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Review of Aphidiinae parasitoids (Hymenoptera: Braconidae) of the Middle East and North Africa: key to species and host associations

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Abstract. In this study, a total of 108 Aphidiinae species, belonging to 18 genera, associated with 240 aphid species in 16 countries of the Middle East and North Africa are reviewed. 743 host aphid-parasitoid associations are listed. New material was collected from various regions of Saudi Arabia during 2011–2013. Three species including *Aphidius avenae* Haliday, 1834, *Aphidius platensis* Brèthes, 1913 and *Praon barbatum* Mackauer, 1967 are first recorded for the fauna of this country. *Lysiphlebus marismortui* Mescheloff & Rosen, 1990 syn. nov. is classified as the junior synonym of *Lysiphlebus confusus* Tremblay & Eady, 1978. An illustrated up-to-date key to all known species of Aphidiinae that occur in the Middle East and North Africa is provided. The findings are discussed in relation to the overall parasitoid-aphid associations in the target investigated region.

Keywords. Aphids, parasitoids, fauna, Western Asia, North Africa, illustrated key.

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Introduction

Members of the subfamily Aphidiinae (Hymenoptera: Braconidae) belong to an important group as natural enemies of aphids (Starý 1970). Aphidiinae consist of solitary koinobiont parasitoids, among which several species are considered highly efficient biological control agents (Hågvar & Hofsvang 1991; Boivin *et al.* 2012). This subfamily includes about 505 species belonging to 38 genera, around the world (Žikić *et al.* 2017). Aphidiinae are strictly associated to their host aphids, regarding local distribution and/or broader expansions (Starý 1981a). The complexity of biogeographical factors determines the area of distribution of parasitoid species and directly affects the host associations (Hawkins 1994). Consequently, each aphid parasitoid species is also expected to have a specific territory from which it can be distributed and reach the preferable host aphids (Charles & Paine 2016). Additionally, the host plants have a crucial impact concerning the diversity of the feeding insects, especially on aphids and their parasitoids (Starý 1981a; Žikić *et al.* 2017).

The Middle East is a region that encompasses Western Asia and a part of North Africa. The traditional definition of the Middle East includes counties in Western Asia (Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestine, Saudi Arabia, Syria, United Arab Emirates and Yemen). Yet, the "greater" Middle East includes many other countries in central Asia (Afghanistan, Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkmenistan, Uzbekistan, Turkey) and some northern African countries (Algeria, Egypt, Libya, Morocco, Somalia, Sudan and Tunisia). However, regardless of the geographical definition, a delimitation of the area is more biogeographically substantial with few additions of other countries including Turkey and Mediterranean North African countries. The countries of the Middle East generally have an arid and hot climate, relying on several major rivers to provide water for irrigation in order to support agriculture in moderately limited areas. The biotic history of Asia, as well as its complex topography and climatic diversity, led to the evolution of thousands of very specific plant species. The natural barrier of the Irano-Anatolian area, which is located between the Mediterranean Basin and the dry plateaus of Western Asia, serves as both a refuge and a corridor and

it has contributed to the creation of many isolated areas with various patches of local endemism (Starý *et al.* 2000; Ma *et al.* 2010).

Such a complicated diversity of plant species, which is affected partially by the agricultural intensification, needs to be highlighted in conservation programs. The analyses of the faunal diversity and the biological connectivity of the regions, in the case of aphid parasitoids, are the main topics of ecological and conservation studies (Powell *et al.* 1990; Vollhardt *et al.* 2008). The area of North African countries is biogeographically divided into the Mediterranean climate region in the north, and the arid Sahara in the south, albeit both of them can be subdivided into various ecozones (Houerou 2000). Numerous faunistic and biosystematical research studies on Aphidiinae have been conducted in this complex region, although many parts are still unexplored. Earlier studies on aphid parasitoids of Central Asia (Starý 1979) and the Mediterranean (Starý 1976) include also some parts of the Middle East. Furthermore, scattered information has been published, in which the occurrence of the aphid parasitoid species has been recorded in various countries in the Middle East and North Africa.

The few published identification keys of Aphidiinae are restricted to the local fauna of Aphidiinae (i.e., Iran) (Nazari *et al*. 2012; Rakhshani *et al*. 2012b; Barahoei *et al*. 2013), local generic keys (Mescheloff & Rosen 1988, 1990a, 1990b, 1993; Rakhshani *et al*. 2007a, 2008a, 2012a) or specific groups associated with economically important aphids (Rakhshani *et al*. 2005a, 2006a; Rakhshani 2012; Gadallah *et al*. 2017). However, these keys are associated with few countries in the Middle East, while numerous species have never been included. Here we review the Aphidiinae parasitoids of the Middle East and North Africa, aiming to compare their diversity in various countries and establish a background for future research, especially within the unexplored areas. New material, originating from Saudi Arabia, has been studied and new findings are presented. On the basis of line drawings of females, an original illustrated key to all known species in the Middle East and North Africa is provided.

Material and methods

New material was collected during 2011–2013 from various regions of Saudi Arabia. Plant material with aphid colonies (both live and mummified individuals) was collected from the field and transferred to the laboratory. Then, it was cleaned and subdivided into properly prelabeled plastic rearing jars covered with fine mesh for ventilation. The containers were kept in room temperature for a period of 1–2 weeks until emergence of adult parasitoids. As soon as the adult parasitoids emerged, they were immediately captured using an aspirator and transferred into vials containing 70% ethyl alcohol. Female parasitoids were dissected and slide mounted in Berlese medium (Tomanović *et al.* 2018). The external morphology of parasitoids was studied using an Olympus™ SZX9 (Olympus Corporation, Japan) or a Nikon™ SMZ645 (Nikon Corporation, Japan) stereo microscopes and a Nikon™ Eclipse E200 (Nikon Corporation, Japan) or a Leica™ DMLS phase-contrast (Leica Microsystems GmBH, Wetzlar, Germany) microscopes. Line drawings were traced in Adobe Illustrator CS5 on the digital photographs from the slides, captured using a Canon™ EOS 700D digital camera (Canon Inc., Japan) directly mounted on the micrsoscope. The ratio measurements were based on the slide-mounted specimens using an ocular micrometer or using tpsDig software (Rohlf 2006) on the digital photographs. Specimens from the following depositories were examined and used to prepare the key and illustrations: Department of Plant Protection, University of Zabol, Iran; Institute of Entomology, Biology Centre, Česke Budějovice, Czech Republic; Institute of Zoology, Faculty of Biology, University of Belgrade, Serbia; Laboratory of Agricultural Zoology and Entomology, Department of Crop Science, Agricultural University of Athens, Greece, and Naturalis Biodiversity Centre, Leiden, The Netherlands. The new series of specimens from Saudi Arabia were deposited in the Collection of Department of Plant Protection, University of Zabol (DPPZ). The rest of the data have been extracted from literature that refers to taxonomy, faunal diversity and biology of Aphidiinae parasitoids in various countries of the Middle East and North African countries. The distribution of the listed species is also presented in this study. Terminology of morphological characters

for the parasitoids follows Gärdenfors (1986) (for the sculpture of propodeum) and Sharkey & Wharton (1997). Aphid nomenclature follows Remaudière & Remaudière (1997) and in few cases updated according to Nieto Nafria *et al.* (2011) and Favret (2019).

Results

Aphid parasitoids - host aphids - distribution and Taxonomy

A total of 108 Aphidiinae species, belonging to 18 genera, associated with 240 aphid species in 16 countries of the Middle East and North Africa are reviewed. 743 host aphid-parasitoid associations are listed in the target area. Doubtful records are marked with "?", i.e., associations that fall out of parasitoids' known host range. These records need to be verified but are kept in the present account, since they may be worthy as issues to look upon in future studies in the target region and elsewhere.

Class Insecta L., 1758
Order Hymenoptera L., 1758
Family Braconidae Nees, 1811
Subfamily Aphidiinae Haliday, 1833

Aclitus obscuripennis Förster, 1862
Figs 1, 73, 176, 272, 374, 510

Host records

Lacking host data (Farahani *et al*. 2017).

Distribution in the Middle East and North Africa

Iran (Farahani *et al*. 2017).

General distribution

Eastern (Iran) and Western Palaearctic (Europe).

Adialytus ambiguus Haliday, 1834
Figs 2, 74, 177, 273, 375, 500, 511

Host records

Sipha elegans Del Guercio (Elmali 1997; Uysal *et al.* 2004; Rakhshani *et al.* 2008b, 2012a; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Sipha flava* (Forbes) (Nazari *et al.* 2012; Rakhshani *et al.* 2012a); *Sipha maydis* Passerini (Mescheloff & Rosen 1990a; Starý *et al.* 2000; Nazari *et al.* 2012; Rakhshani *et al.* 2012a, 2012b; Barahoei *et al.* 2013); *Sipha* sp. (Starý 1979).

Distribution in the Middle East and North Africa

Egypt (El-Ghiet *et al.* 2014 – as *Adialytus* cf. *ambiguus* (Haliday, 1834)); Iran (Starý 1979; Starý *et al.* 2000; Nazari *et al.* 2012; Rakhshani *et al.* 2012a, 2012b; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); Israel (Mescheloff & Rosen 1990a); Turkey (Starý 1976; Central part – Elmali 1997; Western part – Uysal *et al.* 2004).

General distribution

Holarctic, Oriental.

Adialytus salicaphis (Fitch, 1855)
Figs 3, 75, 178, 274, 376, 501, 512

Host records

Chaitophorus euphraticus Hodjat (Starý *et al.* 2000; Rakhshani *et al.* 2007b, 2012a; Talebi *et al.* 2009); *Chaitophorus leucomelas* Koch (Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Rakhshani *et al.* 2007b, 2012a; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Chaitophorus populeti* (Panzer) (Rakhshani *et al.* 2007b, 2012a); *Chaitophorus populialbae* (Boyer de Fonscolombe) (Starý *et al.* 2000; Rakhshani *et al.* 2007b, 2012a; Barahoei *et al.* 2013); *Chaitophorus remaudierei* Pintera (Starý *et al.* 2000; Rakhshani *et al.* 2007b, 2012a; Talebi *et al.* 2009; Nazari *et al.* 2012); *Chaitophorus salijaponicus* Essig & Kuwana (Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani *et al.* 2007b, 2012; Nazari *et al.* 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Chaitophorus truncatus* (Hausmann) (Rakhshani *et al.* 2007b; Talebi *et al.* 2009); *Chaitophorus vitellinae* (Schrank) (Rakhshani *et al.* 2007b, 2012a; Talebi *et al.* 2009; Barahoei *et al.* 2013); *Chaitophorus* spp. (Starý & Kaddou 1971; Starý 1976, 1979; Starý *et al.* 2000; Barahoei *et al.* 2012, 2013; Rakhshani *et al.* 2012a, 2012b).

Distribution in the Middle East and North Africa

Iran (Starý 1979; Starý *et al.* 2000; Barahoei *et al.* 2012; Nazari *et al.* 2012; Rakhshani *et al.* 2007b, 2012a, 2012b; Taheri & Rakhshani 2013); Iraq (Starý & Kaddou 1971; Starý 1976); Turkey (Eastern part – Ölmez & Ulusoy 2003; Western part – Uysal *et al.* 2004; Erdoğan *et al.* 2008).

General distribution

Holarctic, Neotropical, Oriental.

Adialytus thelaxis Starý, 1961
Figs 4, 76, 179, 275, 377, 502, 513

Host records

Thelaxes confertae Börner (Mescheloff & Rosen 1990a); *Thelaxes suberi* (Del Guercio) (Starý 1969a, 1969b, 1976; Starý & Kaddou 1971; Starý 1979; Babaee *et al.* 2000; Starý *et al.* 2000; Nazari *et al.* 2012; Rakhshani *et al.* 2012a); *Thelaxes* sp. (Starý 1976).

Distribution in the Middle East and North Africa

Iran (Starý 1979; Babaee *et al.* 2000; Starý *et al.* 2000; Nazari *et al.* 2012; Rakhshani *et al.* 2012a); Iraq (Starý 1969a, 1969b, 1976; Starý & Kaddou 1971); Israel (Mescheloff & Rosen 1990a); Turkey (Starý 1976).

General distribution

Eastern (Iran) and Western Palaearctic.

Adialytus veronicaecola (Starý, 1978)
Figs 5, 77, 180, 276, 378, 503, 514

Host records

Aphis craccivora Koch, *Aphis gossypii* Glover (Rakhshani *et al.* 2012a).

Distribution in the Middle East and North Africa

Iran (Rakhshani *et al.* 2012a); Turkey – Western part (Erdoğan & Akar 2018).

General distribution

Eastern (Iran, Kazakhstan) and Western Palaearctic (Turkey).

Aphidius absinthii Marshall, 1896
Figs 6, 78, 181, 277, 379, 476, 515

Host records

Macrosiphoniella abrotani (Walker) (Starý *et al.* 2000; Rakhshani *et al.* 2008a, 2011; Talebi *et al.* 2009); *Macrosiphoniella artemisiae* (Boyer de Fonscolombe) (Starý 1976; Aslan *et al.* 2004; Uysal *et al.* 2004; Rakhshani *et al.* 2008a, 2011; Talebi *et al.* 2009); *Macrosiphoniella helichrysi* Remaudière (Starý *et al.* 2000; Rakhshani *et al.* 2011); *Macrosiphoniella oblonga* (Mordvilko) (Starý *et al.* 2000; Rakhshani *et al.* 2008a, 2011; Talebi *et al.* 2009); *Macrosiphoniella pulvera* (Walker) (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2011); *Macrosiphoniella riedeli* Szelegiewicz (Mescheloff & Rosen 1990b; Rakhshani *et al.* 2011); *Macrosiphoniella tuberculata* (Nevsky) (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2011; Mescheloff & Rosen 1990b – as *Macrosiphoniella* nr. *macrura* Hille Ris Lambers); *Macrosiphoniella* sp. (Starý *et al.* 2000; Rakhshani *et al.* 2011).

Distribution in the Middle East and North Africa

Iran (Starý 1979; Starý *et al.* 2000; Talebi *et al.* 2009; Rakhshani *et al.* 2008a, 2011); Israel (Mescheloff & Rosen 1990b); Turkey (Starý 1976; Central part – Aslan *et al.* 2004; Uysal *et al.* 2004; Western part – Erdoğan *et al.* 2008).

General distribution

Holarctic, Oriental.

Aphidius arvensis (Starý, 1960)
Figs 7, 79, 182, 278, 380, 516

Host records

Coloradoa achilleae Hille Ris Lambers (Starý 1979; Starý *et al.* 2000; Talebi *et al.* 2009; Nazari *et al.* 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013).

Distribution in the Middle East and North Africa

Iran (Starý 1979; Starý *et al.* 2000; Talebi *et al.* 2009; Nazari *et al.* 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013).

General distribution

Eastern (Iran) and Western Palaearctic (Europe).

Aphidius asteris Haliday, 1834
Figs 80, 183, 279, 381, 477, 517

Host records

Macrosiphoniella spp. (Rakhshani *et al.* 2011).

Distribution in the Middle East and North Africa

Iran (Rakhshani *et al.* 2011); Egypt (El-Ghiet *et al.* 2014).

General distribution

Holarctic, Oriental.

Remarks

Record of *Aphidius asteris* in association with alfalfa fields (El-Ghiet *et al.* 2014) can be a reason of migration from adjacent plants infested with *Macrosiphoniella* aphids/or a misidentification.

Aphidius avenae Haliday, 1834
Figs 81, 184, 280, 382, 478, 518

Material examined

SAUDI ARABIA • 1♀; Abha; May 2013; on *Jacaranda mimosifolia* • 1♀ 1♂; Abha; May 2013; *Myzus persicae* (Sulzer) on *Lectuca virosa* • 1♀ 1♂; Abha; Jun. 2012; *Acyrthosiphon pisum* (Harris) on *Trifolium alexandrinum*; Z. Ahmad, leg. (DPPZ).

Host records

Acyrthosiphon pisum (Harris) (Tremblay *et al.* 1985; Laamari *et al.* 2011); *Aphis* sp. (Uysal *et al.* 2004); *Hyperomyzus lactucae* (L.) (Laamari *et al.* 2011); *Myzus persicae* (Sulzer) (Uysal *et al.* 2004); *Rhopalosiphum maidis* (Fitch) (Taheri & Rakhshani 2013).

Distribution in the Middle East and North Africa

Algeria (Laamari *et al.* 2011); Iran (Taheri & Rakhshani 2013); Lebanon (Tremblay *et al.* 1985); Morocco (Bleton & Fieuzet 1939); Turkey (Central part – Erdoğan *et al.* 2008; Western part – Uysal *et al.* 2004; Erdoğan *et al.* 2008; Akar & Erdoğan 2017 – as *Aphidius picipes* (Nees 1811)); Saudi Arabia (new record).

General distribution

Holarctic, Oriental.

Aphidius banksae Kittel, 2016
Figs 82, 185, 281, 383, 479, 519

Host records

Acyrthosiphon pisum (Harris) (Chen *et al.* 1991).

Distribution in the Middle East and North Africa

Israel, Turkey – Eastern part (Chen *et al.* 1991).

General distribution

Western Palaearctic, Nearctic (imported to USA, not recovered again).

Remarks

All records of *Aphidius staryi* Chen & Luhman, 1991 (*in* Chen *et al.* 1991) refer to *Aphidius banksae* Kittel, 2016.

Aphidius cingulatus Ruthe, 1859
Figs 8, 83, 186, 282, 384, 480, 520

Host records

Pterocomma pilosum Buckton (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2007b, 2008a, 2012b; Talebi *et al.* 2009); *Pterocomma populeum* (Kaltenbach) (Starý 1979; Rakhshani *et al.* 2007b, 2008a, 2012b); *Pterocomma* sp. (Starý *et al.* 2000); Lacking host data (Düzgüneş *et al.* 1982; Uysal *et al.* 2004).

Distribution in the Middle East and North Africa

Iran (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2007b, 2008a); Turkey (Central part – Düzgüneş *et al.* 1982; Uysal *et al.* 2004).

General distribution

Holarctic, Neotropical, Oriental.

Aphidius colemani Viereck, 1912
Figs 84, 187, 283, 385, 481, 521

Host records

Acyrthosiphon gossypii Mordvilko (?), *Acyrthosiphon pisum* (Harris) (?) (Starý & Erdelen 1982); *Aphis aurantii* Boyer de Fonscolombe (Rosen 1967, 1969; Avidov & Harpaz 1969; Starý 1976; Tremblay *et al*. 1985; Yumruktepe & Uygun 1994; Uysal *et al.* 2004; Yoldaş *et al.* 2011); *Aphis chloris* Koch (Mescheloff & Rosen 1990b); *Aphis craccivora* Koch (Starý & Erdelen 1982; Mescheloff & Rosen 1990b; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Yoldaş *et al.* 2011; Ahmad & Bakr 2013; Satar *et al.* 2014); *Aphis epilobiaria* Theobald (Mescheloff & Rosen 1990b); *Aphis fabae* Scopoli (Abou-Fakhr 1982; Starý & Erdelen 1982; Tremblay *et al*. 1985; Mescheloff & Rosen 1990b – as *Aphis citricola* van der Goot; Laamari *et al.* 2012); *Aphis gossypii* Glover (Mescheloff & Rosen 1990b; Yoldaş *et al.* 2002, 2011; Uysal *et al.* 2004; Boukhris-Bouhachem 2011; Irshaid & Hasan 2011; Laamari *et al.* 2012; Satar *et al.* 2014; Ayadi *et al.* 2017); *Aphis hederae* Kaltenbach, *Aphis illinoisensis* Shimer (El-Gantiry *et al.* 2012; Havelka *et al.* 2011); *Aphis intybi* Koch (Abou-Fakhr 1982; Mescheloff & Rosen 1990b; Abou-Fakhr & Kawar 1998; Laamari *et al.* 2012); *Aphis nerii* Boyer de Fonscolombe (Abou-Fakhr 1982; Tremblay *et al*. 1985; Mescheloff & Rosen 1990b; Abou-Fakhr & Kawar 1998; Laamari *et al.* 2012); *Aphis nasturtii* Kaltenbach (Starý & Kaddou 1971; Starý 1976; Mescheloff & Rosen 1990b – as *Aphis zizyphi* Theobald); *Aphis pomi* De Geer (Laamari *et al.* 2011, 2012); *Aphis punicae* Passerini (Starý 1976; Al-Azawi 1970; Mescheloff & Rosen 1990b; Laamari *et al.* 2012); *Aphis solanella* Theobald (Ayadi *et al.* 2017); *Aphis umbrella* (Börner) (Mescheloff & Rosen 1990b); *Aphis verbasci* Schrank (Mescheloff & Rosen 1990b); *Aphis* sp. (Starý 1975, 1976); *Brachycaudus amygdalinus* (Schouteden) (Mescheloff & Rosen 1990b); *Brachycaudus cardui* (L.) (Abou-Fakhr 1982; Tremblay *et al*. 1985; Abou-Fakhr & Kawar 1998); *Brachycaudus helichrysi* (Kaltenbach) (Abou-Fakhr 1982; Starý & Erdelen 1982; Tremblay *et al*. 1985; Mescheloff & Rosen 1990b; Abou-Fakhr & Kawar 1998; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Satar *et al.* 2014); *Capitophorus elaeagni* (Del Guercio) (Mescheloff & Rosen 1990b); *Diuraphis noxia* (Kurdjumov) (Starý & Erdelen 1982; Starý *et al.* 2013); *Hayhurstia atriplicis* (L.) (Mescheloff & Rosen 1990b); *Hyadaphis foeniculi* (Passerini) (Mescheloff & Rosen 1990b); *Hyperomyzus lactucae* (L.) (?) (Güz & Kilinçer 2005); *Macrosiphum euphorbiae* (Thomas) (Mescheloff & Rosen 1990b); *Macrosiphum rosae* (L.) (?) (Mescheloff & Rosen 1990b); *Myzus persicae* (Sulzer) (Abou-Fakhr 1982; Starý & Erdelen 1982; Tremblay *et al*. 1985; Mescheloff & Rosen 1990b; Abou-Fakhr & Kawar 1998; Güz & Kilinçer 2005; Yoldaş *et al.* 2011; Laamari *et al.* 2012; Ahmad & Bakr 2013; Satar *et al.* 2014; Hasan 2016); *Ovatus mentharius* (van der Goot) (Güz & Kilinçer 2005); *Rhopalosiphum maidis* (Fitch) (Starý & Erdelen 1982; Ghanim & El-Adl 1983; Mescheloff & Rosen

1990b; El-Heneidy *et al.* 2001, 2002, 2004; Sobhy *et al.* 2004; Güz & Kilinçer 2005; Gadallah *et al.* 2017); *Rhopalosiphum nymphaeae* (L.) (Starý 1976); *Rhopalosiphum padi* (L.) (Ghanim & El-Adl 1983; Tremblay *et al*. 1985; Mescheloff & Rosen 1990b; Abdel-Rahman *et al.* 2000; El-Heneidy *et al.* 2001, 2002, 2004; Sobhy *et al.* 2004; Abdel-Rahman 2005; Slman 2006; Gadallah *et al.* 2017); *Schizaphis graminum* (Rondani) (Starý & Erdelen 1982; Ghanim & El-Adl 1983; Mescheloff & Rosen 1990b; Abdel-Rahman *et al.* 2000; El-Heneidy *et al.* 2001, 2002, 2004; Sobhy *et al.* 2004; Abdel-Rahman 2005; Slman 2006); *Schizaphis rosazevedoi* Ilharco (Mescheloff & Rosen 1990b); *Sitobion avenae* (Fabricius) (Ghanim & El-Adl 1983; El-Heneidy *et al.* 2001, 2002; Sobhy *et al.* 2004; Gadallah *et al.* 2017); *Sitobion fragariae* (Walker) (Mescheloff & Rosen 1990b).

Distribution in the Middle East and North Africa

Algeria (Starý 1975, 1976; Laamari *et al.* 2011, 2012); Egypt (Starý 1976; Ghanim & El-Adl 1983; Abdel-Rahman *et al.* 2000; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002, 2003, 2004; Sobhy *et al.* 2004; Abdel-Rahman 2005; Slman 2006; El-Gantiry *et al.* 2012; El-Ghiet *et al.* 2014; Gadallah *et al.* 2017); Iraq (Al-Azawi 1970; Starý & Kaddou 1971; Starý 1976); Israel (Rosen 1967, 1969; Avidov & Harpaz 1969; Starý 1970, 1975, 1976; Mescheloff & Rosen 1990b); Jordan (Irshaid & Hasan 2011; Hasan 2016); Lebanon (Starý 1976; Abou-Fakhr 1982; Tremblay *et al*. 1985; Abou-Fakhr & Kawar 1998); Libya (Havelka *et al.* 2011; Tomanović *et al.* 2014); Morocco (Starý & Sekkat 1987); Palestine (Samara & Qubbaj 2012); Saudi Arabia (Ahmad & Bakr 2013); Syria (Starý 1975, 1976); Tunisia (Starý 1976; Ben Halima & Ben Hamouda 2005; Boukhris-Bouhachem 2011; Ayadi *et al.* 2017); Turkey (Starý 1976; Uysal *et al.* 2004; Eastern part – Tozlu *et al.* 2002; Ölmez & Ulusoy 2003; Central part – Yumruktepe & Uygun 1994; Güz & Kilinçer 2005; Satar *et al.* 2014; Western part – Yoldaş *et al.* 2002, 2011; Erdoğan *et al.* 2008; Akar & Erdoğan 2017); UAE (Starý *et al.* 2013); Yemen (Starý & Erdelen 1982; Starý *et al.* 2013).

General distribution

Cosmopolitan.

Remarks

All evidence from Iran (Starý 1979, Starý *et al.* 2000; Rakhshani *et al.* 2008a), refer to *Aphidius platensis* (Tomanović *et al.* 2014). Identification-revision of this species group is recommended. Description and illustration of *Aphidius colemani* in Mescheloff & Rosen 1990b, clearly represent the diagnostic characters of *Aphidius platensis*.

Aphidius eadyi Starý, González & Hall, 1980
Figs 9, 85, 188, 285, 386, 482, 522

Host records

Acyrthosiphon pisum (Harris) (González *et al.* 1978; Starý 1979; Starý *et al.* 1980, Starý & Sekkat 1987; Starý *et al.* 2000; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Rakhshani *et al.* 2006a, 2008a; Laamari *et al.* 2012; Nazari *et al.* 2012; Barahoei *et al.* 2013; Chaouche & Laamari 2015).

Distribution in the Middle East and North Africa

Algeria (Laamari *et al.* 2012; Chaouche & Laamari 2015); Iran (Starý 1979; Starý *et al.* 1980, 2000; Rakhshani *et al.* 2006a, 2008a; Nazari *et al.* 2012; Barahoei *et al.* 2013); Morocco (Starý & Sekkat 1987; Starý *et al.* 1980); Turkey (Central and Eastern parts – Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Western part – Erdoğan *et al.* 2008; Akar & Erdoğan 2017).

General distribution

Eastern and Western Palaearctic, Nearctic (imported), Oceanic.

Aphidius eglanteriae Haliday, 1834
Figs 86, 189, 284, 387, 523

Host records

Chaetosiphon tetrarhodum (Walker) (Barjadze *et al.* 2010).

Distribution in the Middle East and North Africa

Turkey (Western part – Barjadze *et al.* 2010).

General distribution

Western Palaearctic (Europe).

Aphidius ervi Haliday, 1834
Figs 10, 87, 190, 286, 388, 483, 524

Host records

Acyrthosiphon gossypii Mordvilko (Laamari *et al.* 2011, 2012; Barahoei *et al.* 2013); *Acyrthosiphon ilka* Mordvilko (as *Acyrthosiphon bidentis* Eastop – Starý 1976); *Acyrthosiphon kondoi* Shinji (González *et al.* 1978; Starý *et al.* 2000; Rakhshani *et al.* 2006a, 2008a, 2008b; Nazari *et al.* 2012; Barahoei *et al.* 2013); *Acyrthosiphon lactucae* (Passerini) (Zeren & Düzgüneş 1983; Uysal *et al.* 2004); *Acyrthosiphon pisum* (Harris) (Bodenheimer & Swirski 1957; Eady 1969; Avidov & Harpaz 1969; Starý 1976; Starý & González 1978; González *et al.* 1978; Monajemi & Esmaili 1981; Tremblay *et al.* 1985; Talebi *et al.* 2009; Nazari *et al.* 2012; Taheri & Rakhshani 2013; Barahoei *et al.* 2013; Düzgüneş *et al.* 1982; Zeren & Düzgüneş 1983; Rasulian 989; Starý & Sekkat 1987; Mescheloff & Rosen 1990b; Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani *et al.* 2006a, 2008a, 2008b; Laamari *et al.* 2011, 2012; Rakhshani *et al.* 2012b; Chaouche & Laamari 2015); *Aphis craccivora* Koch (Zeren & Düzgüneş 1983; Laamari *et al.* 2011; Chaouche & Laamari 2015); *Aphis fabae* Scopoli (Zeren & Düzgüneş 1983; Uysal *et al.* 2004; Laamari *et al.* 2011); *Capitophorus elaeagni* (Del Guercio); *Dysaphis foeniculus* (Theobald) (Ayadi *et al.* 2017); *Dysaphis* spp., *Hyperomyzus lactucae* (L.) (Laamari *et al.* 2011, 2012); *Lipaphis pseudobrassicae* (Davis) (Chaouche & Laamari 2015); *Macrosiphum euphorbiae* (Thomas) (Starý 1976; Abou-Fakhr 1982; Tremblay *et al.* 1985; Mescheloff & Rosen 1990b; Zeren & Düzgüneş 1983; Ben Halima & Ben Hamouda 1993; Abou-Fakhr & Kawar 1998; Uysal *et al.* 2004; Rakhshani *et al.* 2008a; Laamari *et al.* 2011, 2012); *Metopolophium dirhodum* (Walker) (Starý & Sekkat 1987; Elmali & Toros 1994; Gülçlü & Özbek 2002; Uysal *et al.* 2004); *Microlophium carnosum* (Buckton) (Rakhshani *et al.* 2008a; Talebi *et al.* 2009); *Myzus persicae* (Sulzer) (Starý 1976; Zeren & Düzgüneş 1983; Starý & Sekkat 1987; Ben Halima & Ben Hamouda 1993; Uysal *et al.* 2004; Rakhshani *et al.* 2008a; Laamari *et al.* 2012; Barahoei *et al.* 2013; Chaouche & Laamari 2015); *Rhopalosiphum padi* (L.) (Laamari *et al.* 2011; Taheri & Rakhshani 2013; Gadallah *et al.* 2017); *Schizaphis graminum* (Rondani) (Starý & Sekkat 1987); *Sitobion avenae* (Fabricius) (Elmali & Toros 1994; Darvish-Mojeni & Bayat-Asadi 1995; Uysal *et al.* 2004; Rakhshani *et al.* 2008a; Laamari *et al.* 2011, 2012; Barahoei *et al.* 2013; Ayadi *et al.* 2017; Gadallah *et al.* 2017); *Sitobion fragariae* (Walker) (Laamari *et al.* 2011, 2012); *Uroleucon aeneum* (Hille Ris Lambers) (?); *Uroleucon sonchi* (L.) (?) (Laamari *et al.* 2011); *Wahlgreniella nervata* (Gillette) (Barahoei *et al.* 2013).

Distribution in the Middle East and North Africa

Algeria (Starý 1976; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); Egypt (Gadallah *et al.* 2017); Iran (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2006a, 2008a, 2008b, 2012b; Nazari *et al.* 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); Iraq (Al-Azawi 1970; Starý 1976); Israel (Bodenheimer & Swirski 1957; Avidov & Harpaz 1969; Starý 1976; Mescheloff & Rosen 1990b); Lebanon (Mackauer & Starý 1967; Starý 1976; Marsh 1977; Abou-Fakhr 1982; Tremblay *et al*. 1985; Abou-Fakhr & Kawar 1998); Morocco (Mimeur 1934; Eady 1969; Starý 1976; Starý & Sekkat 1987; González *et al*. 1978); Palestine (Samara & Qubbaj 2012); Tunisia (Ben Halima & Ben Hamouda 1993; Ayadi *et al.* 2017); Turkey (Eastern part – Elmali & Toros 1994; Gülçlü & Özbek 2002; Central part – Zeren & Düzgüneş 1983; Uysal *et al.* 2004; Erdoğan *et al.* 2008; Western part – Akar & Erdoğan 2017); UAE (Starý *et al.* 2013); Yemen (Starý *et al.* 2013).

General distribution

Cosmopolitan.

Aphidius funebris Mackauer, 1961
Figs 11, 88, 191, 287, 389, 484, 525

Host records

Aphis fabae Scopoli (?) (Chaouche & Laamari 2015); *Brachycaudus cardui* (L.) (?) (Güz & Kilinçer 2005; Laamari *et al.* 2011, 2012); *Hyperomyzus lactucae* (L.) (?) (Laamari *et al.* 2011); *Uroleucon acroptilidis* Kadyrbekov, Renxin & Shao (Barahoei *et al.* 2013); *Uroleucon aeneum* (Hille Ris Lambers) (Güz & Kilinçer 2005; Laamari *et al.* 2011, 2012); *Uroleucon chondrillae* (Nevsky) (Starý 1979; Starý *et al.* 2000; Rakhshani *et al. 2*008a); *Uroleucon cichorii* (Koch) (Rakhshani *et al.* 2008a); *Uroleucon compositae* (Theobald) (Laamari *et al.* 2012; Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Nazari *et al.* 2012; Barahoei *et al.* 2013); *Uroleucon erigeronense* (Thomas) (Rakhshani *et al. 2*008a; Talebi *et al.* 2009); *Uroleucon jaceae* (L.) (Al-Azawi 1970; Starý & Kaddou 1971; Starý 1976; Güz & Kilinçer 2005; Rakhshani *et al. 2*008a; Talebi *et al.* 2009; Laamari *et al.* 2011, 2012; Nazari *et al.* 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Uroleucon sonchi* (L.) (Al-Azawi 1970; Starý & Kaddou 1971; Starý 1976; Düzgüneş *et al.* 1982; Starý & Sekkat 1987; Uysal *et al.* 2004; Güz & Kilinçer 2005; Rakhshani *et al.* 2008a; Laamari *et al.* 2011, 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013; Chaouche & Laamari 2015; Ayadi *et al.* 2017); *Uroleucon* sp. (Starý 1976; Aslan *et al.* 2004; Uysal *et al.* 2004; Barahoei *et al.* 2012, 2013).

Distribution in the Middle East and North Africa

Algeria (Starý 1976; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); Iran (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2008a; Barahoei *et al.* 2012, 2013; Nazari *et al.* 2012; Taheri & Rakhshani 2013); Iraq (Al-Azawi 1970; Starý & Kaddou 1971; Starý 1976); Morocco (Starý & Sekkat 1987); Turkey (Central part – Düzgüneş *et al.* 1982; Aslan *et al.* 2004; Güz & Kilinçer 2005; Eastern part – Uysal *et al.* 2004; Western part – Erdoğan *et al.* 2008; Akar & Erdoğan 2017).

General distribution

Eastern and Western Palaearctic, Oceanic, Oriental.

Aphidius hieraciorum Starý, 1962
Figs 89, 192, 288, 390, 526

Host records

Nasonovia ribisnigri (Mosley) (Nazari *et al.* 2012); *Nasonovia* sp. (Mossadegh *et al.* 2011).

Distribution in the Middle East and North Africa

Iran (Mossadegh *et al.* 2011; Nazari *et al.* 2012).

General distribution

Eastern and Western Palaearctic.

Aphidius iranicus Rakhshani & Starý, 2007
Figs 90, 193, 289, 391, 527

Host records

Titanosiphon neoartemisiae (Takahashi) (Tomanović *et al*. 2007; Talebi *et al*. 2009 – as *Titanosiphon bellicosum* Nevesky).

Distribution in the Middle East and North Africa

Iran (Tomanović *et al*. 2007; Talebi *et al*. 2009).

General distribution

This species has not been recorded outside Iran.

Aphidius matricariae Haliday, 1834
Figs 12, 91, 194, 290, 392, 485, 528

Material examined

SAUDI ARABIA • 1 ♂; Abha-Mahala College campus; Nov. 2012; on *Chrysanthemum* sp. • 1 ♀, 1 ♂; Abha-Mahala College campus; Apr. 2013; on *Dodonaea viscosa* • 1 ♀, 3 ♂♂; Abha; May 2013; on *Dodonaea viscosa* • 2 ♀♀; Abha; 28 Nov. 2012; Agricultural field; on *Lablab purpureus* • 7 ♀♀, 1 ♂ Abha; Nov. 2012; on *Lablab purpureus* • 1 ♀, 6 ♂♂; Abha-Mahala College campus; Nov. 2012; on *Lactuca virosa* • 28 ♀♀, 23 ♂♂; Abha-Mazra; May 2013; *Aphis punicae* Passerini on *Punica granatum* • 3 ♂♂; Abha-Mahala College campus; Nov. 2012; on *Setaria glauca* • 1 ♂; Abha-Mahala College campus; Dec. 2012; on *Solanum nigrum* • 4 ♀♀, 2 ♂♂; Abha-Mahala College campus; Apr. 2013; on *Solanum nigrum* • 1 ♂; Abha-Mahala College campus; Nov. 2012; on *Sonchus oleraceus*; Z. Ahmed leg. (DPPZ).

Host records

Acyrthosiphon gossypii Mordvilko (?) (Chaouche & Laamari 2015); *Amegosiphon platicaudum* (Narzikulov) (Nazari *et al.* 2012); *Aphis affinis* Del Guercio (Starý & Kaddou 1971; Starý 1976; Aslan *et al.* 2004; Uysal *et al.* 2004; Rakhshani *et al.* 2012b; Nazari *et al.* 2012; Barahoei *et al.* 2013); *Aphis aurantii* Boyer de Fonscolombe (Hussein & Kawar 1984; Tremblay *et al*. 1985; Ben Halima *et al.* 1994; Uysal *et al.* 2004; Ben Halima & Ben Hamouda 2005; Boukhris-Bouhachem 2011); *Aphis craccivora* Koch (Starý & Kaddou 1971; Starý 1976; Mescheloff & Rosen 1990b; Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Abdel-Samad & Ahmed 2009; Mossadegh *et al.* 2011; Laamari *et al.* 2011, 2012; Nazari *et al.* 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013; Chaouche & Laamari 2015); *Aphis crepidis* (Börner) (Starý *et al.* 2000); *Aphis dlabolai* Holman (Barahoei *et al.* 2013); *Aphis euphorbiae* Kaltenbach (Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Mossadegh *et al.* 2011; Barahoei *et al.* 2013); *Aphis fabae* Scopoli (Abou-Fakhr 1982; Tremblay *et al*. 1985; Mescheloff & Rosen 1990b; Ben Halima & Ben Hamouda 1993; Abou-Fakhr & Kawar 1998; Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Mossadegh *et al.* 2011; Laamari *et al.* 2011, 2012; Nazari *et al.* 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013; Ayadi *et al.* 2017); *Aphis gossypii* Glover (Starý 1979; Abou-Fakhr 1982; Tremblay *et al.* 1985; Mescheloff & Rosen 1990b; Ben

Halima & Ben Hamouda 1993; Ben Halima *et al.* 1994; Starý *et al.* 2000; Ben Halima & Ben Hamouda 2005; Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Boukhris-Bouhachem 2011; Mossadegh *et al.* 2011; Laamari *et al.* 2011, 2012; Nazari *et al.* 2012; Ahmad & Bakr 2013; Barahoei *et al.* 2013; Satar *et al.* 2014; Ayadi *et al.* 2017); *Aphis hederae* Kaltenbach (Mescheloff & Rosen 1990b); *Aphis illinoisensis* Shimer (Barjadze *et al.* 2010; Havelka *et al.* 2011); *Aphis intybi* Koch (Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Aphis nasturtii* Kaltenbach (Starý 1976; Mescheloff & Rosen 1990b – as *Aphis zizyphi* Theobald; Nazari *et al.* 2012); *Aphis nerii* Boyer de Fonscolombe (Abou-Fakhr 1982; Tremblay *et al*. 1985; Ben Halima *et al.* 1994; Abou-Fakhr & Kawar 1998; Ben Halima & Ben Hamouda 2005; Laamari *et al.* 2012); *Aphis parietariae* Theobald (Starý & Kaddou 1971; Starý 1976); *Aphis plantaginis* Goeze (Barahoei *et al.* 2013); *Aphis pomi* De Geer (Ölmez & Ulusoy 2003; Rakhshani *et al.* 2008a; Rakhshani 2012; Barahoei *et al.* 2013); *Aphis punicae* Passerini (Laamari *et al.* 2012; Nazari *et al.* 2012; Barahoei *et al.* 2013); *Aphis solanella* Theobald (Barahoei *et al.* 2013); *Aphis spiraecola* Patch (Laamari *et al.* 2012; Rakhshani 2012); *Aphis umbrella* (Börner) (Schlinger & Mackauer 1963; Abou-Fakhr 1982; Tremblay *et al*. 1985; Mescheloff & Rosen 1990b; Abou-Fakhr & Kawar 1998; Starý *et al.* 2000; Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Laamari *et al.* 2011, 2012; Nazari *et al.* 2012); *Aulacorthum solani* (Kaltenbach) (Hussein & Kawar 1984); *Brachycaudus amygdalinus* (Schouteden) (Mescheloff & Rosen 1990b; Laamari *et al.* 2011, 2012; Nazari *et al.* 2012; Rakhshani 2012); *Brachycaudus cardui* (L.) (Ölmez & Ulusoy 2003; Rakhshani *et al.* 2008a; Laamari *et al.* 2011, 2012; Rakhshani 2012); *Brachycaudus divaricatae* Shaposhnikov (Jafari *et al*. 2011; Jafari & Modarres Awal 2012); *Brachycaudus helichrysi* (Kaltenbach) (Starý 1976; Erkin 1983; Mescheloff & Rosen 1990b; Mokhtari *et al.* 2000; Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani *et al.* 2008a, 2012b; Talebi *et al.* 2009; Mossadegh *et al.* 2011; Rakhshani 2012; Jafari *et al*. 2011; Laamari *et al.* 2011, 2012; Jafari & Modarres Awal 2012; Nazari *et al.* 2012; Barahoei *et al.* 2013; Satar *et al.* 2014; Chaouche & Laamari 2015); *Brachycaudus persicae* (Passerini) (Rakhshani 2012); *Brachycaudus tragopogonis* (Kaltenbach) (Aslan *et al.* 2004; Uysal *et al.* 2004; Rakhshani *et al.* 2008a; Talebi *et al.* 2009); *Brevicoryne brassicae* (L.) (?) (Chaouche & Laamari 2015); *Capitophorus elaeagni* (Del Guercio) (Mescheloff & Rosen 1990b; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); *Capitophorus inulae* (Passerini) (Mescheloff & Rosen 1990b); *Diuraphis noxia* (Kurdjumov) (González *et al.* 1992; Zareh *et al.* 1995; Starý *et al.* 2000; Uysal *et al.* 2004; Laamari *et al.* 2011, 2012, 2016); *Dysaphis crataegi* (Kaltenbach) (Abou-Fakhr 1982; Tremblay *et al*. 1985; Abou-Fakhr & Kawar 1998); *Dysaphis devecta* (Walker) (Starý *et al.* 2000; Aslan & Karaca 2005); *Dysaphis foeniculus* (Theobald) (Chaouche & Laamari 2015); *Dysaphis lappae* (Koch) (Laamari *et al.* 2011, 2012); *Dysaphis plantaginea* (Passerini) (Radjabi 1989; Mescheloff & Rosen 1990b – as *Myzus mali* Ferrari; Starý *et al.* 2000; Ölmez & Ulusoy 2003; Aslan & Karaca 2005; Laamari *et al.* 2011, 2012; Mossadegh *et al.* 2011; Rakhshani 2012); *Dysaphis pyri* (Boyer de Fonscolombe) (Erkin 1983; Radjabi 1989; Starý *et al.* 2000; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Laamari *et al.* 2012); *Eucarazzia elegans* (Ferrari) (Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Barahoei *et al.* 2013); *Hyalopterus amygdali* (Blanchard) (?) (Jafari *et al*. 2011; Jafari & Modarres Awal 2012; Nazari *et al.* 2012); *Hyalopterus pruni* (Geoffroy) (?) (Erkin 1983; Mokhtari *et al.* 2000; Starý *et al.* 2000; Uysal *et al.* 2004; Laamari *et al.* 2011, 2012); *Hyperomyzus lactucae* (L.) (?) (Laamari *et al.* 2011; Mossadegh *et al.* 2011; Chaouche & Laamari 2015); *Lipaphis erysimi* (Kaltenbach) (Mossadegh *et al.* 2011); *Lipaphis lepidii* (Nevsky) (Starý 1979; Starý *et al.* 2000; Mossadegh *et al.* 2011); *Lipaphis pseudobrassicae* (Davis) (Barahoei *et al.* 2013; Chaouche & Laamari 2015); *Macrosiphum euphorbiae* (Thomas) (Yoldaş *et al.* 1990; Mescheloff & Rosen 1990b; Ben Halima & Ben Hamouda 1993; Uysal *et al.* 2004); *Macrosiphum rosae* (L.) (Ben Halima & Ben Hamouda 1993; Laamari *et al.* 2011); *Metopolophium dirhodum* (Walker) (Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani *et al.* 2008a, 2008b; Nazari *et al.* 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Myzus ascalonicus* Doncaster (Barahoei *et al.* 2013); *Myzus beybienkoi* (Narzykulov) (Starý *et al.* 2000); *Myzus cerasi* (Fabricius) (Erkin 1983; Mokhtari *et al.* 2000; Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani *et al.* 2008a; Rakhshani 2012); *Myzus certus* (Walker)

(Barahoei *et al.* 2013); *Myzus ornatus* Laing (Starý *et al.* 2000); *Myzus persicae* (Sulzer) (Schlinger & Mackauer 1963; Rosen 1967, 1969; Avidov & Kotter 1966; Avidov & Harpaz 1969; Starý & Kaddou 1971; Starý 1976, 1979; Abou-Fakhr 1982; Erkin 1983; Tremblay *et al*. 1985; Karaat & Goven 1986; Radjabi 1989; Mescheloff & Rosen 1990b; Ben Halima & Ben Hamouda 1993; Ben Halima *et al.* 1994; Abou-Fakhr & Kawar 1998; Starý *et al.* 2000; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Ben Halima & Ben Hamouda 2005; Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Boukhris-Bouhachem 2011; Laamari *et al.* 2011, 2012; Mossadegh *et al.* 2011; Jafari *et al*. 2011; Jafari & Modarres Awal 2012; Barahoei *et al.* 2012, 2013; Nazari *et al*. 2012; Rakhshani 2012; Taheri & Rakhshani 2013; Chaouche & Laamari 2015; Ayadi *et al.* 2017); *Nasonovia ribisnigri* (Mosley) (?) (Laamari *et al.* 2011, 2012); *Ovatus insitus* (Walker) (Rakhshani *et al.* 2008a; Rakhshani 2012); *Phorodon humuli* (Schrank) (Schlinger & Mackauer 1963; Starý *et al.* 2000); *Rhopalomyzus* sp. (Starý 1979); *Rhopalosiphum maidis* (Fitch) (Ibrahim 1990a, 1990b; Mescheloff & Rosen 1990b; Ibrahim & Afifi 1991; El-Heneidy 1994; Starý *et al.* 2000; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002, 2003; Abdel-Rahman 2005; Slman 2006; Laamari *et al.* 2011, 2012; Barahoei *et al.* 2012, 2013; Nazari *et al.* 2012; Chaouche & Laamari 2015; Ayadi *et al.* 2017); *Rhopalosiphum nymphaeae* (L.) (Mokhtari *et al.* 2000; Starý *et al.* 2000); *Rhopalosiphum padi* (L.) (Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay *et al*. 1985; Ibrahim 1990b; Mescheloff & Rosen 1990b; El-Heneidy 1994, Abou-Fakhr & Kawar 1998; Starý *et al.* 2000; El-Heneidy *et al.* 2001, 2002, 2003; Abdel-Rahman 2005; Slman 2006; Rakhshani *et al.* 2008a, 2008b; Laamari *et al.* 2011, 2012; Mossadegh *et al.* 2011; Nazari *et al*. 2012; Rakhshani 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013; Chaouche & Laamari 2015; Gadallah *et al.* 2017); *Schizaphis graminum* (Rondani) (Mescheloff & Rosen 1990b; El-Heneidy 1994; Starý *et al.* 2000; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002, 2003; Abdel-Rahman 2005; Slman 2006; Rakhshani *et al.* 2008a, 2008b; Nazari *et al.* 2012; Barahoei *et al.* 2013); *Schizaphis rosazevedoi* Ilharco (Mescheloff & Rosen 1990b); *Sitobion avenae* (Fabricius) (Mescheloff & Rosen 1990b; El-Heneidy 1994; Starý *et al.* 2000; El-Heneidy *et al.* 2001, 2002, 2003; Slman 2006; Rakhshani *et al.* 2008a, 2008b; Laamari *et al.* 2011, 2012; Mossadegh *et al.* 2011; Barahoei *et al.* 2013; Gadallah *et al.* 2017); *Sitobion fragariae* (Walker) (Mescheloff & Rosen 1990b; Barahoei *et al.* 2013); *Uroleucon compositae* (Theobald) (?) (Laamari *et al.* 2011); *Uroleucon sonchi* (L.) (?) (Mescheloff & Rosen 1990b); *Wahlgreniella nervata* (Gillette) (Barahoei *et al.* 2013).

Distribution in the Middle East and North Africa

Algeria (Starý 1976; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); Egypt (Ibrahim 1990a, 1990b; El-Heneidy 1994; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002, 2003, 2004; Abdel-Rahman 2005; Abdel-Samad & Ahmed 2009; El-Ghiet *et al.* 2014; Gadallah *et al.* 2017); Iran (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2008a, 2008b; Rakhshani *et al.* 2012b; Nazari *et al*. 2012; Rakhshani 2012; Barahoei *et al.* 2012, 2013; Taheri & Rakhshani 2013); Iraq (Starý & Kaddou 1971; Starý 1976); Israel (Schlinger & Mackauer 1963; Rosen 1967, 1969; Avidov & Kotter 1966; Avidov & Harpaz 1969; Starý 1976; Mescheloff & Rosen 1990b); Lebanon (Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay *et al.* 1985; Abou-Fakhr & Kawar 1998); Saudi Arabia (Ahmad & Bakr 2013); Tunisia (Ben Halima & Ben Hamouda 1993; Ben Halima *et al.* 1994; Ben Halima & Ben Hamouda 2005; Boukhris-Bouhachem 2011; Ayadi *et al.* 2017); Turkey (Starý 1976; Uysal *et al.* 2004; Eastern part – Karaat & Goven 1986; Ölmez & Ulusoy 2003; Central part – Aslan *et al.* 2004; Satar *et al.* 2014; Western part – Erkin 1983; Aslan & Karaca 2005; Erdoğan *et al.* 2008; Barjadze *et al.* 2010; Havelka *et al.* 2011; Akar & Erdoğan 2017); UAE (Starý *et al.* 2013); Yemen (Starý *et al.* 2013).

General distribution

Cosmopolitan.

Aphidius microlophii Pennachio & Tremblay, 1987
Figs 92, 195, 291, 393, 486, 529

Host records

Lacking host data (Akar & Erdoğan 2017).

Distribution in the Middle East and North Africa

Turkey (Western part – Akar & Erdoğan 2017).

General distribution

Western Palaearctic (Europe).

Aphidius myzocallidis Mescheloff & Rosen, 1990
Figs 93, 196, 292, 530

Host records

Myzocallis glandulosa Hille Ris Lambers (Mescheloff & Rosen 1990b).

Distribution in the Middle East and North Africa

Israel (Mescheloff & Rosen 1990b).

General distribution

This species has not been recorded outside Israel.

Aphidius persicus Rakhshani & Starý, 2006
Figs 13, 94, 197, 293, 394, 487, 531

Host records

Macrosiphoniella sp., *Uroleucon bielawskii* (Szelegiewicz), *Uroleucon carthami* (Hille Ris Lambers) (Barahoei *et al.* 2013); *Uroleucon chondrillae* (Nevsky); (Rakhshani *et al.* 2006b, 2008a, 2011; Nazari *et al*. 2012; Taheri & Rakhshani 2013; Barahoei *et al.* 2013); *Uroleucon compositae* (Theobald); *Uroleucon ochropus* (Hille Ris Lambers), (Barahoei *et al.* 2013); *Uroleucon sonchi* (L.) (Rakhshani *et al.* 2008a; Mossadegh *et al.* 2011; Barahoei *et al.* 2012, 2013); *Uroleucon* spp. (Rakhshani *et al.* 2012b; Barahoei *et al.* 2012, 2013).

Distribution in the Middle East and North Africa

Iran (Rakhshani *et al.* 2006b, 2008a, 2012b; Mossadegh *et al.* 2011; Barahoei *et al.* 2012, 2013; Nazari *et al.* 2012, Taheri & Rakhshani 2013); Iraq (Rakhshani *et al.* 2006b).

General distribution

Western Asia.

Aphidius platensis Brèthes, 1913
Figs 14, 95, 198, 294, 395, 488, 532

Material examined

SAUDI ARABIA • 1 ♀, 1 ♂; Abha-KKU campus; May 2012; *Aphis gossypii* Glover on *Aster squamatus* • 1 ♀; Raidah; Apr. 2011; net sweeping • 7 ♀♀, 4 ♂♂; Abha; May 2013; on *Hibiscus rosa-sinensis* • 1

♀, 1 ♂; Abha; May 2013; *on Lablab purpureus* • 2 ♀♀; Abha-Mahala College campus; Dec. 2012; on *Setaria glauca* • 1 ♀; Abha-Mahala College campus; Apr. 2013; *Aphis solanella* Theobald on *Solanum nigrum* • 13 ♀♀, 8 ♂♂; Abha; Jun. 2012; on *Trifolium alexandrinum* • 7 ♀♀, 4 ♂♂; Abha-Mahala College campus; 6 Mar. 2013; on *Trigonella* sp.; Z. Ahmad leg. (DPPZ).

