (2008): A Dél-Dunántúl gyilkosfűrkész faunájának alapvetése (Hymenoptera, Braconidae), VIII. 14 alcsalád. — *Somogyi Múzeumok Közleményei* **18**: 85-100.
- PAPP J. (2003): Braconidae (Hymenoptera) from Korea, XXI species of fifteen subfamilies. — *Acta Zoologica Academiae Scientiarum Hungaricae* **49** (2): 115-152.
- PAPP J. (2007): Braconidae (Hymenoptera) from Greece, 6. — *Notes fauniques de Gembloux* **60** (3): 99-127.
- PAPP J. (2009a): contribution to the braconid fauna of the former Yugoslavia, V. Ten subfamilies (Hymenoptera, Braconidae). — *Entomofauna* **30** (1): 1-36.
- PAPP J. (2009b): Braconidae (Hymenoptera) from Mongolia, XVII. Eleven subfamilies. — *Acta Zoologica Academiae Scientiarum Hungaricae* **55** (2): 139-173.
- PAPP J. (2011-2012): A contribution to the Braconid fauna of Israel (Hymenoptera: Braconidae), 3. — *Israel Journal of Entomology* **41-42** (2011-2012), 165-219.
- PASCUAL X.P. (2010): *Braconidos exodontos de España* (Hymenoptera, Braconidae, Alysiniinae). — Tesis Doctoral, Salamanca, 10 de abril de 2010.
- PETERSEN-SILAV R., PUJADE-VILLAR J., NAVES P., SOUSA E. & S. BELOBYLSKIJ (2012): Parasitoids of *Monochamus galloprovincialis* (Coleoptera, Cerambycidae), vector of the pine wood nematode, with key for the Palaearctic region. — *Zookeys* **251**: 29-48.
- PHILIP B.J., JIAN J.D., ROGER W.F., MARK W.F. & V.D. ROY (2012): Parasitoid guilds of *Agrilus* Woodborers (Coleoptera: Buprestidae): Their diversity and potential for use in biological control. — *Psyche* **2012**: 1-10.
- PRIORE R. & E. TREMBLAY (1981): *Pseudovipio castrator* F. (Hymenoptera, Braconidae) entomofago di *Gortyna xanthenes* GERM. (Lepidoptera, Noctuidae). — *Bollettino de laboratorio di Entomologia Agraria Filippo Silvestri* **38**: 275-281.
- QUILIS-PÉREZ M. (1929): 1930: Los parasitas de los pulgones. Dos nuevas especies de «*Aphidius*». — *Boletín de Patología Vegetal y Entomología Agrícola*, Madrid **4**: 49-64.
- QUILIS-PÉREZ M. (1931): Notas biológicas sobre los Aphidiidae españoles. — *An. Inst. Nac. Valencia Trab. Lab. Hist. Nat.* No. 20, 36 pp.
- QUILIS-PÉREZ M. (1932): Tres especies interesantes de Aphidiidae (Hymenoptera: Braconidae) de Bologna. — *Bollettino del Laboratorio di Entomologia Bologna* **5**: 49-52.
- RAKSHANI E. (2012): Aphid parasitoid (Hym., Braconidae, Aphidiinae) associated with pome and stone fruit trees in Iran. — *Journal of Crop Protection* **1** (2): 81-95.
- RAKSHANI E., TALEBI A.A., MANZARI S., RESVANI A. & H. RAKSHANI (2006). An investigation on alfalfa aphids and their parasitoids in different parts of Iran, with a key to the parasitoids (Hemiptera: Aphididae; Hymenoptera: Braconidae: Aphidiinae). — *Journal of Entomological Society of Iran* **25** (2): 1-14.
- RAKSHANI E., TALEBI A.A., MANZARI S. TOMANOVIĆ Z., STÁRY P. & A. RESVANI (2007a). Preliminary taxonomic study of the genus *Praon* (Hymenoptera: Braconidae: Aphidiinae) and its host associations in Iran. — *Journal of Entomological Society of Iran* **26** (2): 19-34.
