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# WORLDWIDE CATALOG OF APHIDIINAE (HYMENOPTERA, BRACONIDAE): DISTRIBUTION, HOST ASSOCIATIONS AND NOTES ON THEIR BIOECOLOGY

Ehsan Rakhshani, Mostafa Ghafouri Moghaddam, Cornelis van Achterberg, Željko Tomanović, Andrew Polaszek, Elena M. Davidian, Minoo Heidari Latibari, Abigail P. Martens, Farzad Minab, Sangjin Kim, Jose Michelena Saval, Mar Ferrer-Suay, Zahra Yari, Özlem Çetin Erdogan, Samantha Edly, Buntika A. Butcher, Jelisaveta Čkrkić, Korana Kocić, Konstanin Samartsev, Hossein Barahoei, David Mifsud, Xavier Pons, Rajendra Singh, Bidhan Chandra Das, Zubair Ahmad, Shalva Barjadze, Mohsen Mehrparvar, Jan Havelka, Malik Laamari, Monia Kamel Ben Halima, Marcus Vinicius Sampaio, Andjeljko Petrović, Vladimir Žikić, Nickolas G. Kavallieratos, Xue-Xin Chen, Jose Fernandez-Triana, Ali Asghar Talebi



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Monograph

# Worldwide catalog of Aphidiinae (Hymenoptera, Braconidae): distribution, host associations and notes on their bioecology

**Ehsan Rakhshani [1], Mostafa Ghafouri Moghaddam [2,3], Cornelis van Achterberg [4], Željko Tomanović [5,6], Andrew Polaszek [7], Elena M. Davidian [8], Minoo Heidari Latibari [2], Abigail P. Martens [9], Farzad Minab [1], Sangjin Kim [10,11], Jose Michelena Saval [12], Mar Ferrer-Suay [13], Zahra Yari [1], Özlem Çetin Erdogan [14], Samantha Edley [15,16], Buntika A. Butcher [2], Jelisaveta Čkrkić [5], Korana Kocić [5], Konstantin Samartsev [17], Hossein Barahoei [18], David Mifsud [19], Xavier Pons [20], Rajendra Singh [21], Bidhan Chandra Das [22], Zubair Ahmad [23], Shalva Barjadze [24], Mohsen Mehrparvar [25], Jan Havelka [26], Malik Laamari [27], Monia Kamel Ben Halima [28], Marcus Vinicius Sampaio [29], Andjeljko Petrović [5], Vladimir Žikić [30], Nickolas G. Kavallieratos [31], Xue-Xin Chen [32,33], Jose Fernandez-Triana [34] Ali Asghar Talebi [35]**

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*A taxonomist in the parasitoids should always keep in mind that his work is merely one phase of a long chain of research.*

The late **Petr Starý** (1933–2023)
RNDr., DSc., The Czech Academy of Sciences

*A legend and a remarkable scientist, with a broad perspective and unparalleled generosity, who had a great impact on the taxonomy of aphid parasitoids worldwide. May his legacy continue to inspire future generations of scientists.*

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**ABSTRACT.** In this monograph, the Aphidiinae of the world are cataloged. A total of 733 valid species in 67 genera are recorded, comprising 704 extant species in 54 genera and 29 fossil species assigned to 15 genera. The Palaearctic region contains the largest documented aphidiine fauna. Generic diversity is strongly skewed, with 34 genera represented by a single species and a few species-rich genera accounting for a disproportionate share of the known fauna. Distributions are given according to a scheme of biogeographical divisions developed for this catalog and are most finely divided for the Afrotropical, Australasian, Holarctic (Palaearctic + Nearctic), Neotropical, Oceanic, and Oriental regions. The catalog is based on examination of the primary literature comprising more than 3,370 references from 1818–2026. Nomenclatural details are provided for nominal genera and species, including synonyms at both levels for taxa described or recorded worldwide. For valid species, distributions are provided along with complete name-bearing type data for associated names. Host aphids belong to 1,070 species within 215 genera. A replacement name, *Pauesia shii* Ghafouri Moghaddam, **nom. nov.**, is proposed for *Pauesia rugosa* Shi, 2001, a junior primary homonym of *Pauesia rugosa* Starý & Remaudière, 1982. Herein, we present 146 new country records involving genera and species from 48 countries. Notably, this study provides the first confirmed records of the subfamily Aphidiinae from four countries: Jamaica, Papua New Guinea, São Tomé and Príncipe, and Suriname. Country-level faunal analyses across 142 countries and territories revealed a strongly uneven distribution of documented richness: Russia, the USA, France, India, and China were among the faunistically richest countries. Species richness was strongly associated with generic richness but only weakly related to country area. Europe had the highest median country-level richness, followed by Asia. The long-tailed richness profile showed that a small number of countries contribute a disproportionate share of the documented fauna, whereas several countries still lack published distributional records. These patterns reveal both genuine biogeographical structure and major geographical biases in sampling and taxonomic coverage, providing a baseline for future inventory, taxonomic revision, and research related to biological control. In addition, photographs for more than half of the species, alongside an updated compilation of their biological data, with particular emphasis on their use in biological control are presented.

