

## Aphid parasitoid species (Hymenoptera: Braconidae: Aphidiinae) of central submountains of Iran

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Received: 02. July 2012 / Accepted: 11. November 2012 / Available online: 01. January 2013 / Printed: June 2013

**Abstract.** Aphid parasitoid species (Hymenoptera: Braconidae: Aphidiinae) of central submountain parts of Iran were investigated. A total of 40 parasitoid species, reared from 80 aphid taxa occurring on more than 126 plant taxa in the studied area were recorded while 400 tritrophic parasitoid-aphid-plant associations were detected. These included 239 new records of tritrophic associations for Iran, while 17 parasitoid-host aphid associations are new for science. The aphidiines found in the present study are keyed and illustrated with line drawings. In addition, several species/biotypes, such as *Lysiphlebus confusus* Tremblay & Eady, *Praon yomenae* Takada, *Adialytus salicaphis* (Fitch) and *Aphidius colemani* Viereck, showed unusual variability in several morphological characteristics (e.g. number of palpomeres, wing-venation patterns and setation of forewing margin) in comparison to European and Mediterranean individuals. Further studies are necessary in order to confirm taxonomic status of some central Iranian species or biotypes, including studies using molecular markers.

**Key words:** aphid parasitoids, tritrophic associations, biotypes, submountains, Iran.

### Introduction

Aphids are considered one of the most important and widely distributed crop pests in various agroecosystems worldwide (Minks & Harrewijn 1988). They cause damage to plants either directly or indirectly by disease transmission, production of honeydew and subsequent build up of sooty moulds, or through changes in microfloral communities on plant surfaces, which may influence crop physiology (van Emden & Harrington 2007). Among aphid natural enemies, members of the subfamily Aphidiinae (Hymenoptera: Braconidae) are considered as important biological control agents (Hagvar & Hofsvang 1991). They are solitary koinobiont endoparasitoids of aphids (Starý 1970, 1988) with cosmopolitan distribution.

Aphidiines have been taxonomically and faunistically investigated in several parts of Iran.

Starý et al. (2000) reviewed aphidiine species from Iran and listed 49 species, which were updated for a total of 66 recognized species (Rakhshani et al. 2005a,b,c, 2006, 2007a,b, 2008a,b, Rezaei et al. 2006, Starý et al. 2005, Tomanović et al. 2007, Kazemzadeh et al. 2009, Bagheri-Matin et al. 2010, Barahoei et al. 2010, 2011, Darsouei et al., 2011, Mossadegh et al. 2011). However, few papers have been published on aphid parasitoids of central parts of Iran, which remain poorly investigated (Mehrparvar et al. 2005, Rakhshani et al. 2008b, 2010, Barahoei et al. 2010, Ferrer-Suay et al. 2013).

The central part of Iran comprises a large territory with complex climatic condition, which has been affected by different geographical elements. The major part of the territory is desert in which the vegetation is adapted to the hot and arid climate as well as to the saline soil. Common plant species like shrubs and grasses can only be found

in some valleys and on mountain tops. The mountains (Zagros) at the west and (Alborz) at the north enclosed the area in which several broad basins, or plateaus, comprise major agricultural and urban settlements. Climatically, extremely different environments of cold winters with subfreezing temperatures, relatively mild spring and hot summers are major characters of the respective areas.

Additional knowledge about distribution, taxonomy and tritrophic associations (plant-host aphid-primary parasitoid) of aphid parasitoids in various habitats of central parts of Iran is presented in this paper. Besides, a key for identification of 40 aphidiines species with note about taxonomic status of some species/biotypes is provided.

### Material and Methods

This study was carried out in six provinces of Iran, located at central part of the country (Fig. 1). Nine years of sampling (2002-2011) were performed from natural, semi-natural and cultivated areas. A wide variety of host plants in various wild and agricultural landscapes, including field crops, fruit orchards, grasslands, forests and urban areas were sampled. The whole part of the plants was inspected for existence of aphid colonies. Plants bearing aphid colonies were carefully cut off and placed inside semi-transparent plastic boxes. A circular opening covered with muslin, was cut into the lid of each box and for ventilation.

Collected materials were transferred subsequently to the laboratory, and maintained for 2-3 weeks under laboratory conditions with temperature and RH set at  $22\pm 5^{\circ}\text{C}$  and 65%, respectively. Adequate numbers of healthy adult aphids from the same boxes were collected and preserved in 70% ethanol for later identification. The boxes were inspected daily for emergence of adult aphidiinae parasitoids. Once detected, they were carefully picked up using an aspirator and dropped into 75% ethanol for later identification. Few specimens of female parasitoid species were separately dissected and slide mounted in Hoyer medium for the detailed study of taxonomic characteristics. External morphology of parasitoids was studied using a Nikon SMZ645 stereomicroscope and a Nikon

Eclipse E200 microscope equipped with a Sony Digital camera. Measurements were taken in TPSdig ver 2.05 (Rohlf 2006) using linear measurements option with a series of captured images. Illustrations were prepared based on captured images using Adobe CS2 softwares. Morphological terminology used in this paper follows Sharkey & Wharton (1997) for parasitoids and Blackman & Eastop (2006) for aphids. The specimens were deposited in collection of ER (Department of Plant Protection, University of Zabol). Abbreviations of the name of collectors were as follows: AA - Azam Alipour; EN - Elham Nader; ER - Ehsan Rakhshani; HB - Hossein Barahoei; MA - Mahmoud Alikhani; ST - Saeid Taheri. In the results of the present study, new records of aphidiines on aphids are indicated with an asterisk in front of each aphid name and new records of aphidiines on aphid-host plant associations are indicated with a dagger in front of each host plant name. Records of aphidiines on aphids which are new for science are indicated by two asterisks (\*\*).



Figure 1. Map of the sampling area indicating six of central provinces.

### Results

A total of 40 parasitoid species, reared from 80 aphid taxa occurring on more than 126 plant taxa in the studied area, were recorded, while 400 tritrophic parasitoid-aphid-plant associations were detected. These included 239 new records of tritrophic associations for Iran, and 17 parasitoid-aphid associations are new for science.

### Key to species (Females)

1. Forewing venation with seven closed cells. Forewing 3RSb vein reaching wing margin (Figs. 39-42).....2
  - Forewing venation with four closed cells or fewer. Forewing 3RSb vein not reaching wing margin (Figs. 18-38, 43-57).....5
2. Forewing 3RSa vein distinctly shorter than 2RS vein (Fig. 41). Length of petiole less than 1.5X as long as its width (Fig. 84). Ovipositor sheath stout (Fig. 126).....*Ephedrus persicae*
  - Forewing 3RSa vein subequal (Fig. 40) or distinctly longer (Figs. 39, 42) than 2RS vein. Length of petiole more than 1.8X as long as its width (Figs. 82, 83, 85). Ovipositor sheath elongated (Figs. 124, 125, 127).....3

3. Forewing 3RSa vein subequal to 2RS vein (Fig. 40). Ovipositor sheath considerably elongated with pre-apical depression (Fig. 125). Flagellomere I with distinct constriction in basal third with presence of short longitudinal placodes..... *Ephedrus niger*  
 – Forewing 3RSa vein distinctly longer than 2RS vein (Figs. 39, 42). Ovipositor sheath moderately elongated, without pre-apical depression (Figs. 124, 127). Flagellomere I almost cylindrical with long longitudinal placodes..... **4**
4. Flagellomere I yellow, 1.3–1.5X as long as flagellomere II bearing 1–2 longitudinal placodes. Antennal segments gradually thickened toward tip..... *Ephedrus cerasicola*  
 – Flagellomere I brown with narrow yellowish ring, 1.1–1.3X as long as flagellomere II bearing 3–5 longitudinal placodes. Antennae filliform..... *Ephedrus plagiator*
5. RS+M vein present (Figs. 48–54). Notauli complete (Figs. 58–63)..... **6**  
 – RS+M vein absent (Figs. 18–38, 43–47, 55–57). Notauli incomplete..... **12**
6. Lateral lobes of mesonotum pubescent or with few hairless areas (Figs. 60, 62). Forewing m-cu vein coloured throughout (Figs. 51, 53)..... **7**  
 – Lateral lobes of mesonotum with large hairless areas (Figs. 58, 59, 61, 63). Forewing m-cu colourless throughout, or coloured only in distal segment (Figs. 48–50, 52, 54)..... **8**
7. Petiole with few sparse hairs (Fig. 92). Dorsal outline of ovipositor sheath almost straight; ovipositor sheath rounded at apex (Fig. 136)..... *Praon rosaecola*  
 – Petiole with short dense dorsal hairs (Fig. 94). Dorsal outline of ovipositor sheath concave; ovipositor sheath lanceolate (Fig. 138)..... *Praon volucre*
8. Length of petiole less than 1.2X as long as its width. Dorsal aspect of petiole with a pair of triple hairs at posterior margin (Fig. 91). Ovipositor sheath stout, length/width ratio less than 2.4 (Fig. 135)..... *Praon flavinode*  
 – Length of petiole more than 1.3X as long as its width. Dorsal aspect of petiole with sparse to dense hairs located between spiracles (Figs. 89, 90, 93, 95). Ovipositor sheath elongated, with length/width ratio more than 2.5 (Figs. 133, 134, 137, 139)..... **9**
9. Forewing m-cu vein coloured in the first third proximally and remaining part effaced (Fig. 49). Dorsal aspect of petiole with 4–5 short setae at each sides (Fig. 90)..... *Praon exsoletum*  
 – Forewing m-cu colourless throughout (Fig. 48, 52, 54). Dorsal aspect of petiole with more than 10 short setae at each sides (Figs. 89, 93, 95)..... **10**
10. Face densely pubescent. Antennae 20–21-segmented. Ovipositor sheath elongated (Fig. 133)..... *Praon barbatum*  
 – Face less densely or sparsely pubescent. Antennae 17–19-segmented. Ovipositor sheath not elongate (Fig. 137, 139)..... **11**
11. Antenna (17)18–19-segmented. Dorsal aspect of propodeum densely pubescent (Fig. 75). Flagellomere I entirely yellow..... *Praon yomenae*  
 – Antenna 16–17-segmented. Dorsal aspect of propodeum sparsely pubescent (Fig. 93). Flagellomere I yellowish at base, gradually darkening to brown at apex..... *Praon unitum*
12. Terminal metasomal sternum without prongs (Figs. 103–119; 123–139)..... **13**  
 – Terminal metasomal sternum with two prongs (Figs. 120–122; 140–142)..... **36**
13. Forewing M+m-cu vein complete (Figs. 21–34, 47) or incomplete (Figs. 20, 44–46)..... **14**  
 – Forewing M+m-cu vein absent (Figs. 18, 19, 38)..... **33**
14. Dorsal aspect of propodeum carinated, with complete or incomplete central areola (Figs. 65–67, 69). Ovipositor sheath truncated at tip (Figs. 105–119, 132)..... **15**  
 – Dorsal aspect of propodeum smooth or with two divergent carinae in lower part (Fig. 64, 68). Ovipositor sheath pointed at tip (Figs. 129–131)..... **31**
15. Propodeum with wide central pentagonal areola (Fig. 69). Ovipositor sheath with long and strongly curved setae (Fig. 132)..... *Pauesia antennata*  
 – Propodeum with narrow complete or incomplete central pentagonal areola (Figs. 65, 66). Ovipositor sheath with short and straight or slightly curved setae (Figs. 105–119)..... **16**
16. Propodeum with incomplete central areola (Fig. 65). Labial palpomeres 1-segmented (Fig. 3). Dorsal aspect of petiole with a pair of convergent grooves (Fig. 78)..... *Aphidius arvensis*

- Propodeum with complete central areola (Fig. 66). Labial palpomeres 2-3-segmented (Figs. 4-14). Dorsal aspect of petiole without convergent grooves ..... 17
- 17. Anterolateral area of petiole rugose (Fig. 100)..... *Aphidius ervi*
- Anterolateral area of petiole costate (Figs. 99, 102) or costulate (Fig. 101) ..... 18
- 18. Anterolateral area of petiole costate (Figs. 99, 102)..... 19
- Anterolateral area of petiole costulate (Fig. 101)..... 21
- 19. Antennae 14-15-segmented. Labial palpomeres 2-segmented. Maxillary palpomeres 3-4-segmented. Anterolateral area of petiole with 3-4 costae (Fig. 99)..... *Aphidius colemani*
- Antennae 16-17-segmented. Labial palpomeres 2-3-segmented. Maxillary palpomeres 4-segmented (Fig. 4). Anterolateral area of petiole with 5-6 costae (Figs 99, 102)..... 20
- 20. Forewing stigma length/with ratio of 3.10-3.40 (Fig. 21). R1 vein equal or slightly shorter than stigma. r-m vein equal or slightly shorter than 3RSb vein (0.80-1.00) (Fig. 21). Labial palpomeres 2(3)-segmented ..... *Aphidius cf. colemani*
- Forewing stigma length/with ratio of 3.60-3.90. R1 vein half as long as stigma. Length of r-m vein half that of 3RSb (0.50-0.55) (Fig. 32). Labial palpomeres 3-segmented (Fig. 13)..... *Aphidius transcaspicus*
- 21. Labial palpi with two palpomeres (Figs. 8-10)..... 22
- Labial palpi with three palpomeres (Figs. 5, 7, 11, 12, 14)..... 24
- 22. Maxillary palpi 4-segmented (Fig. 10). R1 vein very short, 0.15-0.2X as long as stigma length (Fig. 27)..... *Aphidius popovi*
- Maxillary palpi 3-segmented; sometimes one palpus 4-segmented, the last palpomere of other palpus bears trace of two segments (Figs. 8, 9)..... 23
- 23. Antennae 14-15-segmented. Forewing stigma elongately triangular, as long as R1 vein (Fig. 25). Ovipositor sheath short (Fig. 110)..... *Aphidius matricariae*
- Antennae 16-17-segmented. Forewing stigma widely triangular, 1.9-2.4X as long as R1 vein (Fig. 26). Ovipositor sheath elongate (Fig. 111)..... *Aphidius persicus*
- 24. Antennae 13-14-segmented..... *Aphidius salicis*
- Antennae with more than 14-segments ..... 25
- 25. Ovipositor sheath elongate and strongly prominent (Fig. 109)..... *Aphidius funebris*
- Ovipositor sheath broad (Figs. 107, 113, 115-116, 118-119)..... 26
- 26. Antennae 16-18-segmented..... 27
- Antennae 19-21-segmented ..... 30
- 27. R1 vein short, 0.50-0.56X as long as stigma length (Fig. 29). Flagellomere I with 4-6 longitudinal placodes..... *Aphidius rosae*
- R1 vein long, 0.75-1.00X as long as stigma length (Figs. 28, 33, 34). Flagellomere I with 0-2 longitudinal placodes ..... 28
- 28. Forewing stigma widely triangular, 2.80-3.10X as long as its width (Fig. 34)..... *Aphidius uzbekistanicus*
- Forewing stigma elongately triangular, 3.30-3.90X as long as its width (Figs. 28, 33)..... 29
- 29. Forewing stigma with length/ wide ratio of 3.30-3.50 (Fig. 28). Ovipositor sheath strongly concave in its anterior-dorsal margin (Fig. 113)..... *Aphidius rhopalosiphii*
- Forewing stigma with length/ wide ratio of 3.70-3.90 (Fig. 33). Ovipositor sheath weakly concave in its antero-dorsal margin (Fig. 118)..... *Aphidius urticae*
- 30. Forewing stigma 1.80-2.10X as long as R1 vein (Fig. 22)..... *Aphidius eadyi*
- Forewing stigma 1.30-1.50X as long as R1 vein (Fig. 31)..... *Aphidius smithi*
- 31. Forewing stigma distinctly longer than R1 vein (Fig. 45). Petiole narrowly triangular (Fig. 87). Labial palpi 2-segmented (Fig. 16)..... *Lysiphlebus desertorum*
- Forewing stigma distinctly shorter than R1 vein (Figs. 44, 46 ). Petiole widely triangular (Fig. 88). Labial palpi 1-segmented (Fig. 17)..... 32
- 32. Forewing marginal setae longer than those on the surface (Fig. 44) ..... *Lysiphlebus confusus*
- Forewing marginal setae as long as those on the surface (Fig. 46)..... *Lysiphlebus fabarum*
- 33. Forewing r & RS vein extending over tip of R1 vein, reaching outer border of forewing (Fig. 43). Ovipositor sheath strongly downcurved (Fig. 128)..... *Lipolexis gracilis*