Host records

Amegosiphon platicaudum (Narzikulov) (Nazari *et al.* 2012); *Aphis acetosae* L. and *Aphis affinis* del Guercio (Barahoei *et al.* 2013); *Aphis craccivora* Koch (Rakhshani *et al.* 2005a, 2006a, 2008a; Talebi *et al.* 2009; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Aphis fabae* Scopoli (Rakhshani *et al.* 2008a, 2012b; Talebi *et al.* 2009; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Aphis gossypii* Glover (Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Nazari *et al.* 2012; Current study), *Aphis intybi* Koch (Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Aphis nerii* Boyer de Fonscolombe (Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Aphis plantaginis* Goeze (Barahoei *et al.* 2013); *Aphis punicae* Passerini (Rakhshani *et al.* 2008a, 2012b; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Aphis solanella* Theobald (Barahoei *et al.* 2013; Current study); *Aphis rumicis* L. (Rakhshani *et al.* 2012b); *Aphis umbrella* (Börner) (Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Nazari *et al.* 2012); *Brachycaudus amygdalinus* (Schouteden) (Rakhshani 2012; Barahoei *et al.* 2013); *Brachycaudus cardui* (L.) (Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Brachycaudus helichrysi* (Kaltenbach) (Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Barahoei *et al.* 2013); *Brachycaudus tragopogonis* (Kaltenbach) (Barahoei *et al.* 2013); *Capitophorus elaeagni* (Del Guercio) (Rakhshani *et al.* 2008a; Talebi *et al.* 2009); *Diuraphis noxia* (Kurdjumov) (Starý *et al.* 2000); *Dysaphis pulverina* ssp. *iranica* Stroyan, *Dysaphis radicola* (Mordvilko) (Barahoei *et al.* 2013); *Hayhurstia atriplicis* (L.) (Rakhshani *et al.* 2012b); *Hyalopterus amygdali* (Blanchard) (Taheri & Rakhshani 2013); *Macrosiphum euphorbiae* (Thomas) (Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Macrosiphum rosae* (L.) (?) (Taheri & Rakhshani 2013); *Metopolophium dirhodum* (Walker) (Barahoei *et al.* 2013); *Myzus persicae* (Sulzer) (Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Mossadegh *et al.* 2011; Rakhshani 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Phorodon humuli* (Schrank) (Rakhshani *et al.* 2008a; Rakhshani 2012); *Rhopalosiphum maidis* (Fitch) (Barahoei *et al.* 2013); *Rhopalosiphum padi* (L.) (Rakhshani *et al.* 2008a, 2008b; Nazari *et al.* 2012; Barahoei *et al.* 2013); *Schizaphis graminum* (Rondani) (Starý *et al.* 2000; Rakhshani *et al.* 2008a, 2008b; Barahoei *et al.* 2013); *Sitobion avenae* (F.) (Starý *et al.* 2000; Rakhshani *et al.* 2008a, 2008b; Barahoei *et al.* 2013).

Distribution in the Middle East and North Africa

Iran (Starý *et al.* 2000; Talebi *et al.* 2009; Mossadegh *et al.* 2011; Nazari *et al.* 2012; Rakhshani *et al.* 2005a, 2006a, 2008a; 2008b, 2012b; Rakhshani 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); Saudi Arabia (new record).

General distribution

Eastern Palaearctic (Middle East), Neotropical (Chile), Oriental.

Remarks

Based on molecular and morphological studies, this species was separated from *Aphidius colemani* (Tomanović *et al.* 2014). All host records of *Aphidius colemani* Viereck, 1912 in Iran (Barahoei *et al.* 2014; Farahani *et al.* 2016) referring to *Aphidius platensis*. Other records of *Aphidius colemani* from the Western Asia and records of *Aphidius transcaspicus* Telenga from the aphids other than *Hyalopterus* spp. most probably refer to *Aphidius platensis*.

Aphidius popovi Starý, 1978
Figs 15, 96, 199, 295, 396, 489, 533

Host records

Amphorophora catharinae (Nevsky) (Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Nazari *et al.* 2012; Rakhshani *et al*. 2012b; Barahoei *et al.* 2013); *Metopolophium dirhodum* (Walker) (Barahoei *et al.* 2012, 2013).

Distribution in the Middle East and North Africa

Iran (Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Barahoei *et al.* 2012; Nazari *et al.* 2012; Rakhshani *et al.* 2012b; Barahoei *et al*. 2013).

General distribution

Eastern Palaearctic (Central and Western Asia).

Aphidius rhopalosiphi De Stefani-Perez, 1902
Figs 16, 97, 200, 296, 397, 490, 534

Host records

Diuraphis noxia (Kurdjumov) (Starý *et al.* 2000; Uysal *et al.* 2004; Laamari *et al.* 2011, 2012, 2016); *Metopolophium dirhodum* (Walker) (Rakhshani *et al.* 2008a, 2008b; Nazari *et al.* 2012; Barahoei *et al.* 2013); *Rhopalosiphum maidis* (Fitch) (Ghanim & El-Adl 1983; El-Serafy 1999; Laamari *et al.* 2011, 2012; Nazari *et al.* 2012; Gadallah *et al.* 2017); *Rhopalosiphum padi* (L.) (Ghanim & El-Adl 1983; El-Serafy 1999; Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani *et al.* 2008a, 2008b; Laamari *et al.* 2011; Nazari *et al.* 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013; Chaouche & Laamari 2015), *Schizaphis graminum* (Rondani) (Ghanim & El-Adl 1983; El-Serafy 1999; Rakhshani *et al.* 2008a, 2008b; Nazari *et al.* 2012; Barahoei *et al.* 2013); *Sitobion avenae* (Fabricius) (Ghanim & El-Adl 1983; Darvish-Mojeni 1994; El-Serafy 1999; Starý *et al.* 2000; Rakhshani *et al.* 2008a, 2008b; Mossadegh *et al.* 2011; Nazari *et al.* 2012; Barahoei *et al.* 2013; Gadallah *et al.* 2017)

Distribution in the Middle East and North Africa

Algeria (Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); Egypt (Ghanim & El-Adl 1983; El-Serafy 1999; Gadallah *et al.* 2017); Iran (Darvish-Mojeni 1994; Starý *et al.* 2000; Rakhshani *et al.* 2008a, 2008b; Mossadegh *et al.* 2011; Nazari *et al.* 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); Israel (Starý 1981b); Turkey (Central part – Uysal *et al.* 2004).

General distribution

Holarctic, Neotropical, Oceanic, Oriental.

Aphidius ribis Haliday, 1834
Figs 98, 201, 297, 398, 535

Host records

Cryptomyzus ribis (L.) (Düzgüneş *et al.* 1982; Alaoğlu 1994; Uysal *et al.* 2004); *Myzus persicae* (Sulzer) (?) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004).

Distribution in the Middle East and North Africa

Turkey (Central part – Düzgüneş *et al.* 1982; Uysal *et al.* 2004; Eastern part – Alaoğlu 1994).

General distribution

Holarctic, Oriental.

Aphidius rosae Haliday, 1833
Figs 17, 99, 202, 298, 399, 491, 536

Host records

Macrosiphum rosae (L.) (Starý & Kaddou 1971; Starý 1976; Ben Halima & Ben Hamouda 1993; Uysal *et al.* 2004; Mehrparvar *et al.* 2005; Rakhshani *et al.* 2008a; Talebi *et al.* 2009; Mossadegh *et al.* 2011; Nazari *et al.* 2012; Barahoei *et al.* 2013); *Sitobion fragariae* (Walker) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004); *Uroleucon* sp. (?) (Mescheloff & Rosen 1990b).

Distribution in the Middle East and North Africa

Iran (Mehrparvar *et al.* 2005; Rakhshani *et al.* 2008a; Mossadegh *et al.* 2011; Nazari *et al.* 2012; Barahoei *et al.* 2013); Iraq (Starý & Kaddou 1971; Starý 1976); Israel (Mescheloff & Rosen 1990b); Tunisia (Ben Halima & Ben Hamouda 1993); Turkey (Central part – Düzgüneş *et al.* 1982; Uysal *et al.* 2004; Western part – Akar & Erdoğan 2017).

General distribution

Holarctic, Neotropical, Oceanic, Oriental.

Aphidius salicis Haliday, 1834
Figs 18, 100, 203, 299, 400, 492, 537

Host records

Cavariella aegopodii (Scopoli) (Starý 1979; Düzgüneş *et al.* 1982; Mescheloff & Rosen 1990b; Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani *et al.* 2007b, 2008a; Talebi *et al.* 2009; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Cavariella aquatica* (Gillette & Bragg) (Starý 1979; Starý *et al.* 2000); *Cavariella aspidaphoides* Hille Ris Lambers (Starý 1979; Starý *et al.* 2000); *Cavariella theobaldi* (Gillette & Bragg) (Starý 1979; Düzgüneş *et al.* 1982; Starý *et al.* 2000; Uysal *et al.* 2004); *Hyadaphis foeniculi* (Passerini) (Talebi *et al*. 2009).

Distribution in the Middle East and North Africa

Iran (Starý *et al.* 2000; Rakhshani *et al.* 2007b, 2008a; Talebi *et al*. 2009); Israel (Mescheloff & Rosen 1990b); Turkey (Central part – Düzgüneş *et al.* 1982; Uysal *et al.* 2004).

General distribution

Australasian, Holarctic, Neotropical, Oceanic, Oriental.

Aphidius setiger (Mackauer, 1961)
Figs 19, 101, 204, 300, 401, 493, 538

Host records

Periphyllus testudinaceus (Fernie) (Rakhshani *et al.* 2008a); *Periphyllus* sp. (Starý 1979; Starý *et al.* 2000; Nazari *et al.* 2012).

Distribution in the Middle East and North Africa

Iran (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2008a; Nazari *et al.* 2012).

General distribution

Afrotropical, Holarctic, Oriental.

Aphidius smithi Sharma & Subba Rao, 1959
Figs 20, 102, 205, 301, 402, 494, 539

Host records

Acyrthosiphon kondoi Shinji (González *et al.* 1978; Starý *et al.* 2000; Rakhshani *et al.* 2006a); *Acyrthosiphon pisum* (Harris) (González *et al.* 1978; Starý 1979; Mescheloff & Rosen 1990b; Starý *et al.* 2000; Rakhshani *et al.* 2006a, 2008a, 2012b; Nazari *et al.* 2012; Barahoei *et al.* 2013); *Nearctaphis bakeri* (Cowen) (Barahoei *et al.* 2013); *Sitobion avenae* (F.) (?) (Rakhshani *et al.* 2008a).

Distribution in the Middle East and North Africa

Algeria (Laamari *et al.* 2011); Iran (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2006a, 2008a, 2012b; Barahoei *et al.* 2012, 2013; Nazari *et al.* 2012); Iraq (Al-Azawi 1970); Israel (Mescheloff & Rosen 1990b); Turkey (Western part – Akar & Erdoğan 2017).

General distribution

Australasian, Holarctic, Neotropical, Oceanic, Oriental.

Aphidius sonchi Marshall, 1896
Figs 103, 206, 302, 403, 540

Host records

Hyperomyzus lactucae (L.) (Laamari *et al.* 2012; Ayadi *et al.* 2017)

Distribution in the Middle East and North Africa

Algeria (Laamari *et al.* 2012); Egypt (Hassan 1957; Starý 1976); Israel (Bodenheimer & Swirski 1957; Starý 1976); Tunisia (Ayadi *et al.* 2017).

General distribution

Australasian, Eastern and Western Palaearctic, Oceanic, Oriental.

Aphidius stigmaticus Rakhshani & Tomanović, 2011
Figs 21, 104, 207, 303, 404, 495, 541

Host records

Macrosiphoniella tanacetaria (Kaltenbach) (Rakhshani *et al*. 2011).

Distribution in the Middle East and North Africa

Iran (Rakhshani *et al.* 2011).

General distribution

This species has not been reported outside Iran.

Aphidius transcaspicus Telenga, 1958
Figs 22, 105, 208, 304, 405, 496, 542

Material examined

SAUDI ARABIA • 9 ♀♀, 1 ♂; Abha; May 2013; *Hyalopterus pruni* (Geoffroy) on *Prunus armeniaca;* Z. Ahmed leg. (DPPZ).

Host records

Aphis nasturtii Kaltenbach (?) (Starý & Kaddou 1971 – as *Aphis zizyphi* Theobald); *Brachycaudus amygdalinus* (Schouteden) (?) (Mescheloff & Rosen 1990b); *Hyalopterus amygdali* (Blanchard) (Aslan *et al.* 2004; Uysal *et al.* 2004; Rakhshani *et al.* 2008a; Mossadegh *et al.* 2011; Rakhshani 2012; Jafari *et al*. 2011; Jafari & Modarres Awal 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Hyalopterus pruni* (Geoffroy) (Starý & Kaddou 1971; Erkin 1983; Mescheloff & Rosen 1990b – as *Aphidius magdae* n.sp.; Mokhtari *et al.* 2000; Starý *et al.* 2000; Ölmez & Ulusoy 2003; Aslan *et al.* 2004; Uysal *et al.* 2004; Lozier *et al.* 2008; Rakhshani *et al.* 2008a, 2012b; Jafari *et al*. 2011; Jafari & Modarres Awal 2012; Laamari *et al.* 2011, 2012; Nazari *et al*. 2012; Rakhshani 2012; Tomanović *et al.* 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013; Ayadi *et al.* 2017); *Melanaphis donacis* (Passerini) (Starý & Kaddou 1971; Mescheloff & Rosen 1990b; Barahoei *et al.* 2014).

Distribution in the Middle East and North Africa

Algeria (Laamari *et al.* 2011, 2012); Iran (Starý *et al.* 2000; Mossadegh *et al.* 2011; Nazari *et al.* 2012; Rakhshani *et al.* 2008a, 2012b; Rakhshani 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); Egypt (Lozier *et al.* 2008); Iraq (Al-Rawy *et al.* 1969; Starý 1969a, 1969c; Starý & Kaddou 1971); Israel (Mescheloff & Rosen 1990b; Lozier *et al.* 2008); Morocco (Lozier *et al.* 2008); Tunisia (Lozier *et al.* 2008; Ben Halima *et al.* 2013; Ayadi *et al.* 2017); Turkey (Uysal *et al.* 2004; Eastern part – Ölmez & Ulusoy 2003; Lozier *et al.* 2008; Western part – Aslan *et al.* 2004; Erkin 1983; Erdoğan *et al.* 2008).

General distribution

Eastern and Western Palaearctic, Nearctic (imported), Oriental.

Aphidius uroleuci Mescheloff & Rosen, 1990
Figs 106, 209, 305, 406, 497, 543

Host records

Uroleucon carthami (Hille Ris Lambers), *Uroleucon inulae* (Ferrari), *Uroleucon jaceae* (L.), *Uroleucon sonchi* (L.) (Mescheloff & Rosen 1990b).

Distribution in the Middle East and North Africa

Israel (Mescheloff & Rosen 1990b).

General distribution

This species has not been recorded outside Israel.

Aphidius urticae Haliday, 1834
Figs 23, 107, 210, 306, 407, 498, 544

Host records

Acyrthosiphon gossypii Mordvilko (Barahoei *et al.* 2013); *Acyrthosiphon pisum* (Harris) (Mescheloff & Rosen 1990b; Rakhshani *et al*. 2008a); *Acyrthosiphon* sp. (Starý & González 1978); *Macrosiphum*

euphorbiae (Thomas) (Starý 1976); *Microlophium carnosum* (Buckton) (Starý *et al*. 2000; Talebi *et al*. 2009; Rakhshani *et al*. 2008a).

Distribution in the Middle East and North Africa

Iran (Starý *et al.* 2000; Rakhshani *et al.* 2008a; Barahoei *et al.* 2013); Israel (Mescheloff & Rosen 1990b); Morocco (González *et al.* 1978); Turkey (Starý 1976; Eastern part – Tomanović *et al.* 2008; Western part – Tomanović *et al.* 2008; Akar & Erdoğan 2017).

General distribution

Holarctic, Oceanic, Oriental.

Aphidius uzbekistanicus Luzhetzki, 1960
Figs 24, 108, 211, 307, 408, 499, 545

Host records

Diuraphis noxia (Kurdjumov) (Zareh *et al.* 1995; Starý *et al.* 2000); *Metopolophium dirhodum* (Walker) (Mescheloff & Rosen 1990b; Özder & Toros 1999; Aslan *et al.* 2004; Uysal *et al.* 2004; Rakhshani *et al.* 2008a, 2008b; Barahoei *et al.* 2013); *Rhopalosiphum maidis* (Fitch) (Ibrahim 1990a; El-Serafy 1999; Özder & Toros 1999; Starý *et al.* 2000; Uysal *et al.* 2004; Gadallah *et al.* 2017); *Rhopalosiphum padi* (L.) (Starý 1979; Ibrahim 1990a; El-Serafy 1999; Starý *et al.* 2000; Sertkaya & Yigit 2002; Aslan *et al.* 2004; Uysal *et al.* 2004; Rakhshani *et al.* 2008a, 2008b; Nazari *et al.* 2012; Gadallah *et al.* 2017); *Schizaphis graminum* (Rondani) (Ibrahim 1990a; El-Serafy 1999; Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani *et al.* 2008a, 2008b; Barahoei *et al.* 2013); *Sitobion avenae* (Fabricius) (Starý 1979; Mescheloff & Rosen 1990b; Darvish-Mojeni & Bayat-Asadi 1995; El-Serafy 1999; Özder & Toros 1999; Starý *et al.* 2000; Sertkaya & Yigit 2002; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Rakhshani *et al.* 2008a, 2008b, 2012b; Barahoei *et al.* 2013; Gadallah *et al.* 2017); *Sitobion fragariae* (Walker) (Mescheloff & Rosen 1990b; Laamari *et al.* 2011, 2012).

Distribution in the Middle East and North Africa

Algeria (Laamari *et al.* 2011, 2012); Egypt (Ibrahim 1990a; El-Serafy 1999; Gadallah *et al.* 2017); Iran (Starý 1979; Starý *et al.* 2000; Nazari *et al.* 2012; Rakhshani *et al.* 2008a, 2008b, 2012b; Barahoei *et al.* 2013); Israel (Mescheloff & Rosen 1990b); Morocco (Starý 1981b); Turkey (Eastern part – Ölmez & Ulusoy 2003; Central part – Aslan *et al.* 2004; Uysal *et al.* 2004; Western part – Özder & Toros 1999; Sertkaya & Yigit 2002; Erdoğan *et al.* 2008).

General distribution

Holarctic, Neotropical, Oriental.

Areopraon lepelleyi (Waterston, 1926)
Figs 25, 109, 212, 308, 409, 546

Host records

Eriosoma lanuginosum (Hartig) (Kazemzadeh *et al.* 2009; Rakhshani *et al.* 2012b).

Distribution in the Middle East and North Africa

Iran (Kazemzadeh *et al.* 2009; Rakhshani *et al.* 2012b).

General distribution

Eastern and Western Palaearctic, Oriental (India).

Betuloxys hortorum (Starý, 1960)
Figs 110, 213, 309, 410, 547

Host records

Tinocallis saltans (Nevsky) (Mackauer & Starý 1967; Starý 1979; Starý *et al.* 2000).

Distribution in the Middle East and North Africa

Iran (Mackauer & Starý 1967; Starý 1979; Starý *et al.* 2000).

General distribution

Eastern Palaearctic (Iran), Western Palaearctic (Eastern and central Europe), Oriental (India).

Binodoxys acalephae (Marshall, 1896)
Figs 26, 111, 214, 310, 411, 548

Host records

Acyrthosiphon pisum (Harris) (?) (Talebi *et al.* 2009; Barahoei *et al.* 2013; Chaouche & Laamari 2015); *Anuraphis* sp. (Güz & Kilinçer 2005); *Aphis affinis* Del Guercio (Starý & Kaddou 1971; Starý 1976); *Aphis craccivora* Koch (Starý 1979; Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani *et al.* 2005a, 2012b; Talebi *et al.* 2009; Laamari *et al.* 2011, 2012; Nazari *et al.* 2012; Barahoei *et al.* 2013; Ayadi *et al.* 2017); *Aphis euphorbiae* Kaltenbach (Talebi *et al.* 2009; Nazari *et al.* 2012); *Aphis fabae* Scopoli (Düzgüneş *et al.* 1982; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Güz & Kilinçer 2005; Talebi *et al.* 2009; Laamari *et al.* 2011, 2012; Rakhshani *et al.* 2012b; Nazari *et al.* 2012; Barahoei *et al.* 2013); *Aphis fabae cirsiiacanthoidis* Scopoli (Uysal *et al.* 2004); *Aphis galiiscabri* Schrank (Güz & Kilinçer 2005); *Aphis gossypii* Glover (Yumruktepe & Uygun 1994; Uysal *et al.* 2004; Laamari *et al.* 2011); *Aphis grossulariae* Kaltenbach (Starý 1976; Uysal *et al.* 2004); *Aphis idaei* van der Goot (Barahoei *et al.* 2014); *Aphis nerii* Boyer de Fonscolombe (Talebi *et al.* 2009); *Aphis pomi* de Geer (Rakhshani 2012); *Aphis punicae* Passerini (Ayadi *et al.* 2017); *Aphis ruborum* (Börner) (Uysal *et al.* 2004); *Aphis vallei* Hille Ris Lambers & Stroyan (Starý 1976; Düzgüneş *et al.* 1982; Uysal *et al.* 2004); *Aphis spiraecola* Patch (Rakhshani 2012); *Aphis umbrella* (Börner) (Mackauer & Starý 1967; Starý *et al.* 2000; Talebi *et al.* 2009; Nazari *et al.* 2012); *Aphis urticata* Gmelin (Talebi *et al.* 2009); *Aphis* sp. (Starý 1976; 1979; Mossadegh *et al.* 2011); *Hyadaphis coriandri* (Das) (Chaouche & Laamari 2015); *Protaphis* sp. (Barahoei *et al.* 2012, 2013).

Distribution in the Middle East and North Africa

Algeria (Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); Egypt (El-Heneidy 1994; Abdel-Rahman *et al.* 2000; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002, 2003, 2004); Iran (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2005a; Mossadegh *et al.* 2011; Barahoei *et al.* 2012, 2013; Nazari *et al.* 2012; Rakhshani 2012; Rakhshani *et al.* 2012b); Iraq (Starý & Kaddou 1971; Starý 1976); Morocco (Starý 1976); Tunisia (Ayadi *et al.* 2017); Turkey (Starý 1976; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Central part – Güz & Kilinçer 2005; Western part – Akar & Erdoğan 2017); UAE (Starý *et al.* 2013); Yemen (Starý *et al.* 2013).

General distribution

Holarctic, Oriental.

Binodoxys angelicae (Haliday, 1833)
Figs 27, 112, 215, 311, 412, 549

Host records

Aphis acetosae L. (Barahoei *et al.* 2013); *Aphis affinis* del Guercio (Mossadegh *et al.* 2011; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Aphis aurantii* Boyer de Fonscolombe (Rosen 1967, 1969; Avidov & Harpaz 1969; Starý 1976; Hussein & Kawar 1984; Tremblay *et al*. 1985; Mescheloff & Rosen 1993; Ben Halima & Ben Hamouda 2005; Boukhris-Bouhachem 2011; Yoldaş *et al.* 2011); *Aphis craccivora* Koch (Avidov & Harpaz 1969; Starý & Kaddou 1971; Starý 1976; Düzgüneş *et al.* 1982; Abou-Fakhr 1982; Tremblay *et al.* 1985; Mescheloff & Rosen 1993; Ragab 1996; Abou-Fakhr & Kawar 1998; Ölmez & Ulusoy 2003; Aslan *et al.* 2004; Uysal *et al.* 2004; Rakhshani *et al.* 2005a; Yoldaş *et al.* 2011; Laamari *et al.* 2011, 2012; Mossadegh *et al.* 2011; Nazari *et al.* 2012; Barahoei *et al.* 2013; Satar *et al.* 2014); *Aphis epilobiaria* Theobald (Mescheloff & Rosen 1993; Nazari *et al.* 2012); *Aphis fabae* Scopoli (Al-Azawi 1970; Starý 1976; Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay *et al*. 1985; Mescheloff & Rosen 1993; Ben Halima *et al.* 1994 – as *Aphis citricola* van der Goot; Abou-Fakhr & Kawar 1998; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Ben Halima & Ben Hamouda 2005 – as *Aphis citricola* van der Goot; Güz & Kilinçer 2005; Talebi *et al.* 2009; Laamari *et al.* 2011, 2012; Mossadegh *et al.* 2011; Barahoei *et al.* 2012, 2013; Nazari *et al.* 2012; Taheri & Rakhshani 2013); *Aphis fabae cirsiiacanthoidis* Scopoli (Aslan *et al.* 2004; Uysal *et al.* 2004); *Aphis farinosa* Gmelin (Starý *et al.* 2000); *Aphis gossypii* Glover (Mimeur 1934; Rosen 1967, 1969; Avidov & Harpaz 1969; Al-Azawi 1970; Starý 1976; Abou-Fakhr 1982; Zeren & Düzgüneş 1983; Hussein & Kawar 1984; Tremblay *et al.* 1985; Mescheloff & Rosen 1993; Ben Halima & Ben Hamouda 1993; Yumruktepe & Uygun 1994; Abou-Fakhr & Kawar 1998; Starý *et al.* 2000; Yoldaş *et al.* 2002; Uysal *et al.* 2004; Mossadegh *et al.* 2011; Yoldaş *et al.* 2011; Laamari *et al.* 2011, 2012; Nazari *et al.* 2012; Barahoei *et al.* 2013; Satar *et al.* 2014; Ayadi *et al.* 2017); *Aphis hederae* Kaltenbach (Abou-Fakhr 1982; Tremblay *et al*. 1985; Mescheloff & Rosen 1993; Abou-Fakhr & Kawar 1998; Starý *et al.* 2000); *Aphis idaei* van der Goot (Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Aphis intybi* Koch (Mescheloff & Rosen 1993); *Aphis nasturtii* Kaltenbach (Starý & Kaddou 1971 – as *Aphis zizyphi* Theobald; Starý 1976; Mescheloff & Rosen 1993); *Aphis nerii* Boyer de Fonscolombe (Starý 1976; Mescheloff & Rosen 1993; Ben Halima *et al.* 1994; Ben Halima & Ben Hamouda 2005; Talebi *et al.* 2009; Laamari *et al.* 2011); *Aphis pomi* de Geer (Erkin 1983; Hussein & Kawar 1984; Radjabi 1989; Mescheloff & Rosen 1993; Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani 2012); *Aphis polygonata* (Nevsky) (Mossadegh *et al.* 2011); *Aphis punicae* Passerini (Starý 1976; Al-Azawi 1970; Starý & Kaddou 1971; Mescheloff & Rosen 1993; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Laamari *et al.* 2011, 2012; Ayadi *et al.* 2017); *Aphis ruborum* (Börner) (Düzgüneş *et al.* 1982; Aslan *et al.* 2004; Uysal *et al.* 2004); *Aphis rumicis* L. (Talebi *et al.* 2009); *Aphis solanella* Theobald (Starý & Kaddou 1971; Starý 1976; Güz & Kilinçer 2005; Barahoei *et al.* 2012, 2013; Rakhshani 2012; Ayadi *et al.* 2017); *Aphis spiraecola* Patch (Mescheloff & Rosen 1993; Boukhris-Bouhachem 2011; Yoldaş *et al.* 2011; Labdaoui & Guenaoui 2018); *Aphis umbrella* (Börner) (Mackauer & Starý 1967; Abou-Fakhr 1982; Tremblay *et al*. 1985; Mescheloff & Rosen 1993; Abou-Fakhr & Kawar 1998; Starý *et al.* 2000; Talebi *et al.* 2009; Laamari *et al.* 2011, 2012; Mossadegh *et al.* 2011; Nazari *et al.* 2012); *Aphis viticis* Ferrari (Starý & Kaddou 1971; Starý 1976); *Aphis* sp. (Mimeur 1934; Starý 1976; Uysal *et al.* 2004; Laamari *et al.* 2012); *Brachycaudus helichrysi* (Kaltenbach) (Satar *et al.* 2014); *Myzus persicae* (Sulzer) (Hussein & Kawar 1984; Tremblay *et al*. 1985; Satar *et al.* 2014); *Sitobion avenae* (Fabricius) (?) (Gadallah *et al.* 2017).

Distribution in the Middle East and North Africa

Algeria (Starý 1976; Laamari *et al.* 2011, 2012; Labdaoui & Guenaoui 2018); Egypt (Mackauer & Starý 1967; Starý 1976; Ragab 1996; Gadallah *et al.* 2017); Iran (Starý *et al.* 2000; Rakhshani *et al.* 2005a; Mossadegh *et al.* 2011; Barahoei *et al.* 2012, 2013; Nazari *et al*. 2012; Rakhshani 2012; Taheri &

Rakhshani 2013); Iraq (Starý 1969a; Al-Azawi 1970; Starý & Kaddou 1971; Starý 1976); Israel (Rosen 1967, 1969; Avidov & Harpaz 1969; Starý 1976; Mescheloff & Rosen 1993); Lebanon (Mackauer & Starý 1967; Starý 1976; Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay *et al.* 1985; Abou-Fakhr & Kawar 1998); Morocco (Mimeur 1934; Starý 1976); Tunisia (Mackauer & Starý 1967; Starý 1976; Ben Halima & Ben Hamouda 1993, 2005; Ben Halima *et al.* 1994; Boukhris-Bouhachem 2011; Ayadi *et al.* 2017); Turkey (Uysal *et al.* 2004; Eastern part – Ölmez & Ulusoy 2003; Central part – Zeren & Düzgüneş 1983; Düzgüneş *et al.* 1982; Aslan *et al.* 2004; Güz & Kilinçer 2005; Yumruktepe & Uygun 1994; Satar *et al.* 2014; Western part – Erkin 1983; Aslan & Karaca 2005; Erdoğan *et al.* 2008; Yoldaş *et al.* 2011; Akar & Erdoğan 2017); UAE (Starý *et al.* 2013).

General distribution

Eastern and Western Palaearctic, Oriental.

Binodoxys brevicornis (Haliday, 1833)
Figs 28, 113, 216, 312, 413, 550

Host records

Cavariella aegopodii (Scopoli) (Starý 1976; Mescheloff & Rosen 1993; Rakhshani *et al.* 2007b; Talebi *et al.* 2009; Barahoei *et al.* 2013); *Hyadaphis coriandri* (Das) (Mescheloff & Rosen 1993; Düzgüneş *et al.* 1982; Uysal *et al.* 2004; Ayadi *et al.* 2017); *Hyadaphis foeniculi* (Passerini) (Starý 1976); *Hyadaphis* sp. (Starý *et al.* 2000; Güz & Kilinçer 2005).

Distribution in the Middle East and North Africa

Algeria (Starý 1976); Iran (Starý *et al.* 2000; Rakhshani *et al.* 2007b; Barahoei *et al.* 2013); Israel (Starý 1976; Mescheloff & Rosen 1993); Tunisia (Ayadi *et al.* 2017); Turkey (Starý 1976; Central part – Düzgüneş *et al.* 1982; Uysal *et al.* 2004; Güz & Kilinçer 2005).

General distribution

Eastern and Western Palaearctic, Neotropical (accidentally introduced), Oriental (India).

Binodoxys centaureae (Haliday, 1833)
Figs 114, 217, 313, 414, 551

Host records

Uroleucon sp. (Starý 1976; Laamari *et al.* 2012).

Distribution in the Middle East and North Africa

Algeria (Starý 1976; Laamari *et al.* 2012).

General distribution

Eastern and Western Palaearctic, Oriental.

Binodoxys heraclei (Haliday, 1833)
Figs 29, 115, 218, 314, 415, 552

Host records

Cavariella aspidaphoides Hille Ris Lambers (Rakhshani *et al.* 2007b; Talebi *et al.* 2009; Nazari *et al.* 2012); *Cavariella theobaldi* (Gillette & Bragg) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004).

Distribution in the Middle East and North Africa

Iran (Rakhshani *et al.* 2007b; Talebi *et al.* 2009; Nazari *et al.* 2012); Turkey (Central part – Düzgüneş *et al.* 1982; Uysal *et al.* 2004).

General distribution

Eastern and Western Palaearctic, Oriental.

Binodoxys sp.

Host records

Lacking host data (Samara & Qubbaj 2012).

Distribution in the Middle East and North Africa

Palestine (Samara & Qubbaj 2012).

Diaeretiella rapae (M'Intosh, 1855)
Figs 30, 116, 219, 315, 416, 553

Material examined

SAUDI ARABIA • 1 ♀; Abha; agricultural field; 28 Nov. 2012; *Brevicoryne brassicae* (L.) on *Brassica oleracea* • 15 ♀♀, 7♂♂; Abha; Nov. 2012; *B. brassicae* (L.) on *Brassica oleracea* • 1 ♀, 3 ♂♂; Abha-Mahala College campus; Nov. 2012; on *Hordeum* • 14 ♀♀, 5♂♂; Abha; May 2013; *B. brassicae* (L.) on *Raphanus sativus* • 6 ♀♀; Abha; Jun. 2012; on *Trifolium alexandrinum*; Z. Ahmed leg. (DPPZ).

Host records

Amegosiphon platicaudum (Narzikulov) (Nazari *et al.* 2012); *Aphis aurantii* Boyer de Fonscolombe (Tremblay *et al*. 1985); *Aphis craccivora* Koch (Mescheloff & Rosen 1990b; Rakhshani *et al.* 2006a; Nazari *et al*. 2012; Taheri & Rakhshani 2013; Barahoei *et al.* 2013; Ayadi *et al.* 2017); *Aphis fabae* Scopoli (Abou-Fakhr 1982; Tremblay *et al*. 1985; Güz & Kilinçer 2005; Laamari *et al.* 2012; Barahoei *et al.* 2013); *Aphis gossypii* Glover (Ben Halima & Ben Hamouda 1993; Laamari *et al.* 2011, 2012; Mossadegh *et al.* 2011; Barahoei *et al.* 2013; Satar *et al.* 2014); *Aphis illinoisensis* Shimer (El-Gantiry *et al.* 2012); *Aphis nerii* Boyer de Fonscolombe (Laamari *et al.* 2012); *Aphis punicae* Passerini (Nazari *et al.* 2012); *Aphis solanella* Theobald, *Aphis umbrella* (Börner) (Barahoei *et al.* 2013); *Aphis spiraecola* Patch (Laamari *et al.* 2012); *Aspidaphis adjuvans* (Walker) (Mescheloff & Rosen 1990b); *Brachycaudus amygdalinus* (Schouteden) (Starý 1979; Mescheloff & Rosen 1990b; Starý *et al.* 2000); *Brachycaudus cardui* (L.) (Starý 1979; Starý *et al.* 2000; Laamari *et al.* 2011, 2012); *Brachycaudus helichrysi* (Kaltenbach) (Erkin 1983; Uysal *et al.* 2004; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); *Brevicoryne brassicae* (L.) (Talhouk 1961; Hafez 1965; Davatchi & Shojai 1968; Al-Azawi 1970; Starý 1976, 1979; Abou-Fakhr 1982; Kilinçer 1982; Düzgüneş *et al.* 1982; Zeren & Düzgüneş 1983; Hussein & Kawar 1984; Tremblay *et al*. 1985; Starý & Sekkat 1987; Mescheloff & Rosen 1990b; Avci & Özbek 1991; Abou-Fakhr & Kawar 1998; Starý *et al.* 2000; Ölmez & Ulusoy 2003; Aslan *et al.* 2004; Uysal *et al.* 2004; Güz & Kilinçer 2005; Talebi *et al.* 2009; Laamari *et al.* 2011, 2012; Mossadegh *et al.* 2011; Barahoei *et al.* 2012, 2013; Nazari *et al.* 2012; Rakhshani *et al.* 2012b; Taheri & Rakhshani 2013; Chaouche & Laamari 2015); *Capitophorus inulae* (Passerini) (Mescheloff & Rosen 1990b); *Diuraphis noxia* (Kurdjumov) (Starý 1976; González *et al.* 1992; Ahmadi & Sarafrazi 1993; Elmali & Toros 1994; Zareh *et al.* 1995; Ahmadi 2000; Starý *et al.* 2000; Baer *et al.* 2004; Uysal *et al.* 2004; Rakhshani *et al.* 2008b, 2012b; Laamari *et al.* 2011, 2012; Nazari *et al.* 2012; Barahoei *et al.* 2013; Laamari *et al.* 2016); *Dysaphis foeniculus* (Theobald) (Ayadi *et al.* 2017); *Dysaphis pyri* (Boyer de Fonscolombe) (Erkin 1983; Uysal *et al.* 2004); *Dysaphis tulipae* (Boyer de Fonscolombe) (Starý

1976; Laamari *et al.* 2011, 2012); *Hayhurstia atriplicis* (L.) (Starý 1976, 1979; Mescheloff & Rosen 1990b; Starý *et al.* 2000; Güz & Kilinçer 2005; Laamari *et al.* 2012; Nazari *et al.* 2012; Rakhshani *et al.* 2012b); *Hyadaphis coriandri* (Das) and *Hyadaphis foeniculi* (Passerini) (Güz & Kilinçer 2005); *Hyadaphis tataricae* (Aizenberg) (Aslan *et al.* 2004; Uysal *et al.* 2004); *Hyperomyzus lactucae* (L.) (Güz & Kilinçer 2005); *Lipaphis erysimi* (Kaltenbach) (Starý 1979; Starý *et al.* 2000; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Mossadegh *et al.* 2011); *Lipaphis lepidii* (Nevsky) (Starý *et al.* 2000; Talebi *et al.* 2009; Mossadegh *et al.* 2011; Nazari *et al.* 2012); *Lipaphis pseudobrassicae* (Davis) (Barahoei *et al.* 2013); *Lipaphis* sp. (Güz & Kilinçer 2005); *Macrosiphoniella sanborni* (Gillette) (Al-Azawi 1970; Starý 1976); *Neomariaella lambersi* (Szelegiewicz) (Starý 1979; Starý *et al.* 2000); *Metopolophium dirhodum* (Walker) (Rakhshani *et al.* 2008b); *Myzus beybienkoi* (Narzykulov) (Starý 1979; Starý *et al.* 2000); *Myzus persicae* (Sulzer) (Avidov & Kotter 1966; Avidov & Harpaz 1969; Starý 1976; Starý 1979; Erkin 1983; Starý & Sekkat 1987; Hodjat & Moradeshaghi 1988; Mescheloff & Rosen 1990b; Starý *et al.* 2000; Boukhris-Bouhachem 2011; Laamari *et al.* 2011; Mossadegh *et al.* 2011; Jafari *et al*. 2011; Jafari & Modarres Awal 2012; Nazari *et al*. 2012; Rakhshani 2012; Taheri & Rakhshani 2013; Barahoei *et al.* 2013; Chaouche & Laamari 2015); *Rhopalosiphum maidis* (Fitch) (Mimeur 1934; Starý 1976, 1979; Starý & Sekkat 1987; El-Heneidy & Attia 1988/1989; El-Heneidy 1991, 1994; Elmali & Toros 1994; Starý *et al.* 2000; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002; Uysal *et al.* 2004; Slman 2006; Laamari *et al.* 2011, 2012; Barahoei *et al.* 2013; Ayadi *et al.* 2017); *Rhopalosiphum padi* (L.) (Hassan 1963; El-Heneidy & Attia 1988/1989; El-Heneidy 1991, 1994; Starý *et al.* 2000; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002; Uysal *et al.* 2004; Abdel-Rahman 2005; Slman 2006; Rakhshani *et al.* 2008b; Mossadegh *et al.* 2011; Barahoei *et al.* 2013); *Saltusaphis scirpus* Theobald (Starý *et al.* 2000); *Schizaphis graminum* (Rondani) (Bodenheimer & Swirski 1957; Starý 1976, 1979; El-Heneidy & Attia 1988/1989; El-Heneidy 1991, 1994; Starý *et al.* 2000; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002; Abdel-Rahman 2005; Slman 2006; Rakhshani *et al.* 2008b; Barahoei *et al.* 2013); *Sitobion avenae* (Fabricius) (El-Heneidy & Attia 1988/1989; El-Heneidy 1991, 1994; Starý *et al.* 2000; El-Heneidy *et al.* 2001, 2002; Slman 2006; Rakhshani *et al.* 2008b; Mossadegh *et al.* 2011; Rakhshani *et al.* 2012b; Barahoei *et al.* 2013); *Uroleucon sonchi* (L.) (?) (Starý & Kaddou 1971).

Distribution in the Middle East and North Africa

Algeria (Starý 1976; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); Egypt (Hassan 1963; Hafez 1965; Mackauer & Starý 1967; Starý 1976; El-Heneidy & Attia 1988/1989; El-Heneidy 1991, 1994; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002; Ragab *et al.* 2002; Abdel-Rahman 2005; Slman 2006; El-Gantiry *et al.* 2012); Iran (Starý 1979; Starý *et al.* 2000; Mossadegh *et al.* 2011; Barahoei *et al.* 2012, 2013; Nazari *et al.* 2012; Rakhshani *et al.* 2006a, 2012b; Rakhshani 2012; Taheri & Rakhshani 2013); Iraq (Al-Azawi 1970; Starý & Kaddou 1971; Starý 1976); Israel (Bodenheimer & Swirski 1957; Avidov & Kotter 1966; Avidov & Harpaz 1969; Starý 1976; Mescheloff & Rosen 1990b); Jordan (Baer *et al.* 2004); Lebanon (Talhouk 1961; Starý 1976; Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay *et al*. 1985; Abou-Fakhr & Kawar 1998); Libya (Mackauer & Starý 1967; Starý 1976); Morocco (Mimeur 1934; Starý 1976; Starý & Sekkat 1987; Baer *et al.* 2004); Palestine (Samara & Qubbaj 2012); Saudi Arabia (Ahmad & Bakr 2013); Syria (Baer *et al.* 2004); Tunisia (Ben Halima & Ben Hamouda 1993; Boukhris-Bouhachem 2011; Ayadi *et al.* 2017); Turkey (Eastern part – Ölmez & Ulusoy 2003; Central part – Düzgüneş *et al.* 1982, Kilinçer 1982; Zeren & Düzgüneş 1983; Elmali & Toros 1994; Aslan *et al.* 2004; Uysal *et al.* 2004; Güz & Kilinçer 2005; Satar *et al.* 2014; Western part – Erkin 1983; Erdoğan *et al.* 2008; Akar & Erdoğan 2017); Yemen (Starý *et al.* 2013).

General distribution

Cosmopolitan.

Diaeretus leucopterus (Haliday, 1834)
Figs 117, 220, 316, 417, 554

Host records

Eulachnus tuberculostemmatus (Theobald) (Starý 1976; Mescheloff & Rosen 1990b).

Distribution in the Middle East and North Africa

Israel (Starý 1976; Mescheloff & Rosen 1990b).

General distribution

Eastern and Western Palaearctic, Oriental.

Ephedrus cerasicola Starý, 1962
Figs 31, 118, 221, 317, 418, 555

Host records

Dysaphis plantaginea (Passerini) (Rakhshani 2012; Barahoei *et al.* 2013); *Myzus cerasi* (F.) (Rakhshani 2012); *Myzus persicae* (Sulzer) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004; Rakhshani 2012); *Phorodon humuli* (Schrank) (Mokhtari *et al.* 2000; Starý *et al.* 2000); *Rhopalosiphum nymphaeae* (L.) (Mokhtari *et al.* 2000; Starý *et al.* 2000).

Distribution in the Middle East and North Africa

Iran (Starý *et al.* 2000; Rakhshani 2012; Barahoei *et al.* 2013); Turkey (Central part – Düzgüneş *et al.* 1982; Uysal *et al.* 2004).

General distribution

Holarctic, Oceanic.

Ephedrus chaitophori Gärdenfors, 1986
Figs 119, 222, 318, 419, 556

Host records

Chaitophorus populeti (Panzer) (Rakhshani *et al.* 2007b).

Distribution in the Middle East and North Africa

Iran (Rakhshani *et al.* 2007b).

General distribution

Holarctic.

Ephedrus helleni Mackauer, 1968
Figs 32, 120, 223, 319, 420, 557

Host records

Cavariella aquatica (Gillette & Bragg) (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2007b; Talebi *et al.* 2009); *Hayhurstia atriplicis* (L.) (Barahoei *et al.* 2014).

Distribution in the Middle East and North Africa

Iran (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2007b; Talebi *et al.* 2009).

General distribution

Eastern and Western Palaearctic, Oriental.

Ephedrus lacertosus (Haliday, 1833)
Figs 121, 224, 320, 421, 558

Host records

Lacking host data (Tomanović *et al.* 2008).

Distribution in the Middle East and North Africa

Turkey (Eastern part – Tomanović *et al.* 2008).

General distribution

Holarctic, Neotropical, Oriental.

Ephedrus nacheri Quilis, 1934
Figs 122, 225, 321, 422, 559

Host records

Hayhurstia atriplicis (L.) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004).

Distribution in the Middle East and North Africa

Turkey (Central part – Düzgüneş *et al.* 1982; Uysal *et al.* 2004).

General distribution

Eastern and Western Palaearctic, Oriental.

Ephedrus niger Gautier, Bonnamour & Gaumont, 1929
Figs 33, 123, 226, 322, 423, 560

Host records

Macrosiphoniella abrotani (Walker) (Mackauer & Starý 1967; Starý *et al.* 2000; Rakhshani *et al.* 2011); *Macrosiphoniella sanborni* (Gillette) (Rakhshani *et al.* 2011; Nazari *et al.* 2012); *Macrosiphoniella* sp. (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2011; Barahoei *et al.* 2013); *Macrosiphum rosae* (L.) (?) (Mescheloff & Rosen 1988); *Uroleucon acroptilidis* Kadyrbekov, Renxin & Shao, *Uroleucon bielawskii* (Szelegiewicz) (Nazari *et al.* 2012; Barahoei *et al.* 2013); *Uroleucon cichorii* (Koch) (Starý *et al.* 2000; Barahoei *et al.* 2012, 2013); *Uroleucon compositae* (Theobald) (Nazari *et al.* 2012; Barahoei *et al.* 2013); *Uroleucon erigeronense* (Thomas) (Starý *et al.* 2000; Talebi *et al.* 2009; Nazari *et al.* 2012); *Uroleucon inulae* (Ferrari) (Mescheloff & Rosen 1988); *Uroleucon jaceae* (L.) (Starý *et al.* 2000; Talebi *et al.* 2009; Rakhshani *et al.* 2011, 2012b; Barahoei *et al.* 2012, 2013; Nazari *et al.* 2012); *Uroleucon sonchi* (L.) (Talebi *et al.* 2009; Rakhshani *et al*. 2012b; Barahoei *et al.* 2012, 2013; Nazari *et al.* 2012; Taheri & Rakhshani 2013); *Uroleucon* sp. (Starý 1979; Starý *et al.* 2000; Barahoei *et al.* 2012, 2013).

Distribution in the Middle East and North Africa

Algeria (Gärdenfors 1986; Laamari *et al.* 2011); Iran (Mackauer & Starý 1967; Starý 1979; Starý *et al.* 2000; Talebi *et al.* 2009; Barahoei *et al.* 2012, 2013; Nazari *et al.* 2012; Rakhshani *et al.* 2012b; Taheri & Rakhshani 2013); Israel (Mescheloff & Rosen 1988).

General distribution

Eastern and Western Palaearctic, Oriental.

Ephedrus persicae Froggatt, 1904
Figs 34, 124, 227, 323, 424, 561

Material examined

SAUDI ARABIA • 1 ♂; Raidah; Apr. 2011; net sweeping; Z. Ahmad leg. (DPPZ).

Host records

Absinthaphis sp. (Mescheloff & Rosen 1988); *Acyrthosiphon malvae* (Mosley) (Laamari *et al.* 2011, 2012); *Acyrthosiphon pisum* (Harris) (Laamari *et al.* 2011); *Aphis affinis* del Guercio (Talebi *et al.* 2009; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Aphis aurantii* Boyer de Fonscolombe (Rosen 1967, 1969; Avidov & Harpaz 1969; Starý 1976; Hussein & Kawar 1984; Tremblay *et al.* 1985; Boukhris-Bouhachem 2011; Yoldaş *et al.* 2011); *Aphis brunnea* Ferrari, *Aphis chloris* Koch (Mescheloff & Rosen 1988); *Aphis craccivora* Koch (Mackauer 1963; Avidov & Harpaz 1969; Starý 1976; Mescheloff & Rosen 1988; Düzgüneş *et al.* 1982; Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani *et al.* 2005a, 2006a; Žikić *et al.* 2009; Laamari *et al.* 2011; Yoldaş *et al.* 2011; Barahoei *et al.* 2012, 2013; Nazari *et al.* 2012); *Aphis epilobiaria* Theobald (Mescheloff & Rosen 1988); *Aphis fabae* Scopoli (Al-Azawi 1970; Starý 1976, 1979; Düzgüneş *et al.* 1982; Tremblay *et al.* 1985; Mescheloff & Rosen 1988; Uysal *et al.* 2004; Žikić *et al.* 2009; Laamari *et al.* 2011, 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Aphis fabae cirsiiacanthoidis* Scopoli (Uysal *et al.* 2004); *Aphis gossypii* Glover (Al-Azawi 1970; Starý 1976; Abou-Fakhr 1982; Düzgüneş *et al.* 1982; Zeren & Düzgüneş 1983; Tremblay *et al.* 1985; Mescheloff & Rosen 1988; Abou-Fakhr & Kawar 1998; Uysal *et al.* 2004; Yoldaş *et al.* 2011; Laamari *et al.* 2011, 2012; Barahoei *et al.* 2013; Satar *et al.* 2014; Ayadi *et al.* 2017); *Aphis hederae* Kaltenbach, *Aphis intybi* Koch (Mescheloff & Rosen 1988); *Aphis nerii* Boyer de Fonscolombe (Talebi *et al.* 2009; Barahoei *et al.* 2014); *Aphis plantaginis* Goeze (Barahoei *et al.* 2013); *Aphis pomi* De Geer (Düzgüneş *et al.* 1982; Starý *et al.* 2000; Uysal *et al.* 2004; Laamari *et al.* 2011, 2012); *Aphis punicae* Passerini (Mackauer 1963; Starý & Sekkat 1987; Mescheloff & Rosen 1988; Starý *et al.* 2000; Laamari *et al.* 2011, 2012); *Aphis ruborum* (Börner) (Starý 1976; Düzgüneş *et al.* 1982; Uysal *et al.* 2004); *Aphis solanella* Theobald (Tremblay *et al.* 1985); *Aphis umbrella* (Börner) (Starý 1976; Abou-Fakhr 1982; Tremblay *et al.* 1985; Abou-Fakhr & Kawar 1998); *Aphis verbasci* Schrank, *Aphis nasturtii* Kaltenbach (Mescheloff & Rosen 1988 – as *Aphis zizyphi* Theobald); *Brachycaudus amygdalinus* (Schouteden) (Bodenheimer & Swirski 1957; Avidov & Harpaz 1969; Starý 1976; Starý & Sekkat 1987; Düzgüneş *et al.* 1982; Mescheloff & Rosen 1988; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Talebi *et al.* 2009; Žikić *et al.* 2009; Jafari *et al*. 2011; Laamari *et al.* 2011; Jafari & Modarres Awal 2012; Nazari *et al.* 2012; Rakhshani 2012; Rakhshani *et al.* 2012b); *Brachycaudus cardui* (L.) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004; Aslan & Karaca 2005; Žikić *et al.* 2009); *Brachycaudus helichrysi* (Kaltenbach) (Starý 1979; Erkin 1983; Mescheloff & Rosen 1988; Starý *et al.* 2000; Uysal *et al.* 2004; Žikić *et al.* 2009; Laamari *et al.* 2011; Nazari *et al*. 2012; Rakhshani 2012; Barahoei *et al.* 2013; Satar *et al.* 2014); *Brachyunguis tamaricis* (Lichtenstein) (Starý 1976, 1979; Starý *et al.* 2000; Laamari *et al.* 2012); *Cavariella aegopodii* (Scopoli); *Cavariella theobaldi* (Gillette & Bragg) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004); *Diuraphis noxia* (Kurdjumov) (Starý *et al.* 2000); *Dysaphis crataegi*

(Kaltenbach) (Talhouk 1961; Starý 1976; Starý *et al.* 2000); *Dysaphis devecta* (Walker) (Aslan *et al.* 2004; Uysal *et al.* 2004; Aslan & Karaca 2005; Žikić *et al.* 2009); *Dysaphis foeniculus* (Theobald) (Talebi *et al.* 2009); *Dysaphis plantaginea* (Passerini) (Düzgüneş *et al.* 1982; Erkin 1983; Hussein & Kawar 1984 – as *Dysaphis mali* (Ferrari); Starý *et al.* 2000; Uysal *et al.* 2004; Aslan & Karaca 2005; Laamari *et al.* 2011, 2012; Nazari *et al*. 2012; Rakhshani 2012; Barahoei *et al.* 2013); *Dysaphis pyri* (Boyer de Fonscolombe) (Mackauer 1963; Erkin 1983; Starý *et al.* 2000; Uysal *et al.* 2004; Žikić *et al.* 2009; Rakhshani 2012); *Dysaphis reaumuri* (Mordvilko) (Rakhshani 2012; Barahoei *et al.* 2013); *Eulachnus tuberculostemmatus* (Theobald) (?) (Mescheloff & Rosen 1988); *Hayhurstia atriplicis* (L.) (Mescheloff & Rosen 1988; Barahoei *et al.* 2013); *Hyadaphis coriandri* (Das) (Talebi *et al.* 2009; Barahoei *et al*. 2014); *Hyadaphis foeniculi* (Passerini) (Mescheloff & Rosen 1988); *Hyalopterus amygdali* (Blanchard) (Ölmez & Ulusoy 2003; Aslan *et al.* 2004; Uysal *et al.* 2004; Jafari *et al*. 2011; Jafari & Modarres Awal 2012; Rakhshani 2012; Barahoei *et al.* 2013); *Hyalopterus pruni* (Geoffroy) (Düzgüneş *et al.* 1982; Erkin 1983; Mescheloff & Rosen 1988; Uysal *et al.* 2004; Aslan & Karaca 2005); *Macchiatiella rhamni* (Boyer de Fonscolombe) (Abou-Fakhr 1982; Abou-Fakhr & Kawar 1998); *Melanaphis donacis* (Passerini) (Mescheloff & Rosen 1988); *Metopolophium dirhodum* (Walker) (Starý *et al.* 2000; Rakhshani *et al.* 2008b); *Myzus cerasi* (Fabricius) (Erkin 1983; Aslan *et al.* 2004; Uysal *et al.* 2004; Žikić *et al.* 2009; Rakhshani 2012); *Myzus persicae* (Sulzer) (Starý 1974; Erkin 1983; Zeren & Düzgüneş 1983; Karaat & Goven 1986; Uysal *et al.* 2004; Talebi *et al.* 2009; Žikić *et al.* 2009; Boukhris-Bouhachem 2011; Yoldaş *et al.* 2011; Laamari *et al.* 2011; Nazari *et al*. 2012; Rakhshani 2012; Barahoei *et al.* 2013; Hasan 2016); *Phorodon humuli* (Schrank) (Rakhshani 2012; Barahoei *et al.* 2013); *Rhopalosiphum maidis* (Fitch) (Avidov & Harpaz 1969; Starý 1976, 1979; Gärdenfors 1986; Starý *et al.* 2000; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002; Mossadegh *et al.* 2011; Barahoei *et al.* 2012, 2013); *Rhopalosiphum padi* (L.) (Starý 1979; Gärdenfors 1986; Özder & Toros 1999; Starý *et al.* 2000; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002; Uysal *et al.* 2004; Rakhshani *et al.* 2008b; Gadallah *et al.* 2017); *Schizaphis graminum* (Rondani) (Starý *et al.* 2000; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002; Rakhshani *et al.* 2008b; Žikić *et al.* 2009; Rakhshani *et al*. 2012b); *Sipha maydis* Passerini (?) (Starý *et al.* 2000); *Sitobion avenae* (Fabricius) (Starý *et al.* 2000; El-Heneidy *et al.* 2001, 2002; Barahoei *et al.* 2013; Gadallah *et al.* 2017).