- RAKSHANI E., TALEBI A.A., STÁRY P., TOMANOVIĆ Z. & S. MANZARI (2007): Aphid-parasitoid (Hymenoptera, Braconidae, Aphidiinae) associations on willows and poplars in Iran. — *Acta Zoologica Academiae Scientiarum Hungaricae* **53** (3): 281-292.

- RAKHSHANI E., TALEBI A.A., STÁRY P., TOMANOVIĆ Z., MANZARI S. & N.G. KAVALLIERATOS (2008): A review of *Aphidius* Nees (Hymenoptera, Braconidae, Aphidiinae) in Iran: host association, distribution and taxonomic notes. — *Zootaxa* **1767**: 37-54.
- RAKHSHANI E., STÁRY P. & Z. TOMANOVIĆ (2012a): Species of *Aphidius* Forster, 1862 (Hymenoptera: Braconidae: Aphidiinae) in Iran: taxonomic notes and tritrophic association. — *ZooKeys* **221**: 81-95.
- RAKHSHANI E., KAZEMZADEH S., STÁRY P., BARADOEI H., KAVALLIERATOS N.G., CETKOVIĆ A., POPOVIĆ A., BODLAH I. & Z. TOMANOVIĆ (2012): Parasitoids (Hymenoptera: Braconidae: Aphidiinae) of northeastern Iran: Aphidiine-aphid-plant associations, key and description of a new species. — *Journal of Insect Science* **12**: 1-26.
- RAO R.S.N. & S.V.V. SATYANARAYANA (1984): Note on more additions to the natural enemy complex of *Spodoptera litura* F. and *Myzus persicae* on tobacco in Andhar Pradesh. — *Current Science* **53** (4): 201.
- RAO V.P., CHACKO M.J., PHALAK V.R. & H. DINESHRAO (1969): Leaf-feeding caterpillars of paddy and their natural enemies in India. — *Journal of the Bombay Natural History Society* **66**: 455-477.
- RATZBURG J.T.C. (1844): Die Ichneumon der Forstinsecten in forstlicher und entomologischer Beziehung. — Berlin, 224 pp.
- RATZBURG J.T.C. (1848): Die Ichneumon der Forstinsecten in forstlicher und entomologischer Beziehung. — Zweiter Band, Berlin, 238 pp.
- RAYCHAUDHURI D.N., DUTTA S., AGARWALA B.K., RAYCHAUDHURI D. & S.K. RAHA (1982): Some parasites and predators of aphids in Northeastern India and Bhutan. II. — *Entom.* **7**: 11-22.
- ROSEN D. (1966): Keys for the identification of the hymenopterous parasites of scale insects, aphids and aleyrodids on citrus in Israel. — *Scripta Hierosolymitana* **18**: 43-79.
- ROSEN D. (1967): The hymenopterous parasites and hyperparasites of aphids on citrus in Israel. — *Annals of the Entomological Society of America* **60** (2): 394-399.
- ROSEN D. (1969): The parasites of coccids, aphids and aleyrodids on citrus in Israel: Some zoogeographical considerations. — *Israel Journal of Entomology* **4**: 45-53.
- SAHA J.L., PODDAR S.C., DAS S.K., AGARWALA B.K. & D. RAYCHAUDHURI (1982): Studies of aphid parasites (Hymenoptera: Aphidiidae) from Himachal Pradesh, India. — *Akitsu* **44**: 1-12.
- SAKENIN H., FISCHER M., SAMIN N., IMANI S., PAPP J., GHAHARI H. & J. RASTEGAR (2011): A faunistic survey on the Braconidae wasps (Hymenoptera: Braconidae) from northern Iran. — *Proceedings of Global Conference on Entomology, March 5-9, 2011 Chiang Mai, Thailand*, p. 123.
- SAKENIN H., NADERIAN H., SAMIN N., RASTEGAR J., TABARI M. & J. PAPP (2012): On a collection of Braconidae (Hymenoptera) from northern Iran. — *Linzer biologische Beiträge* **44** (2): 1319-1330.
- SAMIN N., SAKEMIN H., IMANI S. & M. SHOJAI (2011): A study on the Braconidae (Hymenoptera) of Khorasan province and vicinity, Northeastern Iran. — *Phaega* **39** (4): 137-143.