- Forewing r & RS vein reaching to end of R1 vein in maximum length (Figs 18, 19, 38). Ovipositor sheath different shapes (Figs. 103, 104, 123)..... **34**
- 34.** Antennae 14–15-segmented. Labial palpi 2-segmented (Fig. 15). Propodeum with narrow pentagonal areola (Fig. 67). Ovipositor sheath apically truncated (Fig. 123)..... *Diaeretiella rapae*
- Antennae 12–13-segmented. Labial palpi 1-segmented (Fig. 2). Propodeum smooth or with two short divergent carinae at lower part (Fig. 64). Ovipositor sheath apically pointed (Figs 103, 104)..... **35**
- 35.** R1 vein as long as, or slightly shorter than stigma (Fig. 19). Antennae 13-segmented. Petiole elongately triangular (Fig. 77)..... *Adialytus salicaphis*
- R1 vein distinctly longer than stigma, reaching to outer border of forewing (Fig. 18). Antennae 12-segmented. Petiole widely triangular (Fig. 76)..... *Adialytus ambiguus*
- 36.** Petiole with primary and secondary tubercles (Figs. 79-81)..... **37**
- Petiole with only primary tubercles (Figs. 96-98)..... **39**
- 37.** Antennae 10-segmented. Prongs strongly curved bearing 3 long setae on dorsal surface (Fig. 122)..... *Binodoxys brevicornis*
- Antennae 11-segmented. Prongs almost straight, slightly curved at apex, bearing 4 or more short setae on dorsal surface (Figs. 120, 121)..... **38**
- 38.** Distance between primary and secondary tubercles less than width at spiracles (Fig. 79). Ovipositor sheath sub-quadrate at base (Fig. 120). Metasoma dark brown..... *Binodoxys acalephae*
- Distance between primary and secondary tubercles more than width at spiracles (Fig. 80). Ovipositor sheath rounded at base (Fig. 121). First and last metasomal segments yellowish brown..... *Binodoxys angelicae*
- 39.** Prongs elongated, strongly curved upward, bearing 6–8 long setae at dorsal surface and a pair of ovoid shaped bristle at apex (Fig. 140). R1 vein distinctly shorter than half of stigma length (Fig. 55). Length of petiole more than 2.2X as long as its width at spiracles (Fig. 96)..... *Trioxys asiaticus*
- Prongs short, slightly curved upward, bearing 3–4 long setae at dorsal surface and a single ovoid shaped bristle at apex (Figs. 141, 142). R1 vein half as long or slightly shorter than stigma length (Figs. 56, 57). Length of petiole less than 1.8X as long as its width at spiracles (Figs. 97, 98)..... **40**
- 40.** Ovipositor sheath short, 2.10–2.20X as long as its maximum width at base (Fig. 141). R1 vein 0.60–0.80X as long as stigma (Fig. 56)..... *Trioxys complanatus*
- Ovipositor sheath elongated, 2.90–3.10X as long as its maximum width at base (Fig. 142). R1 vein half stigma length (Fig. 57)..... *Trioxys pallidus*

#### Parasitoid-aphid-plant associations

##### *Adialytus ambiguus* (Haliday, 1834)

\**Sipha elegans* del Guercio on †*Triticum aestivum*, FARS - Shiraz, 27-IV-2005, coll.: ER (1M 1F); on †*Hordeum vulgare*, ISFAHAN - Nazhvan, 05-IX-2011, coll.: EN (2M 2F); *Sipha maydis* Passerini on †*Cynodon dactylon*, KERMEN - Kerman, 22-XI-2007, coll.: HB (6M 2F).

##### *Adialytus salicaphis* (Fitch, 1855)

*Chaitophorus leucomelas* Koch on *Populus nigra*, KERMEN - Lalezar, 27-IX-2008, coll.: AA (1F), 09-X-2007, coll.: HB (5M 15F); ISFAHAN - Isfahan, 30-X-2004, coll.: ER (3M 6F); on *Populus* sp., FARS - Sepidan, 22-V-2009, coll.: ST (8M 12F); *Chaitophorus populiabae* (Boyer de Fonscolombe) on *Populus alba*, FARS - Shiraz, 27-IV-2005, coll.: ER (4M 3F); *Chaitophorus vitellinae* (Schrank) on *Salix alba*, MARKAZI - Mahallat, 22-IV-2005, coll.: ER (8M 11F); *Chaitophorus salijaponicus* ssp. *niger* Mord-

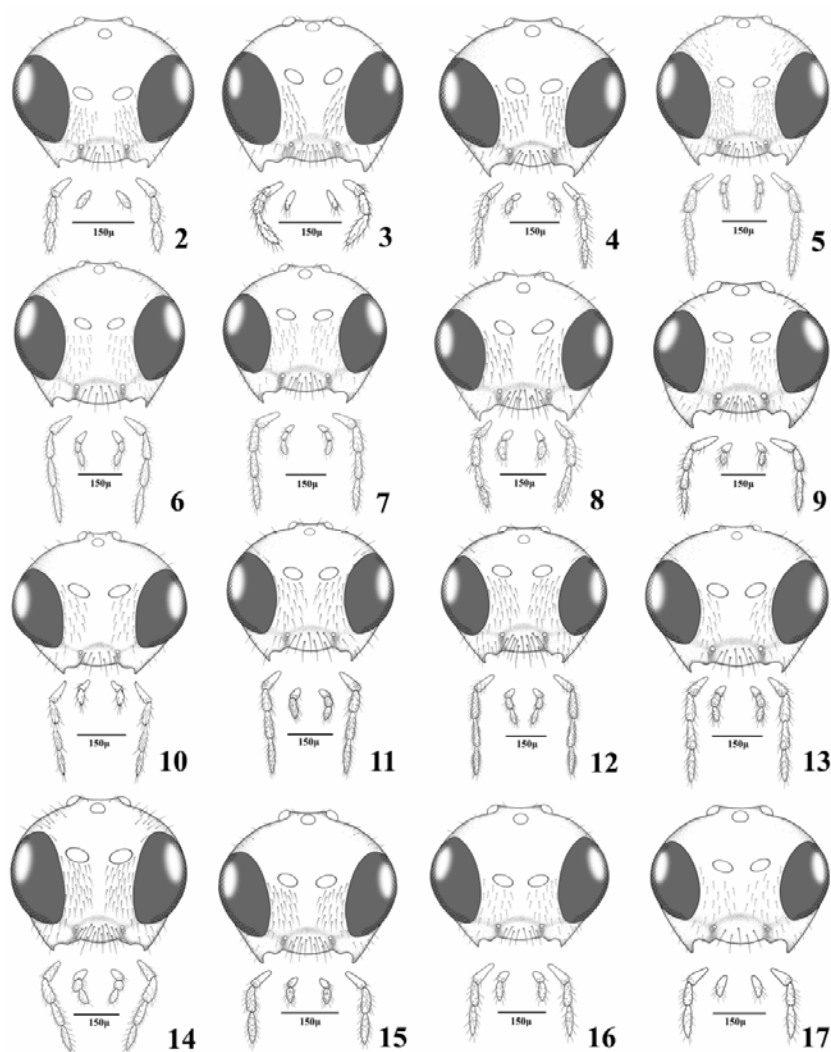
vilko on *Salix* sp., FARS - Sepidan, 23-V-2009, coll.: ST (2M 2F); *Chaitophorus* sp. on *Salix alba*, ISFAHAN - Dourche, 15-IV-2011, coll.: EN (6M 13F); ISFAHAN - Fereydoonshahr, 04-VI-2011, coll.: EN (1M 1F); ISFAHAN - Jozdan, 29-X-2010, coll.: EN (21M 21F); ISFAHAN - Najafabad, 29-X-2010, coll.: EN (3M 6F); on *Populus alba*, ISFAHAN - Falavarjan, 05-XI-2010, coll.: EN (122M 106F); ISFAHAN - Mobarakeh, 13-XI-2010, coll.: EN (1F).

##### *Aphidius arvensis* (Starý, 1960)

*Coloradoa achillea* Hille Ris Lambers on *Achillea millefolium*, FARS - Marvdasht, 03-V-2009, coll.: ST (1M 1F).

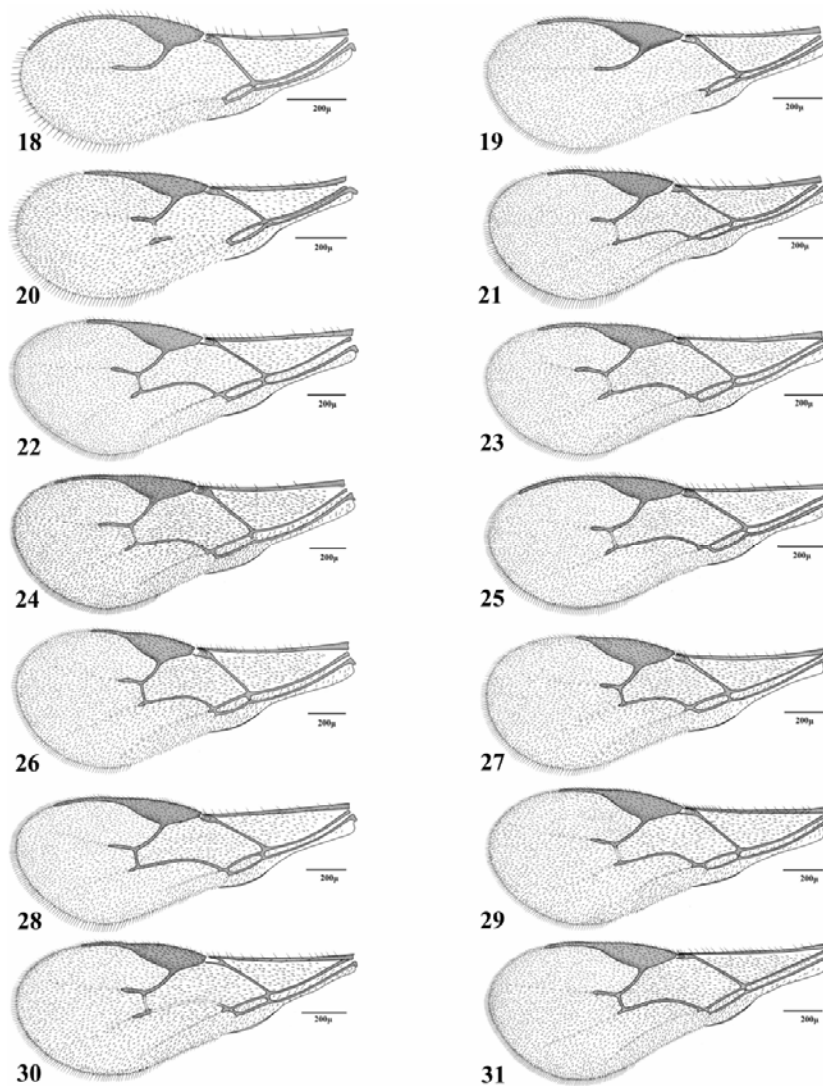
##### *Aphidius colemani* Viereck, 1912

*Aphis craccivora* Koch on †*Calendula officinalis*, KOHKILOYE & BOYERAHMAD - Basht, 28-III-2009, coll.: ST (8M 11F); on *Medicago sativa*, FARS - Marvdasht, 24-III-2009, coll.: ST (1M 1F); on †*Capsella bursa-pastoris*, FARS - Marvdasht, 21-IV-



Figures 2-17. Head and mouthparts (females). 2. *Adialytus salicaphis*, 3. *Aphidius arvensis*, 4. *Aphidius colemani*, 5. *Aphidius eadyi*, 6. *Aphidius ervi*, 7. *Aphidius funebris*, 8. *Aphidius matricariae*, 9. *Aphidius persicus*, 10. *Aphidius popovi*, 11. *Aphidius rhopalosiphii*, 12. *Aphidius smithi*, 13. *Aphidius transcaspicus*, 14. *Aphidius uzbekistanicus*, 15. *Diaeretiella rapae*, 16. *Lysiphlebus desertorum*, 17. *Lysiphlebus fabarum*.

2009, coll.: ST (3M 5F); *Aphis fabae* Scopoli on *Calendula officinalis*, ISFAHAN - Isfahan, 30-X-2004, coll.: ER (5M 13F); on †*Citrus aurantiifolia*, FARS - Marvdasht, 25-III-2009, coll.: ST (1M 4F); *Aphis nerii* Boyer de Fonscolombe on *Nerium oleander*, FARS - Shiraz, 27-III-2009, coll.: ST (18M 25F); *Aphis punicae* Passerini on *Punica granatum*, FARS - Shiraz, 25-III-2009, coll.: ST (2M 4F); FARS - Ramjerd, 07-V-2009, coll.: ST (1M 1F); \**Brachycaudus amygdalinus* (Schouteden) on †*Prunus persica*, ISFAHAN - Hoye, 15-V-2011, coll.: EN (1F); *Brachycaudus cardui* (L.) on †*Carduus australis*, FARS - Arsanjan, 13-IV-2008, coll.: ST (1M 1F); \**Macrosiphum euphorbiae* (Thomas) on *Calendula officinalis*, FARS - Shiraz, 23-IV-2009, coll.: ST (1M 3F); *Myzus persicae* (Sulzer) on *Capsicum annuum*, FARS - Noorabad, 27-III-2009, coll.: ST (5M 4F); on *Cucurbita pepo*, ISFAHAN - Isfahan, 17-XII-2003, coll.: ER (4M 6F); on *Prunus persica*, FARS - Khafrak, 23-III-2009, coll.: ST (1F); *Rhopalosiphum padi* (L.) on *Triticum aestivum*, ISFAHAN - Isfahan, 10-IV-2004, coll.: ER (11M 6F); on †*Hordeum vulgare*, ISFAHAN -



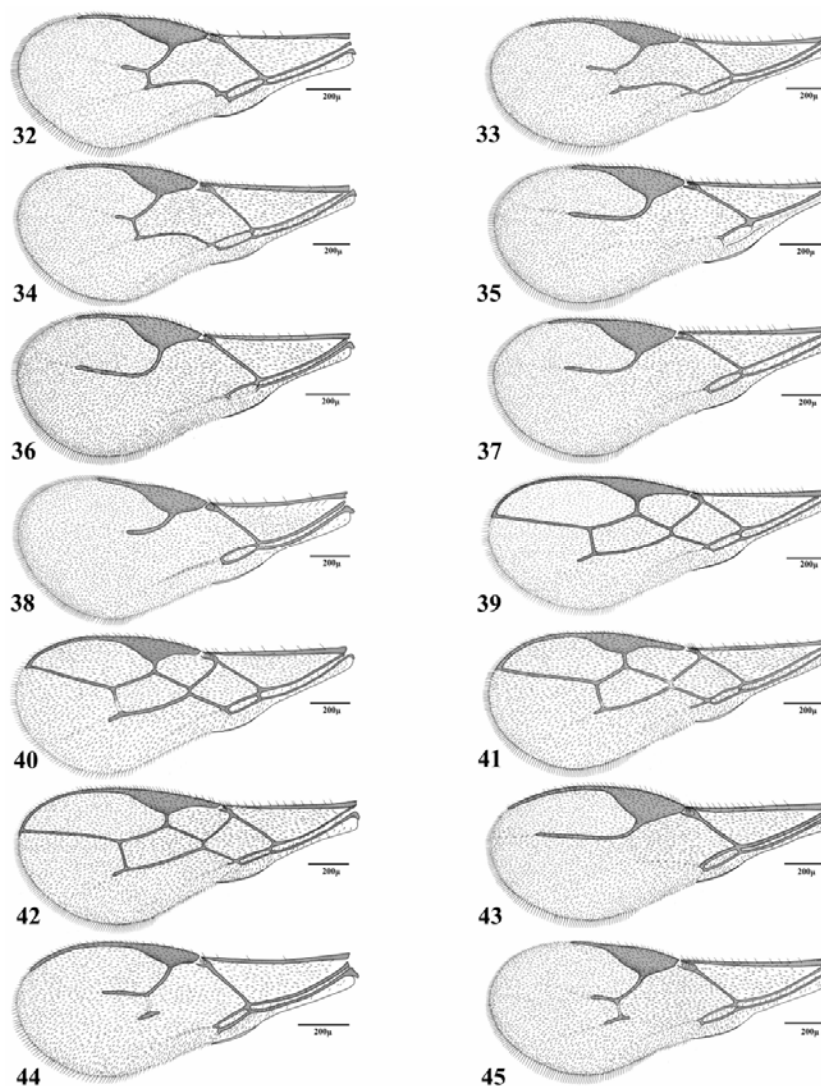
Figures 18-31. Forewings (females). 18. *Adialytus ambiguus*, 19. *Adialytus salicaphis*, 20. *Aphidius arvensis*, 21. *Aphidius colemani*, 22. *Aphidius eadyi*, 23. *Aphidius ervi*, 24. *Aphidius funebris*, 25. *Aphidius matricariae*, 26. *Aphidius persicus*, 27. *Aphidius popovi*, 28. *Aphidius rhopalosiphi*, 29. *Aphidius rosae*, 30. *Aphidius salicis*, 31. *Aphidius smithi*.