Distribution in the Middle East and North Africa

Algeria (Starý 1976; Gärdenfors 1986; Laamari *et al.* 2011, 2012); Egypt (Gärdenfors, 1986; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002, 2003; El-Ghiet *et al.* 2014); Iran (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2005a, 2006a, 2008b, 2012b; Mossadegh *et al.* 2011; Barahoei *et al.* 2012, 2013; Nazari *et al.* 2012; Rakhshani 2012; Taheri & Rakhshani 2013); Iraq (Al-Azawi 1970; Starý 1976; Žikić *et al.* 2009); Israel (Rosen 1967, 1969; Bodenheimer & Swirski 1957; Avidov & Harpaz 1969; Starý 1974, 1976; Gärdenfors, 1986; Mescheloff & Rosen 1988); Jordan (Hasan 2016); Lebanon (Talhouk 1961; Mackauer & Starý 1967; Starý 1974, 1976; Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay *et al.* 1985); Libya (Starý 1976); Morocco (Starý & Sekkat 1987); Syria (Starý 1974, 1976); Tunisia (Boukhris-Bouhachem 2011; Ayadi *et al.* 2017); Turkey (Uysal *et al.* 2004; Eastern part – Karaat & Goven 1986; Ölmez & Ulusoy 2003; Central part – Düzgüneş *et al.* 1982; Zeren & Düzgüneş 1983; Aslan *et al.* 2004; Satar *et al.* 2014; Western part – Erkin 1983; Özder & Toros 1999; Aslan & Karaca 2005; Žikić *et al.* 2009; Yoldaş *et al.* 2011; Akar & Erdoğan 2017); UAE (Starý *et al.* 2013); Yemen (Starý *et al.* 2013).

General distribution

Cosmopolitan.

Ephedrus plagiator (Nees, 1811)
Figs 35, 125, 228, 324, 425, 562

Host records

Acyrthosiphon pisum (Harris), *Aphis fabae* Scopoli, *Aphis pomi* De Geer (Düzgüneş *et al.* 1982; Uysal *et al.* 2004); *Brachycaudus cardui* (L.) (Starý *et al.* 2000); *Brachycaudus helichrysi* (Kaltenbach) (Rakhshani 2012); *Corylobium avellanae* (Schrank) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004); *Diuraphis noxia* (Kurdjumov) (Pike *et al.* 1991; Uysal *et al.* 2004); *Dysaphis crataegi* (Kaltenbach) (Düzgüneş *et al.* 1982; Starý *et al.* 2000; Uysal *et al.* 2004); *Dysaphis devecta* (Walker), *Dysaphis plantaginea* (Passerini) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004); *Dysaphis pyri* (Boyer de Fonscolombe) (Rakhshani 2012); *Dysaphis* sp. (Starý 1979); *Hyalopterus pruni* (Geoffroy) (Düzgüneş *et al.* 1982; Hussein & Kawar 1984; Uysal *et al.* 2004); *Macrosiphum* sp. (Starý 1976; Uysal *et al.* 2004); *Myzus cerasi* (F.) (Mokhtari *et al.* 2000; Starý *et al.* 2000); *Rhopalosiphum oxyacanthae* (Schrank) (Düzgüneş *et al.* 1982 – as *Rhopalosiphum insertum* (Walker); Uysal *et al.* 2004), *Rhopalosiphum maidis* (Fitch) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004); *Rhopalosiphum padi* (L.) (Rakhshani *et al.* 2008b; Barahoei *et al.* 2013); *Schizaphis graminum* (Rondani) (Rakhshani *et al.* 2008b; Barahoei *et al.* 2014); *Sitobion avenae* (Fabricius) (Elmali & Toros 1994; Darvish-Mojeni & Bayat-Asadi 1995; Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani *et al.* 2008b; Nazari *et al.* 2012).

Distribution in the Middle East and North Africa

Egypt (Abdel-Rahman 2005; El-Ghiet *et al.* 2014); Iran (Starý 1979; Starý *et al.* 2000; Rakhshani 2012; Barahoei *et al.* 2013; Nazari *et al.* 2012); Iraq (Starý 1976); Lebanon (Hussein & Kawar 1984); Turkey (Starý 1976; Uysal *et al.* 2004; Central part – Düzgüneş *et al.* 1982; Elmali & Toros 1994; Western part – Erdoğan *et al.* 2008; Akar & Erdoğan 2017).

General distribution

Australasian, Eastern and Western Palaearctic, Neotropical, Oceanic, Oriental.

Lipolexis gracilis Förster, 1862
Figs 36, 126, 229, 325, 426, 563

Host records

Aphis fabae Scopoli (Abou-Fakhr 1982; Tremblay *et al*. 1985; Abou-Fakhr & Kawar 1998; Rakhshani *et al.* 2008d); *Aphis gossypii* Glover (Tremblay *et al.* 1985); *Aphis pomi* De Geer (Aslan & Karaca 2005); *Aphis salviae* Walker (Barahoei *et al.* 2013; Alikhani *et al.* 2013); *Aphis umbrella* (Börner) (Abou-Fakhr 1982; Tremblay *et al*. 1985; Abou-Fakhr & Kawar 1998); *Aphis* sp. (Starý 1976; Laamari *et al.* 2012); *Brachycaudus amygdalinus* (Schouteden) (Rakhshani *et al.* 2012b).

Distribution in the Middle East and North Africa

Algeria (Starý 1976; Laamari *et al.* 2012); Iran (Rakhshani *et al.* 2008c, 2012b; Barahoei *et al.* 2013; Alikhani *et al.* 2013); Lebanon (Abou-Fakhr 1982; Tremblay *et al.* 1985; Abou-Fakhr & Kawar 1998); Turkey (Western part – Aslan & Karaca 2005; Central part – Rakhshani *et al.* 2008d; Tomanović *et al.* 2008).

General distribution

Eastern and Western Palaearctic, Oriental.

Lysiphlebus cardui (Marshall, 1896)
Figs 37, 127, 230, 326, 427, 504, 564

Host records

Aphis fabae Scopoli (Alikhani *et al.* 2013); *Aphis gossypii* Glover (?) (Laamari *et al.* 2012).

Distribution in the Middle East and North Africa

Algeria (Laamari *et al.* 2012); Iran (Alikhani *et al.* 2013).

General distribution

Eastern (Iran) and Western Palaearctic.

Lysiphlebus confusus Tremblay & Eady, 1978
Figs 38, 128, 231, 327, 428, 505, 565

Lysiphlebus marismortui Mescheloff & Rosen, 1990a, Israel Journal of Entomology, 24: 35–50. **syn. nov.**

Host records

Acyrthosiphon sp. (?) (Starý *et al.* 2000); *Aphis affinis* del Guercio (Taheri & Rakhshani 2013); *Aphis aurantii* Boyer de Fonscolombe (Rosen 1967, 1969; Avidov & Harpaz 1969; Starý 1976; Tremblay *et al*. 1985; Ben Halima *et al.* 1994; Starý 1976; Aghajanzadeh *et al.* 1995; Starý *et al.* 2000; Uysal *et al.* 2004; Ben Halima & Ben Hamouda 2005); *Aphis craccivora* Koch (Al-Azawi 1970; Starý & Kaddou 1971; Starý 1976, 1979; Abou-Fakhr 1982; Tremblay *et al*. 1985; Mescheloff & Rosen 1990a; Abou-Fakhr & Kawar 1998; Starý *et al.* 2000; Uysal *et al.* 2004; Güz & Kilinçer 2005; Talebi *et al.* 2009; Nazari *et al*. 2012; Taheri & Rakhshani 2013; Barahoei *et al.* 2013; Satar *et al.* 2014; Chaouche & Laamari 2015; Rakhshani *et al.* 2005a, 2006a); *Aphis euphorbiae* Kaltenbach (Güz & Kilinçer 2005); *Aphis fabae* Scopoli (Starý 1976; Al-Azawi 1970; Starý & Kaddou 1971; Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay *et al*. 1985; Mescheloff & Rosen 1990a; Ben Halima & Ben Hamouda 1993, 2005; Ben Halima *et al.* 1994 – as *Aphis citricola* van der Goot; Abou-Fakhr & Kawar 1998; Ölmez & Ulusoy 2003; Aslan *et al.* 2004; Ben Halima & Ben Hamouda 2005 – as *Aphis citricola* van der Goot; Uysal *et al.* 2004; Talebi *et al.* 2009; Laamari *et al.* 2011, 2012; Nazari *et al.* 2012); *Aphis farinosa* Gmelin (Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani *et al.* 2007b; Talebi *et al.* 2009; Nazari *et al.* 2012); *Aphis gossypii* Glover (Starý 1976; Al-Azawi 1970; Starý & Kaddou 1971; Mescheloff & Rosen 1990a; Ben Halima & Ben Hamouda 1993, 2005; Ben Halima *et al.* 1994; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Laamari *et al.* 2011; Nazari *et al.* 2012; Satar *et al.* 2014); *Aphis hederae* Kaltenbach (Abou-Fakhr 1982; Tremblay *et al*. 1985; Mescheloff & Rosen 1990a; Abou-Fakhr & Kawar 1998); *Aphis idaei* van der Goot (Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Aphis intybi* Koch (Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Aphis nasturtii* Kaltenbach (Al-Azawi 1970; Starý 1976; Laamari *et al.* 2012); *Aphis nasturtii* Kaltenbach (Mescheloff & Rosen 1990a – as *Aphis zizyphi* Theobald); *Aphis nerii* Boyer de Fonscolombe (Al-Azawi 1970; Starý 1976; Ben Halima *et al.* 1994; Ben Halima & Ben Hamouda 2005); *Aphis potentillae* Nevsky (Laamari *et al.* 2011, 2012); *Aphis punicae* Passerini (Aslan *et al.* 2004; Uysal *et al.* 2004); *Aphis ruborum* (Börner) (Starý 1976; Mescheloff & Rosen 1990a; Aslan *et al.* 2004; Uysal *et al.* 2004); *Aphis solanella* Theobald (Abou-Fakhr 1982; Tremblay *et al*. 1985; Abou-Fakhr & Kawar 1998); *Aphis umbrella* (Börner) (Abou-Fakhr 1982; Tremblay *et al*. 1985; Mescheloff & Rosen 1990a; Abou-Fakhr & Kawar 1998); *Aphis urticata* Gmelin (Güz & Kilinçer 2005); *Aphis vallei* Hille Ris Lambers & Stroyan (Starý 1976; Güz & Kilinçer 2005); *Aphis verbasci* Schrank (Mescheloff & Rosen 1990a; Starý *et al.* 2000; Talebi *et al.* 2009; Rakhshani

et al. 2012b; Barahoei *et al.* 2013); *Aulacorthum* sp. (Starý 1979); *Brachycaudus amygdalinus* (Schouteden) (Mescheloff & Rosen 1990a); *Brachycaudus cardui* (L.) (Abou-Fakhr 1982; Tremblay *et al*. 1985; Abou-Fakhr & Kawar 1998; Starý *et al.* 2000; Uysal *et al.* 2004); *Brachycaudus helichrysi* (Kaltenbach) (Aslan *et al.* 2004; Uysal *et al.* 2004; Nazari *et al.* 2012; Satar *et al.* 2014); *Brachyunguis skafi* Remaudière & Talhouk (Starý *et al.* 2000); *Dysaphis crataegi* (Kaltenbach); *Dysaphis foeniculus* (Theobald) (Güz & Kilinçer 2005); *Ephedraphis ephedrae* (Nevsky) (Starý 1979; Starý *et al.* 2000); *Hyadaphis foeniculi* (Passerini) (Tremblay *et al*. 1985); *Hyperomyzus lactucae* (L.) (?) (Barahoei *et al.* 2013); *Macrosiphoniella tapuskae* (Hottes & Frison) (?) (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2011); *Melanaphis* sp. (Mescheloff & Rosen 1990a); *Myzus persicae* (Sulzer) (Ben Halima *et al.* 1994; Abou-Fakhr & Kawar 1998); *Protaphis* sp. (Starý 1979); *Uroleucon* sp. (?) (Barahoei *et al.* 2012, 2013).

Distribution in the Middle East and North Africa

Algeria (Starý 1976; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); Iran (Starý 1979; Aghajanzadeh *et al.* 1995; Starý *et al.* 2000; Rakhshani *et al.* 2005a; Rakhshani *et al.* 2007b; Barahoei *et al.* 2012, 2013; Nazari *et al.* 2012; Rakhshani *et al.* 2012b; Taheri & Rakhshani 2013); Egypt (Mackauer & Starý 1967; Starý 1976); Iraq (Starý 1969a, 1976, 1979; Al-Azawi 1970; Starý & Kaddou 1971); Israel (Rosen 1967, 1969; Avidov & Harpaz 1969; Starý 1976; Mescheloff & Rosen 1990a); Lebanon (Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay *et al*. 1985; Abou-Fakhr & Kawar 1998); Tunisia (Ben Halima & Ben Hamouda 1993, 2005; Ben Halima *et al.* 1994); Turkey (Starý 1976; Uysal *et al.* 2004; Eastern part – Ölmez & Ulusoy 2003; Aslan *et al.* 2004; Güz & Kilinçer 2005; Satar *et al.* 2014; Akar & Erdoğan 2017); UAE (Starý *et al.* 2013).

General distribution

Eastern and Western Palaearctic, Oriental.

Remarks

Mescheloff & Rosen (1990a) described *Lysiphlebus marismortui* from Israel. Based on the original description of this species, which is very closely related to *Lysiphlebus confusus*, and the fact that *Lysiphlebus confusus* exhibits major morphological variability (Tomanović *et al*. 2018), we believe that *Lysiphlebus marismortui* falls as a synonym of *Lysiphlebus confusus*.

Lysiphlebus desertorum Starý, 1965
Figs 39, 129, 232, 328, 429, 506, 566

Host records

Aphis craccivora Koch (Barahoei *et al.* 2013); *Aphis* sp. (Rakhshani *et al.* 2012b); *Protaphis terricola* (Rondani) (Barahoei *et al.* 2013); *Protaphis* sp. (Talebi *et al.* 2009; Nazari *et al.* 2012); *Xerobion cinae* (Nevsky) (Starý 1979; Starý *et al.* 2000; Barahoei *et al.* 2013).

Distribution in the Middle East and North Africa

Iran (Starý 1979; Starý *et al.* 2000; Talebi *et al.* 2009; Nazari *et al.* 2012; Rakhshani *et al.* 2012b; Barahoei *et al.* 2013).

General distribution

Eastern (Iran, Uzbekistan) and Western (Spain) Palaearctic.

Lysiphlebus fabarum (Marshall, 1896)
Figs 40, 130, 233, 329, 430, 507, 567

Material examined

SAUDI ARABIA • 11 ♀♀, 3 ♂ ♂; Abha; May 2013; on *Lablab purpureus*; Z. Ahmad leg. (DPPZ).

Host records

Acyrthosiphon ilka Mordvilko (?) (Starý 1979; Starý *et al.* 2000); *Acyrthosiphon gossypii* Mordvilko (?) (Barahoei *et al.* 2013; Rakhshani *et al.* 2013); *Acyrthosiphon lactucae* (Passerini) (?) (Starý *et al.* 2000); *Acyrthosiphon pisum* (Harris) (?) (Zeren & Düzgüneş 1983; Uysal *et al.* 2004); *Aphis acetosae* L. (Starý *et al.* 2000; Barahoei *et al.* 2013; Rakhshani *et al.* 2013); *Aphis affinis* Del Guercio (Starý & Kaddou 1971; Starý 1976; Starý & Sekkat 1987; Starý *et al.* 2000; Uysal *et al.* 2004; Talebi *et al.* 2009; Rakhshani *et al.* 2012b; Nazari *et al.* 2012; Tomanović *et al.* 2012; Barahoei *et al.* 2013; Rakhshani *et al.* 2013; Taheri & Rakhshani 2013); *Aphis althaeae* (Nevsky) (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2012b); *Aphis astragali* Ossiannilsson (Laamari *et al.* 2011, 2012); *Aphis aurantii* Boyer de Fonscolombe (Rosen 1967, 1969; Avidov & Harpaz 1969; Starý 1976; Hussein & Kawar 1984; Tremblay *et al*. 1985; Yumruktepe & Uygun 1994; Aghajanzadeh *et al.* 1995; Starý *et al.* 2000; Uysal *et al.* 2004; Boukhris-Bouhachem 2011; Rakhshani *et al*. 2013); *Aphis brunnea* Ferrari (Chaouche & Laamari 2015); *Aphis chloris* Koch (Mescheloff & Rosen 1990a); *Aphis craccivora* Koch (Starý 1976, 1979; Starý & Kaddou 1971; Monajemi & Esmaili 1981; Düzgüneş *et al.* 1982; Zeren & Düzgüneş 1983; Abou-Fakhr 1982; Tremblay *et al*. 1985; Starý & Sekkat 1987; Mescheloff & Rosen 1990a; Abou-Fakhr & Kawar 1998; Starý *et al.* 2000; Ölmez & Ulusoy 2003; Aslan *et al.* 2004; Uysal *et al.* 2004; Güz & Kilinçer 2005; Rakhshani *et al.* 2005a, 2006a; Abdel-Samad & Ahmed 2009; Talebi *et al.* 2009; Mossadegh *et al.* 2011; Barahoei *et al.* 2011, 2012, 2013; Laamari *et al.* 2011, 2012; Nazari *et al.* 2012; Rakhshani *et al*. 2012b, 2013; Taheri & Rakhshani 2013; Satar *et al.* 2014); *Aphis davletshinae* Hillie Ris Lambers (Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Rakhshani *et al.* 2013); *Aphis epilobiaria* Theobald (Mescheloff & Rosen 1990a); *Aphis epilobii* Kaltenbach (Nazari *et al.* 2012; Rakhshani *et al.* 2013); *Aphis euphorbiae* Kaltenbach (Rakhshani *et al*. 2013); *Aphis euphorbicola* Rezwani & Lampel (Rakhshani *et al.* 2012b, 2013; Barahoei *et al.* 2013); *Aphis fabae* Scopoli (Davatchi & Shojai 1968; Starý 1976; Al-Azawi 1970; Starý & Kaddou 1971; Abou-Fakhr 1982; Düzgüneş *et al.* 1982; Zeren & Düzgüneş 1983; Tremblay *et al*. 1985; Starý & Sekkat 1987; Mescheloff & Rosen 1990a; Yumruktepe & Uygun 1994; Abou-Fakhr & Kawar 1998; Starý *et al.* 2000; Ölmez & Ulusoy 2003; Aslan *et al.* 2004; Uysal *et al.* 2004; Güz & Kilinçer 2005; Talebi *et al.* 2009; Laamari *et al.* 2011, 2012; Rakhshani *et al.* 2012b, 2013; Nazari *et al.* 2012; Taheri & Rakhshani 2013; Barahoei *et al.* 2011, 2012, 2013; Chaouche & Laamari 2015); *Aphis fabae cirsiiacanthoidis* Scopoli (Aslan *et al.* 2004; Uysal *et al.* 2004; Rakhshani *et al*. 2013); *Aphis galiiscabri* Schrank (Güz & Kilinçer 2005); *Aphis gerardianae* Mordvilko (Rakhshani *et al.* 2012b, 2013); *Aphis gossypii* Glover (Avidov & Harpaz 1969; Al-Azawi 1970; Starý 1976, 1979; Abou-Fakhr 1982; Düzgüneş *et al.* 1982; Zeren & Düzgüneş 1983; Tremblay *et al.* 1985; Starý & Sekkat 1987; Mescheloff & Rosen 1990a; Yumruktepe & Uygun 1994; Abou-Fakhr & Kawar 1998; Starý *et al.* 2000; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Talebi *et al.* 2009; Laamari *et al.* 2011, 2012; Boukhris-Bouhachem 2011; Mossadegh *et al.* 2011; Rakhshani *et al.* 2012b, 2013; Nazari *et al.* 2012; Barahoei *et al.* 2011, 2012, 2013; Taheri & Rakhshani 2013; Satar *et al.* 2014); *Aphis hederae* Kaltenbach (Abou-Fakhr 1982; Tremblay *et al*. 1985; Mescheloff & Rosen 1990a; Abou-Fakhr & Kawar 1998); *Aphis idaei* van der Goot (Talebi *et al.* 2009; Taheri & Rakhshani 2013; Rakhshani *et al*. 2013; Barahoei *et al.* 2013); *Aphis intybi* Koch (Düzgüneş *et al.* 1982; Starý *et al.* 2000; Aslan *et al.* 2004; Uysal *et al.* 2004; Güz & Kilinçer 2005; Talebi *et al.* 2009; Rakhshani *et al*. 2012b; Taheri & Rakhshani 2013); *Aphis nasturtii* Kaltenbach (Starý 1976, 1979; Starý *et al.* 2000; Nazari *et al.* 2012; Laamari *et al.* 2012; Rakhshani *et al*. 2013; Barahoei *et al.* 2013); *Aphis nerii*

Boyer de Fonscolombe (Starý *et al.* 2000; Aslan *et al.* 2004; Uysal *et al.* 2004; Talebi *et al.* 2009; Barahoei *et al.* 2013; Rakhshani *et al*. 2013); *Aphis origani* Passerini, *Aphis plantaginis* Goeze (Barahoei *et al.* 2013; Rakhshani *et al*. 2013); *Aphis pomi* De Geer (Düzgüneş *et al.* 1982; Radjabi 1989; Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani 2012); *Aphis punicae* (Passerini) (Starý 1976; Mescheloff & Rosen 1990a; Talebi *et al.* 2009; Laamari *et al.* 2012; Nazari *et al.* 2012; Barahoei *et al.* 2013; Rakhshani *et al*. 2013; Taheri & Rakhshani 2013); *Aphis ruborum* (Börner) (Starý & Kaddou 1971; Starý 1976, 1979; Düzgüneş *et al.* 1982; Starý *et al.* 2000; Uysal *et al.* 2004; Güz & Kilinçer 2005; Rakhshani *et al*. 2013); *Aphis rumicis* L. (Starý *et al.* 2000; Güz & Kilinçer 2005; Talebi *et al.* 2009; Nazari *et al.* 2012; Rakhshani *et al*. 2013); *Aphis salviae* Walker (Starý 1979; Starý *et al.* 2000; Güz & Kilinçer 2005); *Aphis solanella* Theobald (Starý & Kaddou 1971; Starý 1976; Düzgüneş *et al.* 1982; Zeren & Düzgüneş 1983; Uysal *et al.* 2004; Güz & Kilinçer 2005; Nazari *et al.* 2012; Rakhshani *et al*. 2013 Talebi *et al.* 2009 – as *Aphis evonymi* F.; Barahoei *et al.* 2013; Rakhshani *et al.* 2013 – as *Aphis evonymi* F.); *Aphis spiraecola* Patch (Starý *et al.* 2000; Laamari *et al.* 2012; Rakhshani 2012; Rakhshani *et al*. 2013); *Aphis taraxacicola* (Börner) (Starý 1979; Starý *et al.* 2000); *Aphis tirucallis* Hille Ris Lambers (Ölmez & Ulusoy 2003; Uysal *et al.* 2004); *Aphis umbrella* (Börner) (Abou-Fakhr 1982; Tremblay *et al*. 1985; Mescheloff & Rosen 1990a; Abou-Fakhr & Kawar 1998; Starý *et al.* 2000; Talebi *et al.* 2009; Nazari *et al.* 2012; Barahoei *et al.* 2013; Rakhshani *et al*. 2013); *Aphis urticata* Gmelin (Starý *et al.* 2000; Güz & Kilinçer 2005; Rakhshani *et al*. 2013), *Aphis verbasci* Schrank (Güz & Kilinçer 2005); *Aphis* sp. (Starý & Kaddou 1971; Starý 1976, 1979; Starý *et al.* 2000; Güz & Kilinçer 2005; Barahoei *et al.* 2013; Laamari *et al.* 2012; Nazari *et al.* 2012); *Brachycaudus amygdalinus* (Schouteden) (Nazari *et al.* 2012; Rakhshani 2012); *Brachycaudus cardui* (L.) (Düzgüneş *et al.* 1982; Elmali & Toros 1994; Starý *et al.* 2000; Aslan *et al.* 2004; Uysal *et al.* 2004; Talebi *et al.* 2009; Laamari *et al.* 2011; Rakhshani *et al.* 2012b; 2013; Nazari *et al.* 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Brachycaudus helichrysi* (Kaltenbach) (Starý 1976; Starý *et al.* 2000; Aslan *et al.* 2004; Uysal *et al.* 2004; Jafari *et al*. 2011; Laamari *et al.* 2011, 2012; Jafari & Modarres Awal 2012; Nazari *et al*. 2012; Rakhshani 2012; Barahoei *et al.* 2013; Rakhshani *et al*. 2013; Taheri & Rakhshani 2013); *Brachycaudus persicae* (Passerini) (Rakhshani 2012); *Brachycaudus tragopogonis* (Kaltenbach) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004; Barahoei *et al.* 2012, 2013; Rakhshani *et al.* 2012b, 2013); *Brachycaudus tragopogonis setosus* (Hille Ris Lambers) (Starý *et al.* 2000); *Brachyunguis harmalae* Das (Talebi *et al.* 2009; Rakhshani *et al.* 2012b, 2013); *Brachyunguis zygophylli* (Nevsky) (Barahoei *et al.* 2011, 2012, 2013; Rakhshani *et al*. 2013); *Cavariella aegopodii* (Scopoli) (Abou-Fakhr 1982; Tremblay *et al*. 1985; Uysal *et al.* 2004); *Capitophorus elaeagni* (Del Guercio) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004); *Coloradoa* sp. (Starý 1979; Starý *et al.* 2000); *Dysaphis lappae* Koch (Starý 1979); *Dysaphis plantaginea* (Passerini) (Düzgüneş *et al.* 1982; Starý *et al.* 2000; Aslan *et al.* 2004; Uysal *et al.* 2004; Rakhshani 2012; Barahoei *et al.* 2013; Rakhshani *et al*. 2013); *Dysaphis radicola* (Mordvilko) (Talebi *et al.* 2009; Rakhshani *et al*. 2013); *Dysaphis rumecicola emicis* (Mimeur) (Mescheloff & Rosen 1990a); *Hayhurstia atriplicis* (L.) (Nazari *et al.* 2012; Rakhshani *et al*. 2013); *Hyadaphis coriandri* (Das) (Talebi *et al.* 2009; Rakhshani *et al*. 2013); *Hyadaphis foeniculi* (Passerini) (Tremblay *et al*. 1985); *Hyalopterus amygdali* (Blanchard) (?) (Rakhshani 2012); *Hyalopterus pruni* (Geoffroy) (?) (Starý 1976; Erkin 1983; Uysal *et al.* 2004; Jafari *et al*. 2011; Jafari & Modarres Awal 2012; Laamari *et al.* 2012); *Lipaphis erysimi* (Kaltenbach) (Talebi *et al.* 2009; Rakhshani *et al*. 2013), *Lipaphis fritzmuelleri* Börner (Talebi *et al.* 2009); *Lipaphis lepidii* (Nevsky) (Starý 1979; Starý *et al.* 2000; Talebi *et al.* 2009; Rakhshani *et al*. 2013); *Macrosiphoniella papillata* Holman (?) (Barahoei *et al.* 2013; Rakhshani *et al*. 2013); *Macrosiphoniella sanborni* (Gillette) (?) (Starý *et al.* 2000); *Macrosiphum rosae* (L.) (?) (Taheri & Rakhshani 2013); *Melanaphis sacchari* (Zehntner) (Barahoei *et al.* 2011; Rakhshani *et al*. 2013); *Melanaphis* sp. (Barahoei *et al.* 2012, 2013); *Metopolophium dirhodum* (Walker) (?) (Barahoei *et al.* 2013; Rakhshani *et al*. 2013); *Myzus beybienkoi* (Narzikulov) (Talebi *et al.* 2009; Rakhshani *et al*. 2013); *Myzus persicae* (Sulzer) (Karaat & Goven 1986; Mescheloff & Rosen 1990a; Ölmez & Ulusoy 2003; Uysal *et al.* 2004;

Güz & Kilinçer 2005; Talebi *et al.* 2009; Boukhris-Bouhachem 2011; Laamari *et al.* 2011, 2012; Barahoei *et al.* 2013; Rakhshani *et al*. 2013); *Phorodon humuli* (Schrank) (Mokhtari *et al.* 2000; Starý *et al.* 2000); *Protaphis alexandrae* (Nevsky) (Rakhshani *et al.* 2012b, 2013); *Protaphis anthemidis* (Börner) (Talebi *et al.* 2009; Nazari *et al.* 2012; Rakhshani *et al.* 2013); *Protaphis elongata* (Nevsky) (Talebi *et al.* 2009; Rakhshani *et al.* 2013); *Protaphis terricola* (Rondani) (Güz & Kilinçer 2005; Barahoei *et al.* 2013; Rakhshani *et al*. 2013); *Protaphis* sp. (Starý 1976, 1979; Mescheloff & Rosen 1990a; Barahoei *et al.* 2013); *Rhopalosiphum maidis* (Fitch) (Starý 1976; Düzgüneş *et al.* 1982; Özder & Toros 1999; Uysal *et al.* 2004); *Rhopalosiphum nymphaeae* (L.) (Mokhtari *et al.* 2000; Starý *et al.* 2000); *Rhopalosiphum padi* (L.) (Rakhshani *et al.* 2008b, 2013; Nazari *et al.* 2012; Taheri & Rakhshani 2013; Gadallah *et al.* 2017); *Saltusaphis scirpus* Theobald (Starý *et al.* 2000; Tomanović *et al.* 2012); *Saltusaphis* sp. (Starý 1979); *Sitobion avenae* (Fabricius) (?) (Elmali & Toros 1994; Özder & Toros 1999; Uysal *et al.* 2004); *Uroleucon compositae* (Theobald) (?) (Laamari *et al.* 2011); *Uroleucon jaceae* (L.) (?) (Aslan *et al.* 2004; Uysal *et al.* 2004; Güz & Kilinçer 2005).

Distribution in the Middle East and North Africa

Algeria (Starý 1976; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); Egypt (Mackauer & Starý 1967; Starý 1976; Abdel-Samad & Ahmed 2009; Gadallah *et al.* 2017); Iran (Starý 1979; Aghajanzadeh *et al.* 1995; Starý *et al.* 2000; Rakhshani *et al.* 2005a, 2006a, 2012b, 2013; Mossadegh *et al.* 2011; Nazari *et al*. 2012; Rakhshani 2012; Barahoei *et al.* 2011, 2012, 2013; Taheri & Rakhshani 2013); Iraq (Starý 1969a, 1976; Al-Azawi 1970; Starý & Kaddou 1971); Israel (Rosen 1967, 1969; Avidov & Harpaz 1969; Starý 1976; Mescheloff & Rosen 1990a); Lebanon (Mackauer & Starý 1967; Starý 1976; Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay *et al*. 1985; Abou-Fakhr & Kawar 1998); Morocco (Mimeur 1934; Starý 1976; Starý & Sekkat 1987); Syria (Starý 1976); Tunisia (Boukhris-Bouhachem 2011); Turkey (Starý 1976; Eastern part – Karaat & Goven 1986; Ölmez & Ulusoy 2003; Aslan *et al.* 2004; Uysal *et al.* 2004; Güz & Kilinçer 2005; Central part – Satar *et al.* 2014; Western part – Erkin 1983; Erdoğan *et al.* 2008; Akar & Erdoğan 2017); UAE (Starý *et al.* 2013).

General distribution

Australasian, Eastern and Western Palaearctic, Oceanic, Oriental.

Remarks

Specimens reared from *Brachycaudus tragopogonis* (Kaltenbach) are most probably refer to *Lysiphlebus volkli* Tomanović & Kavallieratos, 2018.

Lysiphlebus fritzmuelleri Mackauer, 1960
Figs 41, 131, 234, 330, 431, 508, 568

Host records

Lacking host data (Akar & Erdoğan 2017).

Distribution in the Middle East and North Africa

Turkey (Western part – Akar & Erdoğan 2017).

General distribution

Australasian, Eastern Palaearctic (Kazakhstan), Western Palaearctic (Eastern and central Europe), Oceanic, Oriental.

Lysiphlebus testaceipes (Cresson, 1880)
Figs 42, 132, 235, 331, 432, 509, 569

Host records

Acyrthosiphon gossypii Mordvilko (Chaouche & Laamari 2015); *Aphis astragali* Ossiannilsson (Laamari *et al.* 2012); *Aphis aurantii* Boyer de Fonscolombe (Boukhris-Bouhachem 2011; Yoldaş *et al.* 2011); *Aphis brunnea* Ferrari (Chaouche & Laamari 2015); *Aphis craccivora* Koch (Rakhshani *et al.* 2005a; Yoldaş *et al.* 2011; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); *Aphis euphorbiae* Kaltenbach (Laamari *et al.* 2011, 2012); *Aphis fabae* Scopoli (Laamari *et al.* 2011, 2012); *Aphis gossypii* Glover (Ben Halima 2011; Boukhris-Bouhachem 2011; Yoldaş *et al.* 2011; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015; Ayadi *et al.* 2017); *Aphis illinoisensis* Shimer (Havelka *et al.* 2011; Laamari *et al.* 2011, 2012); *Aphis nerii* Boyer de Fonscolombe (Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015; Ayadi *et al.* 2017); *Aphis pomi* De Geer (Laamari *et al.* 2011, 2012; Mdellel & Ben Halima 2015), *Aphis potentillae* Nevsky, *Aphis punicae* (Passerini) and *Aphis solanella* Theobald (Ayadi *et al.* 2017); *Aphis spiraecola* Patch (Labdaoui & Guenaoui 2018); *Brachycaudus cardui* (L.) and *Brachycaudus helichrysi* (Kaltenbach) (Laamari *et al.* 2011, 2012); *Diuraphis noxia* (Kurdjumov) (Laamari *et al.* 2016); *Brevicoryne brassicae* (L.) (Uysal *et al.* 2004); *Dysaphis foeniculus* (Theobald) (Chaouche & Laamari 2015); *Dysaphis plantaginea* (Passerini); *Dysaphis pyri* (Boyer de Fonscolombe); *Dysaphis tulipae* (Boyer de Fonscolombe); *Hyalopterus pruni* (Geoffroy) (Laamari *et al.* 2011, 2012); *Myzus persicae* (Sulzer) (Boukhris-Bouhachem 2011; Yoldaş *et al.* 2011; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); *Macrosiphum euphorbiae* (Thomas) (Laamari *et al.* 2011, 2012); *Rhopalosiphum maidis* (Fitch) (Boukhris-Bouhachem 2011; Yoldaş *et al.* 2011; Laamari *et al.* 2011, 2012; Ayadi *et al.* 2017); *Uroleucon compositae* (Theobald) (Laamari *et al.* 2012).

Distribution in the Middle East and North Africa

Algeria (Havelka *et al.* 2011; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015; Laamari *et al.* 2016; Labdaoui & Guenaoui 2018); Egypt (Laboratory population – Adly & El-Gantiry 2014); Iran (Rakhshani *et al.* 2005a); Libya (Mitrović *et al.* 2013; Žikić *et al.* 2015); Tunisia (Ben Halima 2011; Boukhris-Bouhachem 2011; Ayadi *et al.* 2017); Turkey (Uysal *et al.* 2004; Western part – Yoldaş *et al.* 2011).

General distribution

Cosmopolitan.

Lysiphlebus volkli Tomanović & Kavallieratos, 2018

Host records

Aphis verbasci Schrank, *Brachycaudus tragopogonis* (Kaltenbach) (Tomanović *et al.* 2018).

Distribution in the Middle East and North Africa

Iran (Tomanović *et al.* 2018).

General distribution

Eastern Palaearctic (Iran), Western Palaearctic (Southeastern Europe).

Monoctonia pistaciaecola Starý, 1962
Figs 43, 133, 236, 332, 433, 570

Host records

Forda sp. (Starý & Kaddou 1971; Starý 1976); *Smynthurodes betae* Westwood (Wool & Burstein 1991); Lacking host data (Kargarian *et al.* 2016).

Distribution in the Middle East and North Africa

Iran (Kargarian *et al.* 2016), Iraq (Starý & Kaddou 1971; Starý 1976); Israel (Wool & Burstein 1991).

General distribution

Eastern and Western Palaearctic.

Monoctonia vesicarii Tremblay, 1991
Figs 44, 134, 237, 333, 434, 571

Host records

Pemphigus spyrothecae Passerini (Ghafouri Moghaddam *et al.* 2012; Rakhshani *et al*. 2015).

Distribution in the Middle East and North Africa

Iran (Ghafouri Moghaddam *et al.* 2012; Rakhshani *et al.* 2015).

General distribution

Eastern (Iran) and Western Palaearctic.

Monoctonus crepidis (Haliday, 1834)
Figs 135, 238, 334, 435, 572

Host records

Lacking host data (Tomanović *et al.* 2008).

Distribution in the Middle East and North Africa

Turkey (Central part – Tomanović *et al.* 2008).

General distribution

Western Palaearctic, Nearctic, Oriental.

Monoctonus mali van Achterberg, 1989
Figs 136, 239, 335, 436, 573

Host records

Ovatus insitus (Walker) (Ölmez & Ulusoy 2003; Uysal *et al.* 2004).

Distribution in the Middle East and North Africa

Iran (Mosavi *et al.* 2012); Turkey (Eastern part – Ölmez & Ulusoy 2003; Uysal *et al.* 2004).

General distribution

Eastern (Iran) and Western Palaearctic.

Pauesia abietis (Marshall, 1896)
Figs 137, 240, 336, 437, 574

Host records

Cinara pinimaritimae (Dufour) (Uysal *et al.* 2004 – as *Cinara maritimae* (Dufour)); *Cinara pilicornis* (Hartig) (Schimitschek, 1944; Starý 1976 – as *Cinara pinicola* (Kaltenbach)).

Distribution in the Middle East and North Africa

Turkey (Schimitschek 1944; Starý 1976; Uysal *et al.* 2004).

General distribution

Afrotropical, Eastern and Western Palaearctic, Oriental.

Pauesia anatolica Michelena, Assael & Mendel, 2005
Figs 138, 241, 337, 438, 575

Host records

Cinara cedri Mimeur (Michelena *et al.* 2005).

Distribution in the Middle East and North Africa

Israel (imported); Turkey (Western part – Michelena *et al.* 2005).

General distribution

Western Palaearctic.

Pauesia antennata (Mukerji, 1950)
Figs 45, 139, 242, 338, 439, 576

Host records

Pterochloroides persicae (Cholodkovsky) (Mackauer & Starý 1967; Starý & Kaddou 1971; Starý 1976; Starý *et al.* 2000; Rakhshani *et al.* 2005b, 2012b; Talebi *et al.* 2009; Nazari *et al*. 2012; Rakhshani 2012; Barahoei *et al.* 2013).

Distribution in the Middle East and North Africa

Iran (Mackauer & Starý 1967; Rakhshani *et al.* 2005b, 2012b; Nazari *et al*. 2012; Rakhshani 2012; Barahoei *et al.* 2013); Iraq (Starý & Kaddou 1971; Starý 1976); Tunisia (Mdellel *et al.* 2015); Yemen (Cross & Poswal 1996).

General distribution

Eastern and Western Palaearctic, Oriental.

Pauesia cedrobii Starý & Leclant, 1977
Figs 140, 339, 440, 577

Host records

Cinara (*Cedrobium*) *laportei* Remaudière (Starý & Leclant 1977).

Distribution in the Middle East and North Africa

Morocco (Starý & Leclant 1977; Fabre & Rabasse 1987).

General distribution

Western Palaearctic.

Pauesia hazratbalensis Bhagat, 1981
Figs 46, 141, 243, 340, 441, 578

Host records

Cinara (*Cupressobium*) *tujafilina* (del Guercio) (Starý *et al.* 2005; Rakhshani *et al.* 2012b, 2017); *Cinara pinihabitans* (Mordvilko) (Heidari Latibari *et al*. 2019).

Distribution in the Middle East and North Africa

Iran (Starý *et al.* 2005; Rakhshani *et al.* 2012b; 2017).

General distribution

Eastern Palaearctic, Oriental.

Pauesia picta (Haliday, 1834)
Figs 142, 244, 341, 442, 579

Host records

Cinara pini (L.) (Aslan *et al.* 2004; Uysal *et al.* 2004).

Distribution in the Middle East and North Africa

Turkey (Central part – Aslan *et al.* 2004; Uysal *et al.* 2004).

General distribution

Western Palaearctic, Oriental.

Pauesia pini (Haliday, 1834)
Figs 143, 342, 443, 580

Host records

Cinara palaestinensis Hille Ris Lambers (Bodenheimer & Swirski 1957; Avidov & Harpaz 1969; Starý 1976).

Distribution in the Middle East and North Africa

Israel (Bodenheimer & Swirski 1957; Avidov & Harpaz 1969; Starý 1976).

General distribution

Eastern and Western Palaearctic, Oriental.

Pauesia silana Tremblay, 1969
Figs 144, 245, 343, 444, 581

Host records

Cinara palaestinensis Hille Ris Lambers (Mescheloff & Rosen 1990b); *Cinara pini* (L.) (Benhamacha *et al.* 2017).

Distribution in the Middle East and North Africa

Algeria (Benhamacha *et al.* 2017), Israel (Mescheloff & Rosen 1990b).

General distribution

Western Palaearctic.

Pauesia unilachni (Gahan, 1926)
Figs 145, 344, 445, 582

Host records

Cinara (*Schizolachnus*) *pineti* (Fabricius) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004).

Distribution in the Middle East and North Africa

Turkey (Central part – Düzgüneş *et al.* 1982; Uysal *et al.* 2004).

General distribution

Afrotropical, Eastern and Western Palaearctic, Oriental.

Pauesia sp.

Host records

Cinara cedri Mimeur (Aslan *et al.* 2004; Uysal *et al.* 2004).

Distribution in the Middle East and North Africa

Saudi Arabia (Ahmad & Bakr 2013); Turkey (Central part – Aslan *et al.* 2004; Uysal *et al.* 2004); Yemen (Starý *et al.* 2013).

Praon abjectum (Haliday, 1833)
Figs 47, 146, 246, 345, 446, 583

Host records

Aphis craccivora Koch, *Aphis punicae* Passerini, *Aphis solanella* Theobald, *Aphis viticis* Ferrari, *Aphis* sp. (Starý & Kaddou 1971; Starý 1976); *Brachycaudus cardui* (L.) (Rakhshani *et al.* 2007a; Rakhshani 2012)

Distribution in the Middle East and North Africa

Iran (Rakhshani *et al.* 2007a; Rakhshani 2012); Iraq (Starý 1969a, 1976; Starý & Kaddou 1971); Turkey (Western part – Tomanović *et al.* 2008; Akar & Erdoğan 2017).

General distribution

Eastern and Western Palaearctic, Nearctic, Oriental.

Praon absinthii Bignell, 1894
Figs 48, 147, 247, 346, 447, 584

Host records

Macrosiphoniella absinthii (L.) (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2011); *Macrosiphoniella oblonga* (Mordvilko) (Rakhshani *et al.* 2007a, 2011; Talebi *et al.* 2009); *Macrosiphoniella sanborni* (Gillette) (Rakhshani *et al.* 2007a, 2011).

Distribution in the Middle East and North Africa

Iran (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2007a; Talebi *et al.* 2009).

General distribution

Eastern and Western Palaearctic, Oriental.

Praon athenaeum Kavallieratos & Lykouressis, 2000
Figs 148, 248, 347, 448, 585

Host records

Lacking host data (Akar & Erdoğan 2017)

Distribution in the Middle East and North Africa

Turkey (Western part – Akar & Erdoğan 2017).

General distribution

Western Palaearctic (Europe).

Praon barbatum Mackauer, 1967
Figs 49, 149, 249, 348, 449, 586

Material examined

SAUDI ARABIA • 4 ♀♀; Abha; Jun. 2012; *Acyrthosiphon pisum* (Harris) on *Trifolium alexandrinum*; Z. Ahmad leg. (DPPZ).

Host records

Acyrthosiphon pisum (Harris) (González *et al.* 1978; Starý & González 1978; Starý 1979; Tremblay *et al*. 1985; Starý *et al.* 2000; Rakhshani *et al.* 2007a; Nazari *et al.* 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Nearctaphis bakeri* (Cowen) (Barahoei *et al.* 2013).

Distribution in the Middle East and North Africa

Iran (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2007a; Nazari *et al.* 2012; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); Lebanon (Tremblay *et al.* 1985); Morocco (Starý 1976); Saudi Arabia (new record).

General distribution

Eastern and Western Palaearctic, Nearctic (imported).

Praon bicolor Mackauer, 1959
Figs 50, 150, 250, 349, 450, 587

Host records

Lacking host data (Farahani *et al*. 2015).

Distribution in the Middle East and North Africa

Iran (Farahani *et al*. 2015).

General distribution

Eastern (Iran) and Western Palaearctic.

Praon exsoletum (Nees, 1811)
Figs 51, 151, 251, 350, 451, 588

Material examined

SAUDI ARABIA • 2 ♀♀, 2 ♂♂; Abha; Jun. 2012; *Therioaphis trifolii* (Monell) on *Trifolium alexandrinum*; Z. Ahmad leg. (DPPZ).

Host records

Acyrthosiphon pisum (Harris) (?) (Monajemi & Esmaili 1981; Starý *et al.* 2000), *Therioaphis riehmi* (Börner) (van den Bosch 1957; Starý *et al.* 2000); *Therioaphis trifolii* (Monell) (Harpaz 1955; van den Bosch 1957; Farahbakhsh 1961; Starý 1979; Avidov & Harpaz 1969; Starý 1976; Monajemi & Esmaili 1981; Starý & Erdelen 1982; Tremblay *et al*. 1985; Rasulian 1989; Mescheloff & Rosen 1988; Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani *et al.* 2006a, 2007a; Laamari *et al.* 2011, 2012; Rakhshani *et al.* 2012b; Nazari *et al.* 2012; Barahoei *et al.* 2013); *Therioaphis* sp. (Starý & Kaddou 1971; Starý 1976).

Distribution in the Middle East and North Africa

Algeria (Laamari *et al.* 2011, 2012); Egypt (Starý 1976); Iran (Starý *et al.* 2000; Rakhshani *et al.* 2006a, 2007a, 2012b; Nazari *et al.* 2012; Barahoei *et al.* 2013); Iraq (Starý & Kaddou 1971; Starý 1976); Israel (Harpaz 1955; Avidov & Harpaz 1969; Starý 1976; Mescheloff & Rosen 1988); Lebanon (van den Bosch 1957; Starý 1976; Tremblay *et al*. 1985); Saudi Arabia (Ahmad & Bakr 2013); Turkey (Starý 1976; Eastern part – van den Bosch 1957; Uysal *et al.* 2004; Western part – Erdoğan *et al.* 2008; Akar & Erdoğan 2017); Yemen (Starý & Erdelen 1982; Starý *et al.* 2013).

General distribution

Afrotropical, Holarctic, Neotropical.

Praon flavinode (Haliday, 1833)
Figs 52, 152, 252, 351, 452, 589

Host records

Tinocallis nevskyi Remaudière, Quednau & Heie (Barahoei *et al.* 2010, 2012, 2013) *Tuberculatus* (*Tuberculoides*) *albosiphonatus* Hille Ris Lambers (Starý & Kaddou 1971; Starý 1976); *Tuberculatus* (*Tuberculoides*) *moerickei* Hille Ris Lambers (Starý 1976); *Tuberculatus* sp. (Starý 1969b, 1976; Starý & Kaddou 1971).

Distribution in the Middle East and North Africa

Iran (Barahoei *et al.* 2010, 2012, 2013); Iraq (Starý 1969b, 1976; Starý & Kaddou 1971); Turkey (Western part – Akar & Erdoğan 2017).

General distribution

Eastern and Western Palaearctic, Oriental.

Praon gallicum Starý, 1971
Figs 53, 153, 253, 352, 453, 590

Host records

Rhopalosiphum maidis (Fitch) (El-Serafy 1999); *Rhopalosiphum padi* (L.) (Ibrahim 1990a, 1990b; El-Serafy 1999; Bagheri-Matin *et al.* 2010; Nazari *et al.* 2012); *Schizaphis graminum* (Rondani) (El-Serafy 1999); *Sitobion avenae* (Fabricius) (El-Serafy 1999).

Distribution in the Middle East and North Africa

Egypt (Ibrahim 1990a, 1990b; El-Serafy 1999); Iran (Bagheri-Matin *et al.* 2010; Nazari *et al.* 2012).

General distribution

Eastern and Western Palaearctic, Nearctic (imported), Neotropical (imported).

Praon longicorne Marshall, 1896
Figs 54, 154, 254, 353, 454, 591

Host records

Lacking host data (Tomanović *et al.* 2008).

Distribution in the Middle East and North Africa

Turkey (Central and Eastern part – Tomanović *et al.* 2008).

General distribution

Eastern and Western Palaearctic, Oriental.

Praon necans Mackauer, 1959
Figs 55, 155, 255, 354, 455, 592

Host records

Aphis craccivora Koch (Nazari *et al.* 2012); *Aphis gossypii* Glover, *Aphis nerii* Boyer de Fonscolombe (Mossadegh *et al.* 2011); *Aphis punicae* Passerini, *Macrosiphoniella sanborni* (Gillette) (Nazari *et al.* 2012); *Myzus persicae* (Sulzer) (Mossadegh *et al.* 2011); *Rhopalosiphum maidis* (Fitch) (El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002, 2003); *Rhopalosiphum nymphaeae* (L.) (Nazari *et al.* 2012; Mossadegh *et al.* 2011); *Rhopalosiphum padi* (L.) (Abdel-Rahman *et al.* 2000; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002, 2003; Abdel-Rahman 2005; Mossadegh *et al.* 2011; Nazari *et al.* 2012); *Schizaphis graminum* (Rondani) (Abdel-Rahman *et al.* 2000; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002, 2003; Abdel-Rahman 2005); *Sitobion avenae* (Fabricius) (El-Heneidy *et al.* 2001, 2002, 2003; Mossadegh *et al.* 2011).

Distribution in the Middle East and North Africa

Egypt (Abdel-Rahman *et al.* 2000; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002, 2003; Abdel-Rahman 2005; El-Ghiet *et al.* 2014); Iran (Nazari *et al.* 2012; Mossadegh *et al.* 2011); Iraq (Starý 1976).

General distribution

Eastern and Western Palaearctic, Oriental.

Praon nonveilleri Tomanović & Kavallieratos, 2003
Figs 156, 256, 355, 456, 593

Host records

Lacking host data (Akar & Erdoğan 2017).

Distribution in the Middle East and North Africa

Turkey (Western part – Akar & Erdoğan 2017).

General distribution

Western Palaearctic (Europe).

Praon orpheusi Kavallieratos, Athanassiou & Tomanović, 2003
Figs 56, 157, 257, 356, 457, 594

Host records

Hyperomyzus lactucae (L.) (Rakhshani *et al.* 2007a; Talebi *et al.* 2009).

Distribution in the Middle East and North Africa

Iran (Rakhshani *et al.* 2007a, Talebi *et al.* 2009).

General distribution

Eastern (Iran) and Western Palaearctic (Bulgaria, Greece).

Praon pubescens Starý, 1961
Figs 57, 158, 258, 357, 458, 595

Host records

Nasonovia ribisnigri (Mosley) (Nazari *et al.* 2012); Lacking host data (Tomanović *et al.* 2008).

Distribution in the Middle East and North Africa

Iran (Nazari *et al.* 2012); Turkey (Central part – Tomanović *et al.* 2008; Western part – Akar & Erdoğan 2017).

General distribution

Eastern (Iran) and Western Palaearctic, Oriental.

Praon rosaecola Starý, 1961
Figs 58, 159, 259, 358, 459, 596

Host records

Macrosiphum rosae (L.) (Mescheloff & Rosen 1988; Rakhshani *et al.* 2007a, 2012b; Talebi *et al.* 2009; Barahoei *et al.* 2010, 2012, 2013); *Wahlgreniella nervata* (Gillette) (Barahoei *et al.* 2013).

Distribution in the Middle East and North Africa

Iran (Rakhshani *et al.* 2007a; 2012b; Barahoei *et al.* 2010, 2012, 2013); Israel (Mescheloff & Rosen 1988).

General distribution

Eastern (Iran) and Western Palaearctic.

Praon unitum Mescheloff & Rosen, 1988
Figs 59, 160, 260, 359, 460, 597

Host records

Macrosiphoniella sanborni (Gillette) (Mescheloff & Rosen 1988; Rakhshani *et al.* 2011); *Uroleucon acroptilidis* Kadyrbekov, Renxin & Shao (Barahoei *et al.* 2010, 2012, 2013); *Uroleucon jaceae* (L.) (Barahoei *et al.* 2013); *Uroleucon sonchi* (L.) (Mescheloff & Rosen 1988; Barahoei *et al.* 2013).

Distribution in the Middle East and North Africa

Iran (Barahoei *et al.* 2010, 2012, 2013); Israel (Mescheloff & Rosen 1988).

General distribution

Eastern (Iran) and Western Palaearctic (Israel).

Praon uroleucon Tomanović & Kavallieratos, 2003
Figs 161, 261, 360, 461, 598

Host records

Lacking host data (Akar & Erdoğan 2017).

Distribution in the Middle East and North Africa

Turkey (Akar & Erdoğan 2017).

General distribution

Western Palaearctic (Southeastern Europe).

Praon volucre (Haliday, 1833)
Figs 60, 162, 262, 361, 462, 599

Material examined

SAUDI ARABIA • 9 ♀♀; Abha;, Jun. 2012; *Acyrthosiphon pisum* (Harris) on *Trifolium alexandrinum* • 3 ♀♀; Abha-Mahala College campus; 28 Nov. 2012; *Uroleocon* sp. on *Sonchus oleraceus* • 1 ♀; Abha-Mahala College campus; Dec. 2012; *Aphis solanella* Thoebald on *Solanum nigrum* • 1 ♀; Abha-Mahala College campus; Nov. 2012; on *Setaria glauca* • 3 ♀♀, 4♂♂ Abha; May 2013; on *Lactuca sativa* • 3♀♀ 4♂♂; Abha; May 2013; on *Lactuca sativa* • 1 ♀; Qunfudah; Apr. 2011; net sweeping • 1 ♀; Raidah; Apr. 2011; Z. Ahmad leg (DPPZ).