**KEYWORDS:** Aphid parasitoids, Checklist, Biocontrol, Bioecology, Faunal analyses, Global review, Host associations, Pioneer taxonomists, Protonyms, Type locality, Type specimens

## INTRODUCTION

The Aphidiinae stands out as the sole wasp subfamily (Hymenoptera, Braconidae) that feeds exclusively on aphids as solitary koinobionts and endoparasitoids. This monophyletic group is organized into (three or) four tribes, including Aclitini, Aphidiini, Ephedrini, and Praini, with slightly different phylogenetic positions (Mackauer 1961a; Smith et al. 1999; Sanchis et al. 2000; Kambhampati et al. 2000), and its members serve as the main parasitoids of aphids, attacking aphids from no fewer than 17 subfamilies of the Aphididae (Porter & Hawkins 1998). The survival of these parasitoids depends entirely on their aphid hosts; consequently, they are restricted to habitats where aphids occur. Most species occur in the temperate regions of the Northern Hemisphere, and relatively few are native to tropical environments.

Members of the subfamily Aphidiinae are small-bodied parasitoid wasps having distinctive biological traits closely associated with the habitats of their exclusive hosts (Starý 1970a). Despite considerable ambiguity and complexity surrounding the evolution of their host associations and co-evolution with aphids (Mackauer 1967b; Le Ralec et al. 1986, 1996, 2010), these insects serve as important ecological models, leading to extensive studies across various aspects of their biology (Adjalla et al. 2025; Engel et al. 2025; Javed et al. 2025a, 2025b; Reji Chacko et al. 2025). The Aphidiinae parasitoids play a major role as natural enemies of aphids and are consistently prioritized in the product lines of various companies specializing in mass-rearing of biological control agents, particularly in protected crops. Numerous efforts have been made for the introduction of these wasps for the control of invasive aphid pests in various countries, and comprehensive protocols have been developed and promoted for their conservation within both natural and agricultural ecosystems (Starý 1970a; Rakhshani & Starý 2021). In many cases, the common species exhibiting moderate to broad host ranges (oligophagous to broad oligophagous) can be collected by rearing the parasitized or mummified aphids found on various plants. For this reason, research on this group has held special appeal for many investigators. Although a substantial body of information on the distribution and host associations of Aphidiinae has been published, many records still need confirmation. Their small body size, structural modifications resulting from endoparasitic larval development, and specific morphological adaptations for oviposition into the body of aphid hosts

strongly influence the nature and diagnostic value of the characters traditionally used for the identification of these wasps (Starý 1978a). The existence of cryptic species (Atanassova et al. 1998; Mitrovski-Bogdanović et al. 2013; Petrović et al. 2016), with minor diagnostic morphological traits and likely narrow host specificity, has been demonstrated across several genera within the subfamily (Derocles et al. 2016). These issues, combined with the inherent difficulties in accurately identifying aphid host species, create considerable complexity in species determination and make it necessary to re-examine many of the previously published records.