Najafa-bad, 29-X-2011, coll.: EN (1F); *Schizaphis graminum* (Rondani) on *Triticum aestivum*, ISFAHAN - Isfahan, 10-IV-2004, coll.: ER (6M 16F); FARS - Kazeroon, 28-IV-2005, coll.: ER (35M 30F); *Sitobion avenae* (Fabricius) on *Hordeum vulgare*, ISFAHAN - Mahyar, 28-IV-2005, coll.: ER (2F).

*Aphidius cf. colemani* Viereck, 1912

\**Aphis acetosae* L. on *Rumex* sp., KERMAN - Shahdad, 16-IV-2009, coll.: HB (2M 2F); \**Aphis af-*

*finis* del Guercio on *Mentha longifolia*, KERMAN - Shahdad, 16-IV-2009, coll.: HB (1M); *Aphis craccivora* Koch on *Alhagi maurorum*, KERMAN - Kahanooj, 12-III-2009, coll.: HB (2M); on †*Robinia pseudoacacia*, KERMAN - Jiroft, 25-II-2009, coll.: HB (6M 11F); on †*Polygonum* sp., KERMAN - Mahan, 04-XII-2007, coll.: HB (1F); on †*Rumex* sp., KERMAN - Sirjan, 01-XI-2008, coll.: AA (1F); *Aphis fabae* Scopoli on †*Althaea* sp., KERMAN - Jiroft, 24-

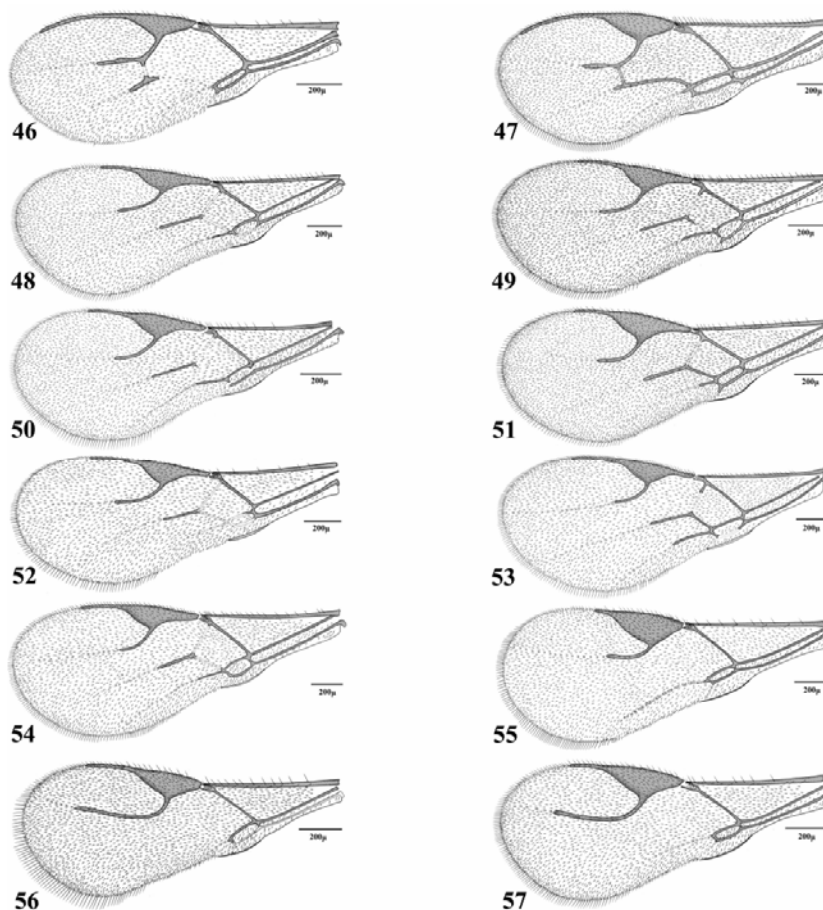


**Figures 32–45.** Forewing (females). **32.** *Aphidius transcaspicus*, **33.** *Aphidius urticae*, **34.** *Aphidius uzbekistanicus*, **35.** *Binodoxys acalephae*, **36.** *Binodoxys angelicae*, **37.** *Binodoxys brevicornis*, **38.** *Diaerettella rapae*, **39.** *Ephedrus cerasicola*, **40.** *Ephedrus niger*, **41.** *Ephedrus persicae*, **42.** *Ephedrus plagiator*, **43.** *Lipolexis gracilis*, **44.** *Lysiphlebus confusus*, **45.** *Lysiphlebus desertorum*.

II-2009, coll.: HB (3M 4F); on †*Centaurea iberica*, KERMÁN - Bidkhan, 31-X-2007, coll.: HB (2M 1F); on *Chenopodium* sp., KERMÁN - Arbabad, 25-X-2008, coll.: AA (1F); on †*Francocuria* sp., KERMÁN - Sirch, 10-X-2008, coll.: AA (1F); on †*Rumex* sp., KERMÁN - Shahdad, 28-XI-2007, coll.: HB (2M 2F); on *Solanum nigrum*, KERMÁN - Arbabad, 25-X-2008, coll.: AA (2F); KERMÁN - Sekonj, 25-X-2008, coll.: AA (1F); *Aphis gossypii* Glover on †*Cucumis sativus*, KERMÁN - Shahdad, 16-IV-

2009, coll.: HB (12M 20F); on *Cucurbita pepo*, KERMÁN - Sirch, 28-XI-2007, coll.: HB (5M 15F); KERMÁN - Kerman, 02-XI-2007, coll.: HB (1F); on †*Rumex* sp., KERMÁN - Mahan, 11-IV-2009, coll.: HB (25M 13F); on †*Salsola* sp., KERMÁN - Jiroft, 25-II-2009, coll.: HB (2M); on †*Solanum alatum*, KERMÁN - Bardseer, 01-XI-2008, coll.: AA (1F); *Aphis nerii* Boyer de Fonscolombe on *Nerium oleander*, KERMÁN - Jiroft, 25-II-2009, coll.: HB (7M 6F); \**Aphis plantaginis* Goeze on †*Plantago lanceolata*,





Figures 46-57. Forewing (females). 46. *Lysiphlebus fabarum*, 47. *Pauesia antennata*, 48. *Praon barbatum*, 49. *Praon exsoletum*, 50. *Praon flavinode*, 51. *Praon rosaeicola*, 52. *Praon unitum*, 53. *Praon volucre*, 54. *Praon yomenae*, 55. *Trioxys asiaticus*, 56. *Trioxys complanatus*, 57. *Trioxys pallidus*.

KERMAN - Shahdad, 16-IV-2009, coll.: HB (10M 10F); \**Aphis fabae solanella* Theobald on †*Solanum alatum*, KERMAN - Koochpayeh, 24-X-2007, coll.: HB (1M 4F); KERMAN - Sirch, 28-XI-2007, coll.: HB (2M 2F); *Aphis* sp. on *Plantago lanceolata*, KERMAN - Shahdad, 16-IV-2009, coll.: HB (1M 1F); on *Solanum* sp., KERMAN - Bardseer, 31-X-2007, coll.: HB (1F); *Brachycaudus helichrysi* (Kaltenbach) on *Calendula officinalis*, KERMAN - Kerman, 18-V-2009, coll.: AA (1F); KERMAN - Sirjan, 21-XI-2007, coll.: HB (55M 83F); \*\**Dysaphis pulverina* ssp. *iranica* Stroyan on †*Plantago lanceolata*, KERMAN - Shahdad, 16-IV-2009, coll.: HB (2F); \**Dysaphis radicola* (Mordvilko) on *Rumex* sp., KERMAN - Sekonj, 25-X-2008, coll.: AA (1F); \**Metopolophium dirhodum* (Walker) on †*Rosa damascena*, KERMAN - Mahan, 01-V-2009, coll.: HB (1F); *Myzus persicae* (Sulzer) on

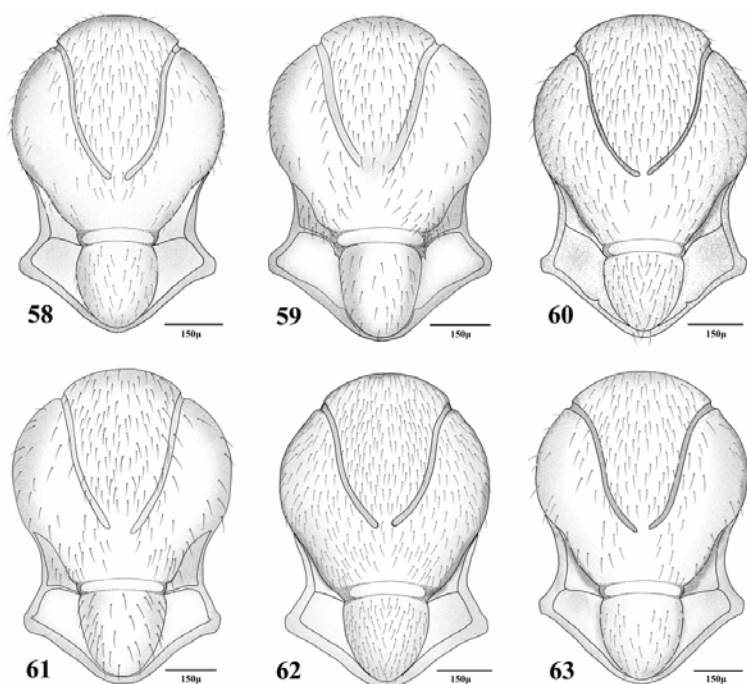
†*Althaea* sp., KERMAN - Jiroft, 24-II-2009, coll.: HB (4M 3F); on *Convolvulus arvensis*, KERMAN - Kerman, 07-XII-2007, coll.: HB (9F); on †*Helianthus annuus*, KERMAN - Jiroft, 24-II-2009, coll.: HB (4M 5F); on †*Lycopersicon esculentum*, KERMAN - Jiroft, 25-II-2009, coll.: HB (54M 61F); on †*Sisymbrium* sp., KERMAN - Kerman, 21-II-2009, coll.: HB (12M 15F); \**Rhopalosiphum maidis* (Fitch) on †*Sorghum bicolor*, KERMAN - Mahan, 31-X-2007, coll.: HB (1M 1F).

*Aphidius eadyi* Starý, Gonzalez & Hall, 1980

*Acyrtosiphon pisum* (Harris) on *Medicago sativa*, ISFAHAN - Lavarg, 28-VIII-2004, coll.: ER (7M 11F).

*Aphidius ervi* Haliday, 1834

\*\**Acyrtosiphon gossypii* Mordvilko on *Sophora*



Figures 58–63. Mesoscutum (females). 58. *Praon exsoletum*, 59. *Praon flavinode*, 60. *Praon rosaecola*, 61. *Praon unitum*, 62. *Praon volucre*, 63. *Praon yomenae*.

*alopescuroides*, KERMAN - Joopar, 12-V-2009, coll.: HB (1F); *Acyrtosiphon kondoi* Shinji on *Medicago sativa*, ISFAHAN - Borkhar, 23-IX-2004, coll.: ER (7M 4F); ISFAHAN - Shahinshahr, 27-VIII-2004, coll.: ER (5M 3F); ISFAHAN - Lavarg, 28-VIII-2004, coll.: ER (3M 2F); *Acyrtosiphon pisum* (Harris) on *Medicago sativa*, ISFAHAN - Isfahan, 29-VI-2004, coll.: ER (37M 44F); ISFAHAN - Shahinshahr, 27-IX-2004, coll.: ER (17M 19F); ISFAHAN - Lavarg, 28-IX-2004, coll.: ER (24M 39F); ISFAHAN - Khoramgah, 27-VIII-2004, coll.: ER (6M 12F); *Myzus persicae* (Sulzer) on †*Orobancha cilicica*, KERMAN - Rabor, 15-XI-2008, coll.: AA (2F); *Sitobion avenae* (Fabricius) on *Triticum aestivum*, FARS - Shiraz, 27-IV-2005, coll.: ER (1M 4F); on †*Gastridium phleoides*, ISFAHAN - Isfahan, 09-IV-2011, coll.: EN (2M 1F); \**Wahlgreniella nervata* (Gillette) on †*Rosa damascena*, KERMAN - Lalezar, 27-IX-2008, coll.: AA (1F); KERMAN - Rabor, 15-XI-2008, coll.: AA (1F).

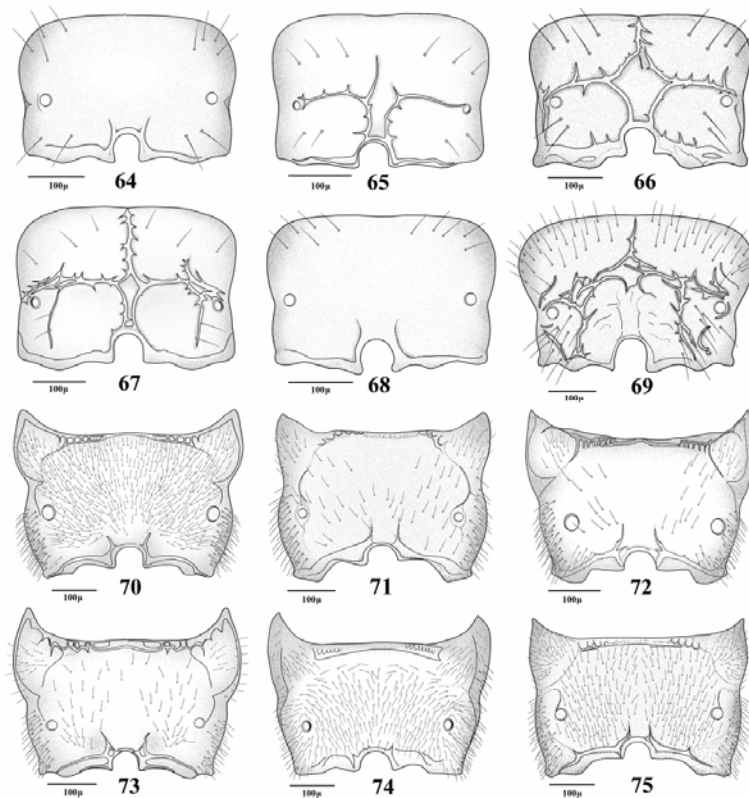
*Aphidius fumebris* Mackauer, 1961

\**Uroleucon acroptilidis* Kadyrbekov, Renxin & Shao on *Acroptilon repens*, ISFAHAN - Najafabad, 27-IV-2011, coll.: EN (4M 4F); *Uroleucon compositae* (Theobald) on *Carthamus tinctorius*, ISFAHAN -

Lavarg, 02-XII-2003, coll.: ER (39M 56F); on †*Cirsium* sp., KERMAN - Kerman, 07-V-2009, coll.: HB (2M); *Uroleucon jaceae* (L.) on *Acroptilon repens*, KERMAN - Kerman, 12-IV-2009, coll.: HB (5M 7F); 26-IV-2009, coll.: HB (3M 3F); 12-III-2009, coll.: HB (9M 36F); ISFAHAN - Lavarg, 17-IV-2003, coll.: ER (7M 12F); on *Centaurea depressa*, ISFAHAN-Lavarg, 27-XII-2004, coll.: ER (5M 7F); *Uroleucon sonchi* (L.) on *Sonchus asper*, FARS - Fasa, 09-IV-2009, coll.: ST (2M 1F); *Uroleucon* sp. on *Acroptilon repens*, KERMAN - Kerman, 10-XI-2007, coll.: HB (2M 8F); on *Catharanthus* sp., KERMAN - Kerman, 26-IV-2009, coll.: HB (1M).