Host records

Acyrthosiphon lactucae (Passerini) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004; Rakhshani *et al.* 2007a); *Acyrthosiphon pisum* (Harris) (Zeren & Düzgüneş 1983; Uysal *et al.* 2004; Rakhshani *et al.* 2006a, 2007a; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); *Amphorophora catharinae* (Nevsky) (Rakhshani *et al.* 2012b; Barahoei *et al.* 2010, 2012, 2013); *Aphis affinis* del Guercio (Rakhshani *et al.* 2012b); *Aphis aurantii* Boyer de Fonscolombe (Hussein & Kawar 1984; Tremblay *et al*. 1985; Boukhris-Bouhachem 2011; Yoldaş *et al.* 2011); *Aphis craccivora* Koch (Zeren & Düzgüneş 1983; Mescheloff & Rosen 1988; Uysal *et al.* 2004; Rakhshani *et al.* 2005a, 2006a, 2007a; Barahoei *et al*. 2010; Yoldaş *et al.* 2011; Laamari *et al.* 2011, 2012; Barahoei *et al.* 2012, 2013; Rakhshani *et al.* 2012b); *Aphis dlabolai* Holman (Barahoei *et al.* 2013); *Aphis epilobiaria* Theobald (Mescheloff & Rosen 1988); *Aphis fabae* Scopoli (Starý 1979; Abou-Fakhr 1982; Düzgüneş *et al.* 1982; Hussein & Kawar 1984; Tremblay *et al*. 1985; Mescheloff & Rosen 1988; Ben Halima *et al.* 1994 – as *Aphis citricola* van der Goot; Abou-Fakhr & Kawar 1998; Starý *et al.* 2000; Tomanović *et al.* 2003; Kavallieratos *et al.* 2004; Uysal *et al.* 2004; Ben Halima & Ben Hamouda 2005 – as *Aphis citricola* van der Goot; Güz & Kilinçer 2005; Rakhshani *et al.* 2007a; Laamari *et al.* 2011, 2012; Nazari *et al.* 2012; Barahoei *et al.* 2013; Kavallieratos *et al.* 2013; Taheri & Rakhshani 2013); *Aphis gossypii* Glover (Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay *et al.* 1985; Yoldaş *et al.* 2011; Barahoei *et al.* 2013; Satar *et al.* 2014); *Aphis nasturtii* Kaltenbach (Mescheloff & Rosen 1988 – as *Aphis zizyphi* Theobald); *Aphis nerii* Boyer de Fonscolombe (Tremblay *et al*. 1985; Abou-Fakhr & Kawar 1998); *Aphis pomi* de Geer (Düzgüneş *et al.* 1982; Hussein & Kawar 1984; Uysal *et al.* 2004; Rakhshani 2012); *Aphis punicae* Passerini (Hussein & Kawar 1984); *Aphis salviae* Walker (Laamari

et al. 2011, 2012); *Aphis solanella* Theobald (Düzgüneş *et al.* 1982; Uysal *et al.* 2004; Rakhshani *et al.* 2007a; Talebi *et al.* 2009; Barahoei *et al.* 2010, 2012, 2013); *Aphis spiraecola* Patch (Yoldaş *et al.* 2011; Boukhris-Bouhachem 2011); *Aphis umbrella* (Börner) (Tremblay *et al*. 1985; Abou-Fakhr & Kawar 1998); *Aphis urticata* Gmelin (Rakhshani *et al.* 2012b); *Brachycaudus amygdalinus* (Schouteden) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004; Rakhshani *et al.* 2007a; Talebi *et al.* 2009; Rakhshani 2012); *Brachycaudus cardui* (L.) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004; Aslan & Karaca 2005; Laamari *et al.* 2011, 2012; Rakhshani 2012); *Brachycaudus helichrysi* (Kaltenbach) (Tremblay *et al*. 1985; Rakhshani *et al.* 2007a; Talebi *et al.* 2009; Jafari *et al*. 2011; Jafari & Modarres Awal 2012; Rakhshani 2012; Barahoei *et al.* 2013); *Brachycaudus persicae* (Passerini) (Rakhshani 2012); *Brachycaudus tragopogonis* (Kaltenbach) (Mescheloff & Rosen 1988); *Brachycaudus* sp. (Mescheloff & Rosen 1988); *Brevicoryne brassicae* (L.) (Kilinçer 1982; Uysal *et al.* 2004); *Diuraphis noxia* (Kurdjumov) (Pike *et al.* 1991; Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani *et al.* 2007a, 2008b; Barahoei *et al.* 2013); *Dysaphis pyri* (Boyer de Fonscolombe) (Rakhshani 2012); *Hyalopterus amygdali* (Blanchard) (Kavallieratos *et al.* 2004; Rakhshani *et al.* 2007a; Nazari *et al*. 2012; Taheri & Rakhshani 2013; Rakhshani 2012); *Hyalopterus pruni* (Geoffroy) (Starý & Kaddou 1971; Starý 1976; Düzgüneş *et al.* 1982; Hussein & Kawar 1984; Tomanović *et al.* 2003; Kavallieratos *et al.* 2004; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Ben Halima & Ben Hamouda 2005; Aslan & Karaca 2005; Güz & Kilinçer 2005; Rakhshani *et al.* 2007a; Rakhshani 2012; Jafari *et al*. 2011; Jafari & Modarres Awal 2012; Barahoei *et al.* 2013); *Hyperomyzus lactucae* (L.) (Abou-Fakhr 1982; Düzgüneş *et al.* 1982; Hussein & Kawar 1984; Tremblay *et al*. 1985; Mescheloff & Rosen 1988; Abou-Fakhr & Kawar 1998; Tomanović *et al.* 2003; Uysal *et al.* 2004; Güz & Kilinçer 2005; Rakhshani *et al.* 2007a; Talebi *et al.* 2009; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); *Hyperomyzus picridis* (Börner) (Laamari *et al.* 2011, 2012); *Liosomaphis berberidis* (Kaltenbach) (Laamari *et al.* 2011); *Macrosiphum euphorbiae* (Thomas) (Zeren & Düzgüneş 1983; Mescheloff & Rosen 1988; Yoldaş *et al.* 1990; Ben Halima & Ben Hamouda 1993; Uysal *et al.* 2004); *Macrosiphum rosae* (L.) (Starý & Kaddou 1971; Starý 1976; Abou-Fakhr 1982; Düzgüneş *et al.* 1982; Hussein & Kawar 1984; Tremblay *et al*. 1985; Abou-Fakhr & Kawar 1998; Starý & Sekkat 1987; Uysal *et al.* 2004; Rakhshani *et al.* 2007a; Talebi *et al.* 2009; Barahoei *et al.* 2010, 2012, 2013; Laamari *et al.* 2011; Nazari *et al.* 2012; Kavallieratos *et al.* 2013); *Macrosiphum* sp. (Starý *et al.* 2000); *Macrosiphoniella riedeli* Szelegiewicz (Mescheloff & Rosen 1988); *Macrosiphoniella* sp. (Rakhshani *et al.* 2011); *Melanaphis donacis* (Passerini) (Starý & Kaddou 1971; Starý 1976); *Metopolophium dirhodum* (Walker) (Rakhshani *et al.* 2008b; Barahoei *et al.* 2013; Taheri & Rakhshani 2013); *Myzaphis rosarum* (Kaltenbach) (Düzgüneş *et al.* 1982; Uysal *et al.* 2004); *Myzus beybienkoi* (Narzykulov) (Starý *et al.* 2000); *Myzus persicae* (Sulzer) (Rosen 1967, 1969; Avidov & Harpaz 1969; Starý 1976, 1979; Abou-Fakhr 1982; Düzgüneş *et al.* 1982; Zeren & Düzgüneş 1983; Hussein & Kawar 1984; Tremblay *et al*. 1985; Starý & Sekkat 1987; Mescheloff & Rosen 1988; Ben Halima & Ben Hamouda 1993; Ben Halima *et al.* 1994; Abou-Fakhr & Kawar 1998; Starý *et al.* 2000; Uysal *et al.* 2004; Ben Halima & Ben Hamouda 2005; Güz & Kilinçer 2005; Rakhshani *et al.* 2007a; Rakhshani 2012; Jafari *et al*. 2011; Boukhris-Bouhachem 2011; Yoldaş *et al.* 2011; Laamari *et al.* 2012; Jafari & Modarres Awal 2012; Nazari *et al.* 2012; Barahoei *et al.* 2013; Chaouche & Laamari 2015); *Phorodon humuli* (Schrank) (Rakhshani *et al.* 2007a); *Rhopalosiphum maidis* (Fitch) (Hafez 1994; Güz & Kilinçer 2005; Rakhshani *et al.* 2007a, 2008b; Nazari *et al.* 2012; Barahoei *et al.* 2010, 2012, 2013); *Rhopalosiphum padi* (L.) (Starý 1976; Hafez 1994; Özder & Toros 1999; Uysal *et al.* 2004; Rakhshani *et al.* 2007a, 2008b; Barahoei *et al.* 2013; Gadallah *et al.* 2017); *Schizaphis graminum* (Rondani) (Mescheloff & Rosen 1988; Hafez 1994; Rakhshani *et al.* 2007a, 2008b; Nazari *et al.* 2012; Barahoei *et al.* 2013); *Sitobion avenae* (Fabricius) (Düzgüneş *et al.* 1982; Özder & Toros 1999; Ölmez & Ulusoy 2003; Uysal *et al.* 2004; Rakhshani *et al.* 2007a, 2008b; Barahoei *et al.* 2013; Gadallah *et al.* 2017); *Sitobion fragariae* (Walker) (Starý 1976; Mescheloff & Rosen 1988; Laamari *et al.* 2011, 2012); *Uroleucon aeneum* (Hille Ris Lambers) (Tomanović *et al.* 2003; Kavallieratos *et al.* 2004); *Uroleucon cichorii* (Koch) (Tremblay *et al*. 1985; Rakhshani *et al.* 2007a); *Uroleucon compositae* (Theobald) (Rakhshani *et al.* 2007a; Barahoei *et al.* 2013); *Uroleucon inulicola* (Hille Ris Lambers) (Abou-Fakhr & Kawar 1998); *Uroleucon jaceae* (L.) (Rakhshani *et al.* 2007a); *Uroleucon sonchi* (L.) (Abou-Fakhr 1982;

Tremblay *et al*. 1985; Abou-Fakhr & Kawar 1998; Kavallieratos *et al.* 2004; Güz & Kilinçer 2005; Rakhshani *et al.* 2007a, 2012b; Talebi *et al*. 2009; Nazari *et al.* 2012; Laamari *et al.* 2011, 2012; Barahoei *et al.* 2010, 2012, 2013); *Uroleucon* sp. (Chaouche & Laamari 2015)

Distribution in the Middle East and North Africa

Algeria (Starý 1976; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); Egypt (Hafez 1994; El-Ghiet *et al.* 2014; Gadallah *et al.* 2017); Iran (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2005a, 2006a, 2007a, 2012b; Jafari *et al*. 2011; Jafari & Modarres Awal 2012; Rakhshani 2012; Nazari *et al*. 2012; Taheri & Rakhshani 2013; Barahoei *et al.* 2010, 2012, 2013); Iraq (Starý & Kaddou 1971; Starý 1976); Israel (Fleschner 1963; Rosen 1967, 1969; Avidov & Harpaz 1969; Starý 1976; Mescheloff & Rosen 1988); Lebanon (Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay *et al.* 1985; Abou-Fakhr & Kawar 1998); Morocco (Starý & Sekkat 1987); Tunisia (Ben Halima & Ben Hamouda 1993, 2005; Ben Halima *et al.* 1994; Boukhris-Bouhachem 2011); Turkey (Tomanović *et al.* 2003; Eastern part – Ölmez & Ulusoy 2003; Central part – Düzgüneş *et al.* 1982; Zeren & Düzgüneş 1983; Kilinçer 1982; Güz & Kilinçer 2005; Satar *et al.* 2014; Western part – Yoldaş *et al.* 1990; Özder & Toros 1999; Kavallieratos *et al.* 2004, 2013; Aslan & Karaca 2005; Erdoğan *et al.* 2008; Yoldaş *et al.* 2011; Akar & Erdoğan 2017).

General distribution

Eastern and Western Palaearctic, Neotropical, Oriental.

Praon yomenae Takada, 1968
Figs 61, 163, 263, 362, 463, 600

Material examined

SAUDI ARABIA • 1 ♂; Abha; May 2013; *Uroleucon* sp. on *Sonchus oleraceus* • 5 ♀♀; Abha-Mahala College campus; Nov. 2012; *Uroleucon* sp. on *Sonchus oleraceus*; Z. Ahmad leg. (DPPZ).

Host records

Acyrthosiphon pisum (Harris) (?) (Chaouche & Laamari 2015); *Metopolophium dirhodum* (Walker) (?) (Gülçlü & Özbek 2002; Uysal *et al.* 2004); *Uroleucon acroptilidis* Kadyrbekov, Renxin & Shao (Barahoei *et al.* 2010, 2012, 2013); *Uroleucon aeneum* Hille Ris Lambers (Laamari *et al.* 2012); *Uroleucon carthami* (Hille Ris Lambers) (Mescheloff & Rosen 1988 – as *Praon dorsale*; Barahoei *et al.* 2013); *Uroleucon cichorii* (Koch) (Barahoei *et al.* 2010, 2012, 2013); *Uroleucon chondrillae* (Nevsky) (Rakhshani *et al.* 2007a; Nazari *et al.* 2012); *Uroleucon compositae* (Theobald) (Rakhshani *et al.* 2007a); *Uroleucon jaceae* (L.) (Güz & Kilinçer 2005 – as *Praon dorsale*; Rakhshani *et al.* 2007a; Barahoei *et al.* 2010, 2012, 2013; Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); *Uroleucon picridis* (Fabricius) (Mescheloff & Rosen 1988 – as *Praon dorsale*); *Uroleucon sonchi* (L.) (Starý & Sekkat 1987; Mescheloff & Rosen 1988 – as *Praon dorsale*; Tomanović *et al.* 2003; Kavallieratos *et al.* 2004; Rakhshani *et al.* 2007a, 2012b; Talebi *et al.* 2009; Barahoei *et al.* 2010, 2012, 2013); *Uroleucon tortuosissimae* Rezwani & Lampel (Barahoei *et al.* 2013).

Distribution in the Middle East and North Africa

Algeria (Laamari *et al.* 2011, 2012; Chaouche & Laamari 2015); Iran (Rakhshani *et al.* 2007a, 2012b; Barahoei *et al.* 2010, 2012, 2013; Nazari *et al.* 2012); Israel (Mescheloff & Rosen 1988); Morocco (Starý & Sekkat 1987); Turkey (Eastern part – Gülçlü & Özbek 2002; Tomanović *et al.* 2003; Central part – Güz & Kilinçer 2005; Erdoğan *et al.* 2008; Western part – Kavallieratos *et al.* 2004; Uysal *et al.* 2004; Akar & Erdoğan 2017); Yemen (Starý *et al.* 2013).

General distribution

Eastern and Western Palaearctic, Oriental.

Remarks

All records for *Praon dorsale* (Haliday 1833) associated with *Uroleucon* aphids in the Middle East and North Africa refer to *Praon yomenae*. Record of *P. yomenae* on *Acyrthosiphon pisum* (Chaouche & Laamari 2015), is probably referring to a misidentification of *Praon barbatum* Mackauer, which is very similar to *P. yomane*.

Tanytrichophorus petiolaris Mackauer, 1961

Host records

Brachycaudus persicae (Passerini) (Mackauer 1961; Starý 1979; Starý *et al.* 2000).

Distribution in the Middle East and North Africa

Tehran (Starý *et al.* 2000).

General distribution

The species has not been reported outside Iran.

Remarks

The species was described on the basis of male specimens only (Mackauer 1961), while no female specimens have been recorded since the original description. Therefore, it has been excluded from the key of the present study.

Toxares deltiger (Haliday, 1833)
Figs 62, 164, 264, 363, 464, 601

Host records

Lacking host data (Tomanović *et al.* 2008).

Distribution in the Middle East and North Africa

Turkey (Eastern part – Tomanović *et al.* 2008).

General distribution

Holarctic, Oriental.

Trioxys asiaticus Telenga, 1953
Figs 63, 165, 265, 364, 465, 602

Host records

Acyrthosiphon gossypii Mordvilko (Mackauer 1960; Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2008c; Talebi *et al.* 2009; Barahoei *et al.* 2013); *Acyrthosiphon pisum* (Harris) (Barahoei *et al.* 2013).

Distribution in the Middle East and North Africa

Iran (Mackauer 1960; Starý 1979; Starý *et al.* 2000; Talebi *et al.* 2009; Barahoei *et al.* 2013).

General distribution

Eastern Palaearctic.

Trioxys cirsii (Curtis, 1831)
Figs 64, 166, 266, 365, 466, 603

Host records

Drepanosiphum platanoidis (Schrank) (Babaee *et al.* 2000; Starý *et al.* 2000; Rakhshani *et al.* 2008c).

Distribution in the Middle East and North Africa

Iran (Babaee *et al.* 2000; Starý *et al.* 2000; Rakhshani *et al.* 2008c).

General distribution

Australasian, Eastern and Western Palaearctic, Nearctic.

Trioxys complanatus Quilis, 1931
Figs 65, 167, 267, 366, 467, 604

Host records

Therioaphis khayami Remaudière (Starý *et al.* 2000); *Therioaphis riehmi* (Börner) (van den Bosch 1957; Starý 1979; Starý *et al.* 2000); *Therioaphis trifolii* (Monell) (van den Bosch 1957; Farahbakhsh 1961; Avidov & Harpaz 1969; Al-Azawi 1970; Starý 1976, 1979; Monajemi & Esmaili 1981; Starý & Erdelen 1982; Düzgüneş *et al.* 1982; Tremblay *et al*. 1985; Starý *et al.* 2000; Uysal *et al.* 2004; Rakhshani *et al.* 2006a, 2008c, 2012b; Nazari *et al.* 2012; Barahoei *et al.* 2013; Laamari *et al.* 2012; Starý *et al.* 2013); *Therioaphis* spp. (Starý 1976, 1979; Mescheloff & Rosen 1993).

Distribution in the Middle East and North Africa

Algeria (Laamari *et al.* 2012); Iran (van den Bosch 1957; Farahbakhsh 1961; Starý 1979; Monajemi & Esmaili 1981; Starý *et al.* 2000; Rakhshani *et al.* 2006a, 2012b; Nazari *et al.* 2012; Barahoei *et al.* 2013); Iraq (van den Bosch 1957; Al-Azawi 1970; Starý 1976); Israel (van den Bosch 1957; Starý 1976; Mescheloff & Rosen 1993); Lebanon (Tremblay *et al*. 1985); Morocco (Starý 1976); Turkey (van den Bosch 1957; Avidov & Harpaz 1969; Starý 1976; Central part – Düzgüneş *et al.* 1982; Uysal *et al.* 2004); UAE (Starý *et al.* 2013); Yemen (Starý & Erdelen 1982; Starý *et al.* 2013).

General distribution

Cosmopolitan.

Trioxys curvicaudus Mackauer, 1967
Figs 66, 168, 367, 468, 605

Host records

Eucallipterus tiliae (L.) (Rakhshani *et al.* 2008c).

Distribution in the Middle East and North Africa

Iran (Rakhshani *et al.* 2008c).

General distribution

Eastern and Western Palaearctic, Nearctic.

Trioxys moshei Mescheloff & Rosen, 1993
Figs 68, 170, 369, 470, 607

Host records

Hoplocallis picta (Ferrari) (Mescheloff & Rosen 1993 – as *Myzocallis bodenheimeri* Hille Ris Lambers).

Distribution in the Middle East and North Africa

Israel (Mescheloff & Rosen 1993).

General distribution

This species has not been reported outside Israel.

Trioxys metacarpalis Rakhshani & Starý, 2012
Figs 67, 169, 268, 368, 469, 606

Host records

Chaitaphis tenuicauda Nevsky (Rakhshani *et al.* 2012b).

Distribution in the Middle East and North Africa

Iran (Rakhshani *et al.* 2012b).

General distribution

This species has not been reported outside Iran.

Trioxys pallidus (Haliday, 1833)
Figs 69, 171, 269, 370, 471, 608

Host records

Chromaphis juglandicola (Kaltenbach) (van den Bosch *et al.* 1970; Starý & Kaddou 1971; van den Bosch & Messenger 1973; Starý 1976; Starý 1979; Starý & Sekkat 1987; Mohammadbeigi 2000; Starý *et al.* 2000; Ölmez & Ulusoy 2003; Aslan *et al.* 2004; Rakhshani *et al.* 2004, Uysal *et al.* 2004; Talebi *et al.* 2009; Laamari *et al.* 2011, 2012; Rakhshani *et al.* 2008c, 2012b; Barahoei *et al.* 2012, 2013; Nazari *et al*. 2012; Taheri & Rakhshani 2013); *Hoplocallis picta* (Ferrari) (Rakhshani *et al.* 2008c); *Monellia caryella* (Fitch) (Mescheloff & Rosen 1993 – as *Monellia costalis* (Fitch)); *Pterocallis alni* (De Geer) (Babaee *et al.* 2000; Starý *et al.* 2000); *Tuberculatus* (*Tuberculoides*) *albosiphonatus* Hille Ris Lambers (Starý 1976); *Tuberculatus* (*Tuberculoides*) *moerickei* Hille Ris Lambers (Starý 1976); *Tuberculatus* sp. (Starý 1969b; Starý & Kaddou 1971).

Distribution in the Middle East and North Africa

Algeria (Laamari *et al.* 2011, 2012); Iran (van den Bosch *et al.* 1970; van den Bosch & Messenger 1973; Starý 1979; Mohammadbeigi 2000; Starý *et al.* 2000; Rakhshani *et al.* 2004; Barahoei *et al.* 2012, 2013; Nazari *et al.* 2012; Taheri & Rakhshani 2013); Iraq (Starý 1969b, 1976; Starý & Kaddou 1971); Israel (Mescheloff & Rosen 1993); Morocco (Starý & Sekkat 1987); Turkey (Central part – Starý 1976; Aslan *et al.* 2004; Uysal *et al.* 2004; Eastern part – Ölmez & Ulusoy 2003).

General distribution

Eastern and Western Palaearctic, Nearctic (imported), Neotropical (imported), Oriental.

Trioxys pannonicus Starý, 1960
Figs 70, 172, 270, 371, 472, 609

Host records

Macrosiphoniella tuberculata (Nevsky) (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2011); *Macrosiphoniella* sp. (Rakhshani *et al.* 2008c; Talebi *et al.* 2009); *Titanosiphon neoartemisiae* (Takahashi) (Barahoei *et al*. 2014)

Distribution in the Middle East and North Africa

Iran (Talebi *et al.* 2009; Starý 1979; Starý *et al.* 2000; Barahoei *et al.* 2014).

General distribution

Eastern and Western Palaearctic, Oriental.

Trioxys pappi Takada, 1979
Figs 71, 173, 473, 610

Host records

Lacking host data (Davidian 2005).

Distribution in the Middle East and North Africa

Iran (Davidian 2005) - as *Trioxys persicus* Davidian.

General distribution

Eastern Palaearctic (Iran, Mongolia).

Trioxys querciсola Starý, 1969
Figs 174, 372, 474, 611

Host records

Thelaxes suberi (Del Guercio) (Starý 1969b, 1976; Starý & Kaddou 1971).

Distribution in the Middle East and North Africa

Iraq (Starý 1969b, 1976; Starý & Kaddou 1971).

General distribution

This species has not been reported outside Iraq.

Trioxys tanaceticola Starý, 1971
Figs 72, 175, 271, 373, 475, 612

Host records

Coloradoa heinzei Börner (Starý 1979; Starý *et al.* 2000); *Coloradoa absinthii* (Lichtenstein) (Talebi *et al.* 2009); *Coloradoa* sp. (Barahoei *et al.* 2014); *Titanosiphon neoartemisiae* (Takahashi) (?) (Rakhshani *et al.* 2008c; Talebi *et al.* 2009).

Distribution in the Middle East and North Africa

Iran (Starý 1979; Starý *et al.* 2000; Rakhshani *et al.* 2008c; Talebi *et al.* 2009).

General distribution

Eastern and Western Palaearctic.

Trioxys spp.

Host records

Aphis craccivora Koch (?) (Abdel-Samad & Ahmed 2009); *Hyadaphis coriandri* (Das) (Chaouche & Laamari 2015).

Distribution in the Middle East and North Africa

Algeria (Chaouche & Laamari 2015); Egypt (El-Heneidy 1991, 1994; El-Heneidy & Abdel-Samad 2001; El-Heneidy *et al.* 2001, 2002; Abdel-Rahman 2005; Abdel-Samad & Ahmed 2009).

Remarks

These species may belong to genus *Binodoxys*, on the basis of host range patterns.

Host aphid-parasitoid associations

Absinthaphis sp.: *Ephedrus persicae* Froggatt.

Acyrthosiphon gossypii Mordvilko: *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius ervi* Haliday; *Aphidius matricariae* Haliday (?); *Aphidius urticae* Haliday; *Lysiphlebus fabarum* (Marshall) (?); *Lysiphlebus testaceipes* (Cresson); *Trioxys asiaticus* Telenga.

Acyrthosiphon ilka Mordvilko: *Lysiphlebus fabarum* (Marshall) (?); *Aphidius ervi* Haliday.

Acyrthosiphon kondoi Shinji: *Aphidius ervi* Haliday; *Aphidius smithi* Sharma & Subba Rao.

Acyrthosiphon lactucae (Passerini): *Aphidius ervi* Haliday; *Lysiphlebus fabarum* (Marshall) (?); *Praon volucre* (Haliday).

Acyrthosiphon malvae (Mosley): *Ephedrus persicae* Froggatt.

Acyrthosiphon pisum (Harris): *Aphidius avenae* Haliday; *Aphidius banksae* Kittel; *Aphidius colemani* Viereck [- *platensis* Brèthes, in part] (?); *Aphidius eadyi* Starý, González & Hall; *Aphidius ervi* Haliday; *Aphidius smithi* Sharma & Subba Rao; *Aphidius urticae* Haliday; *Binodoxys acalephae* (Marshall) (?); *Ephedrus persicae* Froggatt; *Ephedrus plagiator* (Nees); *Lysiphlebus fabarum* (Marshall) (?); *Praon barbatum* Mackauer; *Praon exsoletum* (Nees) (?); *Praon volucre* (Haliday); *Praon yomenae* Takada (?); *Trioxys asiaticus* Telenga.

Acyrthosiphon sp.: *Aphidius urticae* Haliday; *Lysiphlebus confusus* Tremblay & Eady (?).

Amegosiphon platicaudum (Narzikulov): *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Diaeretiella rapae* (M'Intosh).

Amphorophora catharinae (Nevsky): *Aphidius popovi* Starý; *Praon volucre* (Haliday).

Anuraphis sp.: *Binodoxys acalephae* (Marshall).

Aphis acetosae L.: *Aphidius platensis* Brèthes; *Binodoxys angelicae* (Haliday); *Lysiphlebus fabarum* (Marshall).

Aphis affinis Del Guercio: *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Binodoxys acalephae* (Marshall); *Binodoxys angelicae* (Haliday); *Ephedrus persicae* Froggatt; *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall); *Praon volucre* (Haliday).

Aphis althaeae (Nevsky): *Lysiphlebus fabarum* (Marshall).

Aphis astragali Ossiannilsson: *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson).

Aphis aurantii Boyer de Fonscolombe: *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Binodoxys angelicae* (Haliday); *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson); *Praon volucre* (Haliday).

Aphis brunnea Ferrari: *Ephedrus persicae* Froggatt; *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson).

Aphis chloris Koch: *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Ephedrus persicae* Froggatt; *Lysiphlebus fabarum* (Marshall).

Aphis craccivora Koch: *Adialytus veronicaecola* (Starý); *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius ervi* Haliday; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Binodoxys acalephae* (Marshall); *Binodoxys angelicae* (Haliday); *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus desertorum* Starý; *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson); *Praon abjectum* (Haliday); *Praon necans* Mackauer; *Praon volucre* (Haliday); *Trioxys* sp. (?).

Aphis crepidis (Börner): *Aphidius matricariae* Haliday.

Aphis davletshinae Hillie Ris Lambers: *Lysiphlebus fabarum* (Marshall).

Aphis dlabolai Holman: *Aphidius matricariae* Haliday; *Praon volucre* (Haliday).

Aphis epilobiaria Theobald: *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Binodoxys angelicae* (Haliday); *Ephedrus persicae* Froggatt; *Lysiphlebus fabarum* (Marshall); *Praon volucre* (Haliday).

Aphis epilobii Kaltenbach: *Lysiphlebus fabarum* (Marshall).

Aphis euphorbiae Kaltenbach: *Aphidius matricariae* Haliday; *Binodoxys acalephae* (Marshall); *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson).

Aphis euphorbicola Rezwani & Lampel: *Lysiphlebus fabarum* (Marshall).

Aphis fabae cirsiiacanthoidis Scopoli: *Binodoxys acalephae* (Marshall); *Binodoxys angelicae* (Haliday); *Ephedrus persicae* Froggatt; *Lysiphlebus fabarum* (Marshall).

Aphis fabae Scopoli: *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius ervi* Haliday; *Aphidius funebris* Mackauer (?); *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Binodoxys acalephae* (Marshall); *Binodoxys angelicae* (Haliday); *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Ephedrus plagiator* (Nees); *Lipolexis gracilis* Förster; *Lysiphlebus cardui* (Marshall); *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson); *Praon volucre* (Haliday).

Aphis farinosa Gmelin: *Lysiphlebus confusus* Tremblay & Eady.

Aphis galiiscabri Schrank: *Binodoxys acalephae* (Marshall); *Lysiphlebus fabarum* (Marshall).

Aphis gerardianae Mordvilko: *Lysiphlebus fabarum* (Marshall).

Aphis gossypii Glover: *Lysiphlebus cardui* (Marshall) (?); *Adialytus veronicaecola* (Starý); *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Binodoxys acalephae* (Marshall); *Binodoxys angelicae* (Haliday); *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Lipolexis gracilis* Förster; *Lysiphlebus confusus* Tremblay &

Eady; *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson); *Praon necans* Mackauer; *Praon volucre* (Haliday).

Aphis grossulariae Kaltenbach: *Binodoxys acalephae* (Marshall).

Aphis hederae Kaltenbach: *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Binodoxys angelicae* (Haliday); *Ephedrus persicae* Froggatt; *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall).

Aphis idaei van der Goot: *Binodoxys acalephae* (Marshall); *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall).

Aphis illinoisensis Shimer: *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Diaeretiella rapae* (M'Intosh); *Lysiphlebus testaceipes* (Cresson).

Aphis intybi Koch: *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Binodoxys angelicae* (Haliday); *Ephedrus persicae* Froggatt; *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall).

Aphis nasturtii Kaltenbach: *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Aphidius transcaspicus* Telenga (?); *Binodoxys angelicae* (Haliday); *Ephedrus persicae* Froggatt; *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall); *Praon volucre* (Haliday).

Aphis nerii Boyer de Fonscolombe: *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Binodoxys acalephae* (Marshall); *Binodoxys angelicae* (Haliday); *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson); *Praon necans* Mackauer; *Praon volucre* (Haliday).

Aphis origani Passerini: *Lysiphlebus fabarum* (Marshall).

Aphis parietariae Theobald: *Aphidius matricariae* Haliday.

Aphis plantaginis Goeze: *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Ephedrus persicae* Froggatt; *Lysiphlebus fabarum* (Marshall).

Aphis polygonata (Nevsky): *Binodoxys angelicae* (Haliday).

Aphis pomi De Geer: *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Binodoxys acalephae* (Marshall); *Binodoxys angelicae* (Haliday); *Ephedrus persicae* Froggatt; *Ephedrus plagiator* (Nees); *Lipolexis gracilis* Förster; *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson); *Praon volucre* (Haliday).

Aphis potentillae Nevsky: *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus testaceipes* (Cresson).

Aphis punicae (Passerini): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Binodoxys acalephae* (Marshall); *Binodoxys angelicae* (Haliday); *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson); *Praon abjectum* (Haliday); *Praon necans* Mackauer; *Praon volucre* (Haliday).

Aphis ruborum (Börner): *Binodoxys acalephae* (Marshall); *Binodoxys angelicae* (Haliday); *Ephedrus persicae* Froggatt; *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall).

Aphis rumicis L.: *Aphidius platensis* Brèthes; *Binodoxys angelicae* (Haliday); *Lysiphlebus fabarum* (Marshall).

Aphis salviae Walker: *Lipolexis gracilis* Förster; *Lysiphlebus fabarum* (Marshall); *Praon volucre* (Haliday).

Aphis solanella Theobald: *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Aphidius platensis* Brèthes; *Binodoxys angelicae* (Haliday); *Diaeretiella rapae* (M'Intosh); *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson); *Praon abjectum* (Haliday); *Praon volucre* (Haliday).

Aphis spiraecola Patch: *Aphidius matricariae* Haliday; *Binodoxys acalephae* (Marshall); *Binodoxys angelicae* (Haliday); *Diaeretiella rapae* (M'Intosh); *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes*; *Praon volucre* (Haliday).

Aphis taraxacicola (Börner): *Lysiphlebus fabarum* (Marshall).

Aphis tirucallis Hille Ris Lambers: *Lysiphlebus fabarum* (Marshall).

Aphis umbrella (Börner): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Binodoxys acalephae* (Marshall); *Binodoxys angelicae* (Haliday); *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Lipolexis gracilis* Förster; *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall); *Praon volucre* (Haliday).

Aphis urticata Gmelin: *Binodoxys acalephae* (Marshall); *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall); *Praon volucre* (Haliday).

Aphis vallei Hille Ris Lambers & Stroyan: *Binodoxys acalephae* (Marshall); *Lysiphlebus confusus* Tremblay & Eady.

Aphis verbasci Schrank: *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Ephedrus persicae* Froggatt; *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall); *Lysiphlebus volkli* Tomanović & Kavallieratos.

Aphis viticis Ferrari: *Binodoxys angelicae* (Haliday); *Praon abjectum* (Haliday).

Aphis spp.: *Aphidius avenae* Haliday; *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Binodoxys acalephae* (Marshall); *Binodoxys angelicae* (Haliday); *Lipolexis gracilis* Förster; *Lysiphlebus desertorum* Starý; *Lysiphlebus fabarum* (Marshall); *Praon abjectum* (Haliday).

Aspidaphis adjuvans (Walker): *Diaeretiella rapae* (M'Intosh).

Aulacorthum solani (Kaltenbach): *Aphidius matricariae* Haliday.

Aulacorthum sp.: *Lysiphlebus confusus* Tremblay & Eady.

Brachycaudus amygdalinus (Schouteden): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Aphidius transcaspicus* Telenga (?); *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Lipolexis gracilis* Förster; *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall); *Praon volucre* (Haliday).

Brachycaudus cardui (L.): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius funebris* Mackauer (?); *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Ephedrus plagiator* (Nees); *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson); *Praon abjectum* (Haliday); *Praon volucre* (Haliday).

Brachycaudus divaricatae Shaposhnikov: *Aphidius matricariae* Haliday.

Brachycaudus helichrysi (Kaltenbach): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Binodoxys angelicae* (Haliday); *Diaeretiella rapae*

(M'Intosh); *Ephedrus persicae* Froggatt; *Ephedrus plagiator* (Nees); *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson); *Praon volucre* (Haliday).

Brachycaudus persicae (Passerini): *Aphidius matricariae* Haliday; *Lysiphlebus fabarum* (Marshall); *Praon volucre* (Haliday); *Tanytrichophorus petiolaris* Mackauer.

Brachycaudus tragopogonis (Kaltenbach): *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Lysiphlebus volkli* Tomanović & Kavallieratos; *Praon volucre* (Haliday).

Brachycaudus tragopogonis setosus (Hille Ris Lambers): *Lysiphlebus fabarum* (Marshall).

Brachycaudus sp.: *Praon volucre* (Haliday).

Brachyunguis harmalae Das: *Lysiphlebus fabarum* (Marshall).

Brachyunguis skafi Remaudière & Talhouk: *Lysiphlebus confusus* Tremblay & Eady.

Brachyunguis tamaricis (Lichtenstein): *Ephedrus persicae* Froggatt.

Brachyunguis zygophylli (Nevsky): *Lysiphlebus fabarum* (Marshall).

Brevicoryne brassicae (L.): *Aphidius matricariae* Haliday (?); *Diaeretiella rapae* (M'Intosh); *Lysiphlebus testaceipes* (Cresson); *Praon volucre* (Haliday).

Capitophorus elaeagni (Del Guercio): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius ervi* Haliday; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Lysiphlebus fabarum* (Marshall).

Capitophorus inulae (Passerini): *Aphidius matricariae* Haliday; *Diaeretiella rapae* (M'Intosh).

Cavariella aegopodii (Scopoli): *Aphidius salicis* Haliday; *Binodoxys brevicornis* (Haliday); *Ephedrus persicae* Froggatt; *Lysiphlebus fabarum* (Marshall).

Cavariella aquatica (Gillette & Bragg): *Aphidius salicis* Haliday; *Ephedrus helleni* Mackauer.

Cavariella aspidaphoides Hille Ris Lambers: *Aphidius salicis* Haliday; *Binodoxys heraclei* (Haliday).

Cavariella theobaldi (Gillette & Bragg): *Aphidius salicis* Haliday; *Binodoxys heraclei* (Haliday); *Ephedrus persicae* Froggatt.

Chaetosiphon tetrarhodum (Walker): *Aphidius eglanteriae* Haliday.

Chaitaphis tenuicauda Nevsky: *Trioxys metacarpalis* Rakhshani & Starý.

Chaitophorus euphraticus Hodjat: *Adialytus salicaphis* (Fitch).

Chaitophorus leucomelas Koch: *Adialytus salicaphis* (Fitch).

Chaitophorus populeti (Panzer): *Adialytus salicaphis* (Fitch); *Ephedrus chaitophori* Gärdenfors.

Chaitophorus populialbae (Boyer de Fonscolombe): *Adialytus salicaphis* (Fitch).

Chaitophorus remaudierei Pintera: *Adialytus salicaphis* (Fitch).

Chaitophorus salijaponicus Essig & Kuwana: *Adialytus salicaphis* (Fitch).

Chaitophorus truncatus (Hausmann): *Adialytus salicaphis* (Fitch).

Chaitophorus vitellinae (Schrank): *Adialytus salicaphis* (Fitch).

Chaitophorus spp.: *Adialytus salicaphis* (Fitch).

Chromaphis juglandicola (Kaltenbach): *Trioxys pallidus* (Haliday).

Cinara (*Cedrobium*) *laportei* Remaudière: *Pauesia cedrobii* Starý & Leclant.

Cinara (*Cupressobium*) *tujafilina* (del Guercio): *Pauesia hazratbalensis* Bhagat.

Cinara (Schizolachnus) pineti (Fabricius): *Pauesia unilachni* (Gahan).

Cinara cedri Mimeur: *Pauesia anatolica* Michelena, Assael & Mendel; *Pauesia* sp.

Cinara palaestinensis Hille Ris Lambers: *Pauesia pini* (Haliday); *Pauesia silana* Tremblay.

Cinara pilicornis (Hartig): *Pauesia abietis* (Marshall).

Cinara pini (L.): *Pauesia picta* (Haliday).

Cinara pinimaritimae (Dufour): *Pauesia abietis* (Marshall).

Coloradoa absinthii (Lichtenstein): *Trioxys tanaceticola* Starý.

Coloradoa achilleae Hille Ris Lambers: *Aphidius arvensis* (Starý).

Coloradoa heinzei Börner: *Trioxys tanaceticola* Starý.

Coloradoa sp.: *Lysiphlebus fabarum* (Marshall); *Trioxys tanaceticola* Starý.

Corylobium avellanae (Schrank): *Ephedrus plagiator* (Nees).

Cryptomyzus ribis (L.): *Aphidius ribis* Haliday.

Diuraphis noxia (Kurdjumov): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Aphidius rhopalosiphi* De Stefani-Perez; *Aphidius uzbekistanicus* Luzhetzki; *Diaeretiella rapae* (M'Intosh); *Ephedrus plagiator* (Nees); *Lysiphlebus testaceipes* (Cresson); *Praon volucre* (Haliday).

Drepanosiphum platanoidis (Schrank): *Trioxys cirsii* (Curtis).

Dysaphis crataegi (Kaltenbach): *Aphidius matricariae* Haliday; *Ephedrus persicae* Froggatt; *Ephedrus plagiator* (Nees); *Lysiphlebus confusus* Tremblay & Eady.

Dysaphis devecta (Walker): *Aphidius matricariae* Haliday; *Ephedrus persicae* Froggatt; *Ephedrus plagiator* (Nees).

Dysaphis foeniculus (Theobald): *Aphidius ervi* Haliday; *Aphidius matricariae* Haliday; *Diaeretiella rapae* (M'Intosh); *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus testaceipes* (Cresson); *Ephedrus persicae* Froggatt.

Dysaphis lappae (Koch): *Aphidius matricariae* Haliday; *Lysiphlebus fabarum* (Marshall).

Dysaphis plantaginea (Passerini): *Aphidius matricariae* Haliday; *Ephedrus cerasicola* Starý; *Ephedrus persicae* Froggatt; *Ephedrus plagiator* (Nees); *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson).

Dysaphis pulverina ssp. *iranica* Stroyan: *Aphidius platensis* Brèthes.

Dysaphis pyri (Boyer de Fonscolombe): *Aphidius matricariae* Haliday; *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Ephedrus plagiator* (Nees); *Lysiphlebus testaceipes* (Cresson); *Praon volucre* (Haliday).

Dysaphis radicola (Mordvilko): *Aphidius platensis* Brèthes; *Lysiphlebus fabarum* (Marshall).

Dysaphis reaumuri (Mordvilko): *Ephedrus persicae* Froggatt.

Dysaphis rumecicola emicis (Mimeur): *Lysiphlebus fabarum* (Marshall).

Dysaphis tulipae (Boyer de Fonscolombe): *Diaeretiella rapae* (M'Intosh); *Lysiphlebus testaceipes* (Cresson).

Dysaphis spp.: *Aphidius ervi* Haliday; *Ephedrus plagiator* (Nees).

Ephedraphis ephedrae (Nevsky): *Lysiphlebus confusus* Tremblay & Eady.

Eriosoma lanuginosum (Hartig): *Areopraon lepelleyi* (Waterson).

Eucallipterus tiliae (L.): *Trioxys curvicaudus* Mackauer.

Eucarazzia elegans (Ferrari): *Aphidius matricariae* Haliday.

Eulachnus tuberculostemmatus (Theobald): *Diaeretus leucopterus* (Haliday); *Ephedrus persicae* Froggatt (?).

Forda sp.: *Monoctonia pistaciaecola* Starý.

Hayhurstia atriplicis (L.): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius platensis* Brèthes; *Diaeretiella rapae* (M'Intosh); *Ephedrus helleni* Mackauer; *Ephedrus nacheri* Quilis; *Ephedrus persicae* Froggatt; *Lysiphlebus fabarum* (Marshall).

Hoplocallis picta (Ferrari): *Trioxys moshei* Mescheloff & Rosen; *Trioxys pallidus* (Haliday).

Hyadaphis coriandri (Das): *Binodoxys acalephae* (Marshall); *Binodoxys brevicornis* (Haliday); *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Lysiphlebus fabarum* (Marshall); *Trioxys* sp.

Hyadaphis foeniculi (Passerini): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius salicis* Haliday; *Binodoxys brevicornis* (Haliday); *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall).

Hyadaphis tataricae (Aizenberg): *Diaeretiella rapae* (M'Intosh).

Hyadaphis sp.: *Binodoxys brevicornis* (Haliday).

Hyalopterus amygdali (Blanchard): *Aphidius matricariae* Haliday (?); *Aphidius platensis* Brèthes; *Aphidius transcaspicus* Telenga; *Ephedrus persicae* Froggatt; *Lysiphlebus fabarum* (Marshall) (?); *Praon volucre* (Haliday).

Hyalopterus pruni (Geoffroy): *Aphidius matricariae* Haliday (?); *Aphidius transcaspicus* Telenga; *Ephedrus persicae* Froggatt; *Ephedrus plagiator* (Nees); *Lysiphlebus fabarum* (Marshall) (?); *Lysiphlebus testaceipes* (Cresson); *Praon volucre* (Haliday).

Hyperomyzus lactucae (L.): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part] (?); *Aphidius funebris* Mackauer (?); *Aphidius matricariae* Haliday (?); *Aphidius avenae* Haliday; *Aphidius ervi* Haliday; *Aphidius sonchi* Marshall; *Diaeretiella rapae* (M'Intosh); *Lysiphlebus confusus* Tremblay & Eady (?); *Praon orpheusi* Kavallieratos, Athanassiou & Tomanović; *Praon volucre* (Haliday).

Hyperomyzus picridis (Börner): *Praon volucre* (Haliday).

Liosomaphis berberidis (Kaltenbach): *Praon volucre* (Haliday).

Lipaphis erysimi (Kaltenbach): *Diaeretiella rapae* (M'Intosh); *Lysiphlebus fabarum* (Marshall); *Aphidius matricariae* Haliday.

Lipaphis fritzmuelleri Börner: *Lysiphlebus fabarum* (Marshall).

Lipaphis lepidii (Nevsky): *Aphidius matricariae* Haliday; *Diaeretiella rapae* (M'Intosh); *Lysiphlebus fabarum* (Marshall).

Lipaphis pseudobrassicae (Davis): *Aphidius ervi* Haliday; *Aphidius matricariae* Haliday; *Diaeretiella rapae* (M'Intosh).

Lipaphis sp.: *Diaeretiella rapae* (M'Intosh).

Macchiatiella rhamni (Boyer de Fonscolombe): *Ephedrus persicae* Froggatt.

Macrosiphoniella abrotani (Walker): *Aphidius absinthii* Marshall; *Ephedrus niger* Gautier, Bonnamour & Gaumont.

Macrosiphoniella absinthii (L.): *Praon absinthii* Bignell.

Macrosiphoniella artemisiae (Boyer de Fonscolombe): *Aphidius absinthii* Marshall.

Macrosiphoniella helichrysi Remaudière: *Aphidius absinthii* Marshall.

Macrosiphoniella nr. *macrura* Hille Ris Lambers: *Aphidius absinthii* Marshall.

Macrosiphoniella oblonga (Mordvilko): *Aphidius absinthii* Marshall; *Praon absinthii* Bignell.

Macrosiphoniella papillata Holman: *Lysiphlebus fabarum* (Marshall) (?).

Macrosiphoniella pulvera (Walker): *Aphidius absinthii* Marshall.

Macrosiphoniella riedeli Szelegiewicz: *Aphidius absinthii* Marshall; *Praon volucre* (Haliday).

Macrosiphoniella sanborni (Gillette): *Diaeretiella rapae* (M'Intosh); *Ephedrus niger* Gautier, Bonnamour & Gaumont; *Lysiphlebus fabarum* (Marshall) (?); *Praon absinthii* Bignell; *Praon necans* Mackauer; *Praon unitum* Mescheloff & Rosen.

Macrosiphoniella tanacetaria (Kaltenbach): *Aphidius stigmaticus* Rakhshani & Tomanović.

Macrosiphoniella tapuskae (Hottes & Frison): *Lysiphlebus confusus* Tremblay & Eady (?).

Macrosiphoniella tuberculata (Nevsky): *Aphidius absinthii* Marshall; *Trioxys pannonicus* Starý.

Macrosiphoniella spp.: *Aphidius absinthii* Marshall; *Aphidius asteris* Haliday; *Aphidius persicus* Rakhshani & Starý; *Ephedrus niger* Gautier, Bonnamour & Gaumont; *Praon volucre* (Haliday); *Trioxys pannonicus* Starý.

Macrosiphum euphorbiae (Thomas): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius ervi* Haliday; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Aphidius urticae* Haliday; *Lysiphlebus testaceipes* (Cresson); *Praon volucre* (Haliday).

Macrosiphum rosae (L.): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part] (?); *Aphidius platensis* Brèthes (?); *Aphidius matricariae* Haliday; *Aphidius rosae* Haliday; *Ephedrus niger* Gautier, Bonnamour & Gaumont (?); *Lysiphlebus fabarum* (Marshall) (?); *Praon rosaecola* Starý; *Praon volucre* (Haliday).

Macrosiphum spp.: *Ephedrus plagiator* (Nees); *Praon volucre* (Haliday).

Neomariaella lambersi (Szelegiewicz): *Diaeretiella rapae* (M'Intosh).

Melanaphis donacis (Passerini): *Aphidius transcaspicus* Telenga; *Ephedrus persicae* Froggatt; *Praon volucre* (Haliday).

Melanaphis sacchari (Zehntner): *Lysiphlebus fabarum* (Marshall).

Melanaphis sp.: *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall).

Metopolophium dirhodum (Walker): *Aphidius ervi* Haliday; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Aphidius popovi* Starý; *Aphidius rhopalosiphi* De Stefani-Perez; *Aphidius uzbekistanicus* Luzhetzki; *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Lysiphlebus fabarum* (Marshall) (?); *Praon volucre* (Haliday); *Praon yomenae* Takada (?).

Microlophium carnosum (Buckton): *Aphidius ervi* Haliday; *Aphidius urticae* Haliday.

Monellia caryella (Fitch): *Trioxys pallidus* (Haliday).

Myzaphis rosarum (Kaltenbach): *Praon volucre* (Haliday).

Myzocallis glandulosa Hille Ris Lambers: *Aphidius myzocallidis* Mescheloff & Rosen.

Myzus ascalonicus Doncaster: *Aphidius matricariae* Haliday.

Myzus beybienkoi (Narzikulov): *Aphidius matricariae* Haliday; *Diaeretiella rapae* (M'Intosh); *Lysiphlebus fabarum* (Marshall); *Praon volucre* (Haliday).

Myzus cerasi (F.): *Aphidius matricariae* Haliday; *Ephedrus cerasicola* Starý; *Ephedrus persicae* Froggatt; *Ephedrus plagiator* (Nees).

Myzus ornatus Laing: *Aphidius matricariae* Haliday.

Myzus persicae (Sulzer): *Aphidius avenae* Haliday; *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius ervi* Haliday; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Aphidius ribis* Haliday (?); *Binodoxys angelicae* (Haliday); *Diaeretiella rapae* (M'Intosh); *Ephedrus cerasicola* Starý; *Ephedrus persicae* Froggatt; *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson); *Praon necans* Mackauer; *Praon volucre* (Haliday).

Nasonovia ribisnigri (Mosley): *Aphidius hieraciorum* Starý; *Aphidius matricariae* Haliday (?); *Praon pubescens* Starý.

Nearctaphis bakeri (Cowen): *Aphidius smithi* Sharma & Subba Rao, *Praon barbatum* Mackauer.

Ovatus insitus (Walker): *Aphidius matricariae* Haliday; *Monoctonus mali* van Achterberg.

Ovatus mentharius (van der Goot): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part].

Pemphigus spyrothecae Passerini: *Monoctonia vesicarii* Tremblay.

Periphyllus testudinaceus (Fernie): *Aphidius setiger* (Mackauer).

Periphyllus sp.: *Aphidius setiger* (Mackauer).

Phorodon humuli (Schrank): *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Ephedrus cerasicola* Starý; *Ephedrus persicae* Froggatt; *Lysiphlebus fabarum* (Marshall); *Praon volucre* (Haliday).

Protaphis alexandrae (Nevsky): *Lysiphlebus fabarum* (Marshall).

Protaphis anthemidis (Börner): *Lysiphlebus fabarum* (Marshall).

Protaphis elongata (Nevsky): *Lysiphlebus fabarum* (Marshall).

Protaphis terricola (Rondani): *Lysiphlebus fabarum* (Marshall); *Lysiphlebus desertorum* Starý.

Protaphis spp.: *Binodoxys acalephae* (Marshall); *Lysiphlebus confusus* Tremblay & Eady; *Lysiphlebus desertorum* Starý; *Lysiphlebus fabarum* (Marshall).

Pterochloroides persicae (Cholodkovsky): *Pauesia antennata* (Mukerji).

Pterocomma pilosum Buckton: *Aphidius cingulatus* Ruthe.

Pterocomma populeum (Kaltenbach): *Aphidius cingulatus* Ruthe.

Pterocomma sp.: *Aphidius cingulatus* Ruthe.

Rhopalomyzus sp.: *Aphidius matricariae* Haliday.

Rhopalosiphum maidis (Fitch): *Aphidius avenae* Haliday; *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Aphidius rhopalosiphi* De Stefani-Perez; *Aphidius uzbekistanicus* Luzhetzki; *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Ephedrus plagiator* (Nees); *Lysiphlebus fabarum* (Marshall); *Lysiphlebus testaceipes* (Cresson); *Praon gallicum* Starý; *Praon necans* Mackauer; *Praon volucre* (Haliday).

Rhopalosiphum nymphaeae (L.): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday; *Ephedrus cerasicola* Starý; *Lysiphlebus fabarum* (Marshall); *Praon necans* Mackauer.

Rhopalosiphum oxyacanthae (Schrank): *Ephedrus plagiator* (Nees).

Rhopalosiphum padi (L.): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius ervi* Haliday; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Aphidius rhopalosiphi* De Stefani-Perez; *Aphidius uzbekistanicus* Luzhetzki; *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Ephedrus plagiator* (Nees); *Lysiphlebus fabarum* (Marshall); *Praon gallicum* Starý; *Praon necans* Mackauer; *Praon volucre* (Haliday).

Saltusaphis scirpus Theobald: *Diaeretiella rapae* (M'Intosh); *Lysiphlebus fabarum* (Marshall).

Saltusaphis sp.: *Lysiphlebus fabarum* (Marshall).

Schizaphis graminum (Rondani): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius ervi* Haliday; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Aphidius rhopalosiphi* De Stefani-Perez; *Aphidius uzbekistanicus* Luzhetzki; *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Ephedrus plagiator* (Nees); *Praon gallicum* Starý; *Praon necans* Mackauer; *Praon volucre* (Haliday).

Schizaphis rosazevedoi Ilharco: *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius matricariae* Haliday.

Sipha elegans Del Guercio: *Adialytus ambiguus* (Haliday).

Sipha flava (Forbes): *Adialytus ambiguus* (Haliday).

Sipha maydis Passerini: *Adialytus ambiguus* (Haliday); *Ephedrus persicae* Froggatt (?).

Sipha sp.: *Adialytus ambiguus* (Haliday).

Sitobion avenae (F.): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius ervi* Haliday; *Aphidius matricariae* Haliday; *Aphidius platensis* Brèthes; *Aphidius rhopalosiphi* De Stefani-Perez; *Aphidius smithi* Sharma & Subba Rao (?); *Aphidius uzbekistanicus* Luzhetzki; *Binodoxys angelicae* (Haliday) (?); *Diaeretiella rapae* (M'Intosh); *Ephedrus persicae* Froggatt; *Ephedrus plagiator* (Nees); *Lysiphlebus fabarum* (Marshall) (?); *Praon gallicum* Starý; *Praon necans* Mackauer; *Praon volucre* (Haliday).

Sitobion fragariae (Walker): *Aphidius colemani* Viereck [- *platensis* Brèthes, in part]; *Aphidius ervi* Haliday; *Aphidius matricariae* Haliday; *Aphidius rosae* Haliday; *Aphidius uzbekistanicus* Luzhetzki; *Praon volucre* (Haliday).

Smynthurodes betae Westwood: *Monoctonia pistaciaecola* Starý.