- SCHLINGER E.I. & J.C. HALL (1960): Biological notes on pacific coast aphid parasites and lists of California parasites (Aphidiinae) and their aphid hosts. — *Annals of the Entomological Society of America* **53**: 404-415.
- SCHLINGER E.I. & M. MACKAEUR (1963): Identity, distribution, and hosts of *Aphidius matricariae* Haliday, an important parasite of the green peach aphid, *Myzus persicae* (Hymenoptera: Aphidiidae-Homoptera: Aphidoidea). — *Annals of the Entomological Society of America* **56**: 648-653.
- SETHUMADHAVAN T.V. & P.R. DHARMADHIKARI (1969): Notes on *Diaertiella rapae* (M'INTOSCH) (Hym.: Aphidiidae) parasitic on aphids on crucifers in India. — *Commonwealth Institute of Biological Control Technical Bulletin* **11**: 173-177.

- SHARKEY M.J. (1993): Family Braconidae, pp. 362-395. — In: GOULET H. & J.T. HUBER (eds), Hymenoptera of the world: An identification guide to families. — Agriculture Canada Research Branch, Monograph No. 1894E, 668 pp.
- SHENEFELT R.D. (1970): Hymenopterum Catalogus (nov. ed.), Part 6. Braconidae. 3, 307-428.
- SHESTAKOV A. (1928): Ad cognitionem Braconidarum tribus Agathidini. I. — Entomologicheskoye Obozreniye **22**: 223-228.
- SHOJAI M. (1998): Entomology (ethology, social life and natural enemies) (biological control) III. — Tehran University Publications 1681, 550 pp.
- SIMBOLOTTI G. & C. VAN ACHTERBERG (1992): Revision of the West Palearctic species of the genus *Bassus* FABRICIUS (Hymenoptera: Braconidae). — Zoologische Verhandelingen Leiden **281**: 1-80.
- SIMBOLOTTI G. & C. VAN ACHTERBERG (1999): Revision of the west Palearctic species of the genus *Agathis* LATREILLE (Hymenoptera: Braconidae: Agathidinae). — Zoologische Verhandelingen Leiden **325**, 167 pp.
- SINGH R., UPADHYAYA B.S., SINGH D. & H.C. CHAUDHARY (1999): Aphids (Homoptera: Aphididae) and their parasitoids in north-eastern Uttar Pradesh. — Journal of Aphidology **13**: 49-62.
- SMITH C.F. (1944): The Aphidiinae of North America (Braconidae: Hymenoptera). Contributions in Zoology and Entomology, No. 6. — The Ohio State University Columbus, U.S.A., 153 pp.
- STANKOVIĆ S., ŽIKIĆ V. & M. ILIĆ (2010): *Betula* species as host plant for various insects parasitized by braconids (Hymenoptera: Braconidae) in Serbia. — Biologica Nyssana **1** (1-2): 117-122.
- STÁRY P. (1964): Food specificity in the Aphidiidae (Hymenoptera). — Entomophaga **9**: 91-99.
- STÁRY P. (1965a): Aphid parasites of aphids in the USSR (Hymenoptera: Aphidiidae). — Acta Faunistica Entomologica Musei Nationalis Pragae **10** (96): 187-239.
- STÁRY P. (1965b): Integrated control of the mealy plum aphid *Hyalopterus pruni* (Geoffr.) in Czechoslovakia (Hom., Aphididae). — Annales de la Société entomologique de France N. **5** (1): 177-180.
- STÁRY P. (1966): Aphid parasites of Czechoslovakia. A review of the Czechoslovak Aphidiidae (Hymenoptera). — Praha: Academia; The Hague: Dr. W. Junk B.V. 242 pp.
- STÁRY P. (1973): A review of the *Aphidius*-species (Hymenoptera: Aphidiidae) of Europe. — Annotationes Zoologicae et Botanicae **84**: 1-83.
- STÁRY P. (1979): Aphid parasites of the Central Asian Area. Academia, Praha, 127 pp.