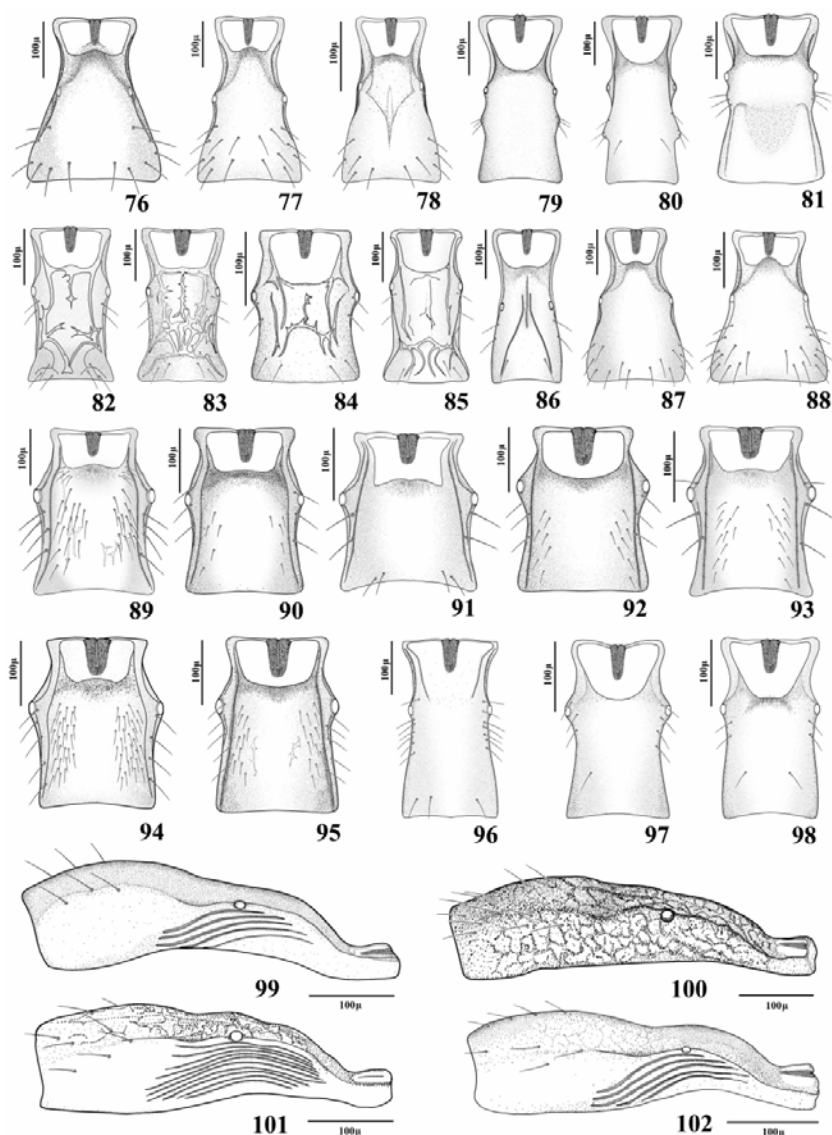
*Aphidius matricariae* Haliday, 1834

*Aphis affinis* del Guercio on *Mentha longifolia*, KERMAN - Jiroft, 25-II-2009, coll.: HB (1F); KERMAN - Sirjan, 22-IV-2009, coll.: HB (1F); FARS - Jahrom, 20-IV-2009, coll.: ST (8M 1F); *Aphis craccivora* Koch on *Capsella bursa-pastoris*, FARS - Shiraz, 27-IV-2009, coll.: ST (9M 5F); on †*Gundelia tournefortii*, KERMAN - Zarand, 06-V-2009, coll.: HB (1M); on *Medicago sativa*, ISFAHAN - Isfahan, 16-XI-2003, coll.: ER (39M 33F); ISFAHAN - Dourche, 15-IV-2011, coll.: EN (1F); on †*Robinia pseudoacacia*, ISFAHAN - Isfahan, 03-V-2011, coll.:



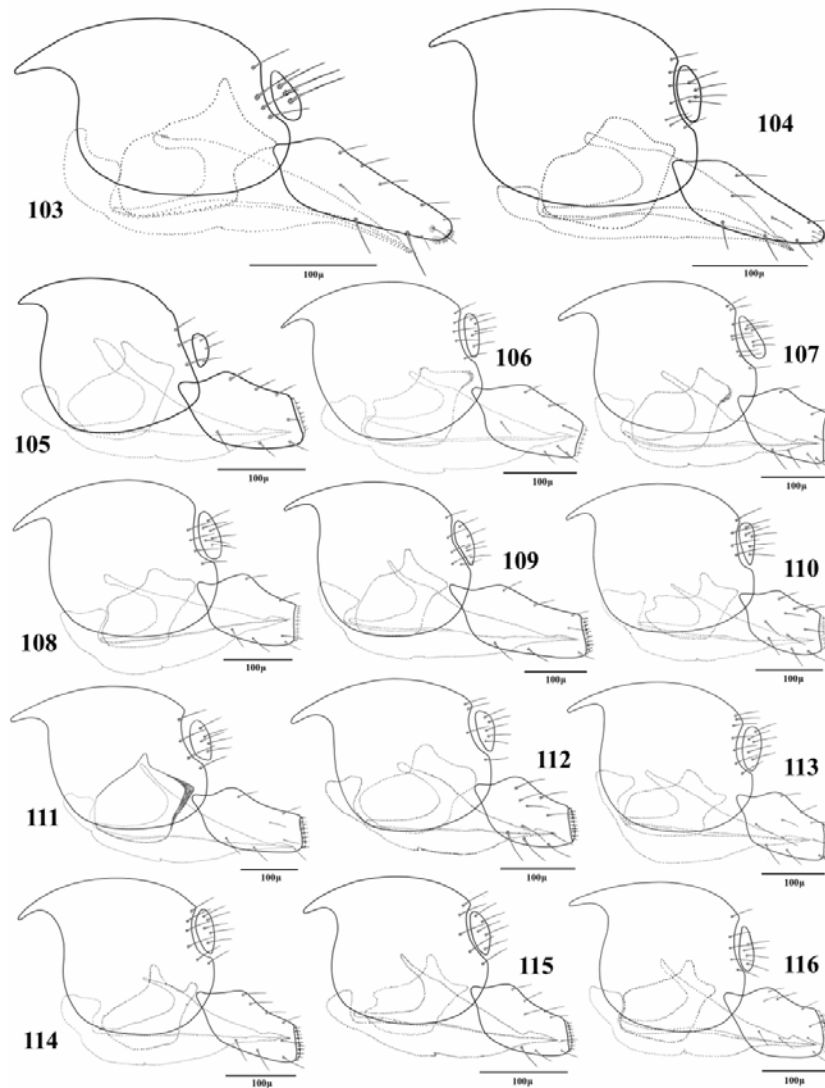
Figures 64-75. Propodeum (females). 64. *Adialytus salicaphis*, 65. *Aphidius arvensis*, 66. *Aphidius colemani*, 67. *Diaeretiella rapae*, 68. *Lysiphlebus fabarum*, 69. *Pauesia antennata*, 70. *Praon barbatum*, 71. *Praon exsoletum*, 72. *Praon flavinode*, 73. *Praon unitum*, 74. *Praon volucre*, 75. *Praon yomenae*.

EN (2F); FARS - Marvdasht, coll.: ST (2M 3F); on †*Solanum tuberosum*, KERMAN - Jiroft, 20-XI-2008, coll.: AA (1F); \*\**Aphis dlabolai* Holman on *Euphorbia* sp., KERMAN - Jiroft, 25-II-2009, coll.: HB (1M 1F); *Aphis euphorbiae* Kaltenbach on *Euphorbia* sp., FARS - Shiraz, 18-IV-2004, coll.: ER (3M 3F); *Aphis fabae* Scopoli on †*Althaea* sp., KERMAN - Jiroft, 24-II-2009, coll.: HB (2M 4F); on *Chenopodium album*, ISFAHAN - Isfahan, 09-V-2011, coll.: EN (2F); on †*Marrubium* sp., FARS - Noorabad, 28-III-2009, coll.: ST (4M 4F); on †*Picnomon acarna*, KOHKILOYE & BOYERAHMAD - Basht, 28-III-2009, coll.: ST (9M 15F); on †*Spinacia oleracea*, ISFAHAN - Filour, 09-IV-2011, coll.: EN (4M 2F); *Aphis gossypii* Glover on †*Cucumis melo*, ISFAHAN - Hoye, 18-VII-2009, coll.: EN (4F); †*Cucumis sativus*, ISFAHAN - Ghahderijan, 01-X-2010, coll.: EN (49M 52F); on †*Cucurbita pepo*, ISFAHAN - Hoye, 18-VII-2009, coll.: EN (2F); on *Solanum melongena*, ISFAHAN - Hoye, 10-VII-2009, coll.: EN (1F); \**Aphis intybi* Koch, on *Calendula officinalis*, FARS - Kazeroon, 29-III-2009, coll.: ST (1M 2F); \**Aphis plantaginis* Goeze on †*Plantago lanceolata*, KERMAN - Kahnooj, 12-III-2009, coll.: HB (3F); KERMAN - Mahan, 11-IV-2009, coll.: HB (2F); *Aphis pomi* de Geer on *Pyrus malus*, FARS - Shiraz, 18-IV-2004, coll.: ER (2M 6F); \**Aphis punicae* Passerini on †*Punica granatum*, MAKAZI - Arak (Mohajeran), 28-V-2009, coll.: MA (1F); \**Aphis solanella* Theobald on *Capsella bursa-pastoris*, ISFAHAN - Yasechah, 17-V-2009, coll.: EN (3F); on *Solanum melongena*, ISFAHAN - Hoye, 18-VII-2009, coll.: EN (1M 4F); ISFAHAN - Isfahan, 10-X-2010, coll.: EN (1M 2F); ISFAHAN - Hoye, 01-IX-2010, coll.: EN (5M 10F); 15-X-2010, coll.: EN (12M 12F); *Brachycaudus helichrysi* (Kaltenbach) on *Calendula officinalis*, ISFAHAN - Najafabad, 06-VI-2011, coll.: EN (1F); \**Brachycaudus (Appelia) tragopogonis* (Kaltenbach) on †*Tragopogon graminifolius*, MARKAZI - Arak, 16-IV-2009, coll.: MA (6F 1M); ISFAHAN - Filour, 09-IV-2011, coll.: EN (2M 1F); on †*Scrozonera isphanica*, ISFAHAN - Morghab, 19-V-2011, coll.: EN



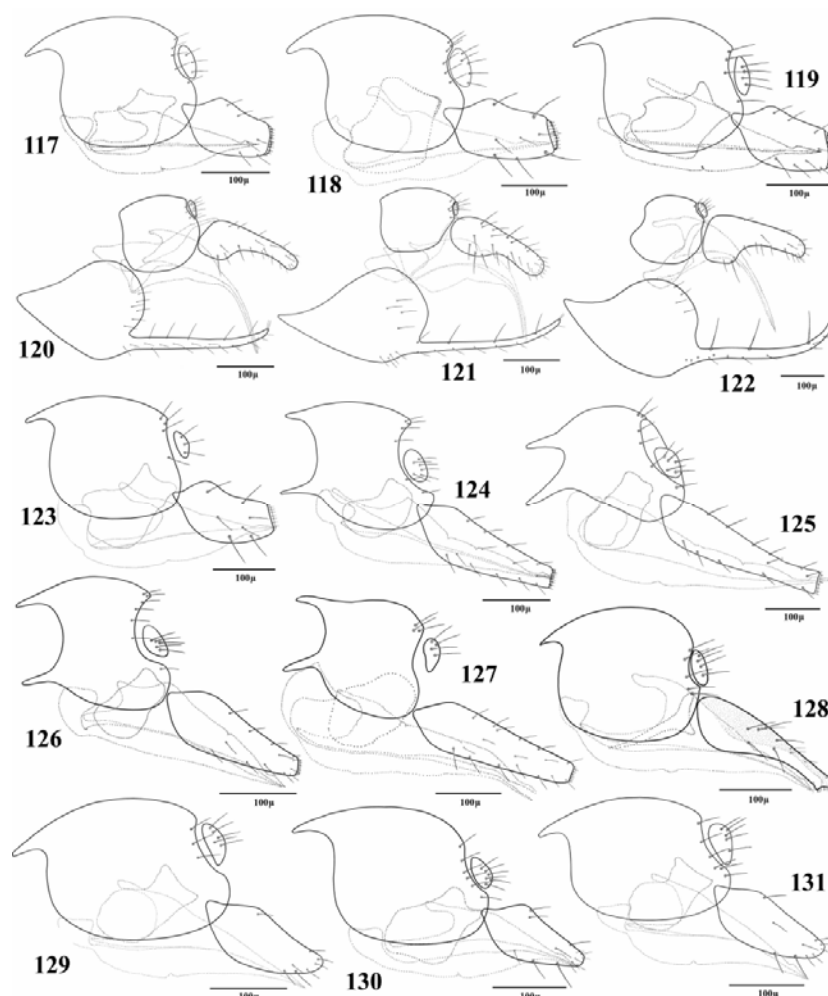
**Figures 76-102.** Dorsal and lateral aspect of petiole (females). 76. *Adialytus ambiguus*, 77. *Adialytus salicaphis*, 78. *Aphidius arvensis*, 79. *Binodoxys acalephae*, 80. *Binodoxys angelicae*, 81. *Binodoxys brevicornis*, 82. *Ephedrus cerasicola*, 83. *Ephedrus niger*, 84. *Ephedrus persicae*, 85. *Ephedrus plagiator*, 86. *Lipolexis gracilis*, 87. *Lysiphlebus desertorum*, 88. *Lysiphlebus fabarum*, 89. *Praon barbatum*, 90. *Praon exsoletum*, 91. *Praon flavinode*, 92. *Praon rosaecola*, 93. *Praon unitum*, 94. *Praon volucre*, 95. *Praon yomenae*, 96. *Trioxys asiaticus*, 97. *Trioxys complanatus*, 98. *Trioxys pallidus*, 99. *Aphidius colemani*, 100. *Aphidius ervi*, 101. *Aphidius matricariae*, 102. *Aphidius transcaspicus*.

(1F); *Eucarazzia elegans* (Ferrari) on *Salvia officinalis*, ISFAHAN - Isfahan, 16-XII-2003, coll.: ER (7M 19F); *\*Lipaphis pseudobrassicae* (Davis) on †*Brassica napus*, ISFAHAN - Goldasht, 14-IV-2011, coll.: EN (1F); *Metopolophium dirhodum* (Walker) on *Triticum aestivum*, MARKAZI - Salafchegan, 25-IV-2005, coll.: ER (5M 7F); FARS - Khafrak, 15-V-2009, coll.: ST (1F); *\*Myzus ascalonicus* Doncaster on *Brassica rapa*, KERMANY - Jiroft, 26-II-2009, coll.: HB (24M 2F); *\*Myzus certus* (Walker) on †*Catharanthus* sp., KERMANY - Sirjan, 22-IV-2009, coll.: HB (1M 2F); *Myzus persicae* (Sulzer) on †*Althaea* sp., KERMANY -



Figures 103–116. Lateral aspect of genitalia (females). 103. *Adialytus ambiguus*, 104. *Adialytus salicaphis*, 105. *Aphidius arvensis*, 106. *Aphidius colemani*, 107. *Aphidius eadyi*, 108. *Aphidius ervi*, 109. *Aphidius funebris*, 110. *Aphidius matricariae*, 111. *Aphidius persicus*, 112. *Aphidius popovi*, 113. *Aphidius rhopalosiphii*, 114. *Aphidius rosae*, 115. *Aphidius salicis*, 116. *Aphidius smithi*.