Thelaxes confertae Börner: *Adialytus thelaxis* Starý.

Thelaxes suberi (Del Guercio): *Adialytus thelaxis* Starý; *Trioxys quercicola* Starý.

Thelaxes sp.: *Adialytus thelaxis* Starý.

Therioaphis khayami Remaudière: *Trioxys complanatus* Quilis.

Therioaphis riehmi (Börner): *Praon exsoletum* (Nees); *Trioxys complanatus* Quilis.

Therioaphis trifolii (Monell): *Praon exsoletum* (Nees); *Trioxys complanatus* Quilis.

Therioaphis sp.: *Praon exsoletum* (Nees).

Tinocallis nevskyi Remaudière, Quednau & Heie: *Praon flavinode* (Haliday).

Tinocallis saltans (Nevsky): *Betuloxys hortorum* (Starý).

Titanosiphon neoartemisiae (Takahashi): *Aphidius iranicus* Rakhshani & Starý; *Trioxys pannonicus* Starý; *Trioxys tanaceticola* Starý (?).

Tuberculatus (*Tuberculoides*) *albosiphonatus* Hille Ris Lambers: *Praon flavinode* (Haliday); *Trioxys pallidus* (Haliday).

Tuberculatus (*Tuberculoides*) *moerickei* Hille Ris Lambers: *Praon flavinode* (Haliday); *Trioxys pallidus* (Haliday).

Tuberculatus sp.: *Praon flavinode* (Haliday); *Trioxys pallidus* (Haliday).

Uroleucon acroptilidis Kadyrbekov, Renxin & Shao: *Aphidius funebris* Mackauer; *Ephedrus niger* Gautier, Bonnamour & Gaumont; *Praon unitum* Mescheloff & Rosen; *Praon yomenae* Takada.

Uroleucon aeneum (Hille Ris Lambers): *Aphidius ervi* Haliday (?); *Aphidius funebris* Mackauer; *Praon volucre* (Haliday); *Praon yomenae* Takada.

Uroleucon bielawskii (Szelegiewicz): *Aphidius persicus* Rakhshani & Starý; *Ephedrus niger* Gautier, Bonnamour & Gaumont.

Uroleucon carthami (Hille Ris Lambers): *Aphidius uroleuci* Mescheloff & Rosen; *Praon yomenae* Takada; *Aphidius persicus* Rakhshani & Starý.

Uroleucon chondrillae (Nevsky): *Aphidius funebris* Mackauer; *Aphidius persicus* Rakhshani & Starý; *Praon yomenae* Takada.

Uroleucon cichorii (Koch): *Aphidius funebris* Mackauer; *Ephedrus niger* Gautier, Bonnamour & Gaumont; *Praon volucre* (Haliday); *Praon yomenae* Takada.

Uroleucon compositae (Theobald): *Aphidius matricariae* Haliday (?); *Aphidius funebris* Mackauer; *Aphidius persicus* Rakhshani & Starý; *Ephedrus niger* Gautier, Bonnamour & Gaumont; *Lysiphlebus fabarum* (Marshall) (?); *Lysiphlebus testaceipes* (Cresson); *Praon volucre* (Haliday); *Praon yomenae* Takada.

Uroleucon erigeronense (Thomas): *Aphidius funebris* Mackauer; *Ephedrus niger* Gautier, Bonnamour & Gaumont.

Uroleucon inulae (Ferrari): *Aphidius uroleuci* Mescheloff & Rosen; *Ephedrus niger* Gautier, Bonnamour & Gaumont.

Uroleucon inulicola (Hille Ris Lambers): *Praon volucre* (Haliday).

Uroleucon jaceae (L.): *Aphidius funebris* Mackauer; *Aphidius uroleuci* Mescheloff & Rosen; *Ephedrus niger* Gautier, Bonnamour & Gaumont; *Lysiphlebus fabarum* (Marshall) (?); *Praon unitum* Mescheloff & Rosen; *Praon volucre* (Haliday); *Praon yomenae* Takada.

Uroleucon ochropus (Hille Ris Lambers): *Aphidius persicus* Rakhshani & Starý.

Uroleucon picridis (Fabricius): *Praon yomenae* Takada.

Uroleucon sonchi (L.): *Aphidius ervi* Haliday (?); *Aphidius matricariae* Haliday (?); *Aphidius funebris* Mackauer; *Aphidius persicus* Rakhshani & Starý; *Aphidius uroleuci* Mescheloff & Rosen; *Diaeretiella rapae* (M'Intosh) (?); *Ephedrus niger* Gautier, Bonnamour & Gaumont; *Praon unitum* Mescheloff & Rosen; *Praon volucre* (Haliday); *Praon yomenae* Takada.

Uroleucon tortuosissimae Rezwani & Lampel: *Praon yomenae* Takada.

Uroleucon sp.: *Aphidius funebris* Mackauer; *Aphidius persicus* Rakhshani & Starý; *Aphidius rosae* Haliday (?); *Ephedrus niger* Gautier, Bonnamour & Gaumont; *Lysiphlebus confusus* Tremblay & Eady (?); *Praon volucre* (Haliday).

Wahlgreniella nervata (Gillette): *Aphidius ervi* Haliday; *Aphidius matricariae* Haliday; *Praon rosaecola* Starý.

Xerobion cinae (Nevsky): *Lysiphlebus desertorum* Starý.

Key to female Aphidiinae of the Middle East and North Africa

1. Forewing with seven closed cells. Forewing 2RS present and well developed (Figs 118–125, 164) 2
– Forewing with four closed cells or fewer. Forewing 2RS absent (Figs 73–117, 126–163, 165–175) 10

2. Antennae 18-segmented (Fig. 62). Ovipositor sheath deltoid shaped (Fig. 601) ..... ***Toxares deltiger*** (Haliday)
– Antennae 13-segmented (Figs 31–35). Ovipositor sheath elongated (Figs 555–562) 3

3. Forewing 3RSa vein distinctly shorter than 2RS vein (Figs 119, 124). Petiole less than 1.5× as long as wide (Figs 419, 424) 4
– Forewing 3RSa vein subequal or distinctly longer than 2RS vein (Figs 118, 120–123, 125). Petiole more than 1.8× as long as wide (Figs 418, 420–423, 425) 5

4. Antenna slightly thickened at apex (Fig. 34). F1 4.00–4.50× as long as wide. Ovipositor sheath stout (Fig. 561) ..... ***Ephedrus persicae*** Froggatt
– Antenna distinctly thickened at the apex. F1 4.50–4.80× as long as wide. Ovipositor sheath elongated (Fig. 556) ..... ***Ephedrus chaitophori*** Gärdenfors

5. Antennae thickened at apex, apical and praeapical segments broadly joined forming a club (Fig. 32). Ovipositor sheath stout and wide at base (Fig. 557) ..... ***Ephedrus helleni*** Mackauer
– Antennae filiform or only slightly thickened towards apex. Apical and praeapical segments normally joined, never forming a club (Figs 31, 33, 35) Ovipositor sheath medium sized (Figs 555, 559, 562) to elongated (Figs 558, 560), never widened at base 6

6. Flagellomere 1 very long, 1.4–1.5× flagellomere 2. Forewing r vein as long as or slightly longer than width of stigma (Fig. 121) ..... ***Ephedrus lacertosus*** (Haliday)
– Flagellomer 1 stout, 1.3× flagellomere 2 or shorter (Figs 31, 33, 35). Forewing vein r distinctly shorter than width of stigma (Figs 118, 122, 123, 125) 7

7. Ovipositor sheath considerably elongated with praeapical depression (Fig. 560) ..... ***Ephedrus niger*** Gautier, Bonnamour & Gaumont
– Ovipositor sheath less elongated, without praeapical depression (Figs 555, 559, 562) 8

8. Petiole with strongly prominent central and less-developed lateral longitudinal carinae (Fig. 422). Flagellomere 1 3.00–3.50× as long as wide..... ***Ephedrus nacheri*** Quilis
– Petiole with less developed central and prominent lateral longitudineal carinae (Figs 418, 425). Flagellomere 1 3.80–4.20 x as long as wide (Figs 31, 35) 9

9. Flagellomere 1 yellow, 1.3–1.5× as long as flagellomere 2 bearing 1–2 longitudinal placodes (Fig. 31) ..... ***Ephedrus cerasicola*** Starý
– Flagellomere 1 brown with narrow yellowish ring, 1.1–1.3× as long as flagellomere 2 bearing 3–5 longitudinal placodes (Fig. 35) ..... ***Ephedrus plagiator*** (Nees)

10. Notauli complete (Figs 212, 245–263). Forewing RS+M vein present, sometimes colourless throughout or partially (Figs 109, 146–163) 11
– Notauli incomplete or absent (Figs 176–211, 213–220, 229–245, 265–271). Forewing RS+M vein absent (Figs 73–108, 110–117, 126–145, 165–175) 29

11. Antennae 13–14-segmented (Fig. 25). Propodeum areolated (Fig. 308). Ovipositor sheath densely setose at apical half (Fig. 546) ..... ***Areopraon lepelleyi*** (Waterson)
– Antennae 15–22(23)–segmented (Figs 47–61). Propodeum smooth (Figs 345–362). Ovipositor sheath sparsely setose (Figs 583–600) 12

12. Lateral lobes of mesonotum densely pubescent (Figs 250, 254, 257–259, 262) 13
– Lateral lobes of mesonotum with small (Figs 246, 248, 261) to large hairless areas (Figs 247, 249, 251–253, 255, 256, 260, 263) 18

13. Forewing RS vein effaced, point-like (Fig. 157). Dorsal aspect of propodeum sparsely pubescent (Fig. 356) ..... ***Praon orpheusi*** Kavallieratos, Athanassiou & Tomanović
– Forewing RS never point-like and normally developed (Figs 150, 154, 158, 159, 162). Dorsal aspect of propodeum densely pubescent (Figs 349, 353, 357, 358, 361) 14

14. Flagellomere 1 yellow. Petiole elongated, 1.5–1.6× as long as wide at spiracle (Figs 450, 454). Antennae 19–22 (23)-segmented 15
– Flagellomere 1 brown, with small yellowish part at base. Petiole short, 1.20–1.35× as long as wide at spiracle (Figs 458, 459, 462). Antennae 16–18(19)–segmented 16

15. Antennae 19-segmented (Fig. 50). Flagellomere 1 yellow. Dorsal aspect of petiole with few sparse hairs along sides (Fig. 450). Dorsal outline of ovipositor sheath almost straight (Fig. 587) .... ***Praon bicolor*** Mackauer
– Antenna 21–23-segmented (Fig. 54). Dorsal aspect of petiole with dense hairs along sides (Fig. 454). Dorsal outline of ovipositor sheath concave (Fig. 591) ..... ***Praon longicorne*** Marshall

16. Dorsal aspect of petiole with sparse hairs along sides (Fig. 459). Stigma 1.9–2.3× as long as R1 vein (Fig. 159) ..... ***Praon rosaecola*** Starý
– Dorsal aspect of petiole with dense hairs along sides (Figs 458, 462). Stigma 1.25–1.65× as long as R1 vein (Figs 158, 162) 17

17. Antenna 16–17-segmented (Fig. 57). Ovipositor sheath rounded at apex (Fig. 595) .... ***Praon pubescens*** Starý
– Antenna (17)18–19-segmented (Fig. 60). Ovipositor sheath sharply pointed at apex (Fig. 599) .... ***Praon volucre*** (Haliday)

18. Lateral lobes of mesonotum with small hairless areas (Figs 246, 248, 261) 19
– Lateral lobes of mesonotum with large hairless areas (Figs 247, 249, 251–253, 255, 256, 260, 263) 21

19. Forewing m-cu complete and coloured throughout (Fig. 146). Antenna 15–16-segmented (Fig. 47). Flagellomere 1 brown, yellowish at base, 4.0–4.5× as long as wide ..... ***Praon abjectum*** (Haliday)
– Forewing m-cu complete but colourless or effaced distally (Figs 148, 161). Antenna 20–21-segmented. Flagellomere 1 yellow with a dark ring at the apex and 0.5–0.6× as long as wide 20

20. Forewing vein m-cu colourless proximally and effaced distally (Fig. 161). Stigma 3.5× as long as wide and 1.5× as long as R1 vein. Antenna 21-segmented. Flagellomere 1 5.0× as long as wide. Petiole stout, subquadrate (Fig. 561) ..... ***Praon uroleucon*** Tomanović & Kavallieratos
– Forewing vein m-cu coloured on first third and colourless for remaning part (Fig. 148). Stigma 4.0× as long as wide and 1.8× as long as R1 vein. Antenna 20-segmented. Flagellomere 1 0.6 as long as

wide. Petiole more elongated, 1.22× as long as wide at spiracles (Fig. 448) .... ***Praon athenaeum*** Kavallieratos & Lykouressis

21. Forewing m-cu complete and coloured throughout (Fig. 147). Flagellomere 1 brown, only yellowish at base ..... ***Praon absinthii*** Bignell
– Forewing m-cu coloureless throughout or partially or completely effaced (Figs 149, 151–153, 155, 156, 160, 163). Flagellomere 1 yellowish, sometimes darkened to brown at tip 22

22. Forewing m-cu vein developed, but partially colourless or thoroughly colourless (Figs 149, 151, 152, 156, 160, 163). Stigma thickened, 3.3–3.5× as long as wide 23
– Forewing m-cu vein effaced (Figs 153, 155). Stigma narrow, 3.6–4.2× as long as wide 28

23. Antenna 20–21-segmented (Fig. 49). Ovipositor sheath considerably elongated (Fig. 586). Face and propodeum very densely pubescent (Fig. 348) ..... ***Praon barbatum*** Mackauer
– Antenna 15–19-segmented. Ovipositor sheath less elongated (Figs 588, 589, 593, 597, 600). Face and propodeum normally or sparsely pubescent (Figs 350, 351, 355, 359, 362) 24

24. Petiole less than 1.2× as long as wide. Dorsal aspect of petiole with a pair of triple hairs at posterior margin (Fig. 452). Ovipositor sheath stout with length/width ratio less than 2.4 (Fig. 589) .... ***Praon flavinode*** (Haliday)
– Petiole more than 1.3× as long as wide. Dorsal aspect of petiole with sparse to dense hairs located between spircales (Figs 451, 456, 460, 463). Ovipositor sheath more elongated with length/width ratio more than 2.5 (Figs 588, 593, 597, 600) 25

25. Dorsal aspect of petiole almost hairless or with 4–5 short setae along sides (Fig. 451). Propodeum covered with few and scattered hairs (Fig. 350) ..... ***Praon exsoletum*** (Nees)
– Dorsal aspect of petiole with more than 10 short setae along each side (Figs 456, 460, 463). Propodeum covered with several long hairs (Figs 355, 359, 362) 26

26. Antenna 18–19(20)–segmented (Fig. 61). Forewing cu vein coloured throughout (Fig. 163) .... ***Praon yomenae*** Takada
– Antenna 16–17-segmented (Fig. 59). Forewing cu vein colourless throughout or coloured only prior to m-cu vein (Figs 156, 160) 27

27. Dorsal aspect of propodeum sparsely pubescent (Fig. 359). Flagellomere 1 6.0× as long as wide (Fig. 59). Mesosoma yellowish to yellow ..... ***Praon unitum*** Mesheloff & Rosen
– Dorsal aspect of propodeum densely pubescent (Fig. 355). Flagellomere 1 5.5× as long as wide. Mesosoma dark brown ..... ***Praon nonveilleri*** Tomanović & Kavallieratos

28. Flagellomeres 1 and 2 yellow. Stigma 2.0× as long as R1 vein (Fig. 153). Dorsal aspect of propodeum covered with normal hairs (Fig. 352) ..... ***Praon gallicum*** Starý
– Flagellomere 1 yellow with brown apice, flagellomere 1 brown. Stigma as long as R1 vein (Fig. 155). Dorsal aspect of propodeum covered with very long hairs (Fig. 354) ..... ***Praon necans*** Mackauer

29. Forewing 1RS vein long, reaching R1 vein at tip of wing margin (Fig. 73). Petiole very short, 0.8× as long as wide at spiracles (Fig. 374). Ovipositor sheath dagger shaped (Fig. 510). Eyes considerably reduced in size ..... ***Aclitus obscuripennis*** Förster
– Forewing 1RS short, never reaching R1 vein and wing margin (Figs 74–108, 110–117, 126–145, 165–175). Petiole always longer than width at spiracles (Figs 375–408, 410–417, 426–445, 465–475). Ovipositor sheath of different shapes (Figs 511–545, 547–554, 563–582, 602–612). Eyes normally developed 30

30. Terminal metasomal sternum with a pair of prongs (Figs 547–552, 602–612) 31
– Terminal metasomal sternum without prongs (Figs 511–545, 553, 554, 563–582) 47

31. Petiole with primary and secondary tubercles (Figs 411–415) 32
– Petiole with only primary tubercles (Figs 410, 465–475) 40

32. Prongs almost straight, slightly curved at apex (Figs 548, 549) 33
– Prongs strongly curved upward (Figs 550–552) 34

33. Distance between primary and secondary tubercles less than width at spiracles (Fig. 411). Stigma 2.1–2.3× as long as wide and 1.9–2.1× as long as R1 vein (Fig. 111). Ovipositor sheath sub–quadrate at base (Fig. 548). Metasoma dark brown .....***Binodoxys acalephae*** (Marshall)
– Distance between primary and secondary tubercles more than width at spiracles (Fig. 412). Stigma 2.6–2.8× as long as wide and 1.4–1.6× as long as R1 vein (Fig. 112). Ovipositor sheath rounded at base (Fig. 549). Petiole and last metasomal segments yellowish brown ....***Binodoxys angelicae*** (Haliday)

34. Dorsal aspect of prongs with 7–8 long hairs (Fig. 551) ..... ***Binodoxys centaureae*** (Haliday)
– Dorsal aspect of prongs with 2–3 long hairs (Figs 550, 552) 35

35. Antenna 10-segmented. (Fig. 28). Propodeum smooth with only posterolateral carinae developed at base (Fig. 312). Primary and secondary tubercles almost fused, distance between them less than width of petiole at spiracles (Fig. 413) ..... ***Binodoxys brevicornis*** (Haliday)
– Antenna 11-segmented. (Fig. 29). Propodeum carinated with well developed and complete central areola (Fig. 314). Primary and secondary tubercles distinctly separated, distance between them more than width at spiracles (Fig. 415) ..... ***Binodoxys heraclei*** (Haliday)

36. Apical portion of prongs differentiated, bearing several stout basally dilated bristles (Fig. 547) ....***Betuloxys horturom*** (Starý)
– Apical portion of prongs tubular with 1–2 bristles of various shapes (simple, ovoid or uniformly dilated) (Figs 602–612) 37

37. R1 vein reduced, equal to or shorter than half of stigma (Figs 156, 169, 172, 175) 38
– R1 vein well developed, distinctly longer than half of stigma (Figs 166, 167, 168, 170, 171, 173, 174) 42

38. Prongs very short and straight with a pair of ovoid-shaped bristles at apex (Fig. 612). R1 vein 0.45–0.5× as long stigma (Fig. 175) .....***Trioxys tanaceticola*** Starý
– Prongs long and distinctly curved upward with a pair of simple or uniformly dilated bristles at apex (Figs 602, 606, 609). R1 vein less than 0.35× as long stigma (Fig. 165, 169, 172) 39

39. Prongs with 3–4 long setae at dorsal surface and a pair of simple bristles at apex (Fig. 606). Maxillary and labial palps with 3 and 1 palpomeres, respectively .. ***Trioxys metacarpalis*** Rakhshani & Starý
– Prongs with more than 6–7 long setae at dorsal surface and a pair of uniformly dilated bristles (Figs 602, 609). Maxillary and labial palps with 4 and 2 palpomeres, respectively 40

40. Antenna 11-segmented (Fig. 70). Petiole short, less than 1.8× as long as wide at spiracles (Fig. 472) ..... ***Trioxys pannonicus*** Starý
– Antenna 12-segmented (Fig. 63). Petiole elongated, more than 2.2× as long as wide at spiracles (Fig. 465) ..... ***Trioxys asiaticus*** Telenga

41. Apex of prongs with single claw-shaped bristle (Figs 604, 605, 607, 608, 611) 42
– Apex of prongs with a pair of simple or uniformly dilated bristles (Figs 603, 610) 46

42. Prongs distinctly curved upward (Fig. 605) ..... ***Trioxys curvicaudus*** Mackauer
– Prongs straight or very slightly curved (Figs 604, 607, 608, 611) 43

43. Prongs without any long setae at dorsal surface (Fig. 611) ..... ***Trioxys quercicola*** Starý
– Prongs with 1–4 long setae at dorsal surface (Figs 604, 607, 608) 44

44. Prongs with 1–2 long setae at dorsal surface (Fig. 607) ..... ***Trioxys moshei*** Mescheloff & Rosen
– Prongs with 3–4 long setae at dorsal surface (Figs 604, 608) 45

45. Ovipositor sheath short, 2.10–2.20× as long as wide at base (Fig. 604). R1 vein 0.60–0.80× as long stigma (Fig. 167) ..... ***Trioxys complanatus*** Quilis
– Ovipositor sheath elongated, 2.90–3.10× as long as wide at base (Fig. 608). R1 vein 0.5× as long stigma (Fig. 171) ..... ***Trioxys pallidus*** (Haliday)

46. Propodeum areolated with well developed anterolateral and central carinae (Fig. 365). Prongs almost straight with 6–8 long setae at dorsal surface and a pair of uniformly dilated bristles at apex (Fig. 603) ..... ***Trioxys cirsii*** (Curtis)
– Propodeum smooth having short posterolateral carinae at base. Prongs upcurved apically with 4–5 long setae at dorsal surface and a pair of simple bristles at apex (Fig. 610) .. ***Trioxys pappi*** Takada

47. Propodeum reticulated and irregularly areolated (Figs 332, 333). Petiole short and subquadrate, 1.0–1.2× as long as wide at spiracles (Figs 433, 434). Antenna monilliform (Figs 43, 44) 48
– Propodeum smooth (Figs 273–276, 326–331) or regularly areoleted (Figs 277–307, 315, 316, 325, 334–344). Petiole elongated, more than 1.5× as long as wide at spiracles (Figs 375–408, 416, 417, 426–432, 435–445). Antenna filiform (Figs 2–24, 30, 36–42, 45, 46) 49

48. Antenna 12–13-segmented. F1 2.6–2.7× as long as wide. F1 and F2 with 1–2 and 5–6 longitudinal placodes, respectively (Fig. 43). Ovipositor sheath triangular, curved downwards, narrowed to the apex (Fig. 570) ..... ***Monoctonia pistaciaecola*** Starý
– Antenna 16 (17)–segmented. F1 1.75–2.00× as long as wide. F1 and F2 with 0 and 1 longitudinal placodes, respectively (Fig. 44). Ovipositor sheath quadrangular at base, sharply narrowed ventrally, truncated at tip (Fig. 571) ..... ***Monoctonia vesicarii*** Tremblay

49. Ovipositor sheath ploughshare shaped (Figs 572, 573) 50
– Ovipositor sheath of different shapes, cup shaped (Fig. 563), subovoid (Figs 515–545, 553, 574. 576. 580, 581), triangular (Figs 511–514, 564–569), quadrangular (Fig. 554), spatulated (Fig. 578), slender (Fig. 579), acincaciform (Figs 575, 577, 582) 51

50. Forewing r & RS, M+m-cu and r–m veins well developed and visible (Fig. 135). Petiole elongated, 2.0–2.2× as long as wide at spiracles (Fig. 435) ..... ***Monoctonus crepidis*** (Haliday)
– Forewing r & RS, M+m-cu and r–m veins effaced (Fig. 136). Petiole short, 1.6–1.8× as long as wide at spiracles (Fig. 436) ..... ***Monoctonus mali*** van Achterberg

51. Forewing r & RS vein extending over tip of R1 vein, reaching the outer border of forewing (Fig. 126). Dorsal aspect of petiole with a pair of strong carinae, diverging backward (Fig. 426). Ovipositor sheath elongated-cup shaped, strongly downcurved (Fig. 563) ..... ***Lipolexis gracilis*** Förster
– Forewing r & RS vein reaching the end of R1 vein in maximum length (Figs 74–108, 116, 117, 127–132, 137–145). Dorsal aspect of petiole smooth, slightly swollen or with straight central keel

(Figs 375–408, 416, 417, 427–432, 437–445). Ovipositor sheath of different shapes (Figs 511–545, 553–554, 564–569, 574–582) 52

52. Propodeum with very narrow, small, central areola (Figs 277–307, 315) or smooth (Figs 273–276, 326–331) 53
– Propodeum with wide central pentagonal areola (336–342, 344) or only with anterolateral and central carinae (Figs 316, 343) 85

53. Dorsal aspect of propodeum carinated with complete or incomplete central areola (Figs 277–307, 315). Ovipositor sheath truncated at tip (Figs 515–545, 553) 54
– Dorsal aspect of propodeum smooth or with two divergent carinae at lower part (Figs 273–276, 326–331). Ovipositor sheath pointed at tip (Figs 511–514, 564–569) 94

54. Forewing r–m and M+m-cu veins absent (Fig. 116) ..... ***Diaeretiella rapae*** (M'Intosh)
– Forewing r–m vein present, M+m-cu complete (Figs 78, 80–109) or reduced anteriorly (Fig. 79) …55

55. Anterolateral area of petiole rugose (Figs 483, 486) 56
– Anterolateral area of petiole costate (Figs 478, 481, 388, 496), or costulate (Figs 476–477, 479–480, 482, 484–485, 487–495, 497–499) 57

56. Stigma 3.8–4.3× as long as wide (Fig. 92). Anterodorsal area of ovipositor sheath strongly elevated leading to a clearly concave dorsal outline (Fig. 529) .... ***Aphidius microlophii*** Pennachio & Tremblay
– Stigma 3.4–3.9× as long as wide (Fig. 87). Antero-dorsal area of ovipositor sheath moderately elevated leading to a slightly concave dorsal outline (Fig. 524) .....***Aphidius ervi*** Haliday

57. Anterolateral area of petiole costate (Figs 478, 481, 388, 496) 58
– Anterolateral area of petiole costulate (Figs 476–477, 479–480, 482, 484–485, 487–495, 497–499) 61

58. Labial palps with three palpomeres. Length of stigma 1.6–2.0× R1 vein (Figs 81, 105). Antenna (16)17–18-segmented 59
– Labial palps with two palpomeres. Length of stigma 1.1–1.2× R1 vein (Figs 84, 96). Antenna (14)15–16-segmented 60

59. Petiole with swollen anterodorsal area (Fig. 405). General body color yellowish brown ....***Aphidius transcaspicus*** Telenga
– Petiole with deep anterodorsal area (Fig. 382). General body color dark brown to black .... ***Aphidius avenae*** Haliday

60. Anterolateral area of petiole smooth with 3–4 blunt costae (Fig. 385) ....***Aphidius colemani*** Viereck
– Anterolateral area of petiole strongly curved with 5–6 sharp costae (Fig. 395) ....***Aphidius platensis*** Brèthes

61. Tentorial index 0.6–0.8 62
– Tentorial index less than 0.6 63

62. Antenna (18)19–20-segmented. Flagellomeres 1 and 2 with 2–5 and 3–7 longitudinal placodes, respectively (Fig. 8). Petiole 3.00–3.50× as long as wide at spiracles (Fig. 384) .... ***Aphidius cingulatus*** Ruthe

– Antenna 13–14-segmented. Flagellomeres 1 and 2 with 1–3 and 3–5 longitudinal placodes, respectively. Petiole 2.50–3.00× as long as wide at spiracles (Fig. 401) ..... ***Aphidius setiger*** (Mackauer)

63. Maxillary palps with 3 palpomeres, if one palp is with 4 palpomeres then the last palpomere bears trace of two segments 64
– Maxillary palps clearly 4-segmented 67

64. Labial palps with 2 palpomeres. Propodeum with complete central areola (Figs 290, 292) 65
– Labial palps with 1 palpomere. Propodeum with incomplete central areola (Figs 278, 289) 66

65. Stigma 4.5× as long as wide (Fig. 93). Clypeus with 6 scattered long setae. Flagellomere 1 basally yellow becoming brown midway to apex ..... ***Aphidius myzocallidis*** Mescheloff & Rosen
– Stigma 3.3–3.8× as long as wide (Fig. 91). Clypeus with 10–12 long setae. Flagellomere 1 yellowish brown with narrow apical dark ring ..... ***Aphidius matricariae*** Haliday

66. Dorsal aspect of petiole with a pair of convergent grooves (Fig. 380). Forewing M+m-cu vein incomplete, stigma 2.0× as long R1 vein (Fig. 79) ..... ***Aphidius arvensis*** (Starý)
– Dorsal aspect of petiole smooth with fine rugosities (Fig. 391). Forewing M+m-cu vein complete, stigma equal or slightly longer than R1 vein (Fig. 90) ..... ***Aphidius iranicus*** Rakhshani & Starý

67. Labial palps with two palpomeres 68
– Labial palps with three palpomeres 75

68. Stigma narrowly triangular, 4.0–4.5× as long as wide, subequal to R1 vein (1.0–1.2× as long R1 vein) (Figs 86, 98). Antenna 14–15-segmented 69
– Stigma widely triangular, 2.8–3.8× as long as wide, distinctly longer than R1 vein (1.3–7.52× as long as R1 vein) (Figs 78, 80, 94, 96, 104, 106). Antenna (15)16–17-segmented 70

69. Apical flagellomere of antenna distinctly thickened. Flagellomere 1 2.6–3.0× as long as wide. Upper areola of propodeum with 2–4 long setae (Fig. 284). Dorsal outline of ovipositor sheath concave (Fig. 523) ..... ***Aphidius eglanteriae*** Haliday
– Apical flagellomere of antenna not thickened. Flagellomere 1 3.1–3.4× as long as wide. Upper areola of propodeum with 5–7 long setae (Fig. 297). Dorsal outline of ovipositor sheath smooth (Fig. 535) ..... ***Aphidius ribis*** Haliday

70. R1 vein very short, 0.15–0.20× as long as stigma (Fig. 96) ..... ***Aphidius popovi*** Starý
– R1 vein short, 0.45–0.75× as long as stigma (Figs 78, 80, 94, 104, 106) 71

71. Dorsal aspect of petiole smooth with fine rugosities (Figs 379, 381, 404) 72
– Dorsal aspect of petiole with moderately prominent central carina (Figs 394, 406) 74

72. Flagellomere 1 elongated, 4.06–4.33× as long as wide (Fig. 21) .... ***Aphidius stigmaticus*** Rakhshani & Tomanović
– Flagellomere 1 short, 3.00–3.50× as long as wide (Figs 6, 13) 73

73. Antenna 15-segmented. Petiole 2.00–2.50× as long as wide at spiracles (Fig. 381) .... ***Aphidius asteris*** Haliday
– Antenna 16–17-segmented (Fig. 6). Petiole 3.00–3.50× as long as wide at spiracles (Fig. 379) .... ***Aphidius absinthii*** Marshall

74. Propodeum with closed central areola. Upper areola of propodeum with 5–8 long setae (Fig. 293). Antenna 16–17-segmented .....***Aphidius persicus*** Rakhshani & Starý
– Propodeum with incomplete closed central areola by weak and broken carinae. Upper areola of propodeum with 3 long setae (Fig. 305). Antenna 15–16-segmented (Fig. 13) ....***Aphidius uroleuci*** Mescheloff & Rosen

75. Antenna 13–14-segmented (Fig. 18) .....***Aphidius salicis*** Haliday
– Antenna with more than 14 segments 76

76. Ovipositor sheath elongate and strongly prominent (Fig. 525) .....***Aphidius funebris*** Mackauer
– Ovipositor sheath broad (Figs 519, 522, 526, 534, 536, 539–540, 544–545) 77

77. Antenna 15–18-segmented 78
– Antenna 19–20-segmented 82

78. R1 vein 0.50–0.55× as long as stigma (Fig. 99) .....***Aphidius rosae*** Haliday
– R1 vein more than 0.75× as long as stigma (Figs 87, 97, 103, 108) 79

79. Antenna 15–16-segmeneted 80
– Antenna 16–17-segmeneted 81

80. Stigma 3.5–4.0× as long as wide (Fig. 89). Flagellomere 1 2.5–3.0× as long as wide. Petiole, 3.0–3.5× as long as wide at spiracles (Fig. 390) .....***Aphidius hieraciorum*** Starý
– Stigma 3.0–3.5× as long as wide (Fig. 103). Flagellomere 1 3.0–3.5× as long as wide. Petiole 2.5–3.0× as long as wide at spiracles (Fig. 403) ..... ***Aphidius sonchi*** Marshall

81. Stigma elongately triangular, 3.30–3.90× as long as wide (Fig. 97). Dorsal aspect of petiole with strong rugosities and unclear central carina, anterolateral aspect with 10–12 straight costulae extended over posterior half (Fig. 490) ..... ***Aphidius rhopalosiphi*** De Stefani-Perez
– Stigma widely triangular, 2.80–3.10× as long as wide (Fig. 108). Dorsal aspect of petiole with fine rugosities and prominent central carina, anterolateral area with aspect with 10–14 curved costulae, limited to the anterior half (Fig. 499) ..... ***Aphidius uzbekistanicus*** Luzhetzki

82. Stigma 1.5–2.2× as long as R1 vein (Fig. 85). Antenna 20–21-segmented (Fig. 9) ....***Aphidius eadyi*** Starý, Gonzáles & Hall
– Stigma 1.1–1.3× as long as R1 vein (Figs 82, 102, 107). Antenna 19–20-segmented 83

83. Forewing R1 vein 1.9–2.2× as long as r vein (Fig. 107) ..... ***Aphidius urticae*** Haliday
– Forewing R1 vein 1.4–1.6× as long as r vein (Figs 82, 102) 84

84. Propodeum with wide central pentagonal areola (Fig. 281). Petiole 3.0–3.2× as long as wide at spiracles, its posterior part strongly rugose (Fig. 383). Anterolateral area of petiole with 9–10 irregular curved costulae (Fig. 479) .....***Aphidius banksae*** Kittel
– Propodeum with narrow and small central pentagonal areola (Fig. 301). Petiole 2.4–2.8× as long as wide at spiracles, its posterior part mainly smooth (Fig. 402). Anterolateral area of petiole with 4–6 almost straight costulae (Fig. 494) .....***Aphidius smithi*** Sharma & Subba Rao

85. Forewing M+m-cu and r–m veins absent (Fig. 117). Ovipositor sheath stout, subquadrate (Fig. 554). Notauli absent (Fig. 220). Antenna 15–16-segmented .....***Diaeretus leucopterus*** (Haliday)

– Forewing M+m-cu and r–m veins present (Figs 137–145). Ovipositor sheath elongated in different shape (Figs 574–582). Notauli developed in anterior part of mesonotum (Figs 240–245). Antenna with more than 17 segments 86

86. Stigma narrow, its width distinctly less than r vein (Fig. 141). Ovipositor sheath with lateral spatula (Fig. 578) ..... ***Pauesia hazratbalensis*** Bhagat
– Stigma wide, its width equal or distinctly more than r vein (Figs 137–140, 142–145). Ovipositor sheath without lateral spatula (Figs 574–577, 579–582) 87

87. Ovipositor sheath elongated, 4.0–5.0× as long as wide at base (Figs 579, 582) 88
Ovipositor sheath short, 2.0–3.5× as long as wide at base (Figs 574–577, 579–581) 89

88. Antenna 21-segmented. Ovipositor sheath slender, upcurved, apically rounded (Fig. 579). Propodeum densly setose, with small central pentagonal areola (Fig. 341). Petiole elongated, 3.4–3.6× as long as wide at spircales (Fig. 442) ..... ***Pauesia picta*** (Haliday)
– Antenna 16–17-segmented. Ovipositor sheath narrow and long, almost straight, apically pointed (Fig. 582). Propodeum sparsely setose, with large central pentagonal areola (Fig. 344). Petiole short, 2.8–3.2× as long as wide at spircales (Fig. 445) ..... ***Pauesia unilachni*** (Gahan)

89. Posterolateral carinae of propodeum absent, only the strong anterolateral carinae and a weak central carina present (Fig. 343) ..... ***Pauesia silana*** Tremblay
– Posterolateral carinae of propodeum present, defining the central areola (Figs 336–339, 342).... 90

90. Antenna 17–19-segmented. Propodeum with small central areola (Figs 337, 339). Ovipositor sheath strongly curved upwards, pointed apically (Figs 575, 577) 91
– Antenna 20–22-segmented. Propodeum with large central areola (Figs 336, 338, 342). Ovipositor sheath very slightly curved upward, apically rounded or truncated (Figs 574, 576, 580) 92

91. Antenna 18–19-segmented. Propodeum with complete and straight posterolateral carinae (Fig. 337). Stigma 3.2–3.5× as long as wide (Fig. 138). Petiole with spiracales located at half of the segment, slightly widened posteriorly, 3.2–3.3× as long as wide at spiracles (Fig. 438) ..... ***Pauesia anatolica*** Michelena, Assael & Mendel
– Antenna 17-segmented. Propodeum with incomplete and irregular posterolateral carinae (Fig. 339). Stigma 2.5–2.8× as long as wide (Fig. 140). Petiole with spiracles located at anterior one third of the segment, parallel sided, 3.5× as long as wide at spiracles (Fig. 440) ..... ***Pauesia cedrobii*** Starý & Leclant

92. Propodeum densly setose, with irregular carinae (Fig. 338). Petiole parallel sided (Fig. 439). Ovipositor sheath truncated apically (Fig. 562) ..... ***Pauesia antennata*** (Mukerji)
– Propodeum sparsely setose, with regular carinae (Figs 336, 342). Petiole with prominent spiracular tubercles, distinctly widened to the base (Fig. 437, 443). Ovipositor sheath truncated apically (Figs 574, 580) 93

93. Stigma uniformly brown. Propodeum with less concave central areola (Fig. 336) ..... ***Pauesia abietis*** (Marshall)
– Stigma brown, yellowish at base. Propodeum with very concave central areola (Fig. 342) ..... ***Pauesia pini*** (Haliday)

94. Forewing M+m-cu and r veins absent (Figs 74–77) 95
– Forewing with incomplete M+m-cu vein, r vein distinct (Figs 127–131) 98

95. Ovipositor sheath considerably elongated, lengh/width ratio 2.80–3.20 (Fig. 511) ..... ***Adialytus ambiguus*** (Haliday)
– Ovipositor sheath stout, lengh/width ratio 2.20–2.70 (Figs 512–514) 96

96. Flagellar segments (Fig. 4) subquadrate, slightly longer than their maximum width, length/width ratio 1.50–1.60. Flagellar segments and hind femur covered with long and prevalently erected setae (Fig. 502). Ovipositor sheath sharply angular (Fig. 513) ..... ***Adialytus thelaxis*** (Starý)
– Flagellar segments (Figs 3, 5) cylindrical, considerably longer than their maximum width, length/width ratio 2.00–2.90. Flagellar segments and hind femur covered with semi-erected (Fig. 501) or adpressed (Fig. 503) setae. Ovipositor sheath roundly angular (Figs 512, 514) 97

97. Petiole elongated, 2.20–2.40× as long as wide at spiracles (Fig. 376). Flagellar segments (Fig. 3) covered with prevalently semi-erected setae equal to segment diameter. Flagellomere 1 with 3–4 longitudinal placodes. Hind femur covered with prevalently semi-erected setae (Fig. 501) ..... ***Adialytus salicaphis*** (Fitch)
– Petiole short, 1.90–2.10× as long as wide at spiracles (Fig. 378). Flagellar segments (Fig. 5) covered with adpressed setae distinctly shorter than segment diameter. Flagellomere 1 with 0–1 longitudinal placode. Hind femur covered with short adpressed setae (Fig. 503) ..... ***Adialytus veronicaecola*** (Starý)

98. Stigma equal or distinctly longer than R1 vein. (Figs 129, 131, 132). Petiole narrowly triangular (Figs 429, 431, 432). Labial palps with 2 palpomeres 99
– Stigma distinctly shorter than R1 vein, reaching outer margin of wing (Figs 127, 128, 130). Petiole widely triangular (Fig. 427, 428, 430). Labial palps with 1 palpomere 101

99. Petiole wide at base, 1.0–1.3× as long as wide at base (Fig. 429). Hind femur with semi-erected setae (Fig. 506) ..... ***Lysiphlebus desertorum*** Starý
– Petiole more elongate, 1.5–2.0× as long as wide at base (Figs 431, 432). Hind femur with appressed setae (Figs 508, 509) 100

100. Petiole 1.5–1.7× as long as wide at base (Fig. 431) ..... ***Lysiphlebus fritzmuelleri*** Mackauer
– Petiole 1.7–2.0× as long as wide at base (Fig. 432) ..... ***Lysiphlebus testaceipes*** (Cresson)

101. Forewing marginal setae longer than those on the surface (Fig. 128) ..... ***Lysiphlebus confusus*** Tremblay & Eady
– Forewing marginal setae as long as those on the surface (Figs 127, 129) 102

102. Hind femur with appressed setae (Fig. 507). Stigma 2.8–3.4× as long as wide (Fig. 130) ..... ***Lysiphlebus fabarum*** (Marshall)
– Hind femur with semi-erected setae (Fig. 504). Stigma 3.2–4.0× as long as wide (Fig. 127) ... 103

103. Stigma 3.2–3.6× as long as wide (Fig. 127). Flagellomere 1 usually without or exceptionally with 1 longitudinal placode (Fig. 37) ..... ***Lysiphlebus cardui*** (Marshall)
– Stigma 3.8–4.0× as long as wide. Flagellomere 1 with 1–2 longitudinal placodes ..... ***Lysiphlebus volkli*** Tomanović & Kavallieratos

Table 1. Numbers of recorded genera and species of Aphidiinae in different countries of the Middle East and North Africa.

Countries	Area (km2)	Number of genera	Number of species
Algeria	2,381,741	7	29
Bahrain	765.3	–	–
Djibeuti	23,200	–	–
Egypt	1,001,449	8	22
Eritrea	117,598	–	–
Iran	1,648,000	16	75
Iraq	437,072	10	28
Israel	20,770	11	38
Jordan	89,342	3	3
Kuwait	17,820	–	–
Lebanon	10,452	7	13
Libya	1,759,540	2	4
Morocco	446,550	8	19
Oman	309,501	–	–
Palestine	6,220	3	4
Qatar	11,571	–	–
Saudi Arabia	2,150,000	4	8
Somalia	637,657	–	–
Sudan	1,886,068	–	–
Syria	185,180	4	3
Tunisia	163,610	7	16
Turkey	783,562	13	57
UAE	83,600	5	9
Yemen	528,076	7	11

Discussion

The overall number of the recorded species from the Middle East and North Africa is less than one fifth of the total known Aphidiinae species, worldwide. Among the 24 counties of the Middle East and North Africa (Table 1), there are still no published records on aphid parasitoids from eight countries (Bahrain, Djibeuti, Eritrea, Kuwait, Oman, Qatar, Somalia, Sudan) (Fig. 613). Except on a few occasions, the explored areas of the Middle East and Noth Africa were mostly limited to the agricultural landscapes and nearby areas (Abou-Fakhr & Kawar 1998; Havelka *et al.* 2011; Ahmad & Bakr 2013; Starý *et al.* 2013; Tomanović *et al.* 2014). With a diverse range of habitats explored, Iran and Turkey are the most investigated regions of the Middle East and North Africa, in regards to Aphidiinae. For example, Barahoei *et al.* (2014) recorded 78 species of aphid parasitoids, belonging to 17 genera, from Iran (including some misidentified genera and species). However, the last up-to-date of Aphidiinae of Iran (Farahani *et al.* 2016) includes 73 species belonging to 15 genera. Two genera, *Toxares* Haliday and *Euaphidius* Mackauer, are not listed in Farahani *et al.* (2016) since the former is considered as a misidentification, while species of the latter are classified in *Aphidius* Nees on the basis of molecular and morphological analyses (Milošević *et al.* 2015). Incorporating a missing record, *Lysiphlebus cardui* (Alikhani *et al.*

2013) and the newly recorded species (Kargarian *et al.* 2016; Farahani *et al*. 2017), the number of Aphidiinae species in Iran reaches 76. Among the recorded aphidiines of Iran, four species are recorded only from Iran. Twenty-four species are only recorded from Iran in the Middle East and North Africa regions, but are also recorded from elsewhere in the world.

On the basis of biogeographical complexity, Aphidiinae of the Middle East and North Africa can be categorized in three groups consisting of endemic rare, endemic widely distributed, or invasive species. The first group is represented by few species (i.e., *Aphidius myzocallidis*, *Aphidius uroleuci*, *Trioxys moshei* and *Trioxys quercicola*), which have not been collected since their original description. A large group of species includes native elements of the Western Palaearctic region that are irregularly distributed in the Middle East and North Africa. The well known invasive species *Lysiphlebus testaceipes* which is probably native to South America (Starý *et al.* 2014) is now widely distributed in Europe (Kavallieratos *et al.* 2001, 2004, 2005, 2010, 2013; Žikić *et al.* 2015; Kavallieratos *et al*. 2016; Tomanović *et al*. 2018) and North African countries (Laamari & Coeur d' Acier 2010; Havelka *et al.* 2011; Boukhris-Bouhachem 2011; Ben Halima 2011; Mitrović *et al.* 2013; Tomanović *et al*. 2018). This species has even been recorded in Iran (Rakhshani *et al.* 2005a) and Turkey (Uysal *et al.* 2004; Yoldaş *et al.* 2011; Satar *et al*. 2014). Some other species have been recorded occasionally and can be classified as rare taxa of the Middle East and North Africa, although they are widely distributed in Europe (i.e., *Aphidius eglanteriae*, *Binodoxys centaureae*, *Diaeretus leucopterus*, *Ephedrus lacertosus*, *Ephedrus nacheri*, *Lysiphlebus cardui*, *Pauesia* spp., *Praon flavinode*, *Praon longicorne* and *Praon pubescens*). Seven species (i.e., *Aphidius eglanteriae, Aphidius microlophii*, *Lysiphlebus fritzmuelleri*, *Pauesia anatolica, Praon athenaeum*, *Praon nonveilleri* and *Praon uroleucon*) are exclusively recorded in the western part of Turkey (Barjadze *et al.* 2010; Michelena *et al.* 2005; Akar & Erdoğan 2017) and possibly could not be considered as elements of the Middle East area. *Binodoxys centaureae*, *Pauesia cedrobii* and *Pauesia silana* are members of the Mediterranean region, which are only recorded in North Africa (Starý 1976; Starý & Leclant 1977; Laamari *et al.* 2012; Benhamacha *et al.* 2017). Few species of the genus *Pauesia* have been recorded in association with Cinarinae aphids in Middle Eastern countries, i.e., Algeria – *Pauesia silana* (Benhamacha *et al.* 2017); Iran – *Pauesia antennata* (Rakhshani *et al.* 2005b) and *Pauesia hazratbalensis* (Starý *et al.* 2005); Iraq – *Pauesia antennata* (Starý & Kaddou 1971); Morocco – *Pauesia cedrobii* (Starý & Leclant 1977; Fabre & Rabasse 1987); Saudi Arabia – *Pauesia* sp. (Ahmad & Bakr 2013; Starý *et al.* 2013); Tunisia (Mdellel *et al.* 2015) and Yemen (Cross & Poswal 1996) – *Pauesia antennata*. Furthermore, six species have been recorded from Turkey (*Pauesia abietis* – Schimitschek 1944; Starý 1976; *Pauesia unilachni* – Düzgüneş *et al.* 1982; *Pauesia picta* – Aslan *et al.* 2004, Uysal *et al.* 2004; *Pauesia anatolica* – Michelena *et al.* 2005) and Israel (*Pauesia pini* – Bodenheimer & Swirski 1957; Avidov & Harpaz 1969; Starý 1976; *Pauesia silana* – Mescheloff & Rosen 1990b; *Pauesia anatolica* – Michelena *et al.* 2005) as representative species of the Mediterranean region.

Recent evidence (Ghaliow *et al.* 2018) indicated that *Aphidius banksae* [former *Aphidius staryi* (Das & Chakrabarti 1990), synonymy by Kittel (2016)], which is described from Israel and Turkey, occurs in Europe and it is widely distributed from Greece to Great Britain. *Aphidius colemani* is a biological control agent distributed in Europe and the Mediterranean region. Recent molecular analysis revealed the existence of another related species, *Aphidius platensis* (Tomanović *et al.* 2014) in Iran, which is considered to be the same species as in Chile (South America). Our new material from Saudi Arabia also confirms the broader distribution of *A. platensis* in the Middle East, while recent records of this species in India (Lokeshwari *et al.* 2016) suggest an even further expanded area of distribution.

Among the 743 parasitoid-aphid associations from Middle Eastern and North Africa, 52 records were doubtful and need further investigation. They may correspond to data originated from mixed aphid colonies and/or misidentifications. For example, the parasitoid complex of *Urolecuon* aphids is reviewed

by Rakhshani *et al.* (2006b) but *A. ervi* has never been recorded as a member of this complex. Similarly, although *E. niger* is a specific parasitoid of *Uroleucon* and *Macrosiphoniella* aphids (Rakhshani *et al.* 2011), literature data that associate it to *Macrosiphum rosae* (Mescheloff & Rosen 1988) has never been confirmed.

The present study summarizes the presence of some important invasive aphid species and their aphidiine parasitoids as potential biocontrol agents in the target area. For example, *Aphis illinoisensis* has been determined as an invasive species in several Mediterranean countries including North Africa (Havelka *et al.* 2011; El-Gantiry *et al.* 2012), while *Cinara cedri* is an invasive species in Israel (Michelena *et al.* 2005), Saudi Arabia (Ahmad & Bakr 2013), Turkey (Central part – Aslan *et al.* 2004; Uysal *et al.* 2004) and Yemen (Starý *et al.* 2013). With regards to host range pattern of aphid parasitoids, occurrence of both rare and common species in the target region depended on the distribution of their host plants and associated aphids. However, major parts of Algeria and Libya, as the largest countries in North Africa, and of Saudi Arabia in Western Asia, are not adequately explored for aphid parasitoids.

Regarding the large number of Aphidiinae species identified in various areas of Middle Eastern and North Africa, further taxonomic revision should be conducted on some species of complicated genera. For example, the most recent revision of the genus *Lysiphlebus* Förster, 1862 in Europe (Tomanović *et al*. 2018) revealed the existence of some new species, of which *Lysiphlebus volkli* Tomanović & Kavallieratos is also widely present in Iran. Despite the recent revision by Tomanović *et al*. (2018), the taxonomic problem of the genus *Lysiphlebus* in the Palaearctic region has not been completely resolved. Among unresolved species, we propose *Lysiphlebus marismortui* Mescheloff & Rosen as a junior synonym of *Lysiphlebus confusus* Tremblay & Eady. The former has all diagnostic and general characters that fall into normal variability within populations of *L. confusus*. It is worthy noting that the records of *Adialytus ambiguus* from some countries (i.e., Algeria, Iraq), actually refer to *Lysiphlebus ambiguus*. The latter has been subsequently renamed as *Lysiphlebus confusus* (Tremblay & Eady 1978). Therefore, we excluded these records from the current study. *Adialytus ambiguus* is a species that is strictly associated with *Sipha* aphids (Rakhshani *et al*. 2012a; Stanković *et al*. 2015).

The lack of an adequate number of clear diagnostic characters is one of the main difficulties in the identification of Aphidiinae (Rakhshani *et al*. 2012b; Tomanović *et al*. 2018). This issue is common for some species of the genera *Aphidius* and *Praon*. Thus, the use of molecular markers, geometric morphometric analyses and ecological observations is necessary to identify species and elucidate the taxonomic ambiguities in some species-groups with similar host range patterns (Tomanović *et al*. 2014; Milošević *et al*. 2015; Rakhshani *et al*. 2015; Tomanović *et al*. 2018).

On the basis of the current review, and the background data, additional field surveys are necessary to be conducted in the unexplored regions, especially within the isolated areas from desert lowlands to humid and mountaneous highlands in different countries of the Middle East and North Africa so as to shed light on the very complex plant-aphid-aphidiine tritrophic associations and to reveal new species. As numerous species have been recorded in the region of the Middle East and North Africa, the proposed key will be a useful tool for the forthcoming studies that will help the accurate identification of aphid parasitoids.