- STÁRY P. (2006): Aphid parasitoids of the Czech Republic (Hymenoptera: Braconidae, Aphidiinae). — Academia Praha: 430 pp.
- STÁRY P. & J. KADDOU (1971): Fauna and distribution of aphid parasites (Hymenoptera: Aphidiidae) in Iraq. — Acta Faunistica Entomologica Musei Nationalis Pragae **14** (169): 179-198.
- STÁRY P. & R.C. BHAGAT (1978): Records and descriptions of aphid parasitoids from Kashmir, India (Hymenoptera, Aphidiinae). — Acta Entomologica Bohemoslovaca **75** (6): 387-393.
- STÁRY P. & A.K. GHOSH (1975): Aphid parasites (Hymenoptera: Aphidiidae) from Maghalaya. — Oriental Insects **9** (3): 343-349.
- STÁRY P. & A.K. GHOSH (1978): Further records of aphid parasitoids (Hymenoptera: Aphidiidae) from Maghalaya, India. — Oriental Insects **12** (1): 77-80.
- STÁRY P. & A.K. GHOSH (1979): Redescription of *Trioxys nepalensis* (TAKADA) and new host records of some aphid parasitoids (Hymenoptera: Aphid) from Maghalaya, India. Oriental Insects **13** (1-2): 41-45.

- STÁRY P., REMAUDIERE G., GONZALES D. & S. SHAHROKHI (2000): A review and host association of aphid parasitoids (Hymenoptera: Braconidae, Aphidiinae) of Iran. *Parasitica* **56**: 15-41.
- STÁRY P. & A.K. GHOSH (1983): Aphid parasitoids of India and adjacent countries (Hym.: Aphidiidae). Zoological survey of India. — Technical Monographs, vol. 7, 96 pp.
- STÁRY P., RAKHSHANI E., TOMANOVIĆ Z., HOELMER K., KAVALLIERATOS N.G., YU J., WANG M. & G.E. HEIMPEL (2010): A new species of *Lysiphlebus* FOERSTER, 1862 (Hymenoptera: Braconidae, Aphidiinae) attacking soybean aphid, *Aphis glycines* MATSUMURA (Hemiptera: Aphidiidae) from China. — *Journal of Hymenoptera Research* **19** (1): 179-186.
- STRAND E. (1918): Über W. Horn's litauische entomologische. — *Mitteilungen* **7**: 149-160.
- SUBBA RAO B.R. & A.K. SHARMA (1960): Three new species of Braconidae from India. — *Proceedings of the Indian Academy of Sciences* **51** (B): 82-88.
- SUBHRANI S., SINGH M.P. & T.K. SINGH (2006): Biodiversity of Aphidiine parasitoids (Hymenoptera: Braconidae) on certain crops in Manipur. — *Journal of Aphidology* **20**: 1-4.
- SZÉPLIGETI G. (1902): A palaeartikus *Bracon*-felek rendszere. 2 alcсалad: *Exothecus*-felek (Exothecinae). — *Termesztud. Kozl.: Allattani Kozlem.* **1**: 126-137.
- SZÉPLIGETI G. (1904): Übersicht der Gattungen und Arten der paläarktischen Braconiden. — *Mathematische und Naturwissenschaftlichen Berichte aus Ungarn* **19** (1901): 145-203.
- SZÉPLIGETI G. (1905): Übersicht der Gattungen und Arten der paläarktischen Braconiden. — *Mathematische und Naturwissenschaftlichen Berichte aus Ungarn* **20** (1902): 55-64.
- TAHERI S. & E. RAKHSHANI (2013): Identification of aphid parasitoid (Hym., Braconidae, Aphidiinae) and determination of their host relationships in Southern Zagros. — *Journal of Plant Protection* **27** (1): 85-95.
- TAKADA H. (1968): Aphidiidae of Japan (Hymenoptera). — *Insecta Matsumurana* **30** (2): 67-124.
- TAKADA H. & N.D. RISHI (1980): Records of fifteen species of Aphidiidae (Hymenoptera) from Kashmir, India, with descriptions of three new species. — *Konty* **48** (2): 234-240.