Kerman, 21-II-2009, coll.: HB (16M 25F); on †*Brassica napus*, ISFAHAN - Filour, 03-IX-2010, coll.: EN (1M 1F); ISFAHAN - Ghahderijan, 01-X-2010, coll.: EN (71M 66F); ISFAHAN - Hoye, 15-X-2010, coll.: EN (3M 4F); on *Convolvulus arvensis*, KERMÁN - Mahan, 20-XI-2007, coll.: HB (2F); on *Cucurbita pepo*, ISFAHAN - Borkhar, 16-XII-2003, coll.: ER (17M 14M); on *Helianthus annuus*, KERMÁN - Jiroft, 24-II-2009, coll.: HB (3M 4F); on *Malva neglecta*, FARS - Marvdasht, 07-IV-2009, coll.: ST (1M 2F); on †*Orobanche ciliica*, KERMÁN - Rabor, 15-XI-2008, coll.: AA (1F); on †*Sisymbrium* sp., KERMÁN - Kerman, 21-II-2009, coll.: HB (14M 17F); KERMÁN - Jiroft, 24-II-2009, coll.: HB (3M 2F); on †*Spinacia oleracea*, ISFAHAN - Filour, 09-IV-2011, coll.: EN (35M 43F); *\*Rhopalosiphum maidis* (Fitch) on *Hordeum marinum*, KERMÁN - Kerman, 12-IV-2009, coll.: HB (1F); on †*Setaria glauca*, KERMÁN - Bardseer, 31-X-2007, coll.: HB (1M 3F); KERMÁN - Sirch, 06-XI-2008, coll.: AA (1F); on



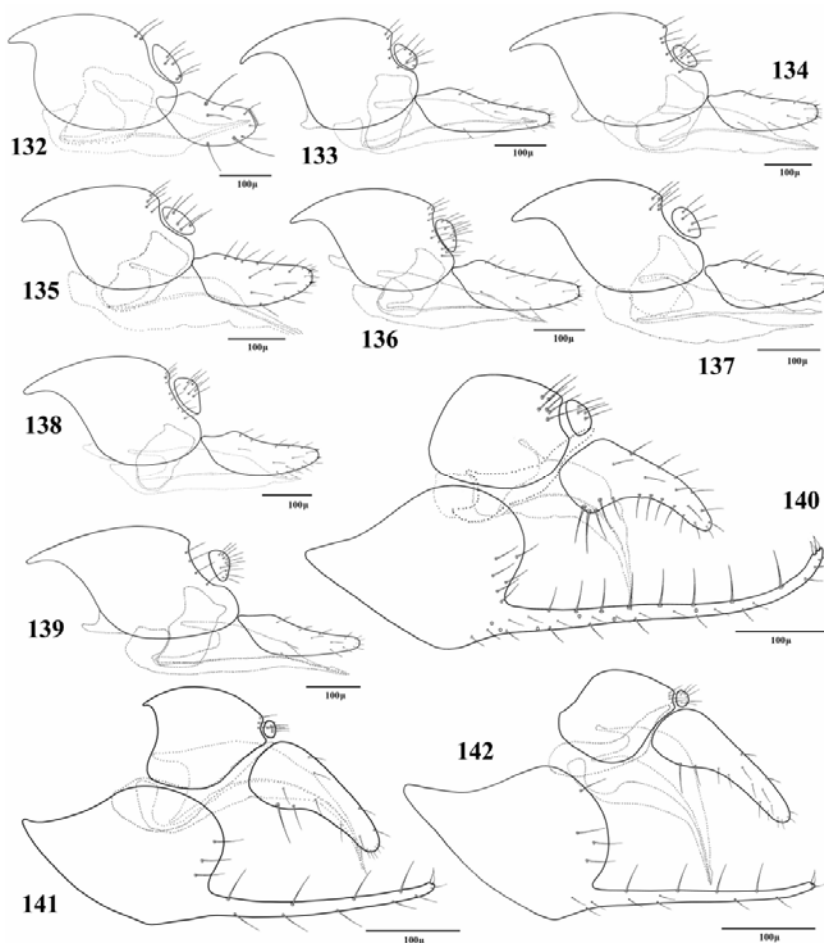
Figures 117–131. Lateral aspect of genitalia (females). 117. *Aphidius transcaspicus*, 118. *Aphidius urticae*, 119. *Aphidius uzbekistanicus*, 120. *Binodoxys acalephae*, 121. *Binodoxys angelicae*, 122. *Binodoxys brevicornis*, 123. *Diaeretiella rapae*, 124. *Ephedrus cerasicola*, 125. *Ephedrus niger*, 126. *Ephedrus persicae*, 127. *Ephedrus plagiator*, 128. *Lipolexis gracilis*, 129. *Lysiphlebus confusus*, 130. *Lysiphlebus desertorum*, 131. *Lysiphlebus fabarum*.

†*Sorghum bicolor*, KERMAN - Mahan, 31-X-2007, coll.: HB (18M 2F); *Rhopalosiphum padi* (L.) on *Triticum aestivum*, KOHKILOYE & BOYERAHMAD - Basht, 28-III-2009, coll.: ST (2F); FARS - Ramjerd, 05-IV-2009, coll.: ST (4M 3F); on †*Hordeum vulgare*, ISFAHAN - Isfahan, 09-V-2011, coll.: EN (6M 15F); *Schizaphis graminum* (Rondani) on †*Hordeum marinum*, KERMAN - Sirjan, 22-IV-2009, coll.: HB (1F); *Sitobion avenae* (Fabricius) on *Triticum aestivum*, QOM - Qom, 25-IV-2005, coll.: ER (13M 16F); on †*Gastridium phleoides*, ISFAHAN - Isfahan, 09-IV-2011, coll.: EN (2M 11F); *Sitobion*

*fragariae* (Walker) on *Malva* sp., KERMAN - Sekonj, 25-X-2008, coll.: AA (1F); *\*Vahlgreniella nervata* (Gillette) on †*Rosa damascena*, KERMAN - Lalezar, 27-IX-2008, coll.: AA (1F).

*Aphidius persicus* Rakhshani & Starý, 2006

\*\**Macrosiphoniella* sp. on †*Artemisia biennis*, KERMAN - Sarcheshmeh, 21-IV-2009, coll.: HB (3F); \*\**Uroleucon bielawskii* (Szelegiewicz) on *Lactuca* sp., KERMAN - Koohpayeh, 03-V-2009, coll.: HB (5M 1F); \*\**Uroleucon carthami* Hille Ris Lambers on †*Carthamus oxyacantha*, KERMAN - Kerman, 13-



Figures 132-142. Lateral aspect of genitalia (females). 132. *Pauesia antennata*, 133. *Praon barbatum*, 134. *Praon exsoletum*, 135. *Praon flavinode*, 136. *Praon rosaeicola*, 137. *Praon unitum*, 138. *Praon volucre*, 139. *Praon yomenae*, 140. *Trioxys asiaticus*, 141. *Trioxys complanatus*, 142. *Trioxys pallidus*.

IV-2009, coll.: HB (1M 7F); *Uroleucon chondrillae* (Nevsky) on *Chondrilla juncea*, FARS - Ramjerd, 28-IV-2009, coll.: ST (1F); *Uroleucon compositae* (Theobald) on †*Carthamus oxyacantha*, KERMÁN - Joo-par, 12-V-2009, coll.: HB (1F); on †*Carthamus tinctorius*, KERMÁN - Negar, 16-X-2008, coll.: AA (1F); on *Lactuca* sp., KERMÁN - Koohbanan, 06-V-2009, coll.: HB (5M 1F); *Uroleucon ochropus* (Hille Ris Lambers) on †*Launaea acanthodes*, KERMÁN - Kerman, 30-IV-2009, coll.: HB (3M); *Uroleucon sonchii* (L.) on †*Launaea acanthodes*, KERMÁN - Mahan, 01-V-2009, coll.: HB (2F); on †*Sonchus oleraceus*, KERMÁN - Lalezar, 09-X-2007, coll.: HB (2F); on *Sonchus* sp., KERMÁN - Kerman, 22-XI-2007, coll.: HB (1M 1F); ISFAHAN - Najafabad, 29-X-2010, coll.: EN (1M 2F); *Uroleucon* sp. on *Launaea acan-*

*thodes*, KERMÁN - Koohpayeh, 24-X-2007, coll.: HB (2F); on †*Picnomon acarna*, KERMÁN - Mahan, 13-V-2008, coll.: HB (1F).

#### *Aphidius popovi* Starý, 1978

*Amphorophora catharinae* (Nevsky) on †*Rosa damascena*, KERMÁN - Koohpayeh, 24-X-2007, coll.: HB (1M 1F); *Metopolophium dirhodum* (Walker) on †*Rosa beggeriana*, KERMÁN - Sarcheshmeh, 14-IV-2008, coll.: HB (1M 1F).

#### *Aphidius rhopalosiphi* de Stefani-Perez, 1902

*Metopolophium dirhodum* (Walker) on *Triticum aestivum*, MARKAZI - Salafchegan, 25-IV-2005, coll.: ER (4M 6F); FARS - Abadeh, 28-IV-2005, coll.: ER (2M 2F); FARS - Kharameh, 28-IV-2005, coll.: ER (3M 2F); ISFAHAN - Shahinshahr, 29-IV-2005,

coll.: ER (1M 3F); on *Hordeum vulgare*, ISFAHAN - Mahyar, 28-IV-2005, coll.: ER (4M 2F); *Rhopalosiphum padi* (L.) on *Triticum aestivum*, FARS - Marvdasht, 28-IV-2005, coll.: ER (3M 4F); FARS - Noorabad, 28-III-2009, coll.: ST (2M 4F); *Schizaphis graminum* (Rondani) on *Triticum aestivum*, FARS - Kazeroon, 28-IV-2005, coll.: ER (7M 10F); FARS - Shiraz, 27-IV-2005, coll.: ER (3M 5F); FARS - Abadeh, 28-IV-2005, coll.: ER (2M 2F); ISFAHAN - Shahinshahr, 29-IV-2005, coll.: ER (2M 1F); *Sitobion avenae* (Fabricius) on *Triticum aestivum*, QOM - Qom, 25-IV-2005, coll.: ER (11M 21F); FARS - Noorabad, 28-IV-2005, coll.: ER (1M 1F); FARS - Kharameh, 27-IV-2005, coll.: ER (8M 7F); FARS - Abadeh, 28-IV-2005, coll.: ER (2M 2F); ISFAHAN - Shahinshahr, 29-IV-2005, coll.: ER (3M 12F); on †*Gastridium phleoides*, ISFAHAN - Isfahan, 09-IV-2011, coll.: EN (1M 1F).

***Aphidius rosae*** Haliday, 1834

*Macrosiphum rosae* (L.) on *Rosa* sp., KERMAN - Jiroft, 20-XI-2008, coll.: AA (1F); ISFAHAN - Isfahan, 05-V-2004, coll.: ER (5M 7F).

***Aphidius salicis*** Haliday, 1834

*Cavariella aegopodii* (Scopoli) on *Salix* sp., KOHKILOYE & BOYERAHMAD - Yasuj, 28-V-2009, coll.: ST (9M 9F); KOHKILOYE & BOYERAHMAD - Dena, 28-V-2009, coll.: ST (7M 8F); FARS - Sepidan, 23-V-2009, coll.: ST (5M 7F).

***Aphidius smithi*** Sharma & Subba Rao, 1959

*Acyrtosiphon pisum* (Harris) on *Medicago sativa*, ISFAHAN - Lavarg, 28-VIII-2004, coll.: ER (2F); ISFAHAN - Hoye, 01-IX-2010, coll.: EN (1M 1F); \**Nearctaphis bakeri* (Cowen) on †*Trifolium campestre*, ISFAHAN - Hoye, 15-V-2011, coll.: EN (1M 1F).

***Aphidius transcaspicus*** Telenga, 1958

*Hyalopterus amygdali* (Blanchard) on *Prunus dulcis*, ISFAHAN - Meimeh, 17-V-2005, coll.: ER (9M 8F); FARS - Shiraz, 27-IV-2009, coll.: ST (8M 6F); *Hyalopterus pruni* (Geoffroy) on *Phragmites australis*, KERMAN - Jiroft, 16-IV-2009, coll.: HB (1F); ISFAHAN - Isfahan, 27-IV-2005, coll.: ER (2M 4F); ISFAHAN - Ghahderijan, 05-XI-2011, coll.: EN (17M 17F); ISFAHAN - Mobarakeh, 13-XI-2010, coll.: EN (4M 4F); on †*Prunus dulcis*, FARS - Shiraz, 27-IV-2009, coll.: ST (35M 15F); on *Prunus domestica*, ISFAHAN - Fereydoonshahr, 04-VI-2011, coll.: EN (1M 4F).

***Aphidius urticae*** Haliday, 1834

\*\**Acyrtosiphon gossypii* Mordvilko on †*Zygophyllum fabago*, Kerman - Rabor, 15-XI-2008,

coll.: AA (6F).

***Aphidius uzbekistanicus*** Luzhetskii, 1960

*Metopolophium dirhodum* (Walker) on *Triticum aestivum*, ISFAHAN - Meimeh, 17-V-2005, coll.: ER (2M 5F); *Schizaphis graminum* (Rondani) on *Avena fatua*, ISFAHAN - Isfahan, 17-V-2004, coll.: ER (2M 6F); FARS - Kazeroon, 28-IV-2005, coll.: ER (1M 2F); ISFAHAN - Meimeh, 17-V-2005, coll.: ER (22M 15F); *Sitobion avenae* (Fabricius) on *Triticum aestivum*, FARS - Noorabad, 28-IV-2005, coll.: ER (2M 2F); FARS - Shiraz, 27-IV-2005, coll.: ER (1M 3F).

***Aphidius*** spp.

*Aphis craccivora* Koch on *Atriplex* sp., KERMAN - Sirjan, 21-IV-2009, coll.: HB (1M); *Myzus ascalonicus* Doncaster on *Cardaria draba*, KERMAN - Sarcheshmeh, 21-IV-2009, coll.: HB (2M); *Rhopalosiphum maidis* (Fitch) on *Hordeum* sp., KERMAN - Koohpayeh, 03-V-2009, coll.: HB (1M); *Rhopalosiphum padi* (L.) on *Hordeum* sp., KERMAN - Sirch, 16-IV-2009, coll.: HB (1M); *Uroleucon bielawskii* (Szelegiewicz) on *Lactuca* sp., KERMAN - Koohpayeh, 03-V-2009, coll.: HB (1M).

***Binodoxys acalephae*** (Marshall, 1896)

*Aphis affinis* del Guercio on *Mentha latifolia*, ISFAHAN - Lavarg, 30-X-2004, coll.: ER (6M 4F); *Aphis craccivora* Koch on †*Sophora alopecuroides*, KERMAN - Sirjan, 01-XI-2008, coll.: AA (1F); *Aphis fabae* Scopoli on †*Phaseolus vulgaris*, ISFAHAN - Isfahan, 10-X-2010, coll.: EN (4M 2F); ISFAHAN - Falavarjan, 05-XI-2010, coll.: EN (1F); ISFAHAN - Isfahan, 17-IX-2010, coll.: EN (6M 13F); *Aphis gossypii* Glover on †*Cucumis sativus*, ISFAHAN - Najafabad, 27-VII-2010, coll.: EN (13M 31F); *Aphis (Protaphis)* sp. on †*Tragopogon graminifolius* DC., KERMAN - Lalezar, 09-X-2007, coll.: HB (7M 7F).