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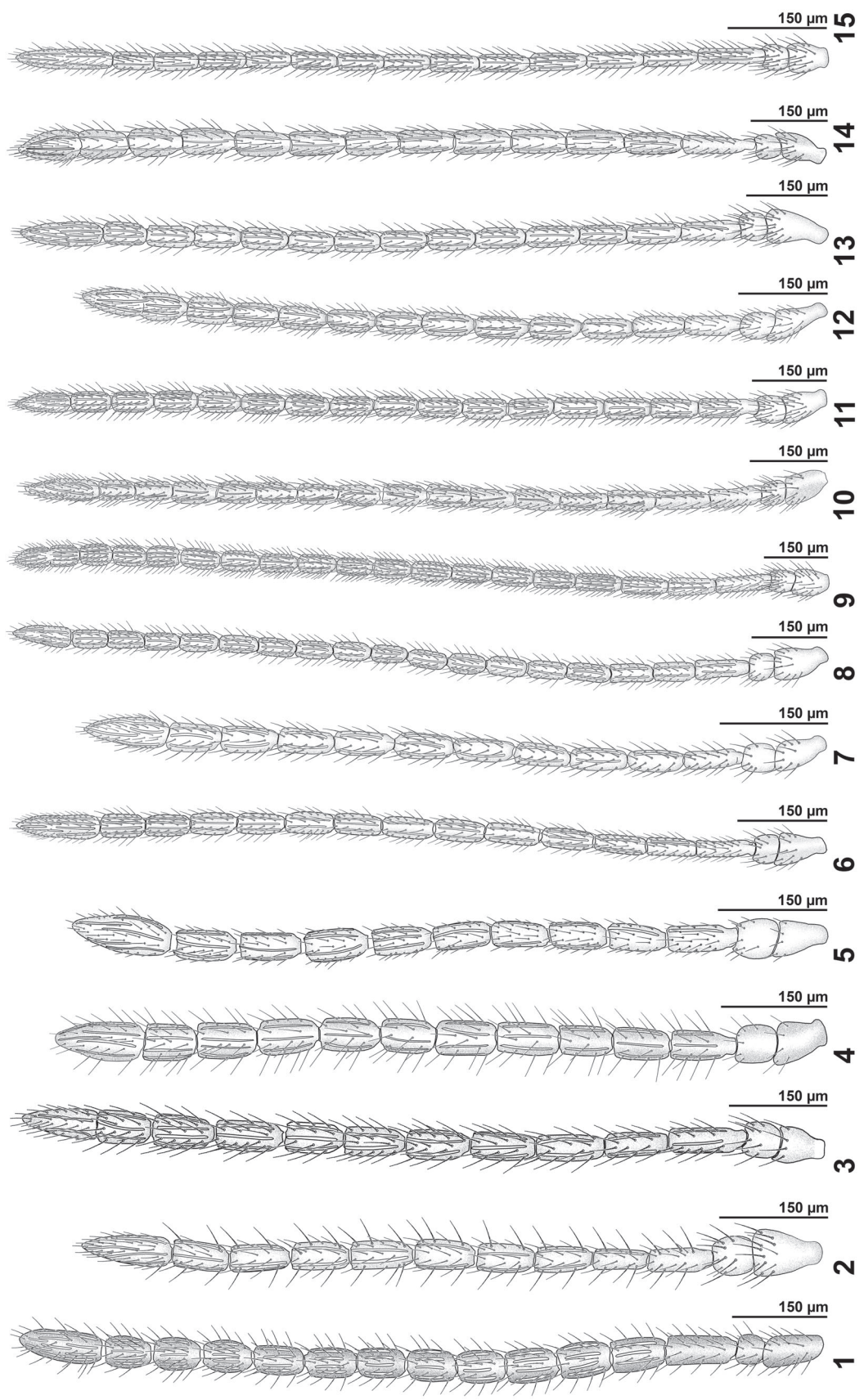
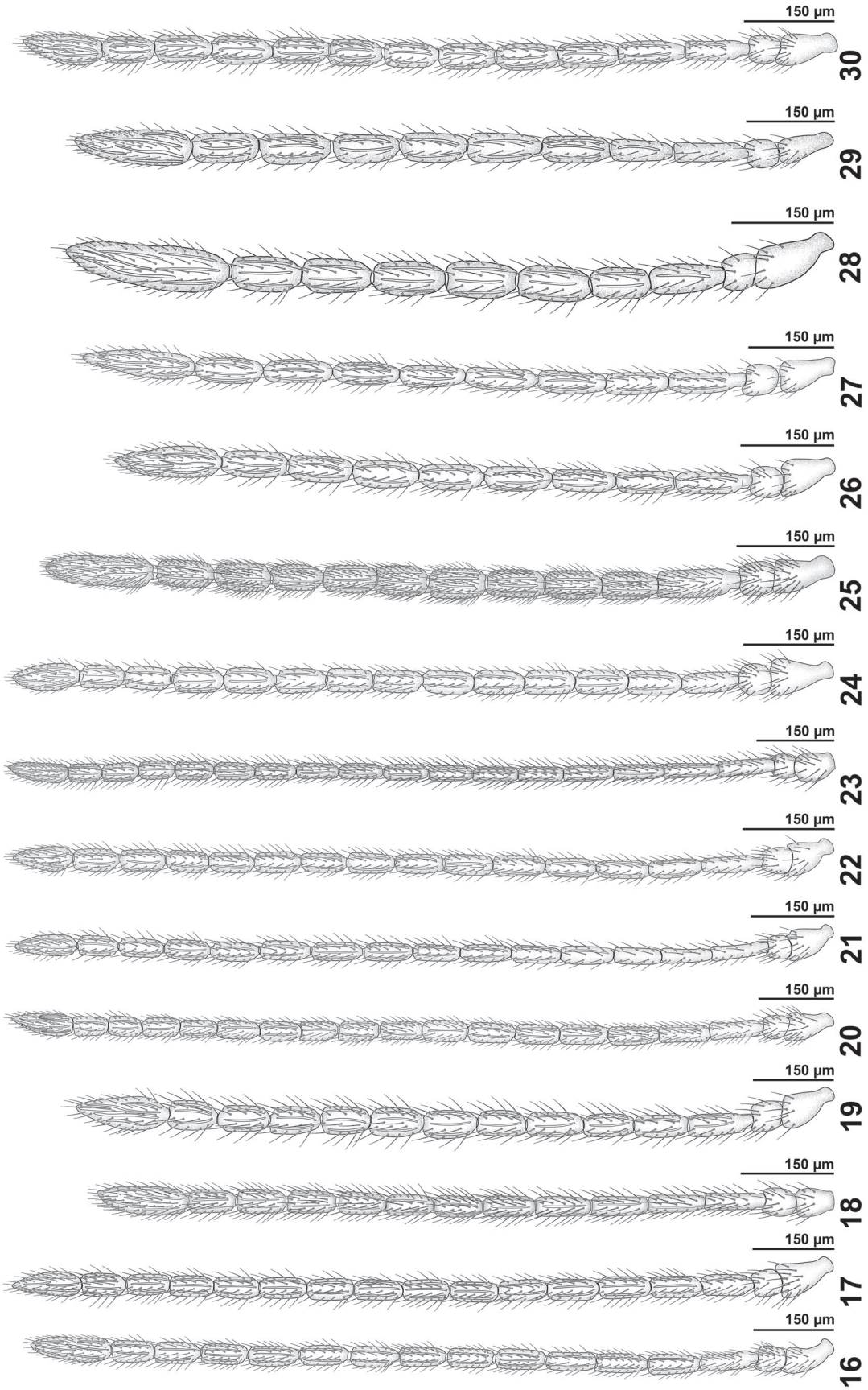
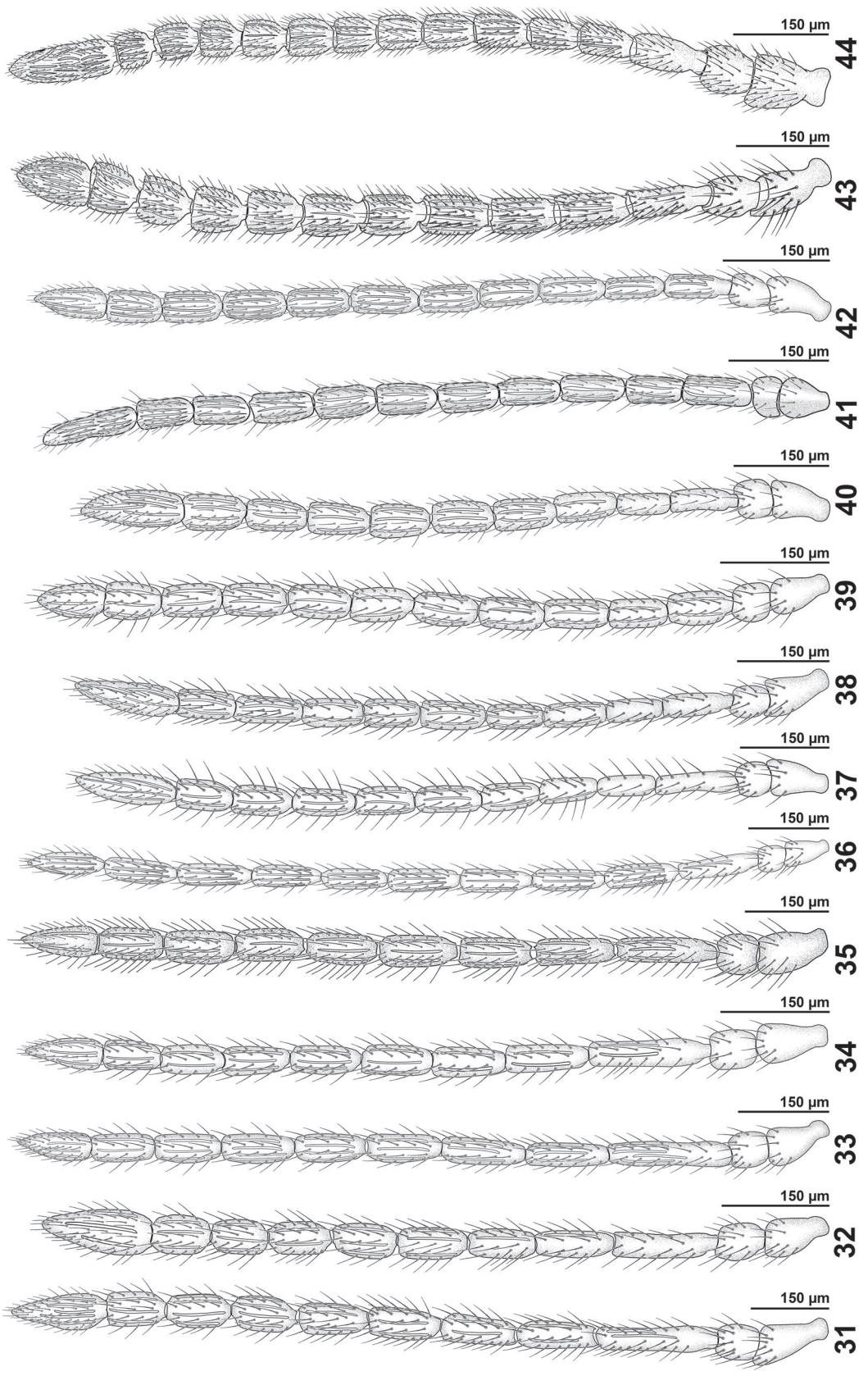


Figs 1–15. Antenna (♀): **1**. *Aclitus obscuripennis*. **2**. *Adialytus ambiguus*. **3**. *Adialytus salicaphis*. **4**. *Adialytus thelaxis*. **5**. *Adialytus veronicaecola*. **6**. *Aphidius absinthii*. **7**. *Aphidius arvensis*. **8**. *Aphidius cingulatus*. **9**. *Aphidius eadyi*. **10**. *Aphidius ervi*. **11**. *Aphidius funebris*. **12**. *Aphidius matricariae*. **13**. *Aphidius persicus*. **14**. *Aphidius platensis*. **15**. *Aphidius popovi*.

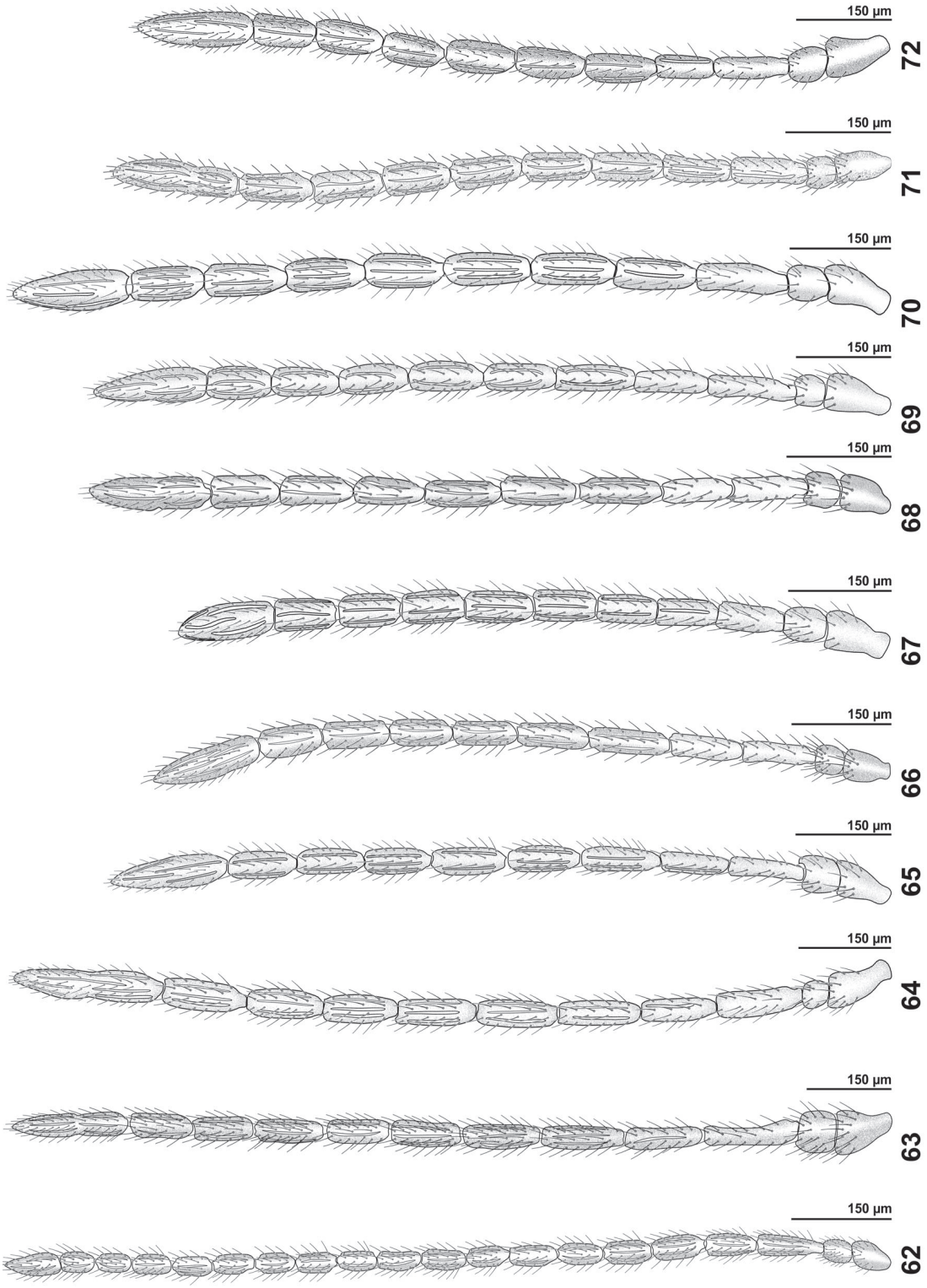


Figs 16–30. Antenna (♀): **16**. *Aphidius rhopalosiphi*. **17**. *Aphidius rosae*. **18**. *Aphidius salicis*. **19**. *Aphidius setiger*. **20**. *Aphidius smithi*. **21**. *Aphidius stigmaticus*. **22**. *Aphidius transcaspicus*. **23**. *Aphidius urticae*. **24**. *Aphidius uzbekistanicus*. **25**. *Areopraon lepelleyi*. **26**. *Binodoxys acalephae*. **27**. *Binodoxys angelicae*. **28**. *Binodoxys brevicornis*. **29**. *Binodoxys heraclei*. **30**. *Diaeretiella rapae*.

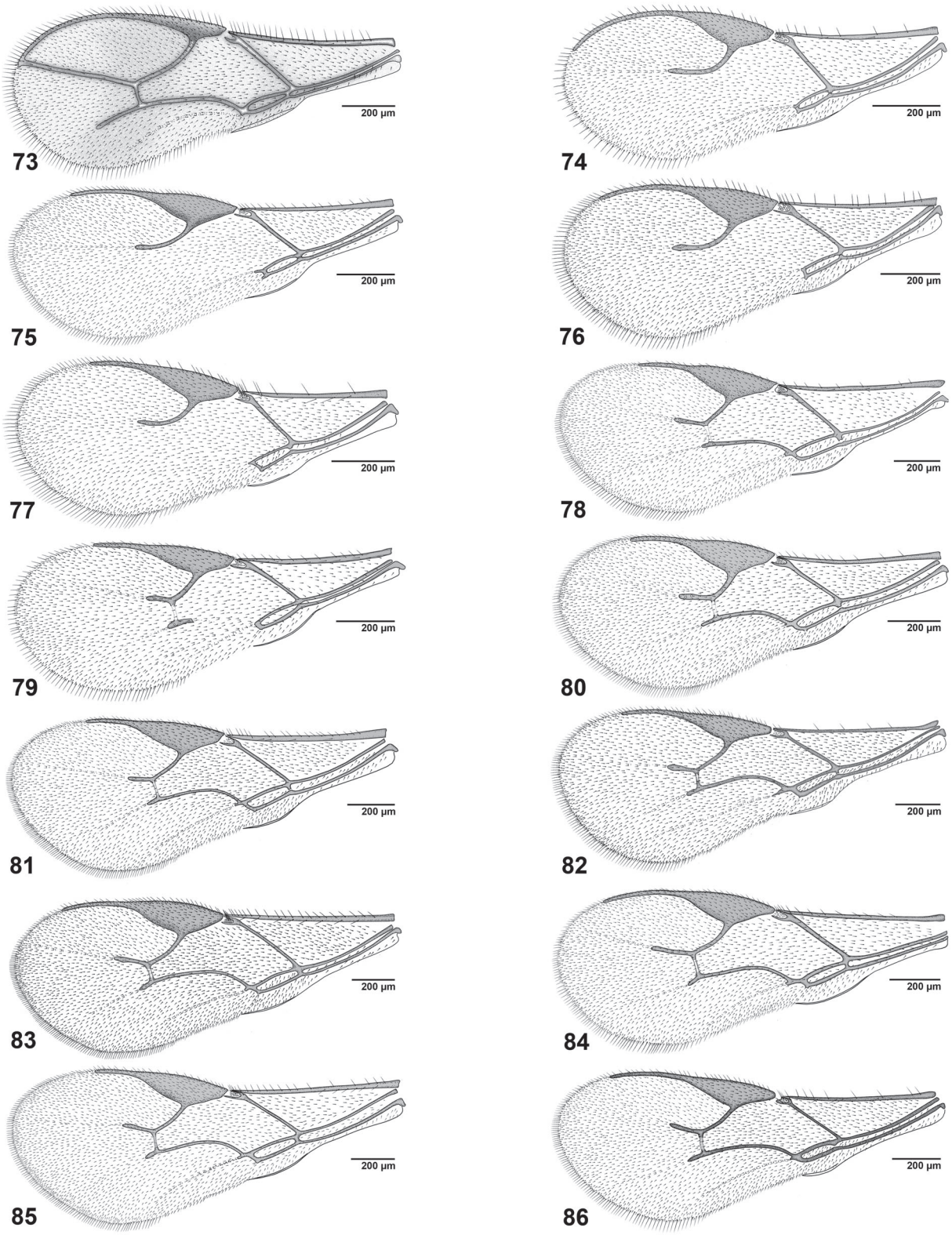


Figs 31–44. Antenna (♀): **31**. *Ephedrus cerasicola*. **32**. *Ephedrus helleni*. **33**. *Ephedrus niger*. **34**. *Ephedrus persicae*. **35**. *Ephedrus plagiator*. **36**. *Lipolexis gracilis*. **37**. *Lysiphlebus cardui*. **38**. *Lysiphlebus confusus*. **39**. *Lysiphlebus desertorum*. **40**. *Lysiphlebus fabarum*. **41**. *Lysiphlebus fritzmuelleri*. **42**. *Lysiphlebus testaceipes*. **43**. *Monoctonia pistaciaecola*. **44**. *Monoctonia vesicarii*.

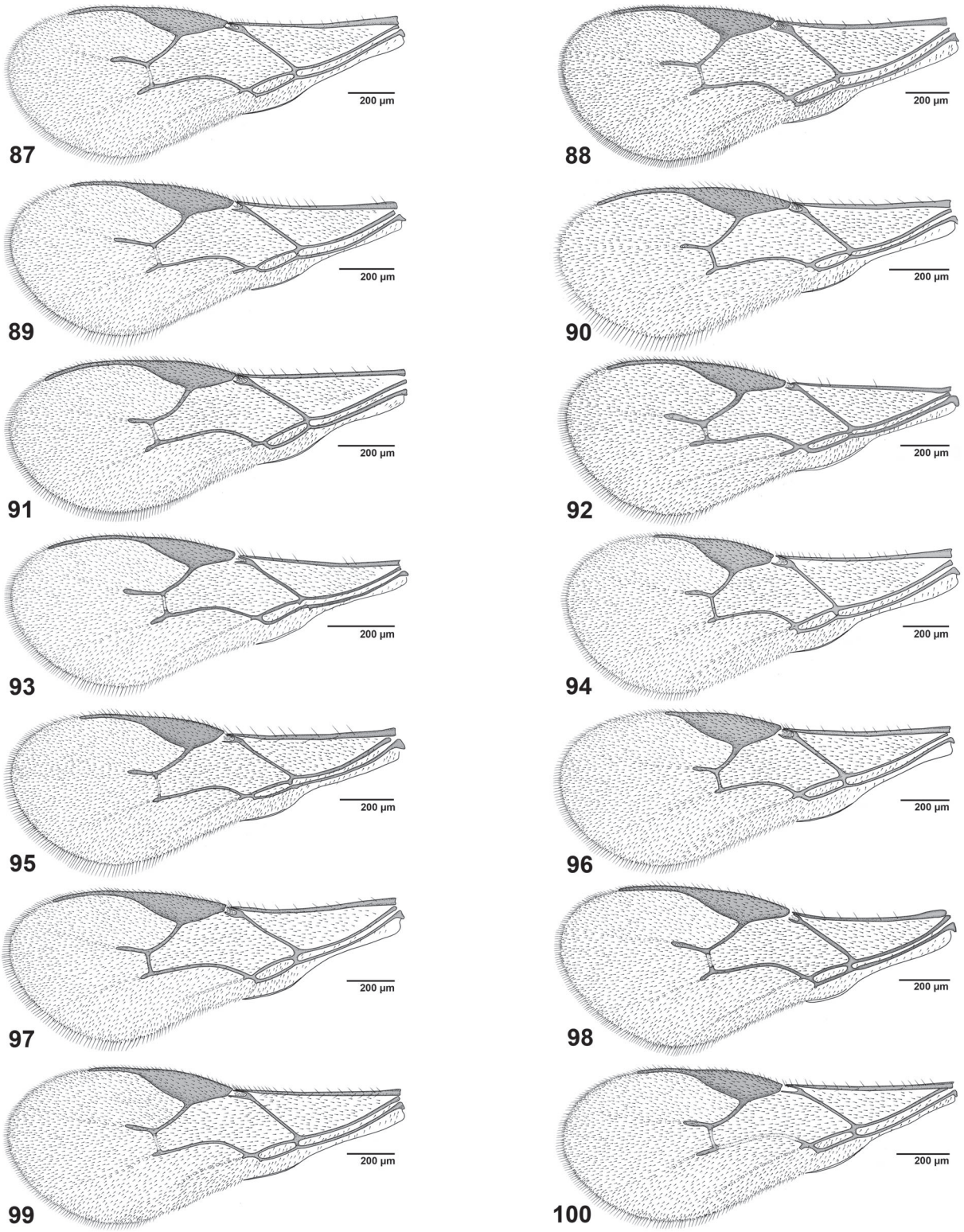
Figs 45–61. Antenna (♀): **45**. *Pauesia antennata*. **46**. *Pauesia hazratbalensis*. **47**. *Praon abjectum*. **48**. *Praon absinthii*. **49**. *Praon barbatum*. **50**. *Praon bicolor*. **51**. *Praon exsoletum*. **52**. *Praon flavinode*. **53**. *Praon gallicum*. **54**. *Praon longicorne*. **55**. *Praon necans*. **56**. *Praon orpheusi*. **57**. *Praon pubescens*. **58**. *Praon rosaecola*. **59**. *Praon unitum*. **60**. *Praon volucre*. **61**. *Praon yomenae*.



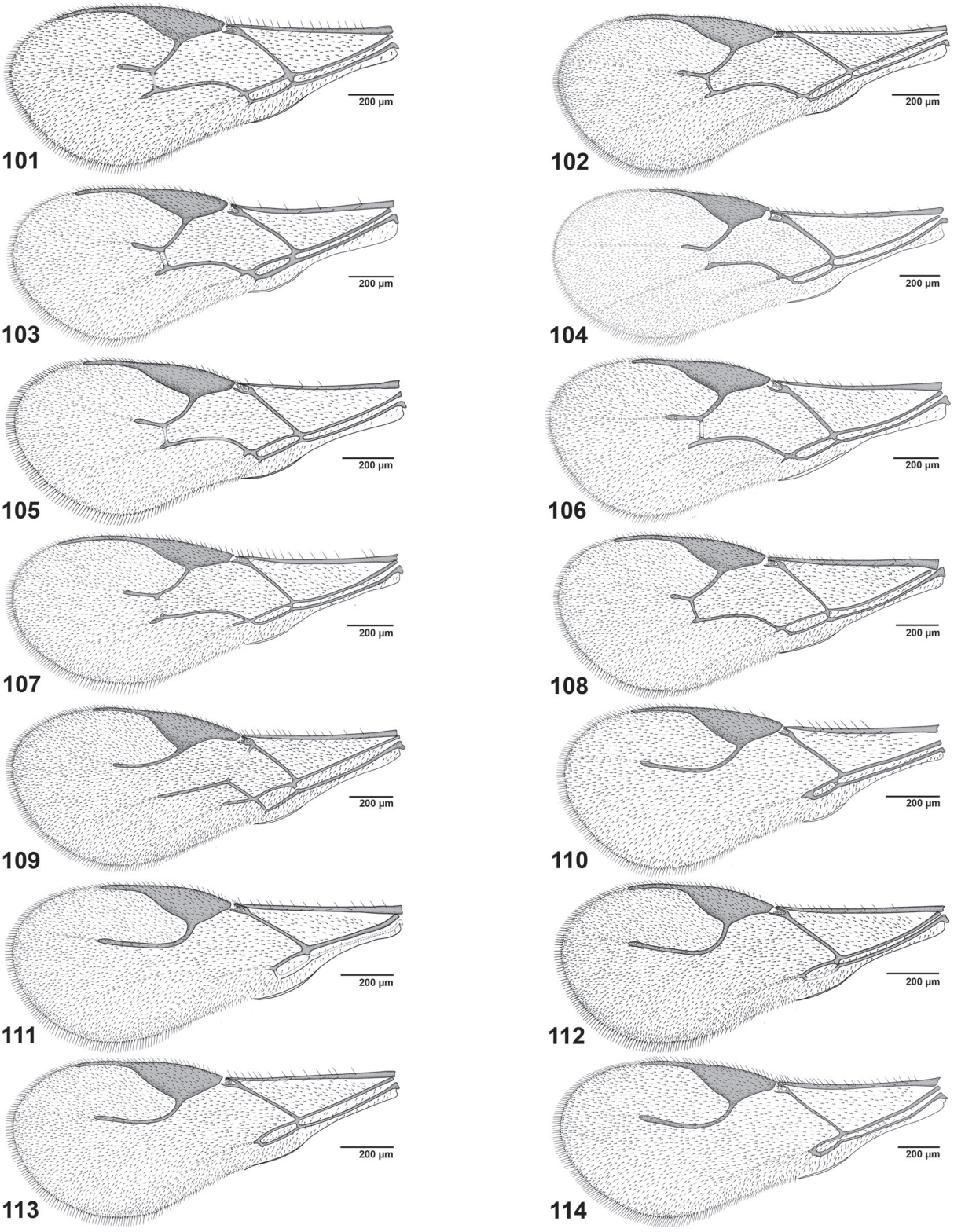
Figs 62–72. Antenna (♀): **62**. *Toxares deltiger*. **63**. *Trioxys asiaticus*. **64**. *Trioxys cirsii*. **65**. *Trioxys complanatus*. **66**. *Trioxys curvicaudus*. **67**. *Trioxys metacarpalis*. **68**. *Trioxys moshei*. **69**. *Trioxys pallidus*. **70**. *Trioxys pannonicus*. **71**. *Trioxys pappi*. **72**. *Trioxys tanaceticola*.



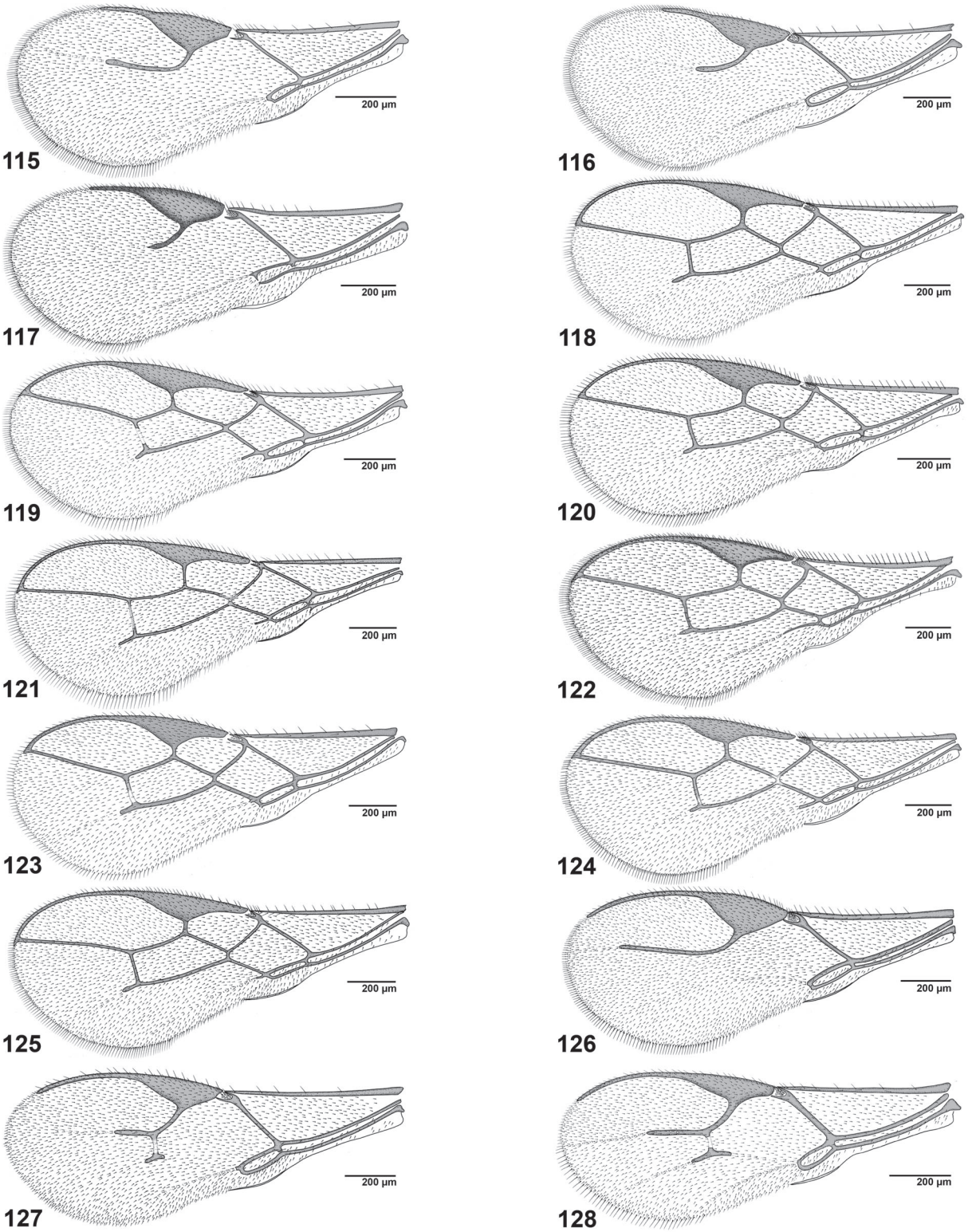
Figs 73–86. Forewing (♀): **73**. *Aclitus obscuripennis*. **74**. *Adialytus ambiguus*. **75**. *Adialytus salicaphis*. **76**. *Adialytus thelaxis*. **77**. *Adialytus veronicaecola*. **78**. *Aphidius absinthii*. **79**. *Aphidius arvensis*. **80**. *Aphidius asteris*. **81**. *Aphidius avenae*. **82**. *Aphidius banksae*. **83**. *Aphidius cingulatus*. **84**. *Aphidius colemani*. **85**. *Aphidius eadyi*. **86**. *Aphidius eglanteriae*.



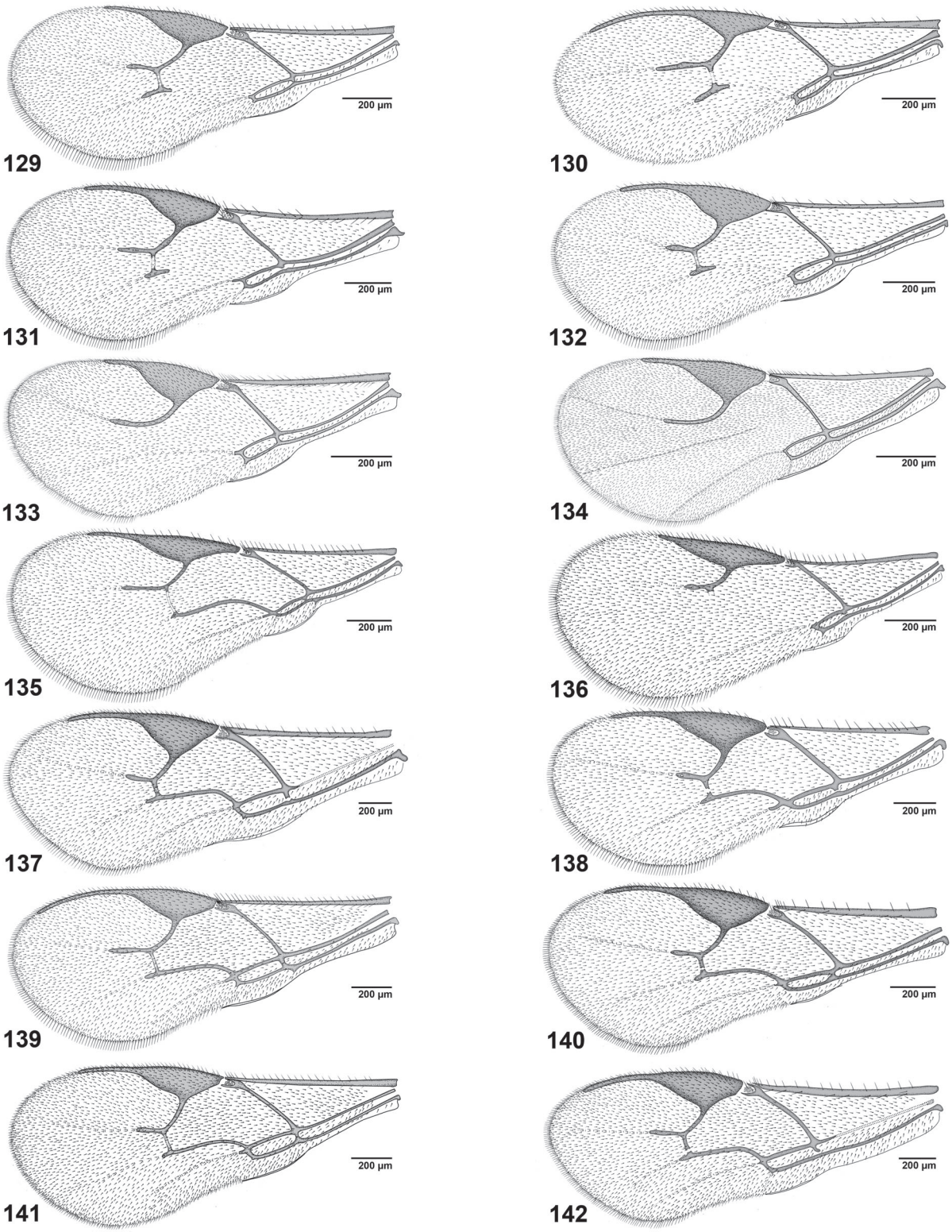
Figs 87–100. Forewing (♀): **87**. *Aphidius ervi*. **88**. *Aphidius funebris*. **89**. *Aphidius hieraciorum*. **90**. *Aphidius iranicus*. **91**. *Aphidius matricariae*. **92**. *Aphidius microlophii*. **93**. *Aphidius myzocallidis*. **94**. *Aphidius persicus*. **95**. *Aphidius platensis*. **96**. *Aphidius popovi*. **97**. *Aphidius rhopalosiphi*. **98**. *Aphidius ribis*. **99**. *Aphidius rosae*. **100**. *Aphidius salicis*.



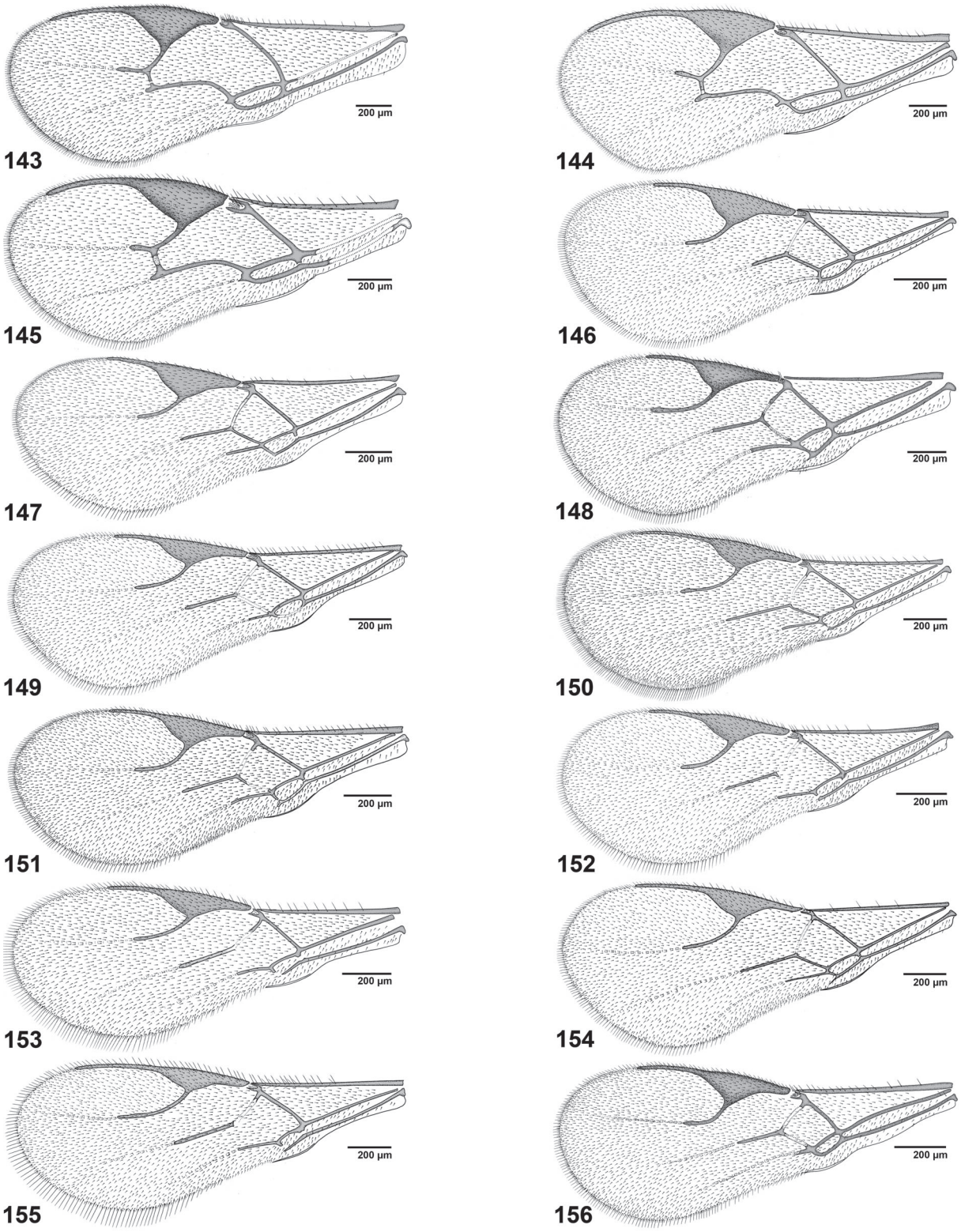
Figs 101–114. Forewing (♀): **101**. *Aphidius setiger*. **102**. *Aphidius smithi*. **103**. *Aphidius sonchi*. **104**. *Aphidius stigmaticus*. **105**. *Aphidius transcaspicus*. **106**. *Aphidius uroleuci*. **107**. *Aphidius urticae*. **108**. *Aphidius uzbekistanicus*. **109**. *Areopraon lepelleyi*. **110**. *Betuloxys hortorum*. **111**. *Binodoxys acalephae*. **112**. *Binodoxys angelicae*. **113**. *Binodoxys brevicornis*. **114**. *Binodoxys centaureae*.



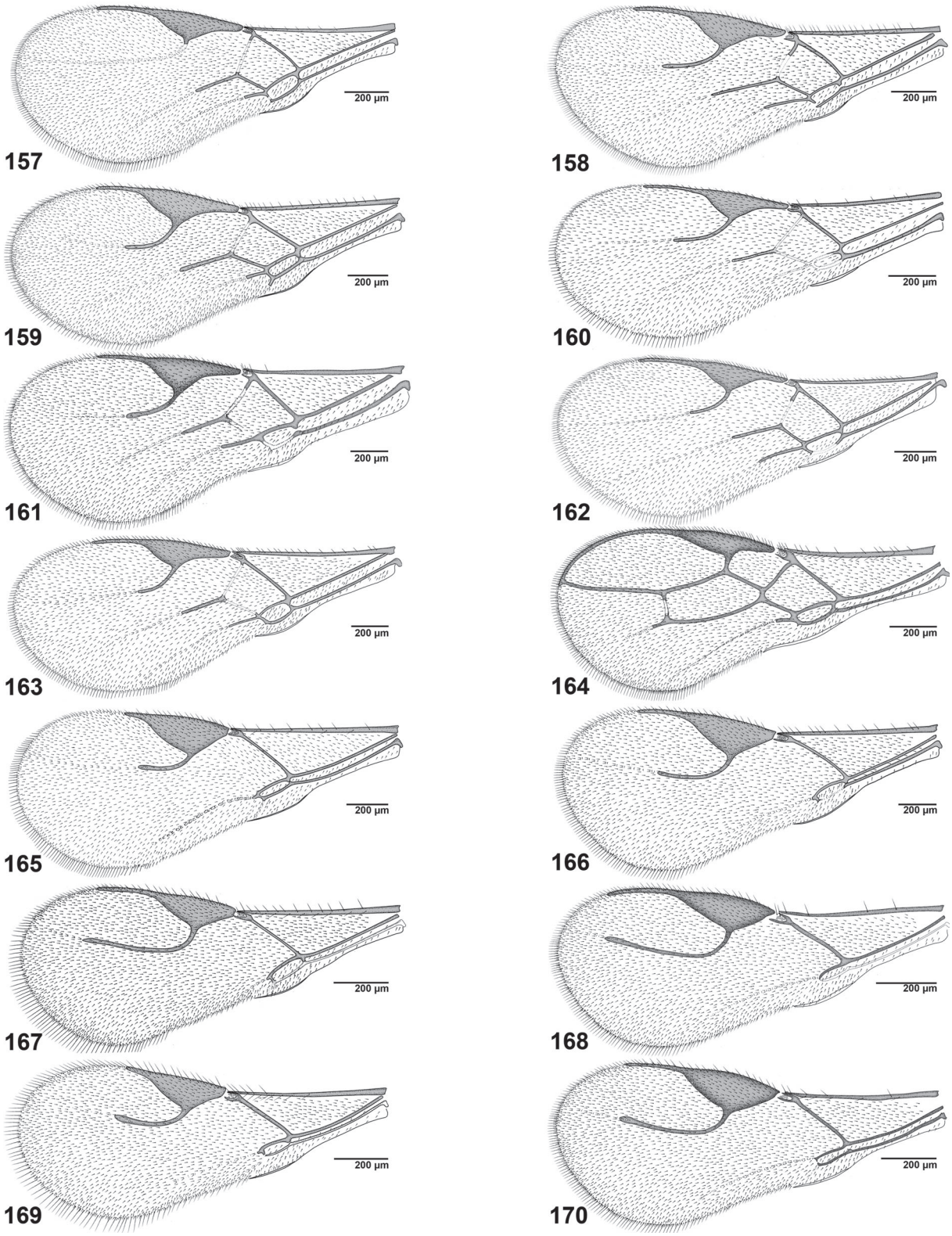
Figs 115–128. Forewing (♀): **115**. *Binodoxys heraclei*. **116**. *Diaeretiella rapae*. **117**. *Diaeretus leucopterus*. **118**. *Ephedrus cerasicola*. **119**. *Ephedrus chaitophori*. **120**. *Ephedrus helleni*. **121**. *Ephedrus lacertosus*. **122**. *Ephedrus nacheri*. **123**. *Ephedrus niger*. **124**. *Ephedrus persicae*. **125**. *Ephedrus plagiator*. **126**. *Lipolexis gracilis*. **127**. *Lysiphlebus cardui*. **128**. *Lysiphlebus confusus*.



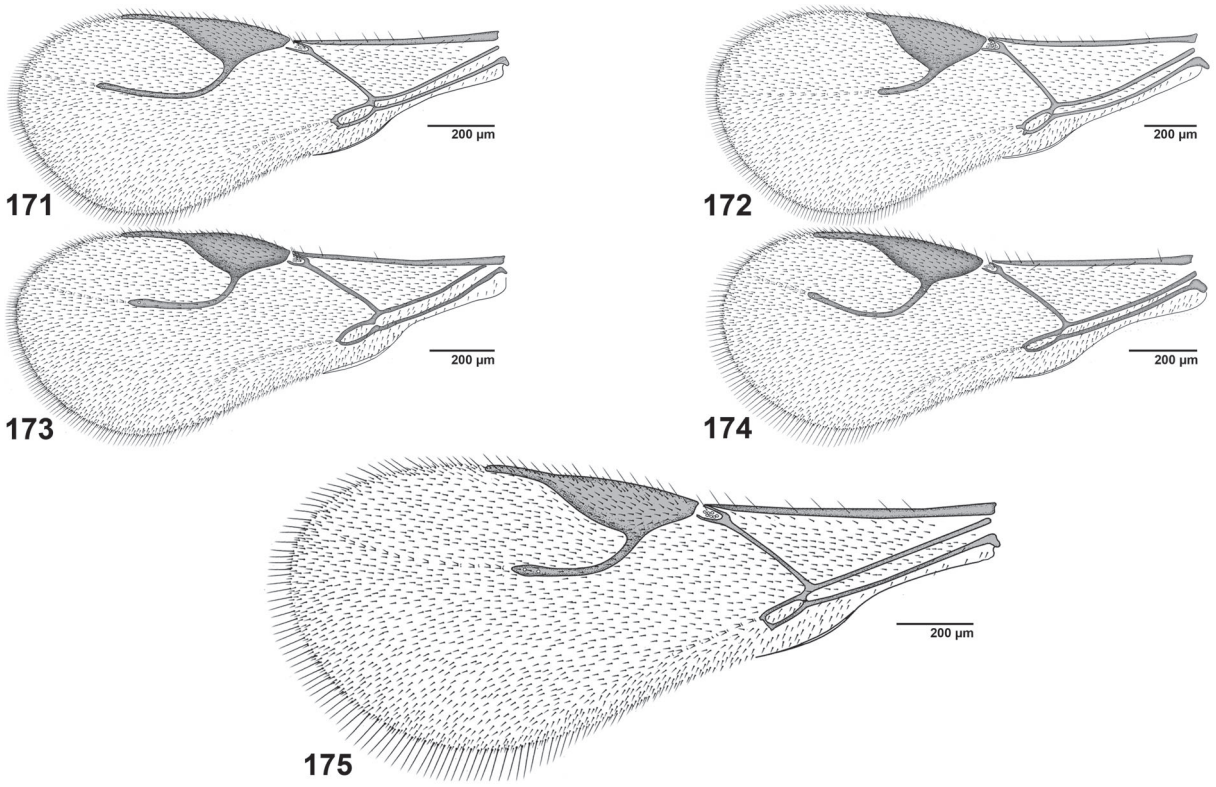
Figs 129–142. Forewing (♀): **129**. *Lysiphlebus desertorum*. **130**. *Lysiphlebus fabarum*. **131**. *Lysiphlebus fritzmuelleri*. **132**. *Lysiphlebus testaceipes*. **133**. *Monoctonia pistaciaecola*. **134**. *Monoctonia vesicarii*. **135**. *Monoctonus crepidis*. **136**. *Monoctonus mali*. **137**. *Pauesia abietis*. **138**. *Pauesia anatolica*. **139**. *Pauesia antennata*. **140**. *Pauesia cedrobii*. **141**. *Pauesia hazratbalensis*. **142**. *Pauesia picta*.



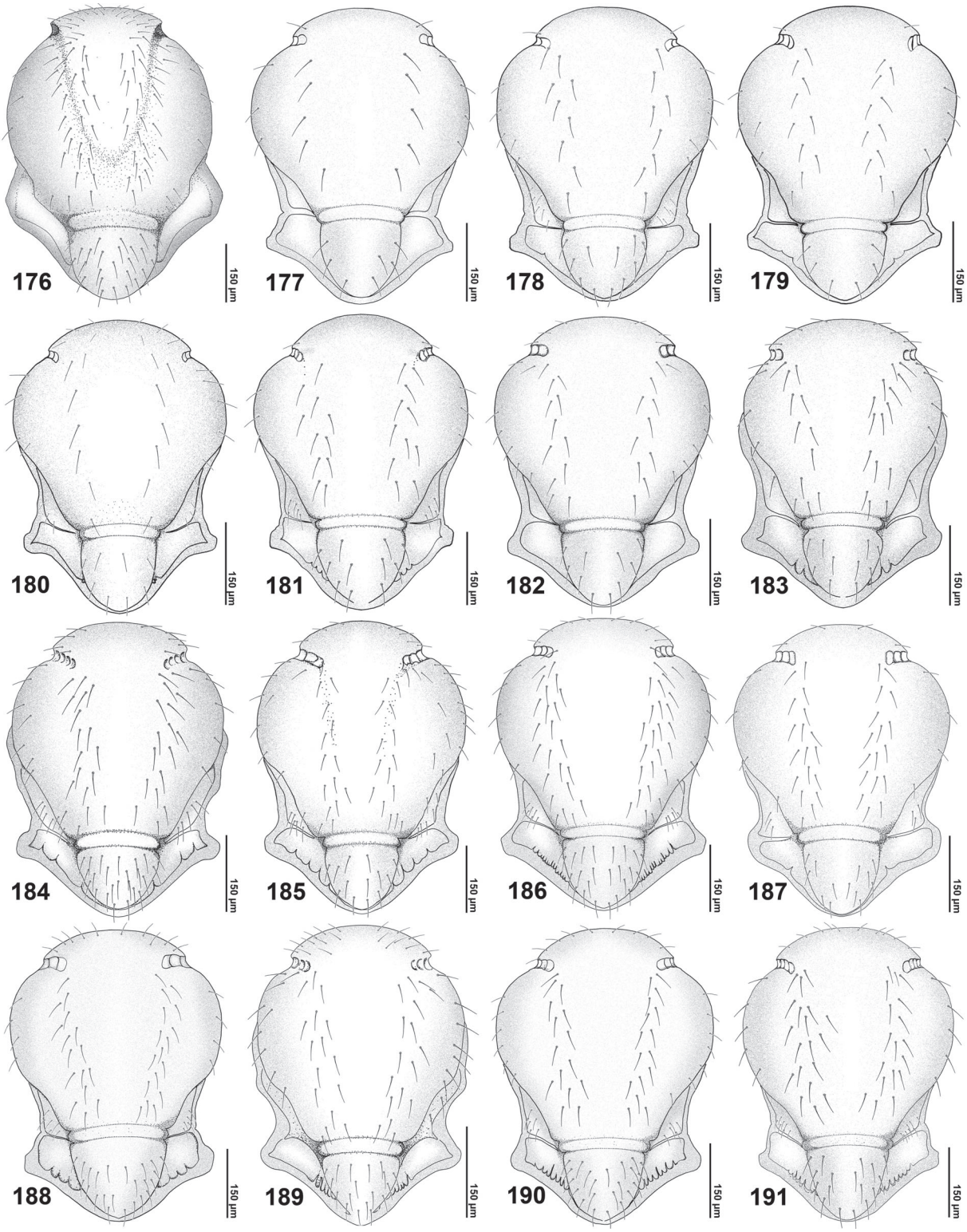
Figs 143–156. Forewing (♀): **143**. *Pauesia pini*. **144**. *Pauesia silana*. **145**. *Pauesia unilachni*. **146**. *Praon abjectum*. **147**. *Praon absinthii*. **148**. *Praon athenaeum*. **149**. *Praon barbatum*. **150**. *Praon bicolor*. **151**. *Praon exsoletum*. **152**. *Praon flavinode*. **153**. *Praon gallicum*. **154**. *Praon longicorne*. **155**. *Praon necans*. **156**. *Praon nonveilleri*.



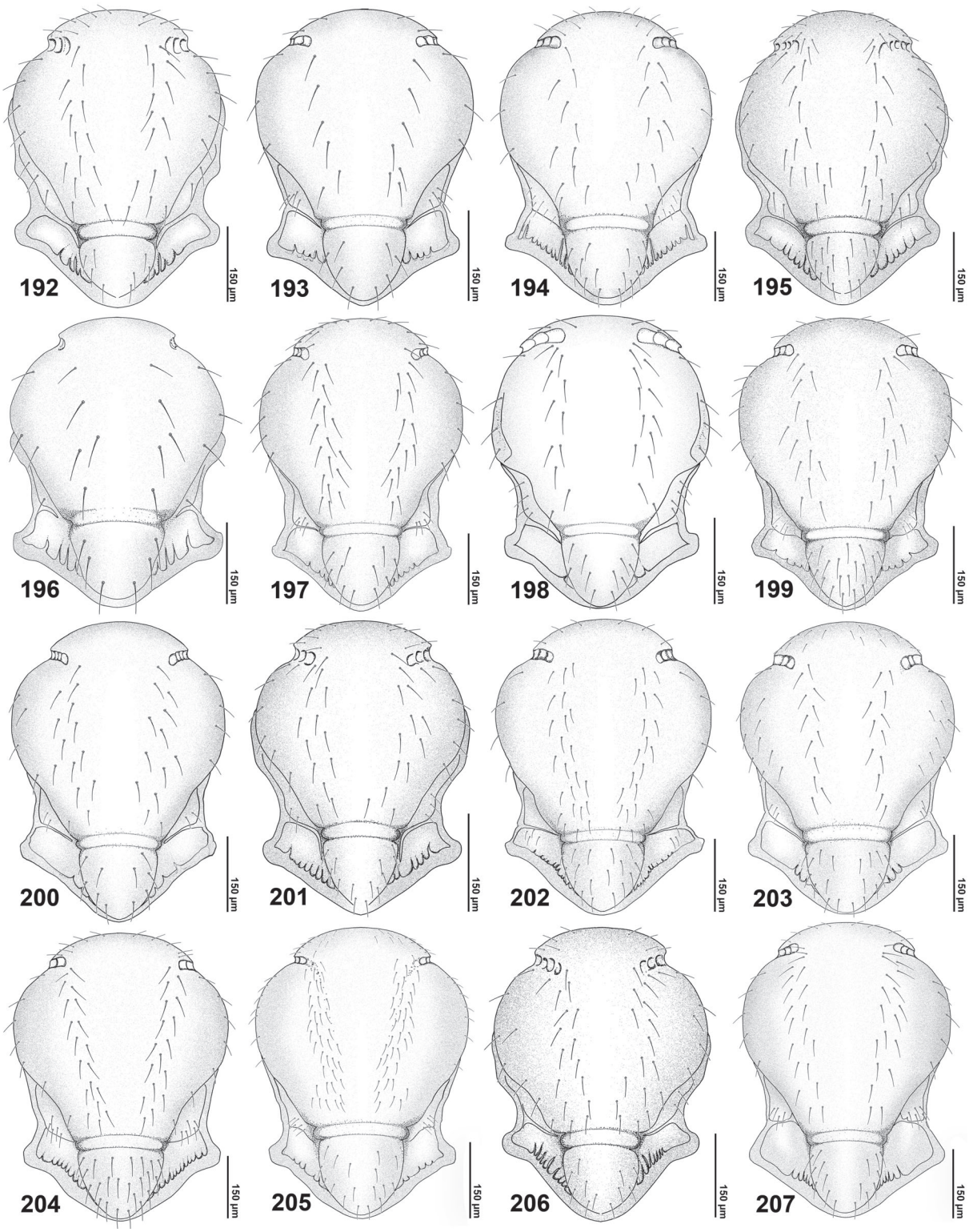
Figs 157–170. Forewing (♀): **157**. *Praon orpheusi*. **158**. *Praon pubescens*. **159**. *Praon rosaecola*. **160**. *Praon unitum*. **161**. *Praon uroleucon*. **162**. *Praon volucre*. **163**. *Praon yomenae*. **164**. *Toxares deltiger*. **165**. *Trioxys asiaticus*. **166**. *Trioxys cirsii*. **167**. *Trioxys complanatus*. **168**. *Trioxys curvicaudus*. **169**. *Trioxys metacarpalis*. **170**. *Trioxys moshei*.