- TAKAHASHI R. (1925): Aphididae of Formosa, Part 4. — *Rep. Govt. Res. Inst. Dep. Agric. Formosa* **6**: 1-74.
- TALEBI A.A., RAKHSHANI E., TOMANOVIĆ Z., STÁRY P. & N. RAJABI-MAZHAR (2009): Aphid parasitoids (Hymenoptera: Braconidae: Aphidiinae) associated with medicinal plants in Iran. — *American-Eurasian Journal of Sustainable Agriculture* **3**: 205-219.
- TELENGA N.A. (1936): Braconidae. Pt.1. Hymenoptera. Fauna USSR. — *Hymenoptera* **5** (2): 402 pp.
- TELENGA N.A. (1941): Family Braconidae, subfamily Braconinae (continuation) and Sigalphinae. Fauna USSR. — *Hymenoptera* **5** (3), 466 pp.
- TELENGA N.A. (1949): Faunal list of parasites of the family Braconidae (Hymenoptera). Tadzhikistan. — *Entomologicheskoye Obozrniye* **30**: 381-388.
- TELENGA N.A. (1955): Braconidae, subfamily Microgastrinae, subfamily Agathidinae. Fauna USSR. — *Hymenoptera* **5** (4), 311 pp.
- TELENGA N.A. (1958): Contribution to the fauna of the genus *Aphidius* – parasites of aphids in Central Asia. — *Uzbekskii Biologicheskii Zhurnal, Tashkent* **2**: 51-56. [in Russian]
- THOMSON C.G. (1892): XLVII. Bidrag till Braconidernas Kannedom. I. Cyclostomi. — *Opuscula Entomologica*. **XVII**: 1777-1861.
- THOMSON C.G. (1895): LII. Bidrag till Braconidernas Kannedom. — *Opuscula Entomologica* **20**: 21-41.
- THOMSON W.R. (1928): The European corn borer and its controlling factors in Europe. — *Technical Bulletin* **59**: 1-61.

- TIZADO E.J. & E. NUNEZ-PEREZ (1991): Apotacion al conocimiento en Espana de los parasitoides du pulgones de la subfamilia Aphidiinae (Hym. Braconidae). — Boletin de Sanidad Vegetal Plagas **17** (4): 545-554.
- TOBIAS V.I. (1963): The species of the genus *Agathis* LATR. (Hymenoptera, Braconidae) from Kazakhstan and Middle Asia. — Entomologicheskoye Obozreniye **42**: 864-883. [Entomological Review **42**: 468-478].
- TOBIAS V.I. (1964): New species and genera of braconids (Hymenoptera, Braconidae) from Khasakhstan. — Trudy Zoologicheskogo Instituta Akademii Nauk SSSR **34**: 177-234.
- TOBIAS V.I. (1976): [Braconids of the Caucasus (Hymenoptera, Braconidae).] (in Russian). — Opređ. Faune SSSR. Nauka Press. Leningrad **110**, 286 pp.
- TOBIAS V.I. (1986): Keys to the insects of the European part of USSR. Hymenoptera. — In: MEDVEDEV G.S. (ed.), Opređitel' Nasekomykh Evrospeiskoi Tsasti SSSR **3**, Peredpontdatokrylye 4. Opr. Faune SSSR. **145**: 1-501.
- TOBIAS V.I. (1995): Keys to the insects of the European part of USSR, ed.; G.S. Medvedev, **3** (4). — New Delhi, Baba Barkla Nath, pp. 900.
- TOMANOVIĆ Z., KAVALLIERATOS N.G., ATHANASSIOU C.G. & L.Z. STANISAVLJEVIĆ (2003): A review of the West Palaearctic aphidiines (Hymenoptera: Braconidae, Aphidiinae) parasitic on *Uroleucon* spp., with the description of a new species. — Annales de la Société Entomologique de France **39** (4): 343-353.