***Binodoxys angelicae*** (Haliday, 1833)

\**Aphis acetosae* L. on *Rumex* sp., KERMAN - Shahdad, 16-IV-2009, coll.: HB (7M 12F); 05-XI-2008, coll.: AA (1F); *Aphis affinis* del Guercio on †*Mentha longifolia*, KERMAN - Jiroft, 25-II-2009, coll.: HB (16M 16F); *Aphis craccivora* Koch on †*Alhagi mauro-rum*, KERMAN - Kahnooj, 12-III-2009, coll.: HB (1M); on *Medicago sativa*, ISFAHAN - Fereydoonshahr, 04-VI-2011, coll.: EN (3M 6F); on †*Rumex* sp., KERMAN - Shahdad, 15-XI-2008, coll.: AA (1F); *Aphis fabae* Scopoli on †*Chenopodium album*, FARS - Fasa, 09-IV-2009, coll.: ST (4M 2F); on *Marrubium* sp., FARS - Noorabad, 28-III-2009, coll.: ST (1F); on †*Rumex* sp., KERMAN - Shahdad, 28-XI-2007, coll.: HB (7M 16F); *Aphis gossypii* Glover on



†*Lycopersicum esculentum*, KERMÁN - Jiroft, 25-II-2009, coll.: HB (2F); \**Aphis idaei* van der Goot on †*Rubus persicus*, FARS - Noorabad, 27-III-2009, coll.: ST (1F); \**Aphis fabae solanella* Theobald on †*Solanum alatum*, KERMÁN - Koohpayeh, 24-X-2007, coll.: HB (5M 15F); FARS - Shiraz, 12-X-2004, coll.: ER (5M 9F).

*Binodoxys brevicornis* (Haliday, 1833)

*Cavariella aegopodii* (Scopoli) on *Salix alba*, MARKAZI - Mahallat, 22-IV-2005, coll.: ER (1M 2F).

*Binodoxys* sp.

*Metopolophium dirhodum* (Walker) on *Rosa canina*, KERMÁN - Shahdad, 15-XI-2008, coll.: AA (1F).

*Diaretiella rapae* (M'Intosh, 1855)

\**Aphis fabae* Scopoli on †*Lactuca sativa*, KERMÁN - Jiroft, 20-XI-2008, coll.: AA (1F); on †*Phaseolus vulgaris*, ISFAHAN - Falavarjan, 05-XI-2010, coll.: EN (4M); on †*Spinacia oleracea*, ISFAHAN - Filour, 09-IV-2011, coll.: EN (1F); *Aphis craccivora* Koch on †*Atriplex* sp., KERMÁN - Sirjan, 21-IV-2009, coll.: HB (1M); on †*Cardaria draba*, FARS - Ramjerd, 02-IV-2009, coll.: ST (1F); ISFAHAN - Dourche, 15-IV-2011, coll.: EN (61M 96F); ISFAHAN - Goldasht, 14-IV-2011, coll.: EN (1M); ISFAHAN - Najafabad, 06-VI-2011, coll.: EN (1M 3F); *Aphis gossypii* Glover on †*Cucumis sativus*, ISFAHAN - Ghahderijan, 01-X-2010, coll.: EN (51M 62F); on †*Salsola* sp., KERMÁN - Jiroft, 25-II-2009, coll.: HB (1F); \**Aphis fabae solanella* Theobald on †*Solanum melongena*, ISFAHAN - Hoye, 18-VII-2009, coll.: EN (3F); \**Aphis umbrellae* (Börner) on †*Malva sylvestris*, ISFAHAN - Yasechah, 17-V-2009, coll.: EN (1F); *Brevicoryne brassicae* (L.) on *Brassica juncea*, ISFAHAN - Isfahan, 11-IV-2004, coll.: ER (12M 19F); on *Brassica napus*, FARS - Farooq, 01-IV-2009, coll.: ST (17M 18F); FARS - Arsanjan, 02-IV-2009, coll.: ST (13M 17F); ISFAHAN - Goldasht, 14-IV-2011, coll.: EN (23M 51F); ISFAHAN - Isfahan, 27-XII-2004, coll.: ER (16M 27F); KERMÁN - Kerman, 16-IV-2009, coll.: HB (76M 112F); on *Brassica oleracea*, ISFAHAN - Hoye, 18-VII-2009, coll.: EN (14M 23F); 27-VII-2010, coll.: EN (47M 59F); KERMÁN - Rabor, 15-XI-2008, coll.: AA (1F); KERMÁN - Sirch, 28-XI-2007, coll.: HB (38M 33F); KERMÁN - Sirjan, 21-XI-2007, coll.: HB (228M 212F); on †*Brassica rapa*, KERMÁN - Koohpayeh, 20-V-2008, coll.: HB (82M 68F); on *Brassica* sp., KERMÁN - Baft, 22-IV-2009, coll.: HB (7M 37F); on *Descuriana Sophia*, ISFAHAN - Isfahan, 28-IX-2002; coll.: ER (1M 3F); on †*Fortuynia bungei*, KERMÁN - Sirch, 16-IV-2009, coll.: HB (13M 15F); *Diuraphis noxia* Mordvilko on

*Brumus tectorum*, ISFAHAN - Isfahan, 20-XI-2003, coll.: ER (5M 7F); on *Triticum aestivum*, ISFAHAN - Meimeh, 17-XII-2003, coll.: ER (3M 1F); KERMÁN - Jiroft, 20-XI-2008, coll.: AA (1F); FARS - Kharameh, 27-IV-2005, coll.: ER (8M 13F); MARKAZI - Salafchegan, 25-IV-2005, coll.: ER (5M 4F); QOM - Qom, 25-IV-2005, coll.: ER (2M 2F); \**Lipaphis pseudo-brassicarum* (Davis) on *Brassica napus*, ISFAHAN - Goldasht, 14-IV-2011, coll.: EN (1M 9F); *Myzus persicae* (Sulzer) on †*Brassica napus*, FARS - Farooq, 01-IV-2008, coll.: ST, (15M 17F); ISFAHAN - Filour, 03-IX-2010, coll.: EN (5M 16F); ISFAHAN - Ghahderijan, 01-X-2010, coll.: EN (15M 34F); ISFAHAN - Hoye, 15-X-2010, coll.: EN (3M 5F); on †*Spinacia oleracea*, ISFAHAN - Filour, 09-IV-2011, coll.: EN (11M 7F); on †*Tragopogon graminifolius*, KERMÁN - Sarcheshmeh, 21-IV-2009, coll.: HB (1M 1F); *Rhopalosiphum maidis* (Fitch) on †*Hordeum* sp., KERMÁN - Sirch, 16-IV-2009, coll.: HB (1M); *Rhopalosiphum padi* (L.) on †*Hordeum vulgare*, ISFAHAN - Isfahan, 09-V-2011, coll.: EN (16M 24F); *Schizaphis graminum* (Rondani) on *Brumus* sp., ISFAHAN - Isfahan, 19-XI-2003, coll.: ER (1M 2F); *Sitobion avenae* (Fabricius) on †*Gastridium phleoides*, ISFAHAN - Zayanderoud, 09-IV-2011, coll.: EN (38M 45F).

*Ephedrus cerasicola* Starý, 1962

*Dysaphis plantaginea* (Passerini) on *Pyrus malus*, ISFAHAN - Meimeh, 17-V-2005, coll.: ER (4M 6F).

*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929

*Macrosiphoniella* sp. on †*Artemisia biennis*, KERMÁN - Koohpayeh, 24-X-2007, coll.: HB (5M 1F); \*\**Uroleucon acroptilidis* Kadyrbekov, Renxin & Shao on *Acroptilon repens*, ISFAHAN - Najafabad, 27-IV-2011, coll.: EN (41M 48F); \*\**Uroleucon bielawskii* (Szelegiewicz) on *Lactuca* sp., KERMÁN - Sirch, 16-IV-2009, coll.: HB (1F); *Uroleucon cichorii* (Koch) on †*Cichorium intybus*, KERMÁN - Koohpayeh, 24-X-2007, coll.: HB (1F); \**Uroleucon compositae* (Theobald) on †*Cirsium* sp., KERMÁN - Kerman, 07-V-2009, coll.: HB (1M); on †*Lactuca* sp., KERMÁN - Koohbanan, 06-V-2009, coll.: HB (3M 9F); *Uroleucon jaceae* (L.) on *Acroptilon repens*, KERMÁN - Kerman, 13-IV-2009, 26-IV-2009, coll.: HB (1M 3F); on †*Centaurea iberica*, KERMÁN - Kerman, 21-VI-2008, coll.: HB (8M 6F); ISFAHAN - Lavarg, 27-XII-2004, coll.: ER (14M 22F); *Uroleucon sonchi* (L.) on †*Launaea acanthodes*, KERMÁN - Mahan, 01-V-2009, coll.: HB (1M 1F); †*Sonchus oleraceus*, ISFAHAN - Najafabad, 29-X-2010, coll.: EN (1F); KERMÁN - Kerman, 02-XI-2007, coll.: HB

(2M); KERMAN - Lalezar, 09-X-2007, coll.: HB (38M 16F); KERMAN - Sirch, 16-IV-2009, coll.: HB (23M 6F); on *Sonchus* sp., KERMAN - Kerman, 22-XI-2007, coll.: HB (2M 2F); *Uroleucon* sp. on *Acropilton repens*, KERMAN - Kerman, 10-XI-2007, coll.: HB (5M 4F); ISFAHAN - Filour, 09-IV-2011, coll.: EN (5M 6F); †*Catharanthus* sp., KERMAN - Kerman, 26-IV-2009, coll.: HB (1M 1F).

*Ephedrus persicae* Froggatt, 1904

*Aphis affinis* del Guercio on *Mentha longifolia*, KERMAN - Jiroft, 25-II-2009, coll.: HB (3M 1F); FARS - Sepidan, 25-IV-2009, coll.: ST (1F); *Aphis craccivora* Koch on †*Alhagi maurorum*, KERMAN - Kerman, 13-IV-2009, coll.: HB (1F); on *Polygonum* sp., KERMAN - Mahan, 03-XII-2007, coll.: HB (3M 1F); on †*Sophora alopecuroides*, KERMAN - Koozhanan, 06-V-2009, coll.: HB (1M 2F); \**Aphis fabae* Scopoli on †*Vicia* sp., FARS - Jahrom, 17-IV-2009, coll.: ST (1M 1F); \**Aphis gossypii* Glover on †*Lycopersicon esculentum*, KERMAN - Jiroft, 25-II-2009, coll.: HB (3M 3F); on †*Salsola* sp., KERMAN - Jiroft, 25-II-2009, coll.: HB (10M 1F); \**Aphis plantaginis* Goeze on †*Rumex* sp., KERMAN - Kahnooj, 12-III-2009, coll.: HB (2M); \**Brachycaudus helichrysi* (Kaltenbach) on *Prunus dulcis*, ISFAHAN - Choghyort, 04-VI-2011, coll.: EN (1M 5F); ISFAHAN - Ahmadreza, 20-V-2011, coll.: EN (2M 5F); *Dysaphis plantaginea* (Passerini) on *Pyrus malus*, ISFAHAN - Meimeh, 17-V-2005, coll.: ER (4M 3F); \**Dysaphis reaumuri* (Mordvilko) on *Pyrus communis*, ISFAHAN - Mahdiabad, 20-V-2011, coll.: EN (5M 4F); \**Hayhurstia atriplicis* (L.) on †*Cichorium* sp., KERMAN - Sirch, 10-X-2008, coll.: AA (1F); *Hyalopterus amygdali* (Blanchard) on *Prunus dulcis*, ISFAHAN - Mohamadiyeh, 19-V-2011, coll.: EN (5M 4F); ISFAHAN - Jafarabad, 20-V-2011, coll.: EN (2M 4F); ISFAHAN - Najafabad, 02-V-2011, coll.: EN (18M 24F); *Myzus persicae* (Sulzer) on †*Althaea* sp., KERMAN - Jiroft, 24-II-2009, coll.: HB (1F); on †*Cucumis sativus*, KERMAN - Jiroft, 25-II-2009, coll.: HB (1F); on †*Sisymbrium* sp., KERMAN - Kerman, 21-II-2009, coll.: HB (4M 6F); \**Phorodon homuli* (Schrank) on †*Prunus dulcis*, FARS - Shiraz, 25-IV-2004, coll.: ER (2F); *Rhopalosiphum maidis* (Fitch) on †*Setaria glauca*, KERMAN - Sirch, 28-XI-2007, coll.: HB (1M 2F); *Sitobion avenae* (Fabricius) on *Triticum aestivum*, KERMAN - Shahrehabak, 25-X-2008, coll.: AA (1F).

*Ephedrus plagiator* (Nees, 1811)

*Rhopalosiphum padi* (L.) on *Triticum aestivum*, ISFAHAN - Meimeh, 30-VI-2005, coll.: ER (11M 14F).

*Lipolexis gracilis* Forster, 1862

\**Aphis salvia* Walker on †*Salvia nemorosa*, MARKAZI - Arak, 07-V-2009, coll.: MA (1M 1F).

*Lysiphlebus confusus* Tremblay & Eady, 1978

*Aphis craccivora* Koch on †*Glycyrrhiza glabra*, FARS - Sivand, 08-IV-2009, coll.: ST (15M 9F); \**Aphis idaei* van der Goot on †*Rubus persicus*, FARS - Noorabad, 25-IV-2009, coll.: ST (12M 17F); \**Aphis intybi*, Koch on †*Calendula officinalis*, FARS - Kazeroon, 26-IV-2009, coll.: ST (49M 36F); *Aphis verbasci* Schrank on *Verbascum songaricum*, KERMAN - Jiroft, 26-II-2009, coll.: HB (6F); \**Hyperomyzus lactucae* (L.) on †*Lactuca* sp., KERMAN - Koohpayeh, 18-V-2009, coll.: AA (1F).

*Lysiphlebus desertorum* Starý, 1965

\**Aphis craccivora* Koch on †*Peganum harmala*, KERMAN - Kerman, 03-V-2009, coll.: HB (2M); *Aphis (Absinthaphis) cinae* (Nevsky) on †*Artemisia biennis*, KERMAN - Koohpayeh, 03-V-2009, coll.: HB (1M 11F); \*\**Aphis (Protaphis) terricola* Rondani on †*Cirsium hygrophilum*, KERMAN - Lalezar, 25-X-2008, coll.: AA (1F).