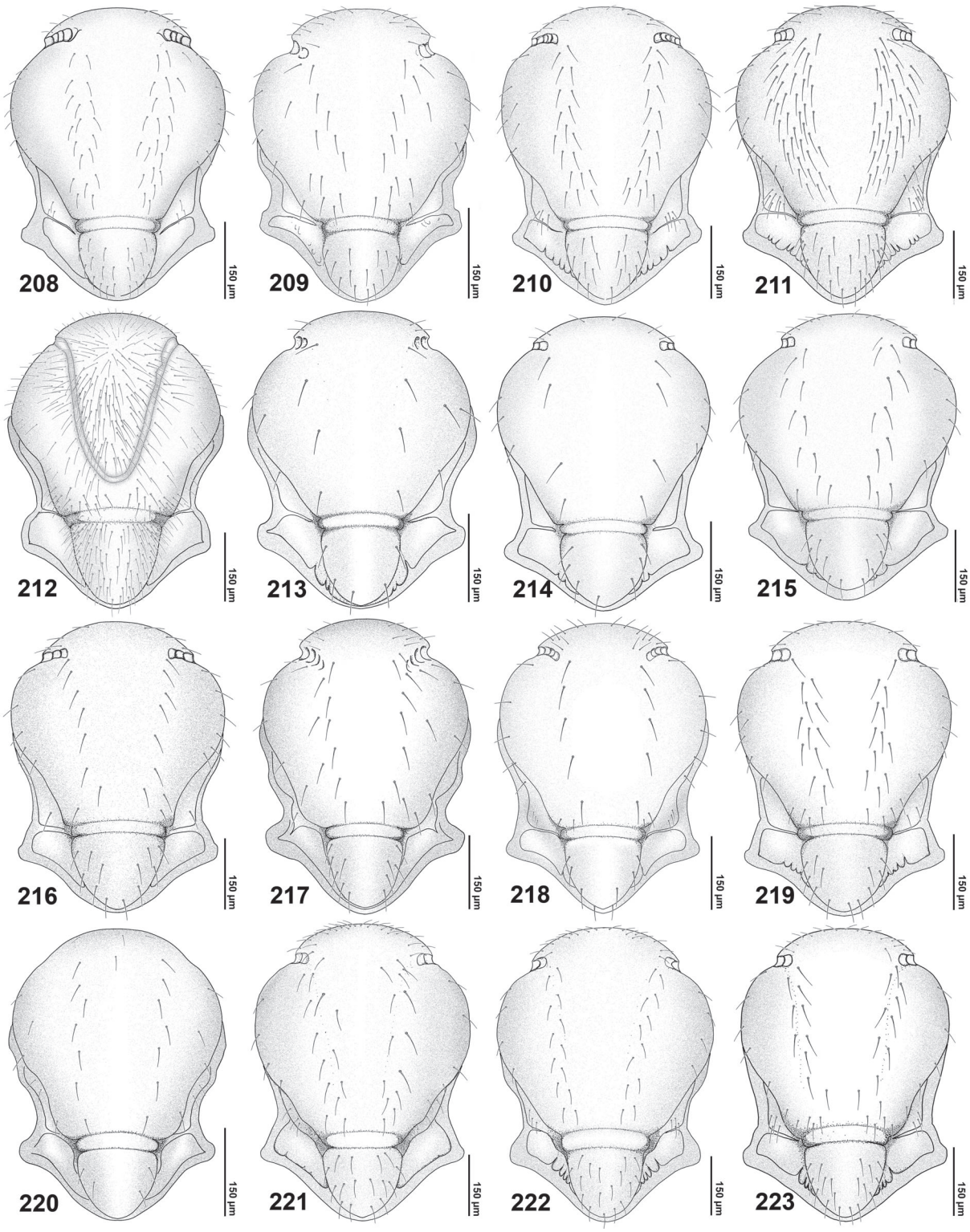
Figs 171–175. Forewing (♀): **171**. *Trioxys pallidus*. **172**. *Trioxys pannonicus*. **173**. *Trioxys pappi*. **174**. *Trioxys quercicola*. **175**. *Trioxys tanaceticola*.



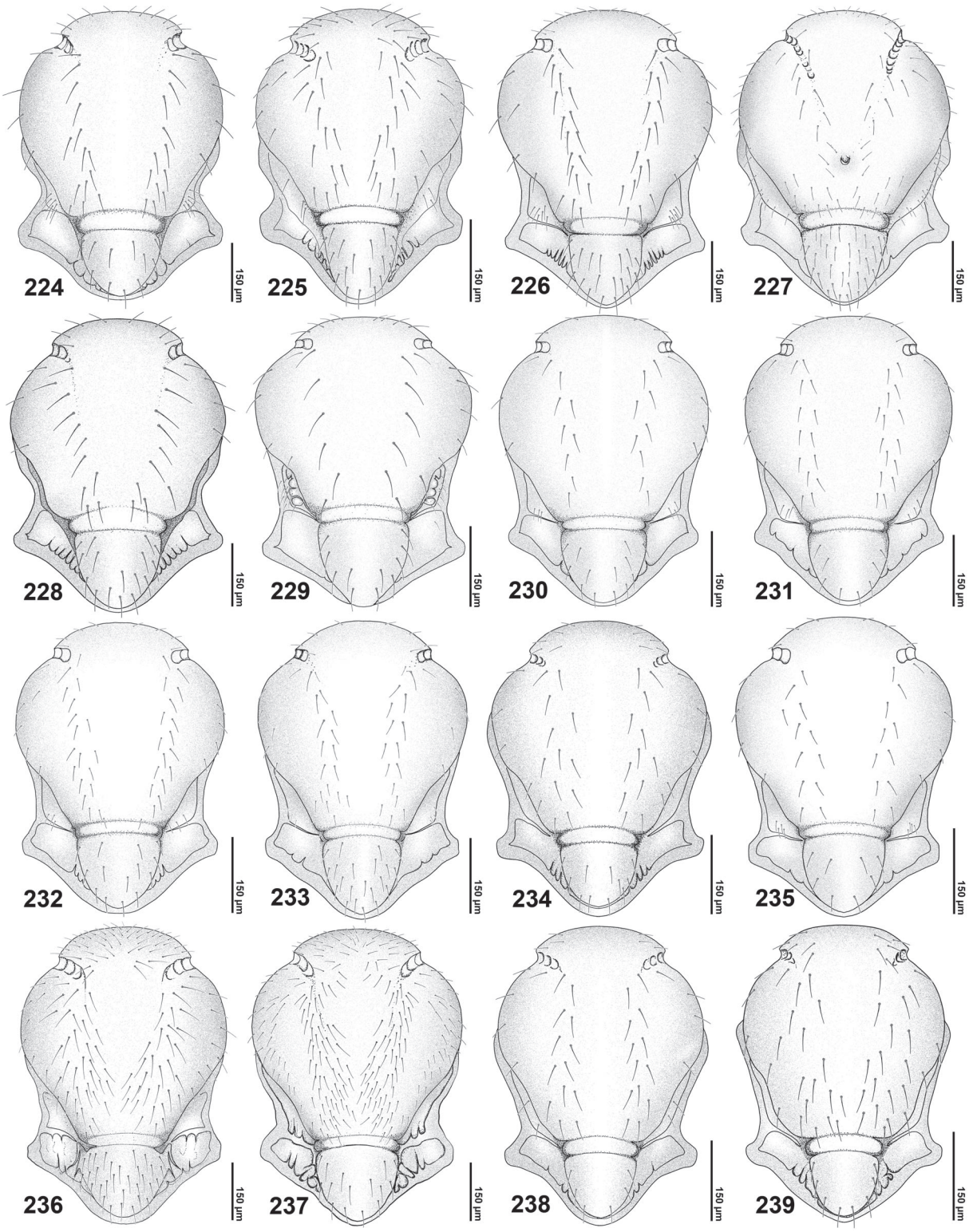
Figs 176–191. Dorsal aspect of mesonotum (♀): **176**. *Aclitus obscuripennis*. **177**. *Adialytus ambiguus*. **178**. *Adialytus salicaphis*. **179**. *Adialytus thelaxis*. **180**. *Adialytus veronicaecola*. **181**. *Aphidius absinthii*. **182**. *Aphidius arvensis*. **183**. *Aphidius asteris*. **184**. *Aphidius avenae*. **185**. *Aphidius banksae*. **186**. *Aphidius cingulatus*. **187**. *Aphidius colemani*. **188**. *Aphidius eadyi*. **189**. *Aphidius eglanteriae*. **190**. *Aphidius ervi*. **191**. *Aphidius funebris*.



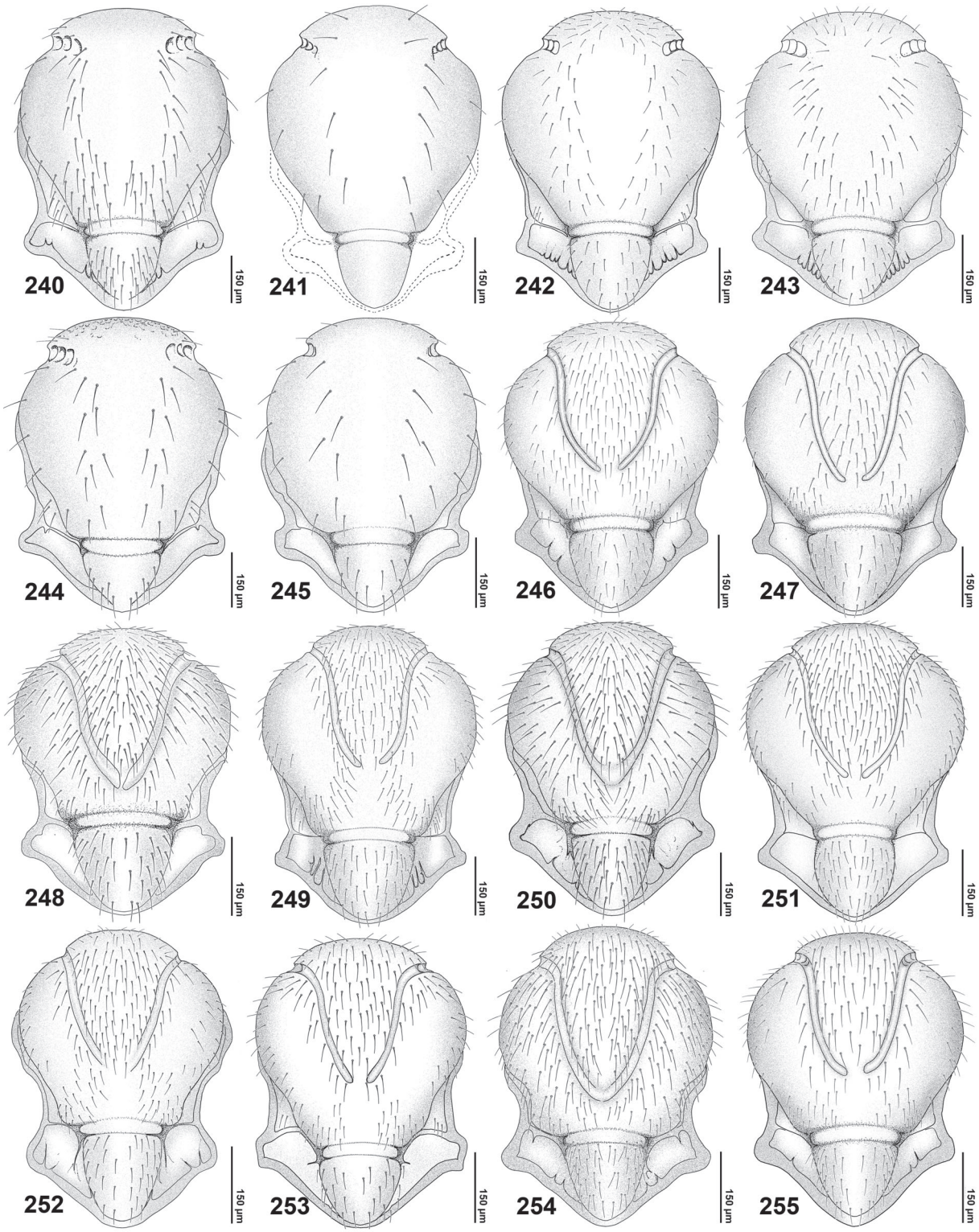
Figs 192–207. Dorsal aspect of mesonotum (♀): **192**. *Aphidius hieraciorum*. **193**. *Aphidius iranicus*. **194**. *Aphidius matricariae*. **195**. *Aphidius microlophii*. **196**. *Aphidius myzocallidis*. **197**. *Aphidius persicus*. **198**. *Aphidius platensis*. **199**. *Aphidius popovi*. **200**. *Aphidius rhopalosiphi*. **201**. *Aphidius ribis*. **202**. *Aphidius rosae*. **203**. *Aphidius salicis*. **204**. *Aphidius setiger*. **205**. *Aphidius smithi*. **206**. *Aphidius sonchi*. **207**. *Aphidius stigmaticus*.



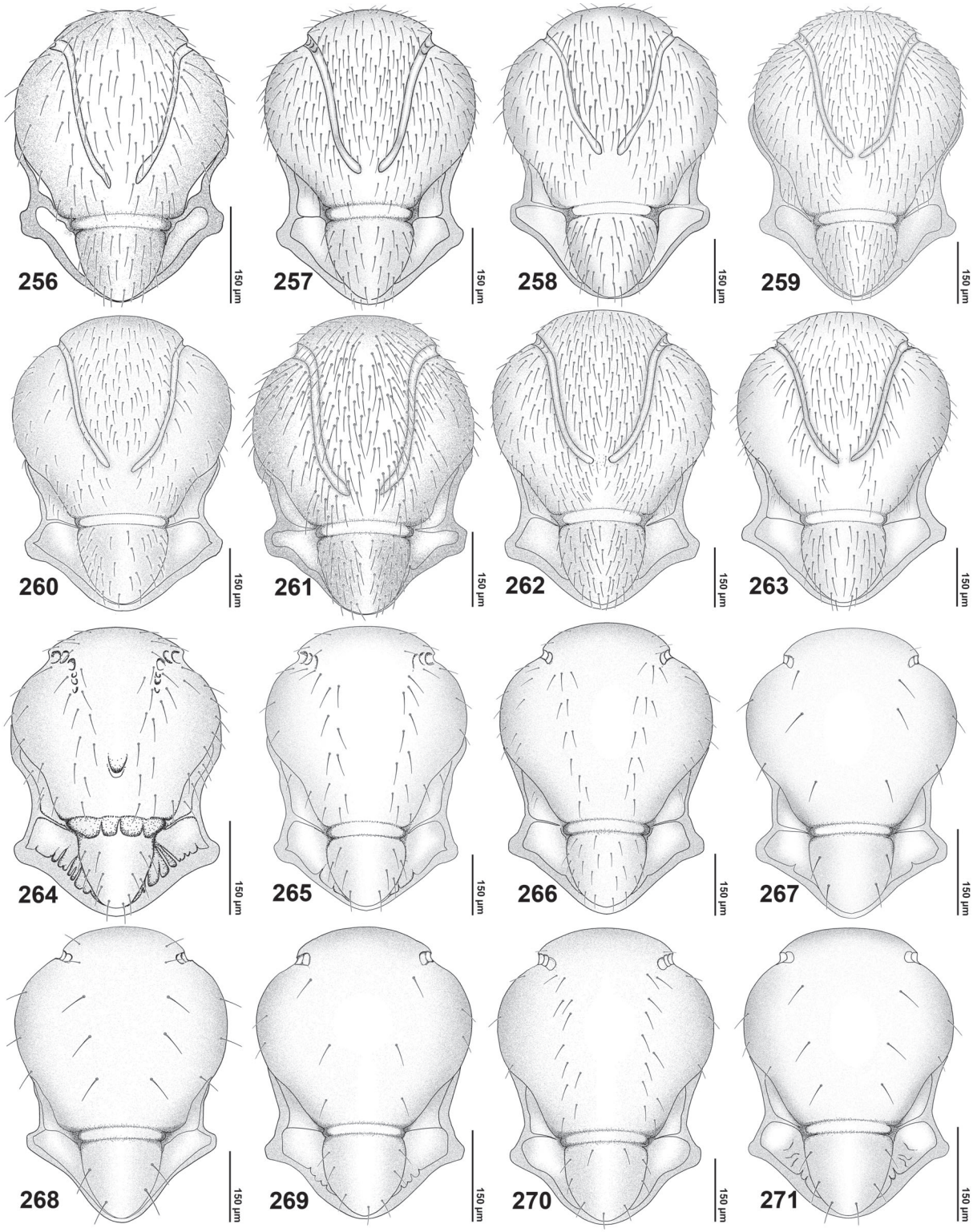
Figs 208–223. Dorsal aspect of mesonotum (♀): **208**. *Aphidius transcaspicus*. **209**. *Aphidius uroleuci*. **210**. *Aphidius urticae*. **211**. *Aphidius uzbekistanicus*. **212**. *Areopraon lepelleyi*. **213**. *Betuloxys hortorum*. **214**. *Binodoxys acalephae*. **215**. *Binodoxys angelicae*. **216**. *Binodoxys brevicornis*. **217**. *Binodoxys centaureae*. **218**. *Binodoxys heraclei*. **219**. *Diaeretiella rapae*. **220**. *Diaeretus leucopterus*. **221**. *Ephedrus cerasicola*. **222**. *Ephedrus chaitophori*. **223**. *Ephedrus helleni*.



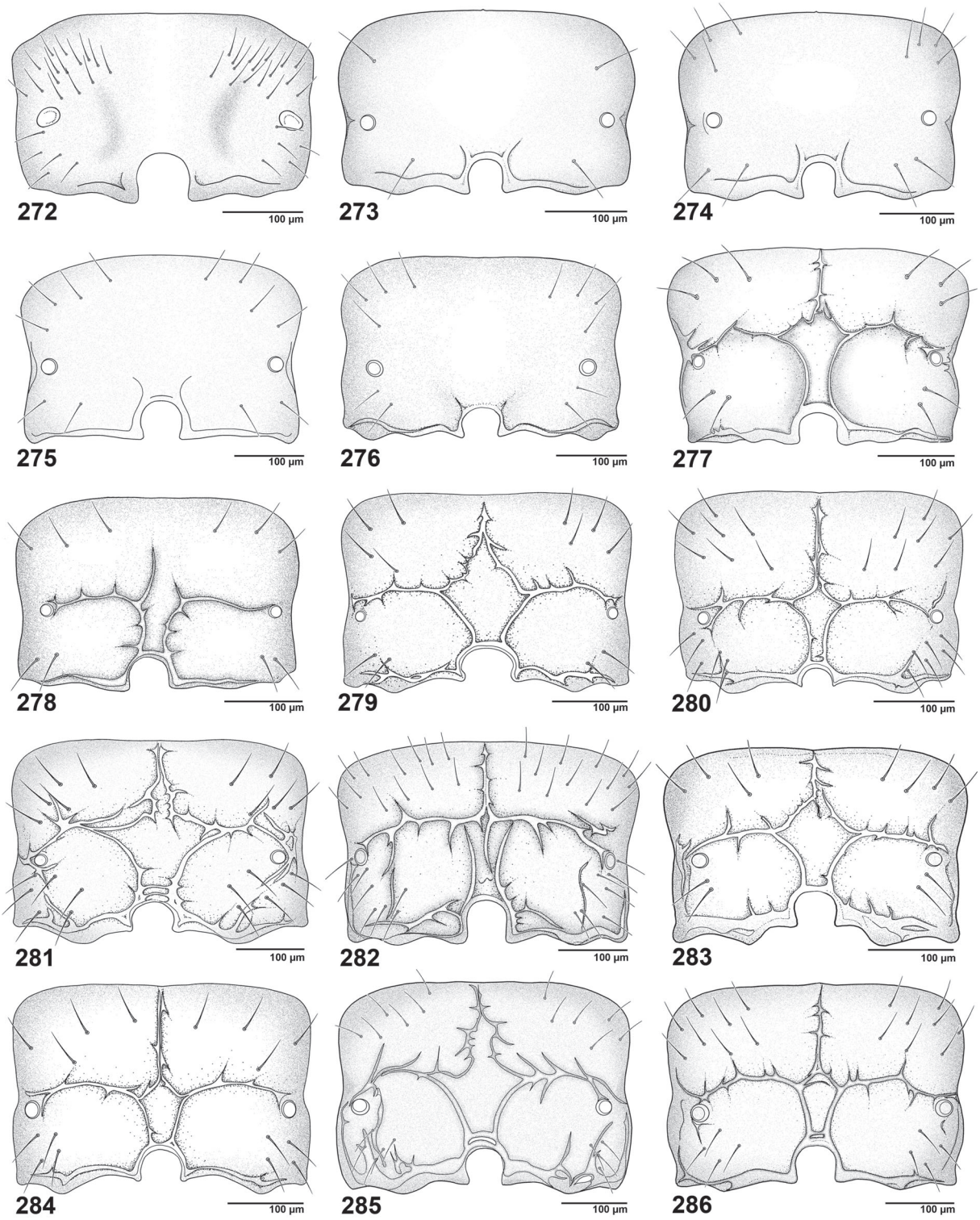
Figs 224–239. Dorsal aspect of mesonotum (♀): **224**. *Ephedrus lacertosus*. **225**. *Ephedrus nacheri*. **226**. *Ephedrus niger*. **227**. *Ephedrus persicae*. **228**. *Ephedrus plagiator*. **229**. *Lipolexis gracilis*. **230**. *Lysiphlebus cardui*. **231**. *Lysiphlebus confusus*. **232**. *Lysiphlebus desertorum*. **233**. *Lysiphlebus fabarum*. **234**. *Lysiphlebus fritzmuelleri*. **235**. *Lysiphlebus testaceipes*. **236**. *Monoctonia pistaciaecola*. **237**. *Monoctonia vesicarii*. **238**. *Monoctonus crepidis*. **239**. *Monoctonus mali*.



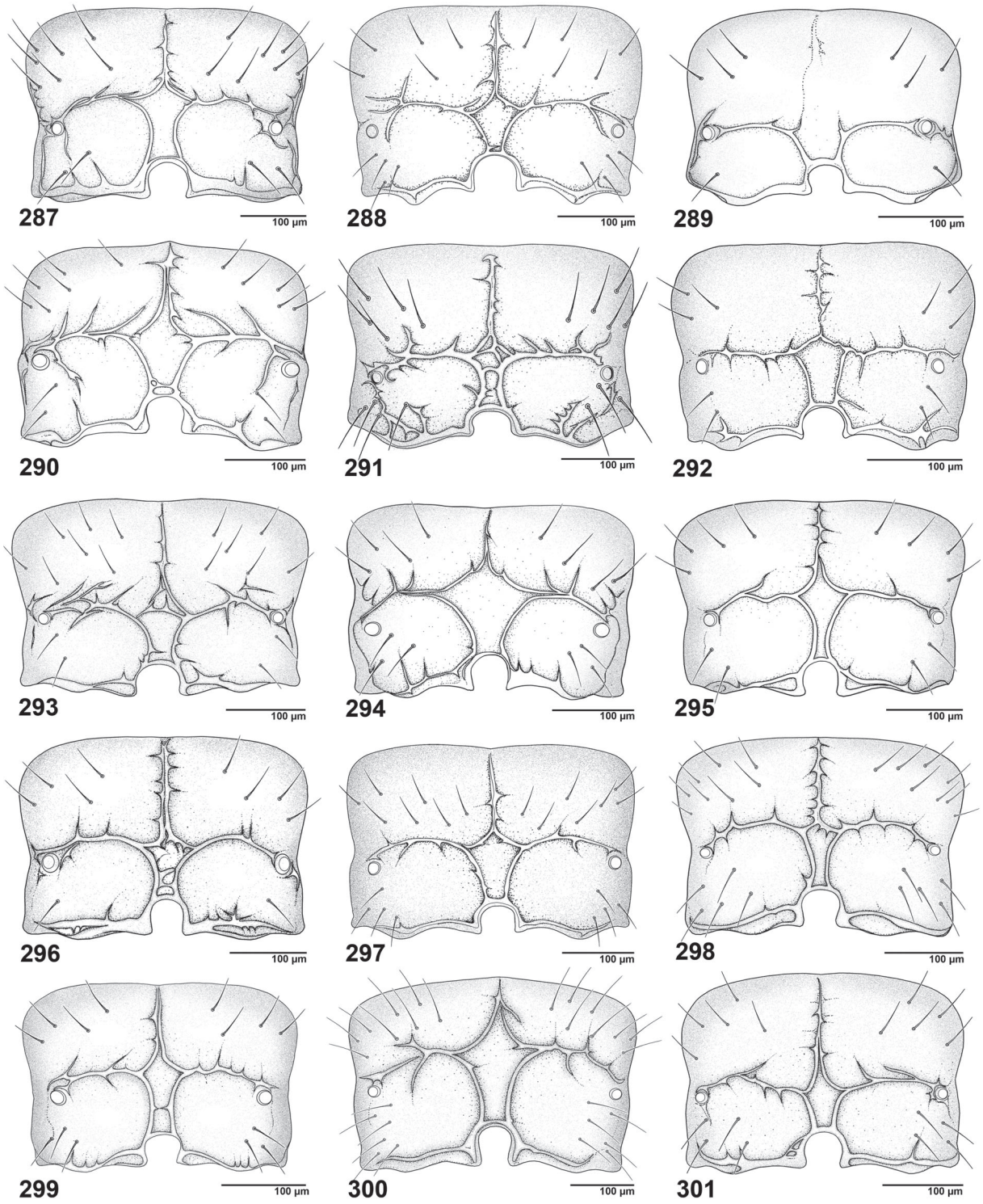
Figs 240–255. Dorsal aspect of mesonotum (♀): **240**. *Pauesia abietis*. **241**. *Pauesia anatolica*. **242**. *Pauesia antennata*. **243**. *Pauesia hazratbalensis*. **244**. *Pauesia picta*. **245**. *Pauesia silana*. **246**. *Praon abjectum*. **247**. *Praon absinthii*. **248**. *Praon athenaeum*. **249**. *Praon barbatum*. **250**. *Praon bicolor*. **251**. *Praon exsoletum*. **252**. *Praon flavinode*. **253**. *Praon gallicum*. **254**. *Praon longicorne*. **255**. *Praon necans*.



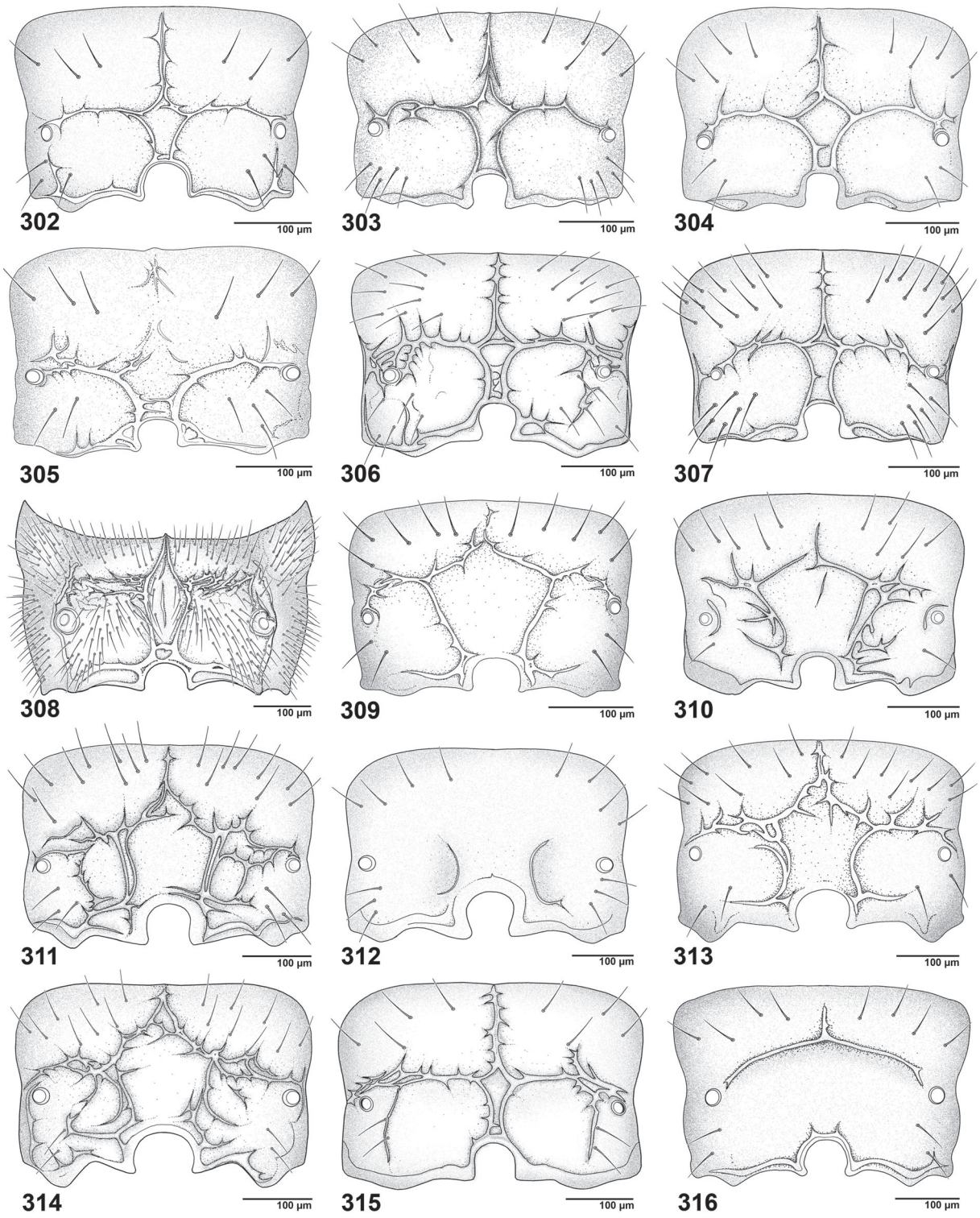
Figs 256–271. Dorsal aspect of mesonotum (♀): **256**. *Praon nonveilleri*. **257**. *Praon orpheusi*. **258**. *Praon pubescens*. **259**. *Praon rosaecola*. **260**. *Praon unitum*. **261**. *Praon uroleucon*. **262**. *Praon volucre*. **263**. *Praon yomenae*. **264**. *Toxares deltiger*. **265**. *Trioxys asiaticus*. **266**. *Trioxys cirsii*. **267**. *Trioxys complanatus*. **268**. *Trioxys metacarpalis*. **269**. *Trioxys pallidus*. **270**. *Trioxys pannonicus*. **271**. *Trioxys tanaceticola*.



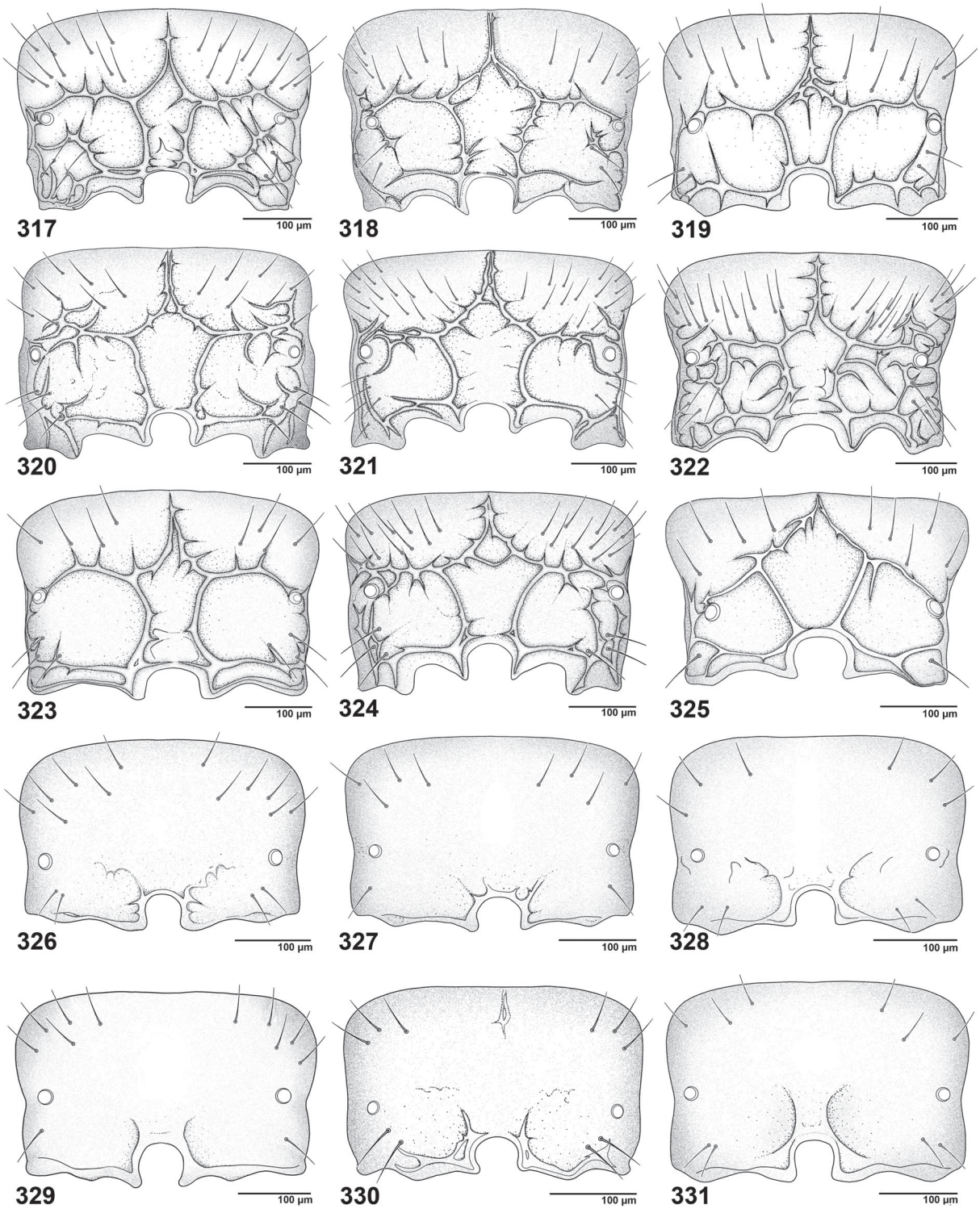
Figs 272–286. Dorsal aspect of propodeum (♀): **272**. *Aclitus obscuripennis*. **273**. *Adialytus ambiguus*. **274**. *Adialytus salicaphis*. **275**. *Adialytus thelaxis*. **276**. *Adialytus veronicaecola*. **277**. *Aphidius absinthii*. **278**. *Aphidius arvensis*. **279**. *Aphidius asteris*. **280**. *Aphidius avenae*. **281**. *Aphidius banksae*. **282**. *Aphidius cingulatus*. **283**. *Aphidius colemani*. **284**. *Aphidius eglanteriae*. **285**. *Aphidius eadyi*. **286**. *Aphidius ervi*.



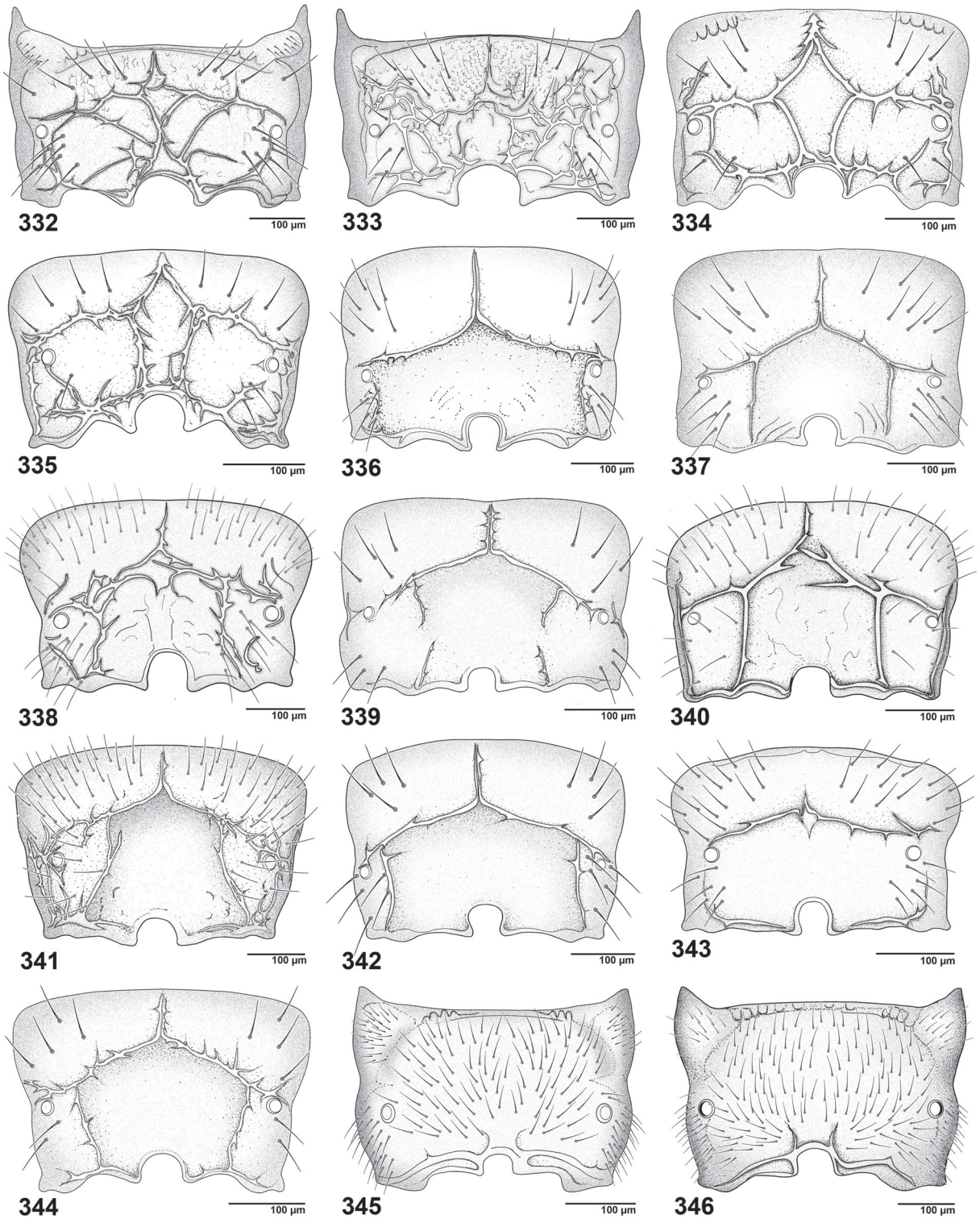
Figs 287–301. Dorsal aspect of propodeum (♀): **287**. *Aphidius funebris*. **288**. *Aphidius hieraciorum*. **289**. *Aphidius iranicus*. **290**. *Aphidius matricariae*. **291**. *Aphidius microlophii*. **292**. *Aphidius myzocallidis*. **293**. *Aphidius persicus*. **294**. *Aphidius platensis*. **295**. *Aphidius popovi*. **296**. *Aphidius rhopalosiphi*. **297**. *Aphidius ribis*. **298**. *Aphidius rosae*. **299**. *Aphidius salicis*. **300**. *Aphidius setiger*. **301**. *Aphidius smithi*.



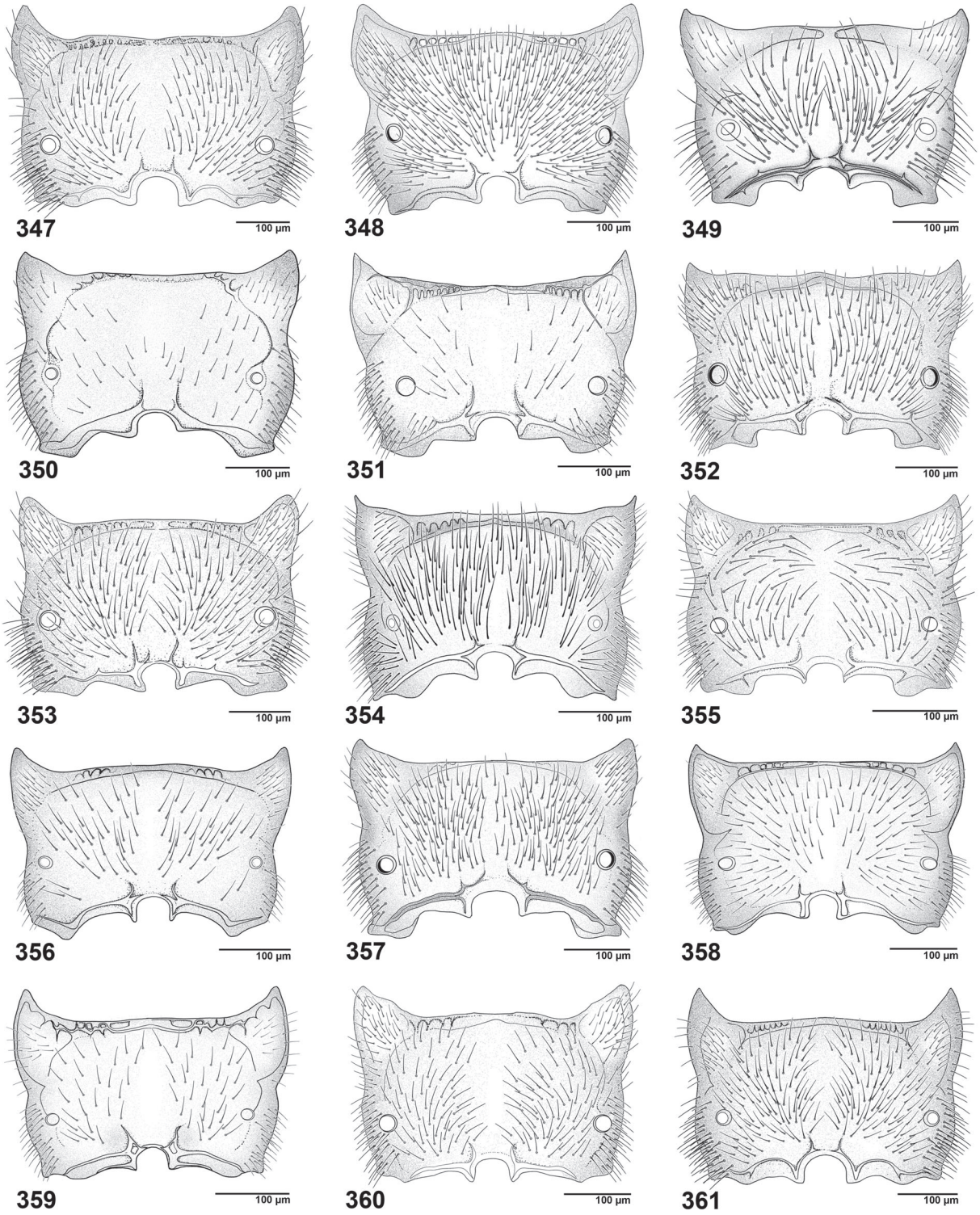
Figs 302–316. Dorsal aspect of propodeum (♀): **302**. *Aphidius sonchi*. **303**. *Aphidius stigmaticus*. **304**. *Aphidius transcaspicus*. **305**. *Aphidius uroleuci*. **306**. *Aphidius urticae*. **307**. *Aphidius uzbekistanicus*. **308**. *Areopraon lepelleyi*. **309**. *Betuloxys hortorum*. **310**. *Binodoxys acalephae*. **311**. *Binodoxys angelicae*. **312**. *Binodoxys brevicornis*. **313**. *Binodoxys centaureae*. **314**. *Binodoxys heraclei*. **315**. *Diaeretiella rapae*. **316**. *Diaeretus leucopterus*.



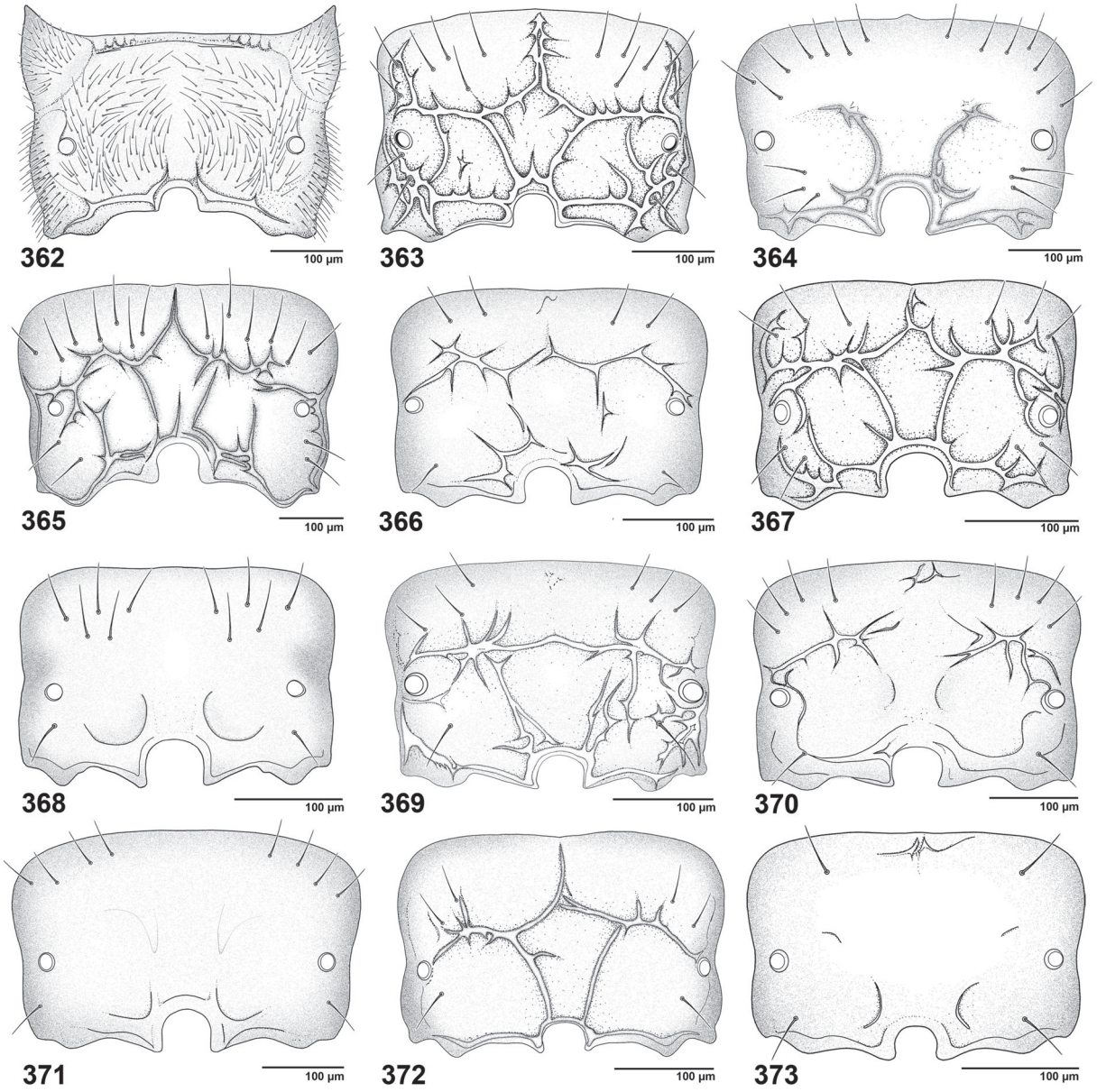
Figs 317–331. Dorsal aspect of propodeum (♀): **317**. *Ephedrus cerasicola*. **318**. *Ephedrus chaitophori*. **319**. *Ephedrus helleni*. **320**. *Ephedrus lacertosus*. **321**. *Ephedrus nacheri*. **322**. *Ephedrus niger*. **323**. *Ephedrus persicae*. **324**. *Ephedrus plagiator*. **325**. *Lipolexis gracilis*. **326**. *Lysiphlebus cardui*. **327**. *Lysiphlebus confusus*. **328**. *Lysiphlebus desertorum*. **329**. *Lysiphlebus fabarum*. **330**. *Lysiphlebus fritzmuelleri*. **331**. *Lysiphlebus testaceipes.*



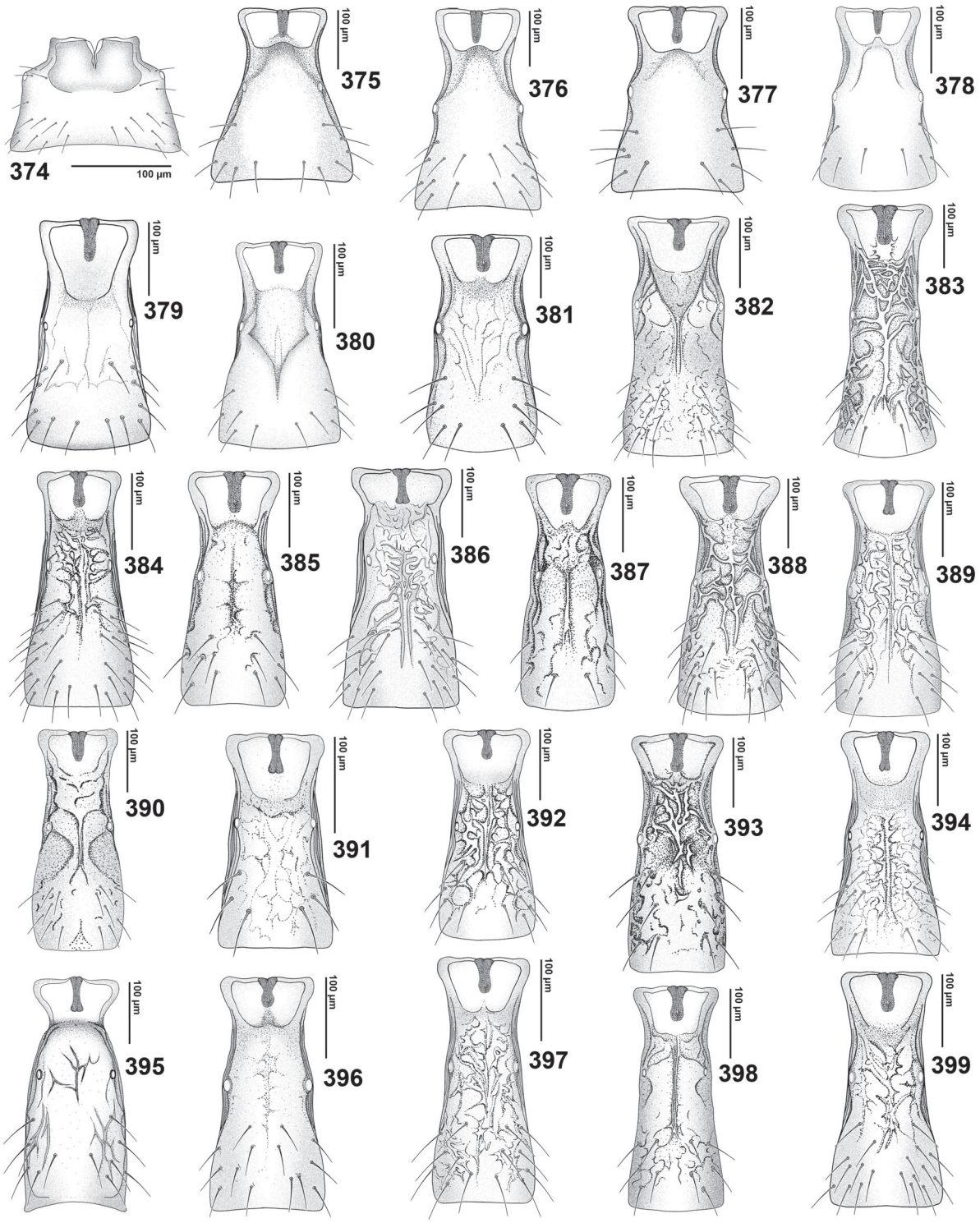
Figs 332–346. Dorsal aspect of propodeum (♀): **332**. *Monoctonia pistaciaecola*. **333**. *Monoctonia vesicarii*. **334**. *Monoctonus crepidis*. **335**. *Monoctonus mali*. **336**. *Pauesia abietis*. **337**. *Pauesia anatolica*. **338**. *Pauesia antennata*. **339**. *Pauesia cedrobii*. **340**. *Pauesia hazratbalensis*. **341**. *Pauesia picta*. **342**. *Pauesia pini*. **343**. *Pauesia silana*. **344**. *Pauesia unilachni*. **345**. *Praon abjectum*. **346**. *Praon absinthii*.