- TOMANOVIĆ Z., RAKHSHANI E., STÁRY P., KAVALLIERATOS N.G., STANISAVLJEVIĆ L.Z., ZIKIC V. & C.G. ATHANASSIOU (2007): Phylogenetic relationships between the genera *Aphidius* Nees and *Lysaphidus* (Hymenoptera: Braconidae: Aphidiinae) with description of *Aphidius iranicus* sp. Nov. The Canadian Entomologist **139**: 297-307.
- TOMANOVIĆ Z., STÁRY P., KAVALLIERATOS N.G., GAGIC V., PLEČAS M., JANKOVIC M., RAKHSHANI E., CETKOVIC A. & A. PETROVIC (2012): Aphid parasitoids (Hymenoptera: Braconidae: Aphidiinae) in wetland habitats in western Palaearctic: key and associated aphid parasitoid guilds. — Annales de la Societe Entomologique de France (Nouvelle Serie) **48** (1-2): 189-198.
- TORMOS J. (1987): Further developments in the study of Spanish Alysine (Hymenoptera, Braconidae). III. — Boletin de la Asociacion Espanola de Entomologia **11**: 321-324.
- TREMBLAY E. (1967): Ricerche sugli Imenotteri parassiti. Sulla posizione sistematica degli Aphidiinae (Hymenoptera: Braconidae). — Bolletín Laboratori Entomologia Agraria Portici **25**: 93-108.
- YAGHUBI P. & A. SAHRAGARD (1998): Introduction of Aphidiidae (parasitoid of aphids) in Guilan province. — Proceedings of 13<sup>th</sup> Iranian Plant Protection Congress, p. 257.
- YU D.S., VAN ACHTERBERG C. & K. HORSTMANN (2012): World Ichneumonoida 2005. Taxonomy, biology, morphology and distribution [Braconidae]. — Taxapad 2006 (Scientific names for information management) Interactive electronical catalogue on DVD/CD-ROM. Vancouver.
- VAN ACHTERBERG C. (1989): Revision of the subtribe Monoctonina Mackauer sensu stricto STRICTO (Hymenoptera: Braconidae: Aphidiinae). — Zoologische Mededelingen **63** (1): 1-22.
- VAN DRIESCHE R.V. & T.S. BELLOWES (1996): Biological control. — Academic Press, New York, 539 pp.
- VIERECK H.L. (1911): Descriptions of six new genera and thirty-one new species of ichneumon flies. — Proceedings of the United States national Museum **40**: 170-196.
- WHARTON R.A. (1993): Bionomics of the Braconidae. — Annual Review of Entomology **38**: 121-143.
- WATANABE C. & H. TAKADA (1964): Occurrence of two species of the genus *Praon* HALIDAY in Japan (Hymenoptera: Aphidiidae). — Insecta Matsumurana **27**: 8-11.
- WATANABE C. & H. TAKADA (1967): Aphidiid parasites of the green peach aphid, *Myzus persicae* (SULZER) in Japan. — Mushi **40**: 83-87.
- WESMAEL C. (1835): Monographie des Braconides de Belgique. (Suite). — Nouveaux Memoires de l'Academie Royales des Sciences et Belles-Lettres de Bruxelles **11**: 1-166.

- ZETTEL H. & A. BEYARSLAN (1992): Über Agathidinae aus der Türkei (Hymenoptera: Braconidae). — *Entomofauna* **13** (5): 121-132.
- ŽIKIĆ V., BRAJKOVIĆ M. & Z. TOMANOVIĆ (2000): Preliminary results of braconid fauna research (Hymenoptera: Braconidae) found in Sićevo Gorge, Serbia. — *Acta entomologica Serbica* **5** (1/2): 95-110.
- ŽIKIĆ V., VAN ACHTERBERG C. & S. STANKOVIĆ (2010): A contribution to the Braconidae, Hybrizontidae (Hymenoptera: Ichneumonoidea) and Stephanidae (Hymenoptera: Stephanoidea) from the south-west Balkans. — *Acta entomologica Serbica* **15** (2): 227-235.
- ŽIKIĆ V., STANKOVIĆ S.S. & M. ILIĆ (2012): Checklist of the genus *Bracon* (Hymenoptera: Braconidae) in Serbia. — *Biologica Nyssana* **3** (1): 21-29.

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