*Lysiphlebus fabarum* (Marshall, 1896)

\*\**Acyrtosiphon gossypii* Mordvilko on *Sophora alopecuroides*, KERMAN - Kerman, 07-V-2009, coll.: HB (1F); KERMAN - Sirch, 16-IV-2009, coll.: HB (2M 15F); \**Aphis acetosae* L. on *Rumex* sp., KERMAN - Shahdad, 16-IV-2009, coll.: HB (2M 3F); *Aphis affinis* del Guercio on *Mentha longifolia*, ISFAHAN - Dourche, 15-IV-2011, coll.: EN (20M 28F); ISFAHAN - Isfahan, 18-V-2004, coll.: ER (29M 37F); KERMAN - Jiroft, 25-II-2009, coll.: HB (31M 27F); KERMAN - Kahnooj, 12-III-2009, coll.: HB (3M 3F); KERMAN - Koohpayeh, 03-V-2009, coll.: HB (15M 5F); KERMAN - Shahdad, 16-IV-2009, coll.: HB (2M); KERMAN - Sirch, 10-X-2008, coll.: AA (1F); KERMAN - Sirjan, 22-IV-2009, coll.: HB (5M 6F); *Aphis craccivora* Koch on †*Achillea* sp., KERMAN - Koohpayeh, 03-V-2009, coll.: HB (5F); KERMAN - Zarand, 06-V-2009, coll.: HB (2M 5F); on *Alhagi maurorum*, FARS - Arsanjan, 11-IV-2009, coll.: ST (1M 3F); ISFAHAN - Dourche, 15-IV-2011, coll.: EN (12M 6F); ISFAHAN - Goldasht, 14-IV-2011, coll.: EN (25M 60F); KERMAN - Kerman, 13-IV-2009, coll.: HB (68M 101F); 01-V-2009, coll.: HB (26M 9F); KERMAN - Bam, 10-III-2009, coll.: HB (2M); KERMAN - Kahnooj, 12-III-2009, coll.: HB (7M 2F); MARKAZI - Mahallat, 25-IV-2005, coll.: ER (44M 69F); on †*Althaea rosea*, FARS - Qaemiyeh, 16-IV-2009, coll.: ST (7F); on †*Amaranthus caudatus*, ISFAHAN - Isfahan, 11-IV-2004, coll.: ER (6M 11F);

- on †*Anagallis arvensis*, KERMÁN - Kahnooj, 11-III-2009, coll.: HB (7M 21F); on *Astragalus* sp., KERMÁN - Joopar, 07-V-2009, coll.: HB (4M 3F); KERMÁN - Negar, 07-V-2009, coll.: HB (15M 12F); on †*Atriplex* sp., KERMÁN - Sirjan, 21-IV-2009, coll.: HB (5M 28F); on †*Capsella bursa-pastoris*, FARS - Marvdasht, 20-IV-2009, coll.: ST (5M 2F); on †*Cardaria draba*, FARS - Karbal, 22-III-2009, coll.: ST (52M 57F); ISFAHAN - Isfahan, 09-IV-2011, coll.: EN (1M); ISFAHAN - Filour, 09-IV-2011, coll.: EN (15M 60F); ISFAHAN - Goldasht, 14-IV-2011, coll.: EN (19M 35F); ISFAHAN - Dourche, 15-IV-2011, coll.: EN (2M 10F); on †*Chenopodium* sp., KERMÁN - Sirjan, 21-IV-2009, coll.: HB (5M 5F); †*Elaeagnus angustifoliae*, KERMÁN - Bardseer, 07-V-2009, coll.: HB (12M 14F); KERMÁN - Koohpayeh, 03-V-2009, coll.: HB (1F); on †*Erodium deserti*, KERMÁN - Joopar, 07-V-2009, coll.: HB (1F); on *Glycyrrhiza aspera*, FARS - Shiraz, 28-VI-2005, coll.: ER (76M 119F); on *Glycyrrhiza glabra*, KERMÁN - Sirjan, 22-IV-2009, coll.: HB (42M 46F); ISFAHAN - Dourche, 15-IV-2011, coll.: EN (4M 3F); ISFAHAN - Isfahan, 25-IV-2011, coll.: EN (71M 117F); ISFAHAN - Jafarabad, 20-V-2011, coll.: EN (81M 129F); ISFAHAN - Varposht, 28-V-2011, coll.: EN (2F); on †*Gundelia tournefortii*, KERMÁN - Zarand, 06-V-2009, coll.: HB (11M 8F); on *Kochia scoparia*, KERMÁN - Kerman, 17-V-2007, coll.: HB (5M 4F); on *Medicago sativa*, FARS - Noorabad, 27-III-2009, coll.: ST (45M 40F); ISFAHAN - Dehaghan, 26-IV-2011, coll.: EN (15M 32F); ISFAHAN - Dourche, 15-IV-2011, coll.: EN (4M 2F); ISFAHAN - Fereydoonshahr, 04-VI-2011, coll.: EN (6F); ISFAHAN - Filour, 09-IV-2011, coll.: EN (86M 125F); ISFAHAN - Goldasht, 02-V-2011, coll.: EN (15M 9F); ISFAHAN - Isfahan, 25-IV-2011, coll.: EN (12M 9F); ISFAHAN - Khamiran, 22-IV-2011, coll.: EN (45M 94F); ISFAHAN - Mohamadiyeh, 19-V-2011, coll.: EN (31M 69F); ISFAHAN - Morghab, 19-V-2011, coll.: EN (2M 77F); KERMÁN - Baft, 22-IV-2009, coll.: HB (18M 23F); KERMÁN - Jiroft, 25-II-2009, coll.: HB (37M 30F); KERMÁN - Lalezar, 15-V-2009, coll.: HB (4F); KERMÁN - Zarand, 06-V-2009, coll.: HB (10M 4F); on †*Peganum harmala*, KERMÁN - Sirjan, 21-IV-2009, coll.: HB (3M 2F); KERMÁN - Zarand, 06-V-2009, coll.: HB (15M 5F); on *Portulaca oleracea*, KERMÁN - Shahdad, 28-XI-2008, coll.: HB (11M 8F); on *Robinia pseudoacacia*, FARS - Shiraz, 27-IV-2009, coll.: ST (2M 2F); ISFAHAN - Dourche, 15-IV-2011, coll.: EN (9M 17F); ISFAHAN - Goldasht, 02-V-2011, coll.: EN (7M 8F); ISFAHAN - Isfahan, 17-XII-2003, coll.: ER (16M 31F); 25-IV-2011, coll.: EN (50M 65F); 03-V-2011, coll.: EN (12M 15F); ISFAHAN - Najafabad, 27-IV-2011, coll.: EN (32M 40F); KERMÁN - Mahan, 11-IV-2009, coll.: HB (9M 14F); MARKAZI - Arak, 30-V-2004, coll.: ER (11M 18F); on *Rumex* sp., KERMÁN - Jiroft, 20-XI-2008, coll.: AA (1F); on *Sophora alopecuroides*, KERMÁN - Bidkhan, 06-X-2008, coll.: AA (1F); KERMÁN - Koohbanan, 06-V-2009, coll.: HB (1M 1F); KERMÁN - Mahan, 01-V-2009, coll.: HB (16M 11F); on †*Sophora mollis*, ISFAHAN - Dourche, 15-IV-2011, coll.: EN (29M 44F); ISFAHAN - Khamiran, 22-IV-2011, coll.: EN (1M 5F); ISFAHAN - Mohamadiyeh, 20-V-2011, coll.: EN (47M 121F); on †*Tragopogon graminifolius*, KERMÁN - Jiroft, 18-V-2009, coll.: AA (1F); KERMÁN - Lalezar, 18-V-2008, coll.: HB (46M 35F); on †*Trigonella foenum-graecum*, ISFAHAN - Jafarabad, 19-V-2011, coll.: EN (130M 147F); ISFAHAN - Morghab, 19-V-2011, coll.: EN (21M 51F); \**Aphis euphorbiae* Kaltenbach on †*Euphorbia aucheri*, ISFAHAN - Asgaran, 22-IV-2011, coll.: EN (35F); ISFAHAN - Jafarabad, 19-V-2011, coll.: EN (2M 2F); *Aphis fabae* Scopoli on †*Althaea* sp., KERMÁN - Mahan, 11-IV-2009, coll.: HB (4M 7F); on †*Arctium lappa*, ISFAHAN - Isfahan, 03-V-2011, coll.: EN (37M 26F); ISFAHAN - Varposht, 26-V-2011, coll.: EN (4M 8F); ISFAHAN - Yasechah, 17-V-2009, coll.: EN (33M 109F); on †*Beta vulgaris*, ISFAHAN - Hoye, 15-X-2010, coll.: EN (4F); on †*Brassica rapa*, KERMÁN - Kahnooj, 12-III-2009, coll.: HB (10M 2F); on †*Carduus onopordiodes*, FARS - Shiraz, 24-IV-2009, coll.: ST (4M 14F); on *Centaurea iberica*, KERMÁN - Bidkhan, 31-X-2007, coll.: HB (1M 5F); on †*Chenopodium album*, FARS - Shiraz, 23-IV-2009, coll.: ST (34M 27F); ISFAHAN - Dourche, 21-V-2009, coll.: EN (13M 47F); ISFAHAN - Isfahan, 09-V-2011, coll.: EN (12M 24F); on †*Cirsium hygrophilum*, KERMÁN - Kerman, 13-IV-2009, coll.: HB (6M 6F); on †*Cirsium arvense*, ISFAHAN - Isfahan, 25-IV-2011, coll.: EN (45M 50F); 03-V-2011, coll.: EN (53M 57F); on †*Cirsium vulgare*, ISFAHAN - Najafabad, 27-IV-2011, coll.: EN (8M 6F); on †*Cousinia* sp., KERMÁN - Koohpayeh, 03-V-2009, coll.: HB (3F); on †*Citrus aurantiifolia*, FARS - Shiraz, 25-III-2009, coll.: ST (24M 36F); FARS - Marvdasht, 15-IV-2009, coll.: ST (17M 39F); on †*Glycyrrhiza glabra*, FARS - Sivand, 08-IV-2009, coll.: ST (18M 28F); on †*Ligustrum vulgare*, FARS - Shiraz, 22-IV-2009, coll.: ST (1M 4F); on †*Phaseolus vulgaris*, ISFAHAN - Filour, 03-IV-2010, coll.: EN (27M 94F); on *Raphanus sativus*, KERMÁN - Sirch, 28-XI-2007, coll.: HB (4M 3F); on †*Rumex acetosa*, ISFAHAN - Dourche, 15-IV-2011, coll.: EN (1M

- 2F); ISFAHAN - Jafarabad, 19-V-2011, coll.: EN (41M 112F); on *Rumex* sp., KERMÁN - Mahan, 01-V-2009, coll.: HB (2M 1F); on †*Salsola canescens*, KERMÁN - Joopar, 07-V-2009, coll.: HB (9M 11F); on †*Spinacia oleracea*, ISFAHAN - Filour, 09-IV-2011, coll.: EN (1M 1F); *Aphis gossypii* Glover on †*Calendula persica*, KERMÁN - Sirjan, 22-IV-2009, coll.: HB (7M 17F); on *Chrysanthemum* sp., KERMÁN - Kerman, 07-XII-2007, coll.: HB (7M 4F); on *Cucurbita pepo*, ISFAHAN - Hoye, 18-VII-2009, coll.: EN (1F); KERMÁN - Kerman, 02-XI-2007, coll.: HB (10M 12F); on †*Cucumis sativus*, ISFAHAN - Najafabad, 27-VII-2010, coll.: EN (14F); ISFAHAN - Ghahderijan, 01-X-2010, coll.: EN (2F); on †*Malva neglecta*, FARS - Marvdasht, 05-IV-2009, coll.: ST (34M 35F); on †*Nonea* sp., KERMÁN - Kerman, 13-IV-2009, coll.: HB (4M 2F); on †*Picnomon acarna*, FARS - Noorabad, 27-III-2009, coll.: ST (12M 20F); on †*Salsola* sp., KERMÁN - Jiroft, 25-II-2009, coll.: HB (3M 1F); on †*Veronica persica*, KERMÁN - Jiroft, 24-II-2009, coll.: HB (14M 15F); *Aphis idaei* van der Goot, on †*Rubus persicus*, FARS - Noorabad, 25-IV-2009, coll.: ST (57M 54F); \**Aphis nasturtii* Kalténbach on †*Marrubium* sp., KERMÁN - Jiroft, 20-XI-2008, coll.: AA (1F); *Aphis nerii* Boyer de Fonscolombe on *Nerium oleander*, KERMÁN - Zarand, 06-V-2009, coll.: HB (1M); \**Aphis origani* Passerini on *Mentha longifolia*, ISFAHAN - Khamiran, 22-IV-2011, coll.: EN (8M 13F); ISFAHAN - Najafabad, 27-IV-2011, coll.: EN (18M 37F); ISFAHAN - Varposht, 26-V-2011, coll.: EN (1M 1F); \**Aphis plantaginis* Goeze on †*Plantago lanceolata*, KERMÁN - Shahdad, 16-IV-2009, coll.: HB (2M 5F); *Aphis punicae* Passerini on *Punica granatum*, FARS - Shiraz, 25-III-2009, coll.: ST (1F); \**Aphis solanella* Theobald on †*Capsella bursa-pastoris*, ISFAHAN - Yasechah, 17-V-2009, coll.: EN (4M 7F); on †*Chenopodium album*, ISFAHAN - Dourche, 01-VI-2009, coll.: EN (4M 12F); on †*Beta vulgaris*, ISFAHAN - Hoye, 01-IX-2010, coll.: EN (1M 1F); *Aphis umbrella* (Börner) *Malva sylvestris*, ISFAHAN - Filour, 09-IV-2011, coll.: EN (1M 1F); ISFAHAN - Goldasht, 14-IV-2011, coll.: EN (5F); ISFAHAN - Yasechah, 17-V-2009, coll.: EN (3F); *Aphis* sp. on †*Salsola canescens*, KERMÁN - Joopar, 12-V-2009, coll.: HB (6M 9F); on *Rumex acetosa*, ISFAHAN - Yasechah, 17-V-2009, coll.: EN (46M 173F); on †*Euphorbia cyparissias*, ISFAHAN - Jafarabad, 19-V-2011, coll.: EN (72M 153F); on *Euphorbia aucheri*, ISFAHAN - Morghab, 19-V-2011, coll.: EN (148F); *Aphis (Protaphis)* sp. on *Alhagi mauro-rum*, KERMÁN - Sirjan, 21-IV-2009, coll.: HB (4M 8F); on *Picnomon acarna* (L.), KERMÁN - Mahan, 04-XII-2007, coll.: HB (1M 2F); \*\**Aphis (Protaphis) terricola* Rondani on †*Anthemis arvensis*, KERMÁN - Kerman, 13-IV-2009, coll.: HB (3M 21F); \**Brachycaudus (Appelia) tragopogonis* (Kalténbach) on †*Scrozonera isphahanica*, ISFAHAN - Mohamadiyeh, 20-V-2011, coll.: EN (2M 8F); ISFAHAN - Morghab, 19-V-2011, coll.: EN (1F); ISFAHAN - Najafabad, 27-IV-2011, coll.: EN (20M 21F); ISFAHAN - Varposht, 28-V-2011, coll.: EN (24M 38F); on †*Tragopogon graminifolius*, ISFAHAN - Dourche, 15-IV-2011, coll.: EN (7M 4F); ISFAHAN - Filour, 09-IV-2011, coll.: EN (1F); ISFAHAN - Goldasht, 14-IV-2011, coll.: EN (56M 83F); 30-X-2004, coll.: ER (8M 10F); ISFAHAN - Isfahan, 09-V-2011, coll.: EN (3F); ISFAHAN - Jafarabad, 19-V-2011, coll.: EN (3M 7F); ISFAHAN - Najafabad, 08-IV-2011, coll.: EN (86M 144F); KERMÁN - Kerman, 11-IV-2009, coll.: HB (1M 1F); KERMÁN - Sirjan, 21-XI-2007, coll.: HB (1F); *Brachycaudus cardui* (L.) on †*Carduus onopordioides*, FARS - Ramjerd, 05-V-2009, coll.: ST (5M 7F); on †*Cirsium arvense*, ISFAHAN - Isfahan, 03-V-2011, coll.: EN (6M 4F); *Brachycaudus helichrysi* (Kalténbach) on †*Calendula officinalis*, FARS - Kazeroon, 27-III-2009, coll.: ST (2M 5F); on *Prunus* sp., ISFAHAN - Yasechah, 21-V-2011, coll.: EN (1M 3F); *Brachycaudus* sp. on †*Euphorbia amygdaloides*, ISFAHAN - Khamiran, 22-IV-2011, coll.: EN (1M 8F); *Brachyunguis zygophylli* (Nevsky) on *Zygophyllum fabago*, KERMÁN - Negar, 07-V-2009, coll.: HB (7M 1F); KERMÁN - Kerman, 03-XI-2007, coll.: HB (56M 48F); *Brachyunguis* sp. on †*Cynanchum acutum*, ISFAHAN - Shahinshahr, 30-X-2004, coll.: ER (3M); \**Dysaphis plantaginea* (Passerini) on †*Malus domestica*, ISFAHAN - Najafabad, 06-VI-2011, coll.: EN (2F); ISFAHAN - Mohamadiyeh, 19-V-2011, coll.: EN (1F); \*\**Macrosiphoniella (Papillomyzus) papilata* Holman on †*Artemisia biennis*, KERMÁN - Koohpayeh, 01-X-2008, coll.: AA (1F); *Melanaphis* sp. on *Sorghum halepense*, KERMÁN - Kerman, 03-XI-2007, coll.: HB (23M 18F); \**Metopolophium dirhodum* (Walker) on †*Rosa damascena*, KERMÁN - Lalezar, 27-IX-2008, coll.: AA (1F); *Myzus persicae* (Sulzer) on †*Lycopersicon esculentum*, KERMÁN - Jiroft, 25-II-2009, coll.: HB (1F); on *Malva neglecta*, FARS - Shiraz, 25-IV-2004, coll.: ER (2M 6F); ISFAHAN - Isfahan, 11-IV-2004, coll.: ER (12F); on †*Melilotus* sp., KERMÁN - Jiroft, 25-II-2009, coll.: HB (34M 36F); on *Triogonella foenum-graesum*, FARS - Noorabad, 11-III-2002, coll.: ER (1M 9F).
- Pauesia antennata* (Muckereji, 1950)  
Swept from colony of *Pterochloroides persicae* (Cho-

lodkovsky) on †*Prunus persica*, KERMAN - Kerman, 07-V-2009, coll.: HB (1F).