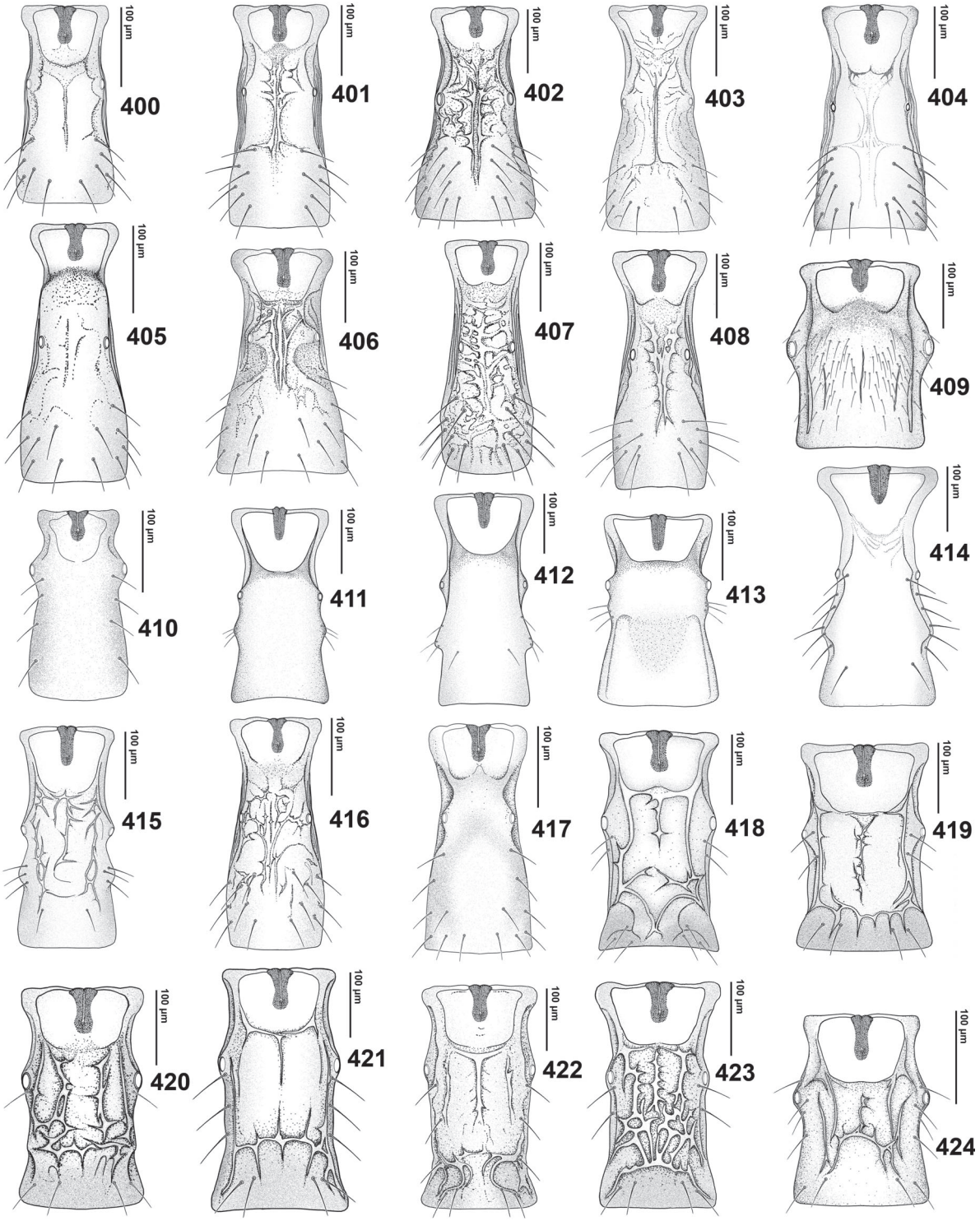
Figs 347–361. Dorsal aspect of propodeum (♀): **347**. *Praon athenaeum*. **348**. *Praon barbatum*. **349**. *Praon bicolor*. **350**. *Praon exsoletum*. **351**. *Praon flavinode*. **352**. *Praon gallicum*. **353**. *Praon longicorne*. **354**. *Praon necans*. **355**. *Praon nonveilleri*. **356**. *Praon orpheusi*. **357**. *Praon pubescens*. **358**. *Praon rosaecola*. **359**. *Praon unitum*. **360**. *Praon uroleucon*. **361**. *Praon volucre*.



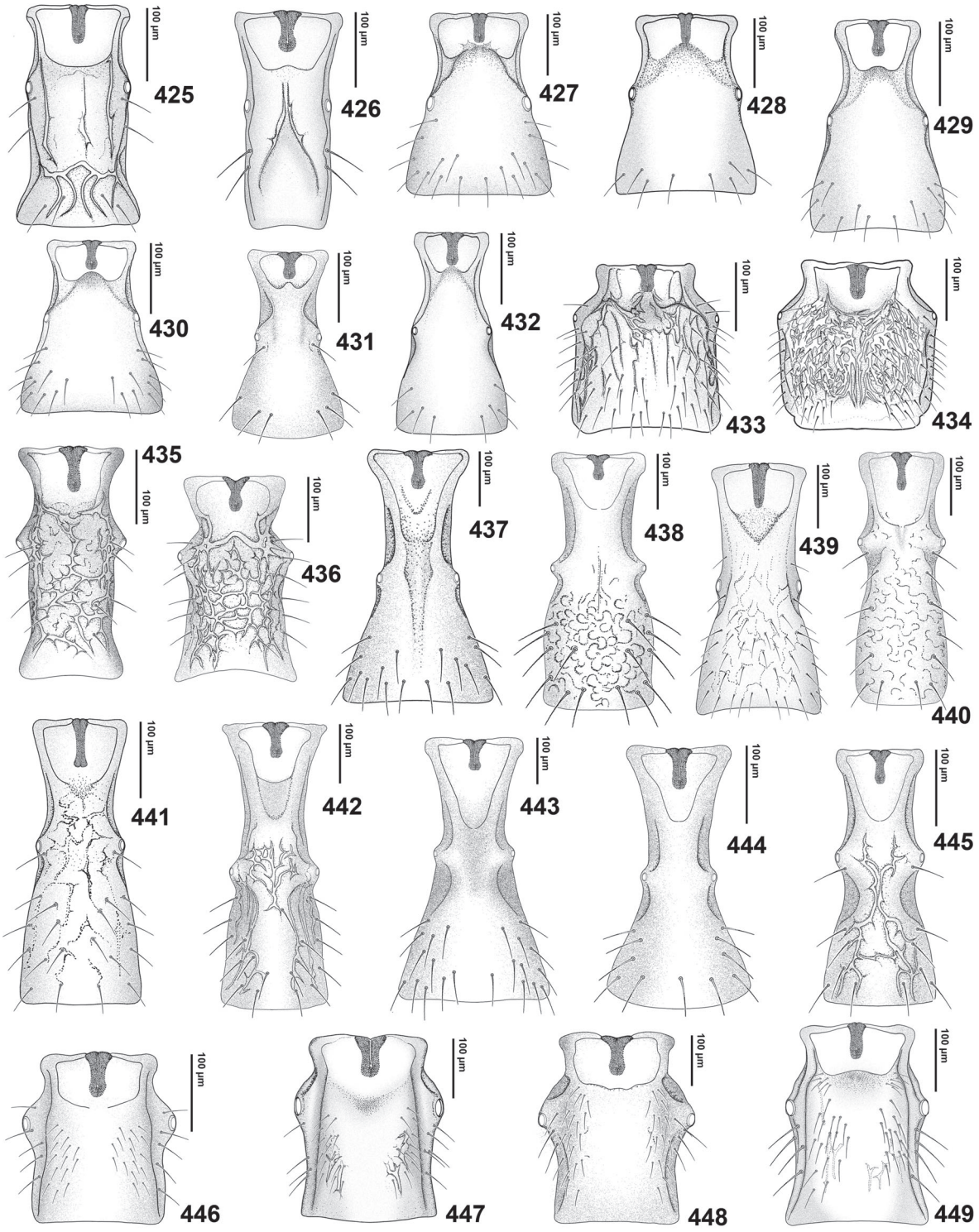
Figs 362–373. Dorsal aspect of propodeum (♀): **362**. *Praon yomenae*. **363**. *Toxares deltiger*. **364**. *Trioxys asiaticus*. **365**. *Trioxys cirsii*. **366**. *Trioxys complanatus*. **367**. *Trioxys curvicaudus*. **368**. *Trioxys metacarpalis*. **369**. *Trioxys moshei*. **370**. *Trioxys pallidus*. **371**. *Trioxys pannonicus*. **372**. *Trioxys quercicola*. **373**. *Trioxys tanaceticola*.



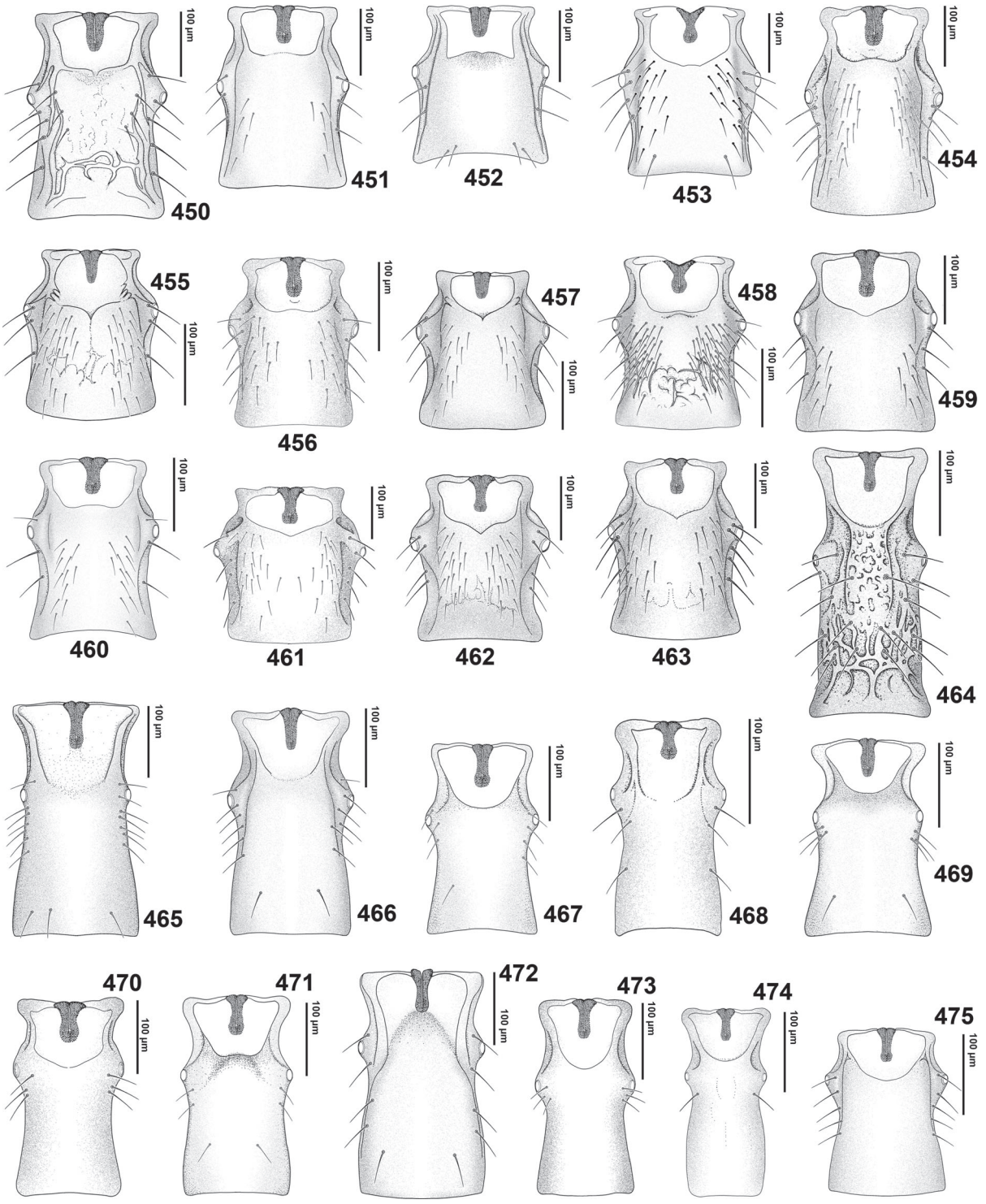
Figs 374–399. Dorsal aspect of petiole (♀): **374**. *Aclitus obscuripennis*. **375**. *Adialytus ambiguus*. **376**. *Adialytus salicaphis*. **377**. *Adialytus thelaxis*. **378**. *Adialytus veronicaecola*. **379**. *Aphidius absinthii*. **380**. *Aphidius arvensis*. **381**. *Aphidius asteris*. **382**. *Aphidius avenae*. **383**. *Aphidius banksae*. **384**. *Aphidius cingulatus*. **385**. *Aphidius colemani*. **386**. *Aphidius eadyi*. **387**. *Aphidius eglanteriae*. **388** *Aphidius ervi*. **389**. *Aphidius funebris*. **390**. *Aphidius hieraciorum*. **391**. *Aphidius iranicus*. **392**. *Aphidius matricariae*. **393**. *Aphidius microlophii*. **394**. *Aphidius persicus*. **395**. *Aphidius platensis*. **396**. *Aphidius popovi*. **397**. *Aphidius rhopalosiphi*. **398**. *Aphidius ribis*. **399**. *Aphidius rosae*.



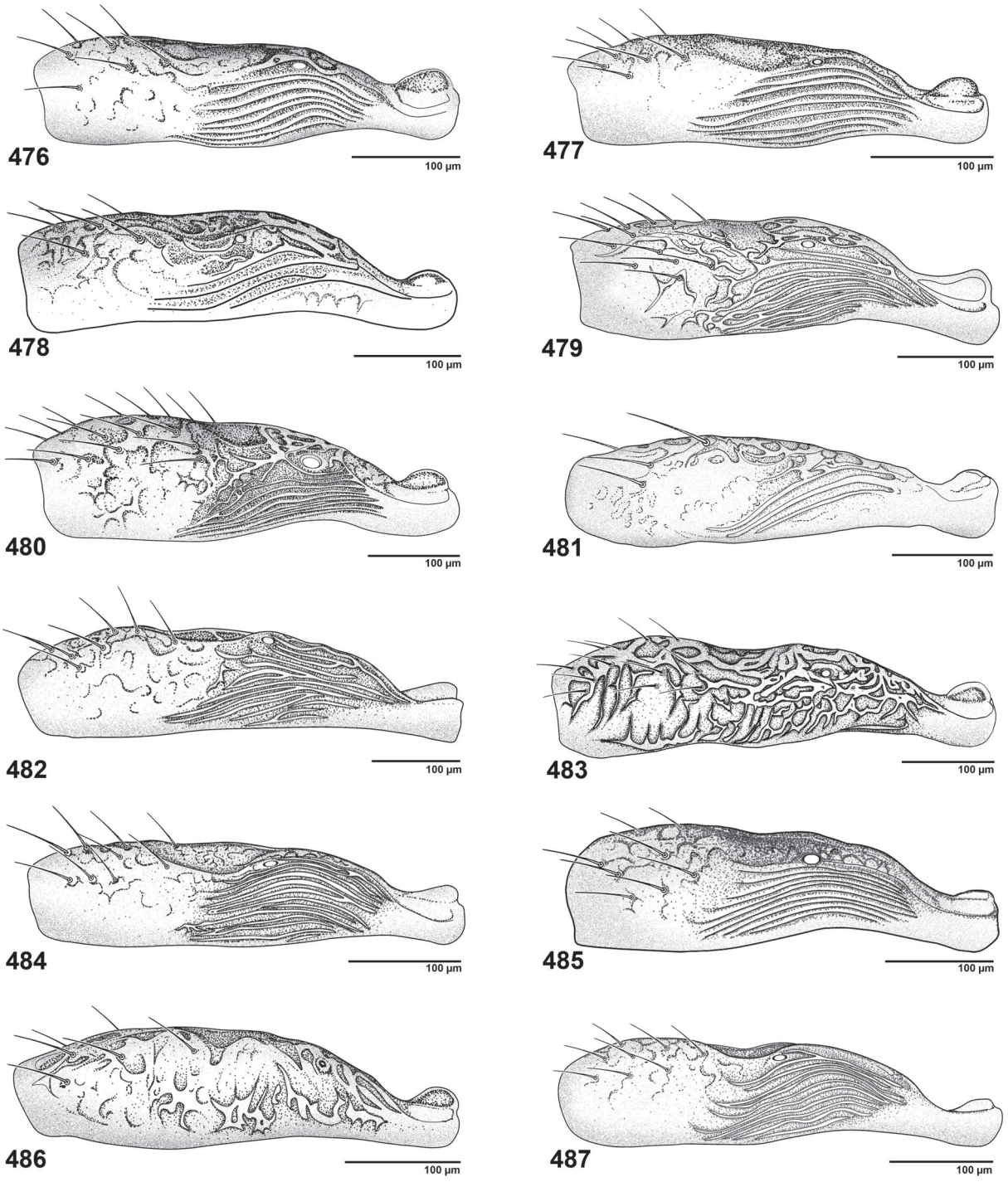
Figs 400–424. Dorsal aspect of petiole (♀): **400**. *Aphidius salicis*. **401**. *Aphidius setiger*. **402**. *Aphidius smithi*. **403**. *Aphidius sonchi*. **404**. *Aphidius stigmaticus*. **405**. *Aphidius transcaspicus*. **406**. *Aphidius uroleuci*. **407**. *Aphidius urticae*. **408**. *Aphidius uzbekistanicus*. **409**. *Areopraon lepelleyi*. **410**. *Betuloxys hortorum*. **411**. *Binodoxys acalephae*. **412**. *Binodoxys angelicae*. **413**. *Binodoxys brevicornis*. **414**. *Binodoxys centaureae*. **415**. *Binodoxys heraclei*. **416**. *Diaeretiella rapae*. **417**. *Diaeretus leucopterus*. **418**. *Ephedrus cerasicola*. **419**. *Ephedrus chaitophori*. **420**. *Ephedrus helleni*. **421**. *Ephedrus lacertosus*. **422**. *Ephedrus nacheri*. **423**. *Ephedrus niger*. **424**. *Ephedrus persicae*.



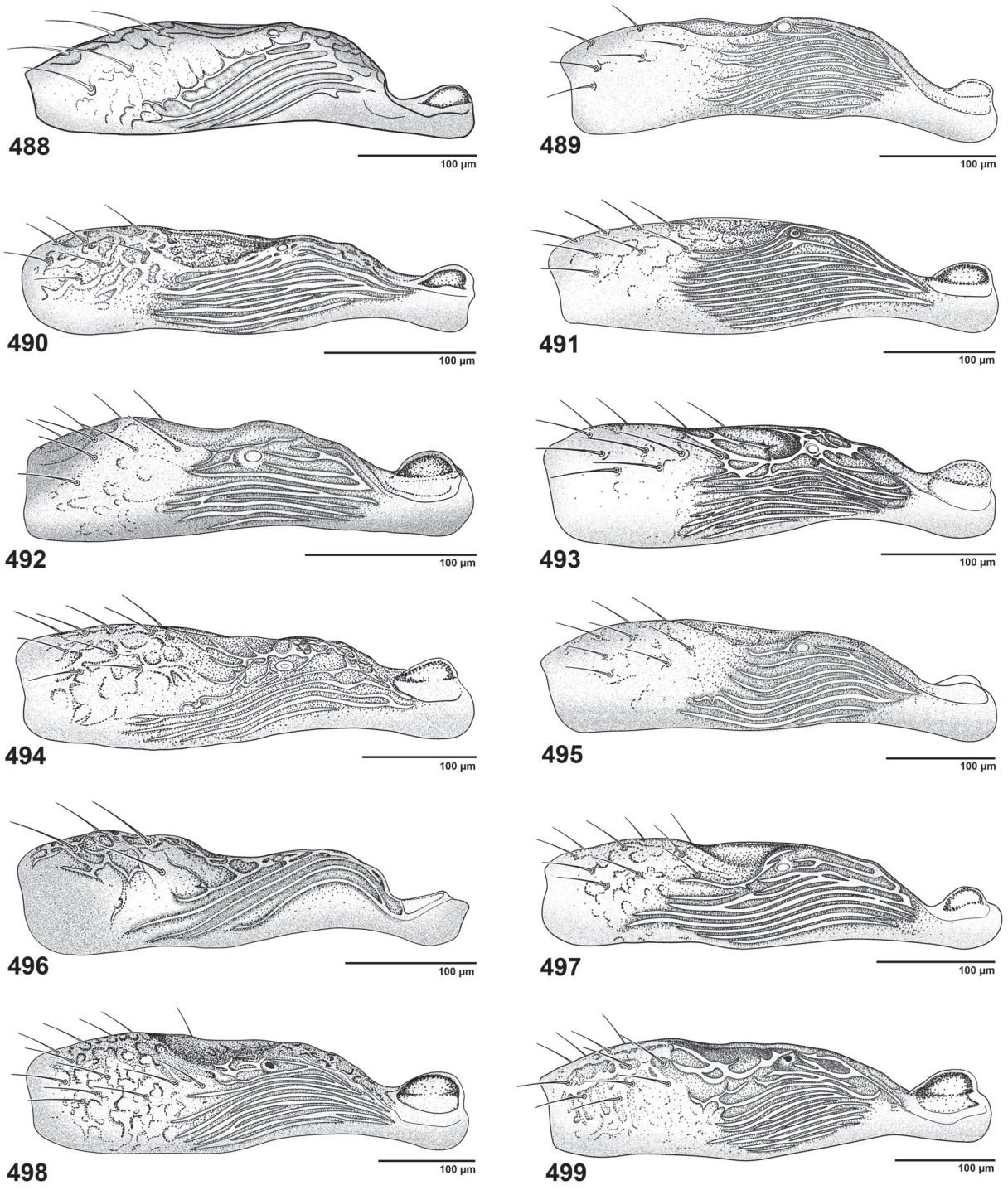
Figs 425–449. Dorsal aspect of petiole (♀): **425**. *Ephedrus plagiator*. **426**. *Lipolexis gracilis*. **427**. *Lysiphlebus cardui*. **428**. *Lysiphlebus confusus*. **429**. *Lysiphlebus desertorum*. **430**. *Lysiphlebus fabarum*. **431**. *Lysiphlebus fritzmuelleri*. **432**. *Lysiphlebus testaceipes*. **433**. *Monoctonia pistaciaecola*. **434**. *Monoctonia vesicarii*. **435**. *Monoctonus crepidis*. **436**. *Monoctonus mali*. **437**. *Pauesia abietis*. **438**. *Pauesia anatolica*. **439**. *Pauesia antennata*. **440**. *Pauesia cedrobii*. **441**. *Pauesia hazratbalensis*. **442**. *Pauesia picta*. **443**. *Pauesia pini*. **444**. *Pauesia silana*. **445**. *Pauesia unilachni*. **446**. *Praon abjectum*. **447**. *Praon absinthii*. **448**. *Praon athenaeum*. **449**. *Praon barbatum*.



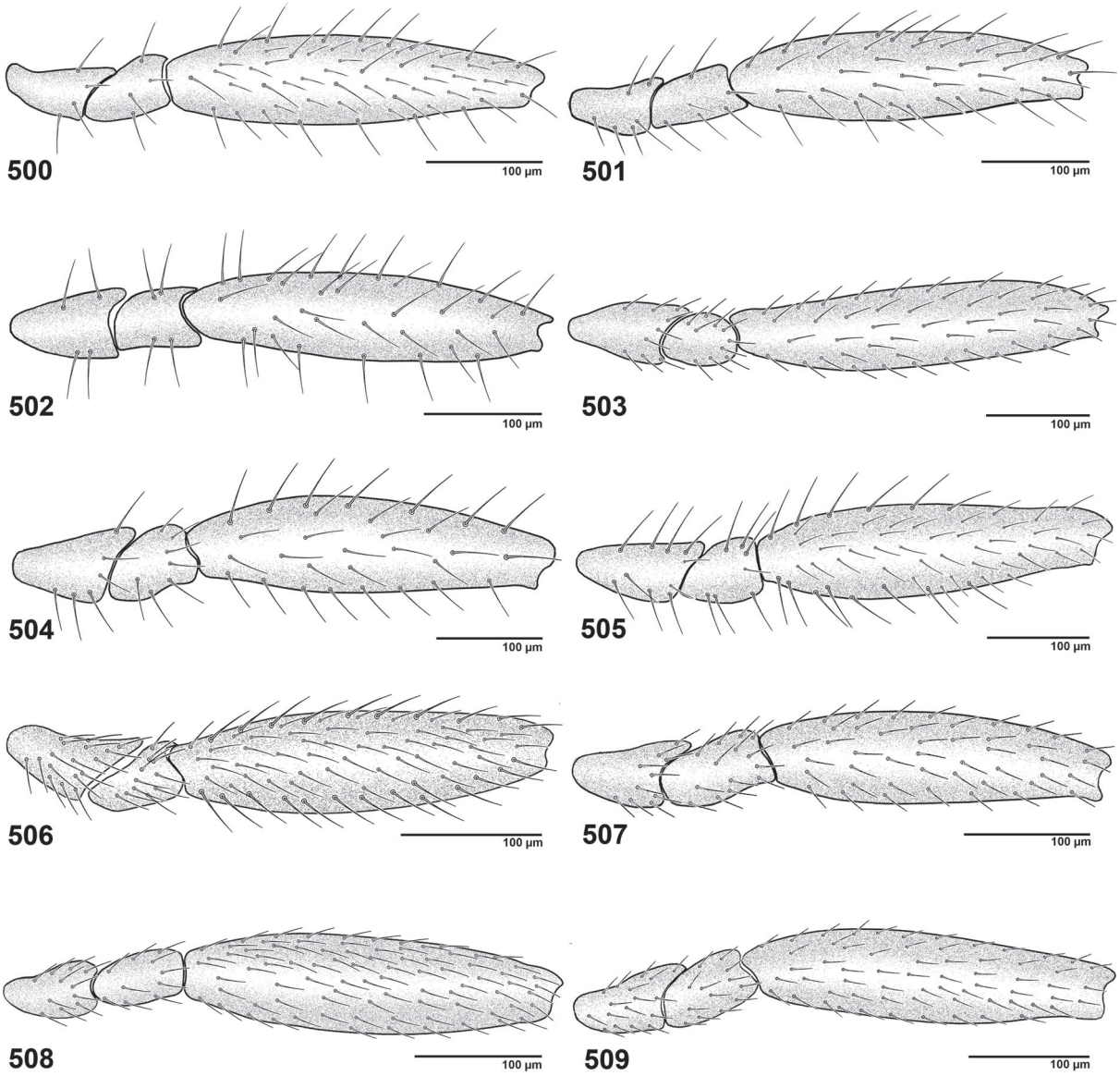
Figs 450–475. Dorsal aspect of petiole (♀): **450**. *Praon bicolor*. **451**. *Praon exsoletum*. **452**. *Praon flavinode*. **453**. *Praon gallicum*. **454**. *Praon longicorne*. **455**. *Praon necans*. **456**. *Praon nonveilleri*. **457**. *Praon orpheusi*. **458**. *Praon pubescens*. **459**. *Praon rosaecola*. **460**. *Praon unitum*. **461**. *Praon uroleucon*. **462**. *Praon volucre*. **463**. *Praon yomenae*. **464**. *Toxares deltiger*. **465**. *Trioxys asiaticus*. **466**. *Trioxys cirsii*. **467**. *Trioxys complanatus*. **468**. *Trioxys curvicaudus*. **469**. *Trioxys metacarpalis*. **470**. *Trioxys moshei*. **471**. *Trioxys pallidus*. **472**. *Trioxys pannonicus*. **473**. *Trioxys pappi*. **474**. *Trioxys quercicola*. **475**. *Trioxys tanaceticola*.



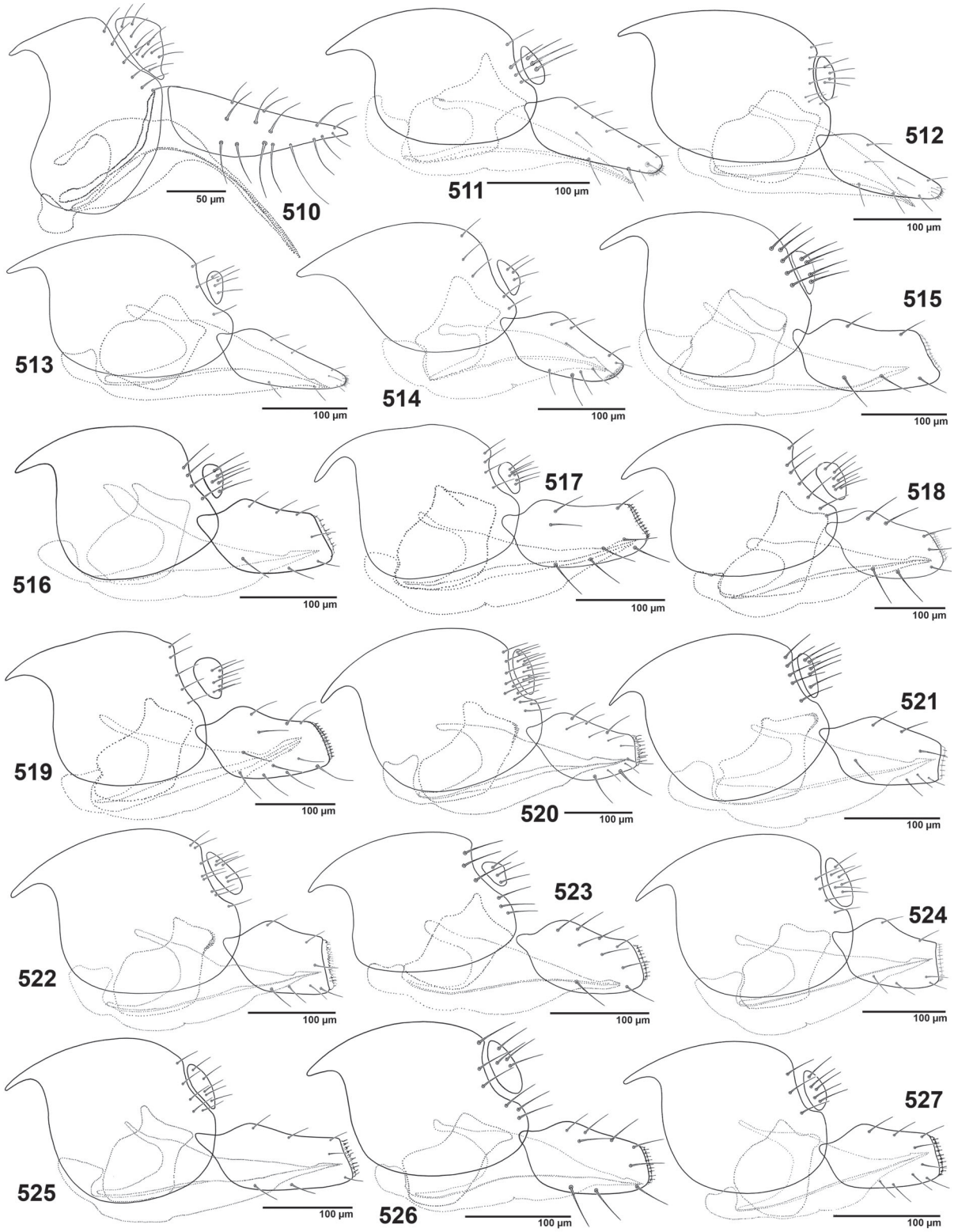
Figs 476–487. Anterolateral aspect of petiole in *Aphidius* species (♀): **476**. *Aphidius absinthii*. **477**. *Aphidius asteris*. **478**. *Aphidius avenae*. **479**. *Aphidius banksae*. **480**. *Aphidius cingulatus*. **481**. *Aphidius colemani*. **482**. *Aphidius eadyi*. **483**. *Aphidius ervi*. **484**. *Aphidius funebris*. **485**. *Aphidius matricariae*. **486**. *Aphidius microlophii*. **487**. *Aphidius persicus*.



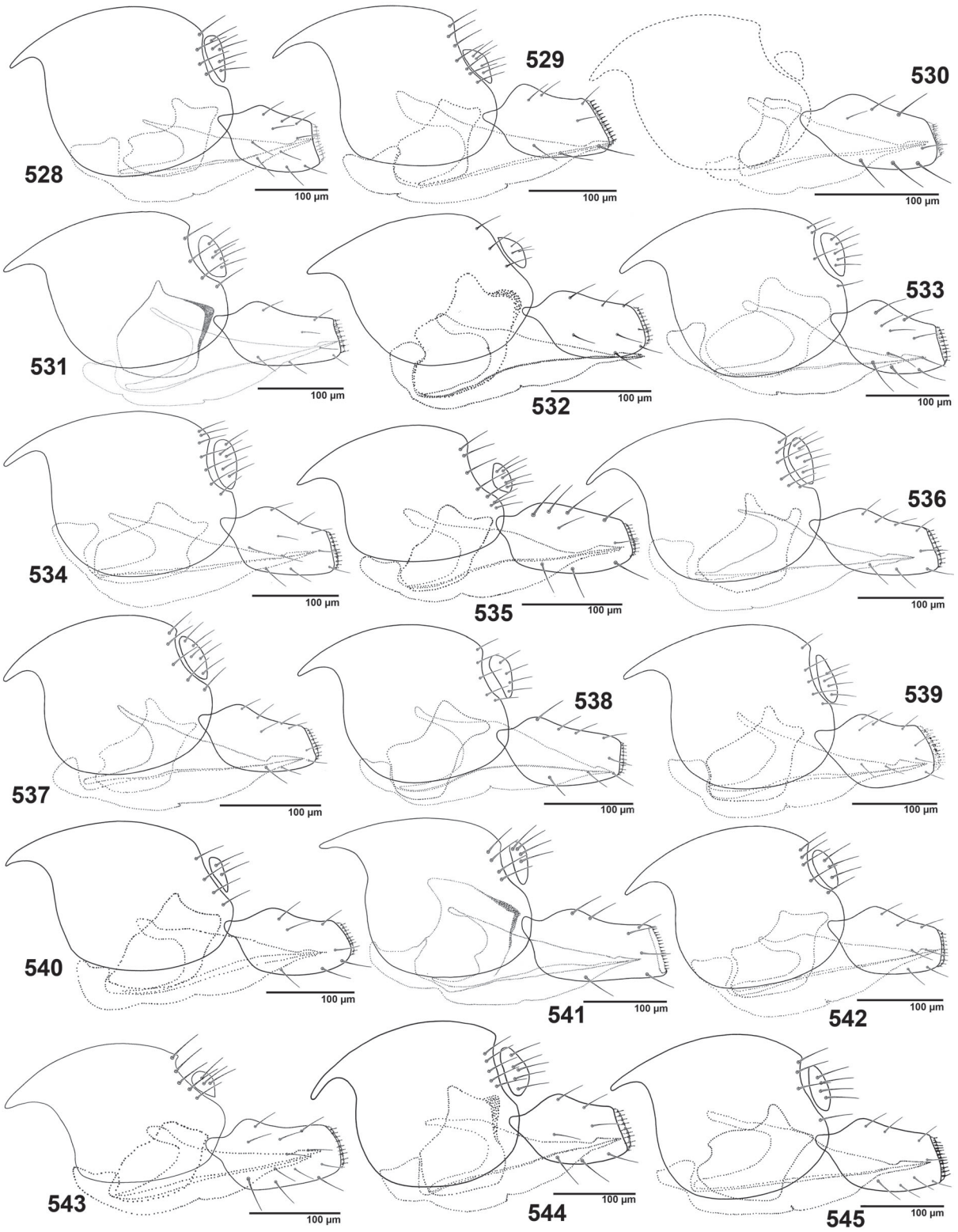
Figs 488–499. Anterolateral aspect of petiole in *Aphidius* species (♀): **488**. *Aphidius platensis*. **489**. *Aphidius popovi*. **490**. *Aphidius rhopalosiphi*. **491**. *Aphidius rosae*. **492**. *Aphidius salicis*. **493**. *Aphidius setiger*. **494**. *Aphidius smithi*. **495**. *Aphidius stigmaticus*. **496**. *Aphidius transcaspicus*. **497**. *Aphidius uroleuci*. **498**. *Aphidius urticae*. **499**. *Aphidius uzbekistanicus*.



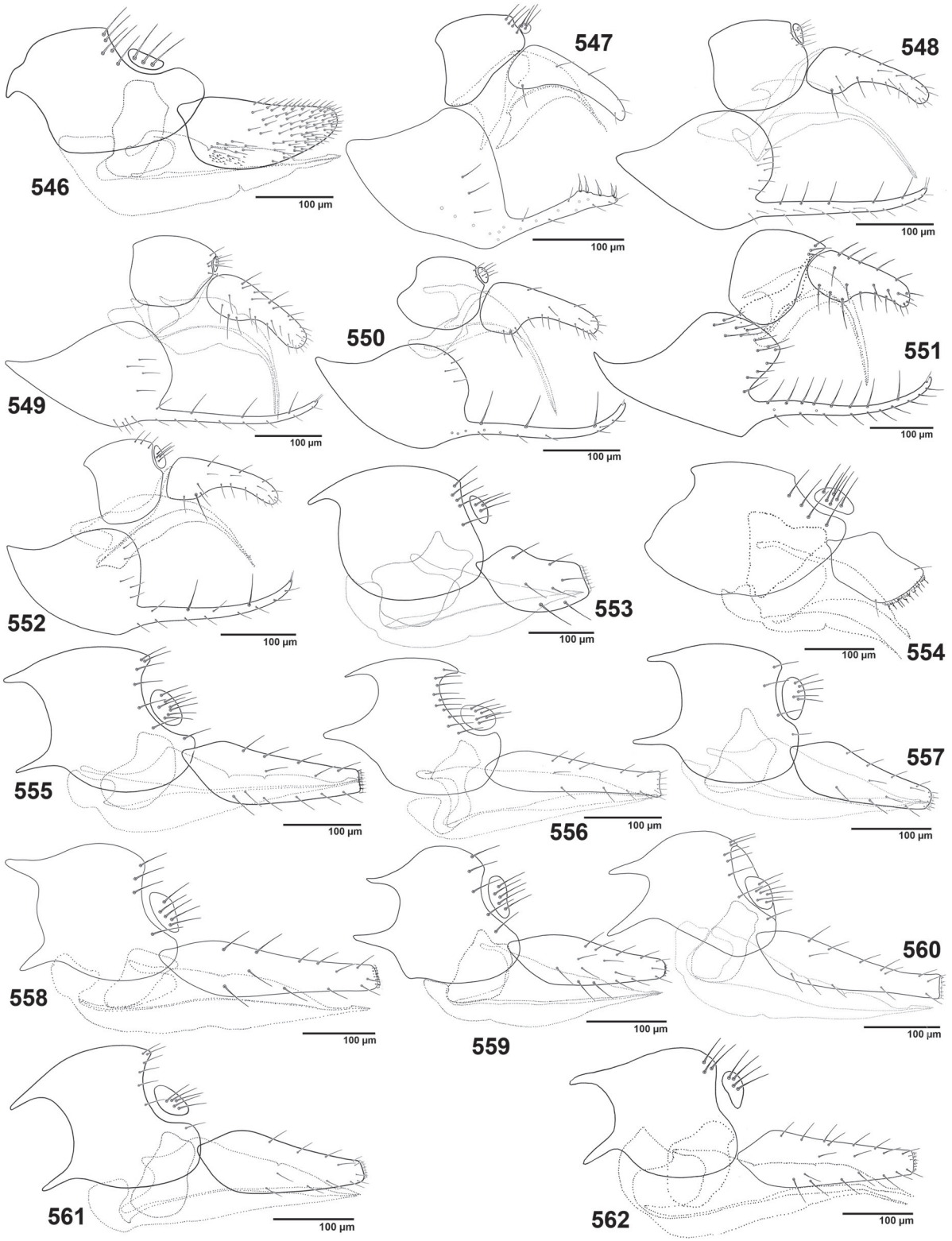
Figs 500–509. Lateral aspect of hind femur in *Adialytus* and *Lysiphlebus* species (♀): **500**. *Adialytus ambiguus*. **501**. *Adialytus salicaphis*. **502**. *Adialytus thelaxis*. **503**. *Adialytus veronicaecola*. **504**. *Lysiphlebus cardui*. **505**. *Lysiphlebus confusus*. **506**. *Lysiphlebus desertorum*. **507**. *Lysiphlebus fabarum*. **508**. *Lysiphlebus fritzmuelleri*. **509**. *Lysiphlebus testaceipes*.



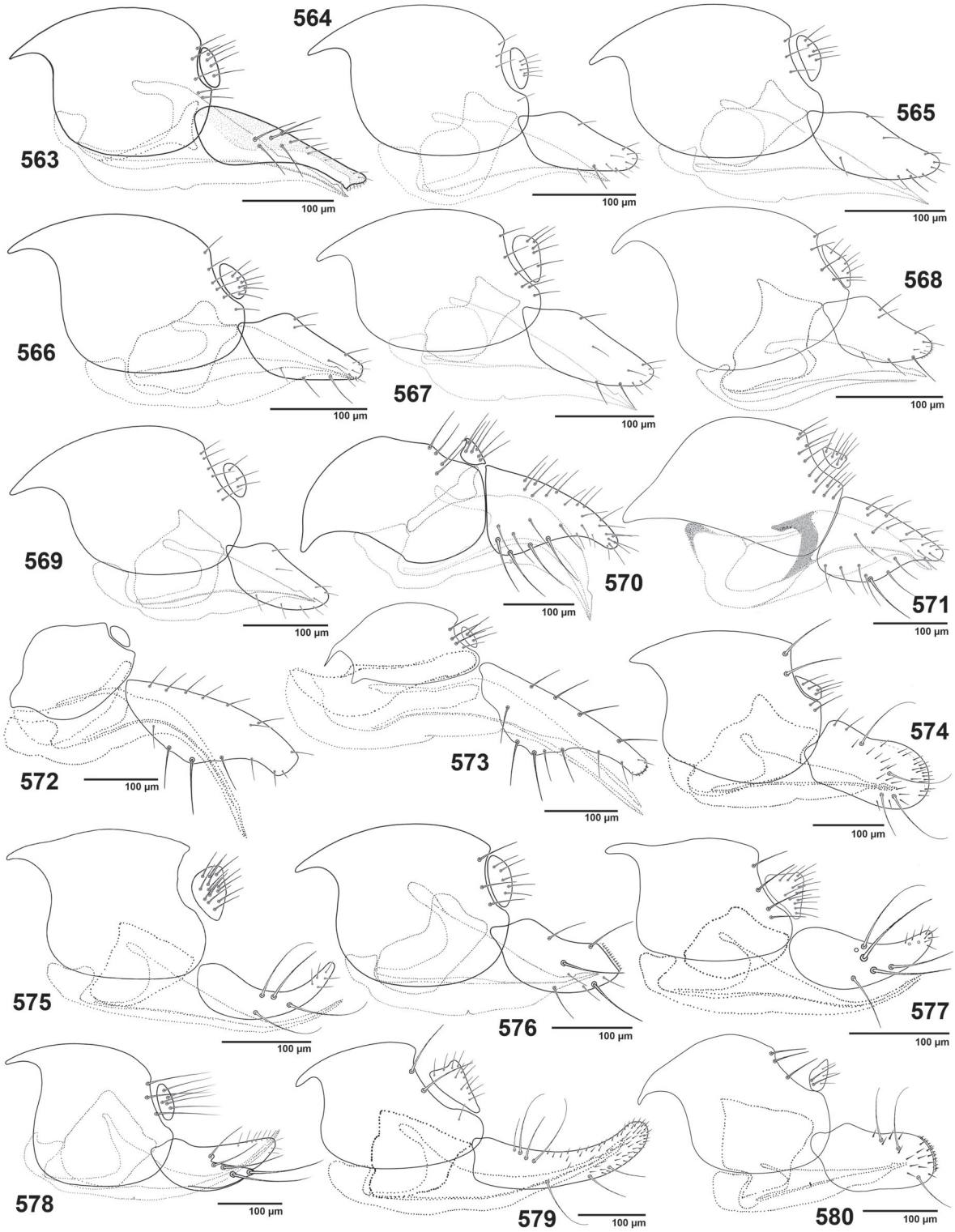
Figs 510–527. Lateral aspect of ♀ genitalia: **510**. *Aclitus obscuripennis*. **511**. *Adialytus ambiguus*. **512**. *Adialytus salicaphis*. **513**. *Adialytus thelaxis*. **514**. *Adialytus veronicaecola*. **515**. *Aphidius absinthii*. **516**. *Aphidius arvensis*. **517**. *Aphidius asteris*. **518**. *Aphidius avenae*. **519**. *Aphidius banksae*. **520**. *Aphidius cingulatus*. **521**. *Aphidius colemani*. **522**. *Aphidius eadyi*. **523**. *Aphidius eglanteriae*. **524**. *Aphidius ervi*. **525**. *Aphidius funebris*. **526**. *Aphidius hieraciorum*. **527**. *Aphidius iranicus*.



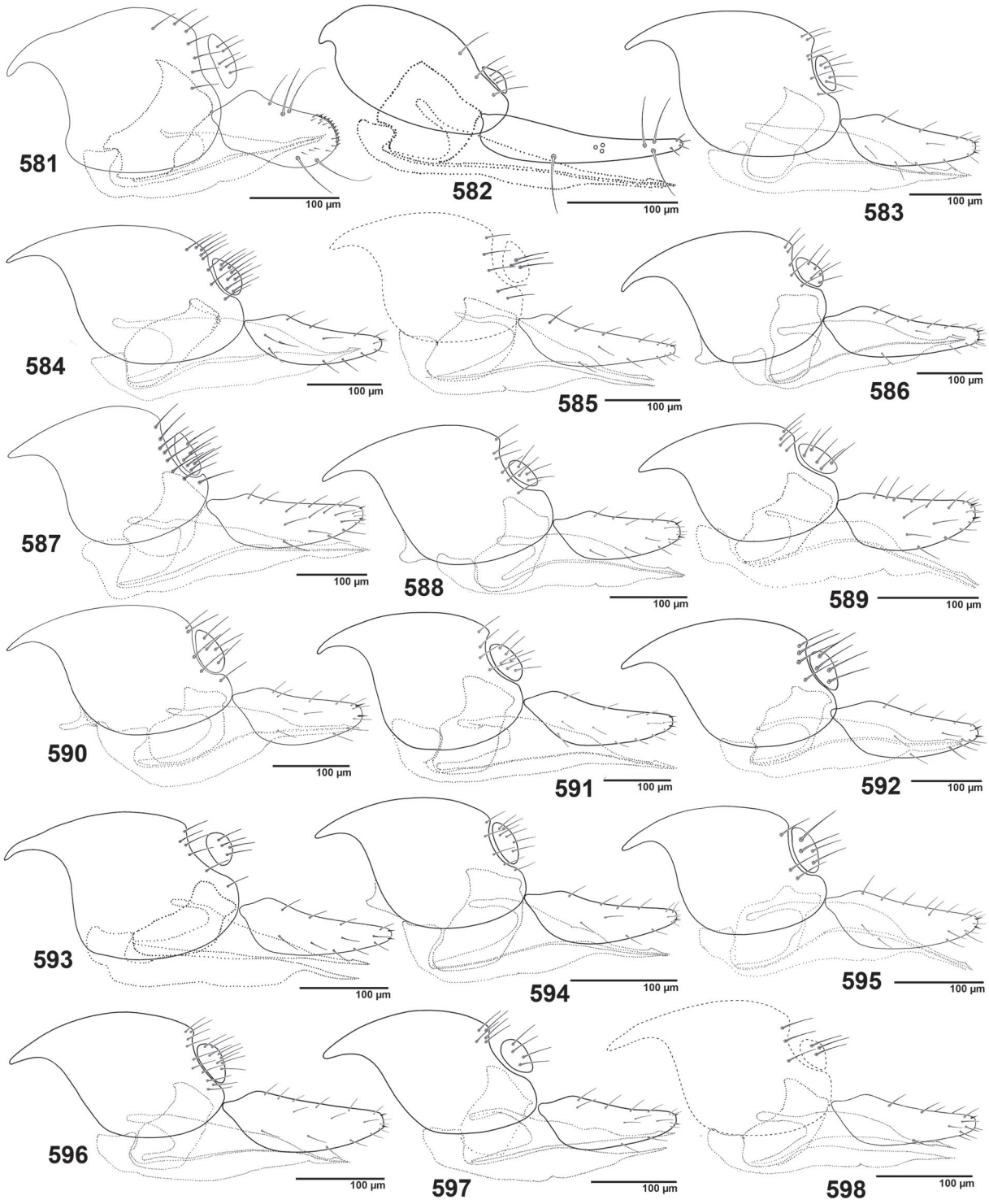
Figs 528–545. Lateral aspect of ♀ genitalia: **528**. *Aphidius matricariae*. **529**. *Aphidius microlophii*. **530**. *Aphidius myzocallidis*. **531**. *Aphidius persicus*. **532**. *Aphidius platensis*. **533**. *Aphidius popovi*. **534**. *Aphidius rhopalosiphi*. **535**. *Aphidius ribis*. **536**. *Aphidius rosae*. **537**. *Aphidius salicis*. **538**. *Aphidius setiger*. **539**. *Aphidius smithi*. **540**. *Aphidius sonchi*. **541**. *Aphidius stigmaticus*. **542**. *Aphidius transcaspicus*. **543**. *Aphidius uroleuci*. **544**. *Aphidius urticae*. **545**. *Aphidius uzbekistanicus*.



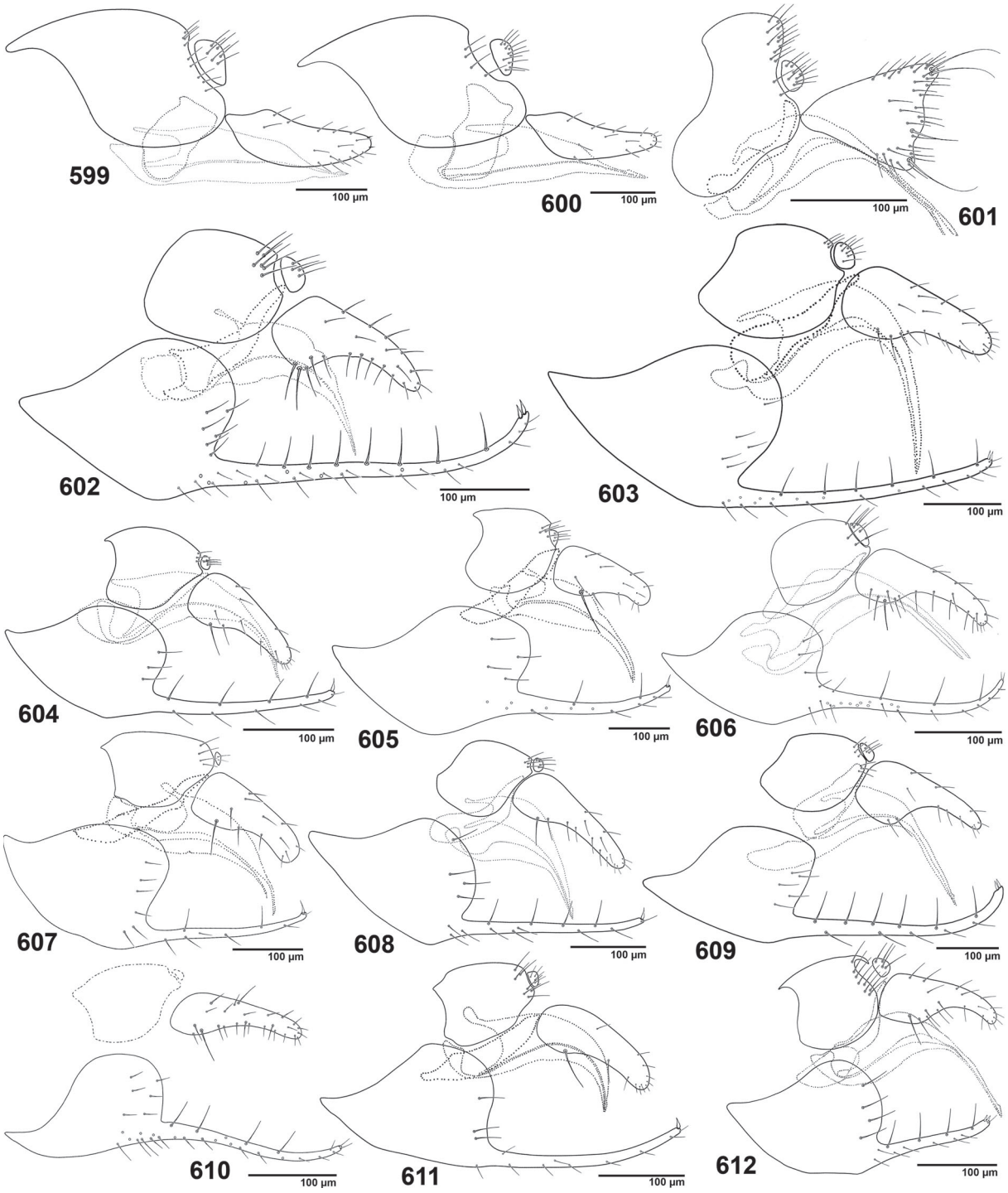
Figs 546–562. Lateral aspect of ♀ genitalia: **546**. *Areopraon lepelleyi*. **547**. *Betuloxys hortorum*. **548**. *Binodoxys acalephae*. **549**. *Binodoxys angelicae*. **550**. *Binodoxys brevicornis*. **551**. *Binodoxys centaureae*. **552**. *Binodoxys heraclei*. **553**. *Diaeretiella rapae*. **554**. *Diaeretus leucopterus*. **555**. *Ephedrus cerasicola*. **556**. *Ephedrus chaitophori*. **557**. *Ephedrus helleni*. **558**. *Ephedrus lacertosus*. **559**. *Ephedrus nacheri*. **560**. *Ephedrus niger*. **561**. *Ephedrus persicae*. **562**. *Ephedrus plagiator*.



Figs 563–580. Lateral aspect of ♀ genitalia: **563**. *Lipolexis gracilis*. **564**. *Lysiphlebus cardui*. **565**. *Lysiphlebus confusus*. **566**. *Lysiphlebus desertorum*. **567**. *Lysiphlebus fabarum*. **568**. *Lysiphlebus fritzmuelleri*. **569**. *Lysiphlebus testaceipes*. **570**. *Monoctonia pistaciaecola*. **571**. *Monoctonia vesicarii*. **572**. *Monoctonus crepidis*. **573**. *Monoctonus mali*. **574**. *Pauesia abietis*. **575**. *Pauesia anatolica*. **576**. *Pauesia antennata*. **577**. *Pauesia cedrobii*. **578**. *Pauesia hazratbalensis*. **579**. *Pauesia picta*. **580**. *Pauesia pini*.



Figs 581–598. Lateral aspect of ♀ genitalia: **581**. *Pauesia silana*. **582**. *Pauesia unilachni*. **583**. *Praon abjectum*. **584**. *Praon absinthii.* **585**. *Praon athenaeum*. **586**. *Praon barbatum*. **587**. *Praon bicolor*. **588**. *Praon exsoletum*. **589**. *Praon flavinode*. **590**. *Praon gallicum*. **591**. *Praon longicorne*. **592**. *Praon necans*. **593**. *Praon nonveilleri*. **594**. *Praon orpheusi*. **595**. *Praon pubescens*. **596**. *Praon rosaecola*. **597**. *Praon unitum*. **598**. *Praon uroleucon*.



Figs 599–612. Lateral aspect of ♀ genitalia: **599**. *Praon volucre*. **600**. *Praon yomenae*. **601**. *Toxares deltiger*. **602**. *Trioxys asiaticus*. **603**. *Trioxys cirsii*. **604**. *Trioxys complanatus*. **605**. *Trioxys curvicaudus*. **606**. *Trioxys metacarpalis*. **607**. *Trioxys moshei*. **608**. *Trioxys pallidus*. **609**. *Trioxys pannonicus*. **610**. *Trioxys pappi*. **611**. *Trioxys quercicola*. **612**. *Trioxys tanaceticola*.

Fig. 613. Map of the Middle East and North Africa. A country is highlighted with green color indicates that there are available data on aphidiine parasitoids. A country highlighted with red color, indicates that there are no available data on aphidiine parasitoids