***Praon barbatum*** Mackauer, 1959

*Acyrtosiphon pisum* (Harris) on *Medicago sativa*, ISFAHAN - Dourche, 01-IX-2010, coll.: EN (12M 22F); \**Nearctaphis bakeri* (Cowen) on †*Trifolium campestre*, ISFAHAN - Hoye, 15-V-2011, coll.: EN (2M).

***Praon exsoletum*** (Nees, 1811)

*Therioaphis trifolii* (Monell) on *Medicago sativa*, ISFAHAN - Alavijeh, 23-IX-2004, coll.: ER (3M 4F); ISFAHAN - Borkhar, 29-X-2004, coll.: ER (3F); ISFAHAN - Khoramgah, 27-VIII-2004, coll.: ER (8M 12F); ISFAHAN - Shahinshahr, 29-X-2004, coll.: ER (6M 5F); ISFAHAN - Ziar, 28-VIII-2004, coll.: ER (4M 7F).

***Praon flavinode*** (Haliday, 1833)

*Tinocallis nevskiyi* Remaudière, Quednau & Heie on *Ulmus campestris*, KERMAN - Bardseer, 31-X-2007, coll.: HB (1F); 07-V-2009, coll.: HB (1F).

***Praon rosaecola*** Starý, 1961

*Macrosiphum rosae* (L.) on *Rosa damascena*, KERMAN - Lalezar, 09-X-2007, coll.: HB (2F); ISFAHAN - Najafabad, 29-X-2010, coll.: EN (3M 2F); on *Rosa* sp., KERMAN - Kerman, 30-IV-2009, coll.: HB (1M 1F); KERMAN - Jiroft, 20-XI-2008, coll.: AA (1F); \**Vahlgreniella nervata* (Gillette) on *Rosa damascena*, KERMAN - Lalezar, 27-IX-2008, coll.: AA (1F).

***Praon unitum*** Mescheloff & Rosen, 1988

*Uroleucon acroptilidis* Kadyrbekov, Renxin & Shao on *Acroptilon repens*, KERMAN - Kerman, 08-XI-2007, coll.: HB (2M 2F); \**Uroleucon sonchi* (L.) on †*Sonchus oleraceus*, KERMAN - Kerman, 16-IV-2009, coll.: HB (10M 7F); KERMAN - Sirch, 16-IV-2009, coll.: HB (1F); \**Uroleucon jaceae* (L.) on *Acroptilon repens*, KERMAN - Kerman, 12-III-2009, coll.: HB (1F); KERMAN - Koohpayeh 03-V-2009, coll.: HB (1F).

***Praon volucre*** (Haliday, 1833)

*Amphorophora catharinae* (Nevsky) on *Rosa damascena*, KERMAN - Koohpayeh, 24-X-2007, coll.: HB (1M); *Aphis craccivora* Koch on *Portulaca oleracea*, KERMAN - Shahdad, 28-XI-2007, coll.: HB (2F); \**Aphis dlabolai* Holman on †*Euphorbia* sp., KERMAN - Jiroft, 25-II-2009, coll.: HB (5M 5F); *Aphis fabae* Scopoli on †*Arctium lappa*, ISFAHAN - Yasechah, 17-V-2009, coll.: EN (1F); on *Cirsium arvense*, ISFAHAN - Filour, 09-IV-2011, coll.: EN

(1F); \**Aphis gossypii* Glover on †*Solanum melongena*, ISFAHAN - Hoye, 10-VII-2009, coll.: EN (2F); on †*Cucumis sativus*, ISFAHAN - Ghahderijan, 01-X-2010, coll.: EN (2F); *Aphis fabae solanella* Theobald on *Solanum* sp., KERMAN - Sirch, 28-XI-2007, coll.: HB (3M 2F); *Brachycaudus heliocrysi* (Kaltenbach) on *Calendula officinalis*, ISFAHAN - Isfahan, 29-X-2004, coll.: ER (2M 5F); *Diuraphis noxia* (Mordvilko) on *Triticum aestivum*, FARS - Kharameh, 27-IV-2005, coll.: ER (9M 14F); *Hyalopterus pruni* (Geoffroy) on †*Prunus dulcis*, FARS - Shiraz, 27-IV-2009, coll.: ST (9M 15F); *Macrosiphum rosae* (L.) on *Rosa damascena*, KERMAN - Lalezar, 09-X-2007, coll.: HB (8M 7F); \**Metopolophium dirhodum* (Walker) on *Rosa* sp., KERMAN - Rabor, 15-XI-2008, coll.: AA (2F); on †*Triticum aestivum*, FARS - Marvdasht, 14-IV-2009, coll.: ST (1M 1F); *Myzus persicae* (Sulzer) on †*Althaea* sp., KERMAN - Jiroft, 24-II-2009, coll.: HB (6M 1F); *Rhopalosiphum maidis* (Fitch) on *Setaria glauca*, KERMAN - Sirch, 28-XI-2007, coll.: HB (1M 1F); *Rhopalosiphum padi* (L.) on *Triticum aestivum*, ISFAHAN - Isfahan, 10-IV-2004, coll.: ER (12M 17F); on †*Hordeum vulgare*, ISFAHAN - Isfahan, 09-V-2011, coll.: EN (1M 1F); *Schizaphis graminum* (Rondani) on *Triticum aestivum*, ISFAHAN - Dourche, 15-IV-2011, coll.: EN (3M 1F); ISFAHAN - Filour, 09-IV-2011, coll.: EN (1M 4F); ISFAHAN - Isfahan, 10-IV-2004, coll.: ER (14M 22F); FARS - Kharameh, 27-IV-2005, coll.: ER (6M 4F); ISFAHAN - Meimeh, 30-VI-2005, coll.: ER (12M 15F); *Sitobion avenae* (Fabricius) on *Triticum aestivum*, FARS - Abadeh, 28-IV-2005, coll.: ER (1M 2F); *Uroleucon compositae* (Theobald) on *Carthamus tinctorius*, ISFAHAN - Isfahan, 07-XI-2004, coll.: ER (4M 8F); *Uroleucon sonchi* (L.) on †*Sonchus oleraceus*, ISFAHAN - Ghahderijan, 01-X-2010, coll.: EN (2F); KERMAN - Kerman, 16-IV-2009, coll.: HB (1M 1F); KERMAN - Lalezar, 09-X-2007, coll.: HB (2F).

***Praon yomenae*** Takada, 1968

*Uroleucon acroptilidis* Kadyrbekov, Renxin & Shao on *Acroptilon repens*, KERMAN - Kerman, 09-X-2007, coll.: HB (8M 5F); \**Uroleucon carthami* (Hille Ris Lambers) on †*Carthamus oxyacantha*, KERMAN - Kerman, 13-IV-2009, coll.: HB (1M 4F); *Uroleucon cichorii* (Koch) on *Cichorium intybus*, KERMAN - Koohpayeh, 24-X-2007, coll.: HB (3M 2F); *Uroleucon jaceae* (L.) on *Acroptilon repens*, ISFAHAN - Isfahan, 17-IV-2004, coll.: ER (3M 5F); KERMAN - Kerman, 13-IV-2009, coll.: HB (1F); KERMAN - Koohbanan, 06-V-2009, coll.: HB (1M 1F); on *Centaurea depressa*, ISFAHAN - Isfahan, 08-V-2004, coll.: ER (5M 12F); on *Centaurea iberica*, KERMAN -

Kerman, 21-IV-2008, coll.: HB (1M 1F); *Uroleucon sonchi* (L.) on *Sonchus oleraceus*, ISFAHAN - Najafabad, 29-X-2010, coll.: EN (4M 4F); KERMÁN - Kerman, 09-XI-2007, coll.: HB (3M 2F); 16-IV-2009, coll.: HB (15M 10F); KERMÁN - Lalezar, 09-X-2007, coll.: HB (2F); \*\**Uroleucon tortuosissimae* Rezwani & Lampel on †*Launaea acanthodes*, KERMÁN - Mahan, 12-X-2008, coll.: AA (2F); *Uroleucon* sp. on *Acroptilon repens*, ISFAHAN - Filour, 09-IV-2011, coll.: EN (4M 4F); KERMÁN - Kerman, 10-XI-2007, coll.: HB (4M 7F); KERMÁN - Mahan, 03-X-2007, coll.: HB (4M 3F); on *Picnomon acarna*, KERMÁN - Mahan, 13-V-2008, coll.: HB (1M 1F).

#### *Praon* spp.

\**Acyrtosiphon gossypii* Mordvilko on †*Zygophyllum fabago*, KERMÁN - Rabor, 15-XI-2008, coll.: AA (1F); \**Aphis affinis* del Guercio on †*Mentha longifolia*, KERMÁN - Koochpayeh, 03-V-2009, coll.: HB (2M); *Aphis craccivora* Koch on †*Alhagi maurorum*, KERMÁN - Kerman, 13-IV-2009, coll.: HB (2F); on †*Cousinia* sp., KERMÁN - Zarand, 06-V-2009, coll.: HB (2M); \**Aphis plantaginis* Goeze on †*Rumex* sp., KERMÁN - Kahnooj, 12-III-2009, coll.: HB (1M); \**Brachycaudus (Appelia) tragopogonis* (Kaltenbach) on †*Acroptilon* sp., KERMÁN - Rafsanjan, 25-X-2008, coll.: AA (1F); \**Lipaphis pseudobrassicae* (Davis) on †*Capsella bursa-pastoris*, ISFAHAN - Dourche, 15-IV-2011, coll.: EN (2M); *Macrosiphoniella sanborni* (Gillette) on *Chrysanthemum morifolium*, ISFAHAN - Najafabad, 08-IV-2011, coll.: EN (2M); *Macrosiphum rosae* (L.) on *Rosa* sp., KERMÁN - Kerman, 30-IV-2009, coll.: HB (1M); *Schizaphis graminum* (Rondani) on †*Hordeum marinum*, KERMÁN - Sirjan, 22-IV-2009, coll.: HB (1F).

#### *Trioxys asiaticus* Telenga, 1953

*Acyrtosiphon gossypii* Mordvilko on *Sophora alopecuroides*, KERMÁN - Joopar, 12-V-2009, coll.: HB (1F); KERMÁN - Kerman, 07-V-2009, coll.: HB (9M 13F); KERMÁN - Sekonj, 25-X-2008, coll.: AA (1F); KERMÁN - Shahdad, 15-XI-2008, coll.: AA (1F); \**Acyrtosiphon pisum* (Harris) on †*Glycyrrhiza glabra*, KERMÁN - Kerman, 10-X-2008, coll.: AA (2F).

#### *Trioxys complanatus* Quilis, 1931

*Therioaphis trifolii* (Monell) on *Medicago sativa*, ISFAHAN - Hoyer, 01-IX-2010, coll.: EN (1F); ISFAHAN - Isfahan, 30-X-2004, coll.: ER (13M 16F); ISFAHAN - Shahinshahr, 29-X-2004, coll.: ER (19M 17F); KERMÁN - Jiroft, 25-II-2009, coll.: HB (4M 4F).

#### *Trioxys pallidus* (Haliday, 1833)

*Chromaphis juglandicola* (Kaltenbach) on *Juglans regia*, FARS - Noorabad, 10-V-2009, coll.: ST (2M 4F); FARS - Sepidan, 23-V-2009, coll.: ST (1F); ISFAHAN - Isfahan, 09-V-2011, coll.: EN (1F); ISFAHAN - Najafabad, 02-V-2011, coll.: EN (4M); ISFAHAN - Varposht, 28-V-2011, coll.: EN (1M 3F); ISFAHAN - Najafabad, 29-V-2011, coll.: EN (2M 1F); ISFAHAN - Meimeh, 17-V-2005, coll.: ER (9M 5F); KERMÁN - Bidkhan, 03-VIII-2007, coll.: HB (1M 1F); KOHKILOYE & BOYERAHMAD - Dena, 29-V-2009, coll.: ST (1F).

#### Discussion

The finding of a very diverse parasitoid species and its associations is in accordance with complex habitats and vegetational structure of the investigated area. Three groups of host aphids were categorized in the area based on the range of associated parasitoids: aphids that are rarely sampled and with a single specialized parasitoid species (*Chromaphis*, *Tinocallis*, *Chaitophorus* and *Sipha*), common aphids with a complex of specialized parasitoids (*Uroleucon*, *Acyrtosiphon* and *Amphrophora*), and very common aphids associated with broadly oligophagous parasitoids species (*Aphis* spp.). Alfalfa fields of the central submountains of Iran are among the most species-rich agroecosystems, hosting almost all of legume-associating aphid parasitoids (*P. barbatum*, *P. exsoletum*, *A. smithi*, *A. eadyi*, *A. ervi* and *T. complanatus*) as well as opportunistic, broadly oligophagous species (*L. fabarum*, *A. colemani* and *P. volucre*). Such findings were already indicated in other parts of the country (Rakhshani et al. 2005b). Several species like *A. matricariae*, *A. colemani*, *L. fabarum*, *E. persicae*, *P. volucre* and *D. rapae* were found in associations with more than 10 aphid species on several cultivated plants. These species represent economically the most important aphid parasitoids in central part of Iran. Association of *A. smithi* - *N. bakeri* is new for Iran. *Nearctaphis bakeri* is an invasive aphid species introduced from North America. *Aphidius smithi* is recorded here for the first time as a parasitoid of this aphid species outside of USA (Pike et al. 2000).

Recent evidence of the occurrence of *L. gracilis* (Rakhshani et al. 2008a) indicates the expanded distribution of this species. *Lipolexis gracilis* is a common aphid parasitoid species in Europe (Kavallieratos et al. 2004, Stary 2006), but also has

been recorded in neighboring countries, Turkey (Rakhshani et al. 2008a) and Pakistan (Starý et al. 1998). Significant variations in functional morphological characters including the number of labial and maxillary palpomeres in comparison to the European specimens indicate existence of different geographical and cryptic species. Also, several species/biotypes, such as *L. confusus*, *P. yomenae*, *A. salicaphis* and *A. colemani*, showed unusual variability in several morphological characters (e.g. number of palpomeres, wing-venation patterns and setation of forewing margin) in comparison with European and Mediterranean specimens. *Praon unitum* is considered as a member of “*dorsale-yomenae*” group which originally comprised *Uroleucon* aphid parasitoids (Kavallieratos et al. 2005). This species was collected from the same area as *P. yomenae*, but it was less common. In light of our results, we found more diagnostic characters than those reported in the original description of *P. unitum* (Mescheloff & Rosen 1988), i.e. sparse hairs on propodeum, number of antennal segments, and coloration of flagellomere I. Further studies are necessary in order to confirm its taxonomic status, as well as determine exact identity of some other central Iranian species or biotypes, including studies using molecular markers.

**Acknowledgments.** This study was supported by the grant No. 89-9198, University of Zabol, Iran for the second author. The contributions of P. Starý, Ž. Tomanović, O. Petrović-Obradović and A. Mitrovski Bogdanović were partially funded by the Entomology Institute project AVOZ50070508 (Academy of Sciences of the Czech Republic) and by a grant of the Ministry of Education and Science of the Republic of Serbia (III43001), respectively.

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