Bioecological studies on the important species involved in biological control programs (i.e., agents that are commercially mass-reared) have yielded numerous innovative insights (Brodeur & McNeil 1994a; Bribosia et al. 2005a). In addition to their inherent necessity, the feasibility of applying and manipulating certain affected traits under greenhouse conditions has created opportunities for advanced studies connected to agricultural operations. This includes studies on the interactions among natural enemies, the effects of agrochemicals, artificial light sources on aphid parasitoid wasps, and the presence of other pests on different plant parts or various plant cultivars. Fundamental studies, including evaluations of parasitoid wasp efficacy within a diverse range of biological conditions, constitute a major portion of the documented knowledge on this group of biological control agents (see Rakhshani & Starý 2021).

Taxonomic studies on the Aphidiinae have a history comparable to or even longer than that of other subfamilies of Braconidae. It appears that the earliest nomenclature was established by Christian Gottfried Daniel Nees von Esenbeck (1776–1858) (Fig. 1A) (*Bracon dissolutus* Nees, 1811; *Bracon exsoletus* Nees, 1811; *Bracon plagiator* Nees, 1811). Except in a few cases, most of the names he proposed are now regarded as synonyms of other names under the ICZN (International Code of Zoological Nomenclature). Many of the currently valid names in the subfamily Aphidiinae are attributed to the efforts of the prominent researcher Alexander Henry Haliday (1806–1870) (Fig. 1F). He classified the majority of species within the genus *Aphidius* Nees, 1819, and the subgenera he introduced have since been elevated to generic rank, each encompassing multiple valid species. A similar, though less extensive, approach was followed by Thomas Ansell Marshall (1827–1903) and Johann Friedrich Ruthe (1788–1859) (Fig. 1B). One of the most influential and significant contributions to the classification of Aphidiinae came from Arnold Förster (1810–1884) (Fig. 1H), who described numerous genera in 1863 [1982] (*Aclitus*, *Adialytus*, *Diaeretus*, *Lipolexis*, *Lysiphlebus*, and *Paralipsis*). Species described by John Curtis (1791–1862) (Fig. 1C) are, with the sole exception of *Trioxys cirsii* (Curtis, 1831), which remains valid, all currently regarded as synonyms of other names or *species inquirenda*. Similarly, a few species and genera described by Camillo Rondani (1808–1879) (Fig. 1G) have largely met the same fate, except for *Binodoxys crudelis* (Rondani, 1848), whose taxonomic status remains problematic. Additional descriptions of a small number of Aphidiinae species by researchers primarily working on other hymenopteran groups have also been published, and some of these names are still valid today. The name of John Obadiah Westwood (1805–1893) (Fig. 1I) appears in the Aphidiinae only in the monograph by Haliday that describes the genus *Toxares*; Westwood's primary contributions were to Chalcidoidea and other insect groups.

Significant progress in the taxonomy of Aphidiinae occurred in the late 19th and early 20th centuries through the work of William Harris Ashmead (1855–1908) (Fig. 1Q). The majority of these studies focused on the fauna of North America (the United States) and East Asia (Japan). Subsequent taxonomic work in North America was extensively pursued by outstanding experts such as Carl Frederick William Muesebeck (1894–1987) (Fig. 2E), Clyde Fuhriman Smith (1913–2000) (Fig. 2M), and Paul M. Marsh (1940–2024) (Fig. 3E), and later developed further by Keith Pike (Fig. 3K) and his collaborators. In Japan, taxonomic research on this group was founded by Chihisa Watanabe (1907–1996) (Fig. 2K) and expanded far more extensively by Hajimu Takada (Fig. 3F). Studies on the taxonomy and biodiversity of Aphidiinae expanded considerably in Europe during the 20th century. The most concentrated efforts, which led to the description of various genera and species and brought about substantial changes in the classification of these parasitoids, were carried out by Ermenegildo Tremblay (1932–2010) (Fig. 2W), Manfred Mackauer (1932–2026) (Fig. 2X), and Petr Starý (1933–2023) (Fig. 2Y).

Doubtlessly, Petr Starý is recognized as the most influential researcher (with more than 500 published papers on Aphidiinae) in this group of wasps, owing to his extensive experience, vast knowledge,

and broad network of international collaborations with scientists worldwide. In addition to his taxonomic work, he devoted special attention to applied ecology research and even conducted paleontological studies. The initiation and development of research in many other parts of the world owe much to his efforts in expanding international collaborations. One particularly noteworthy aspect was his close collaboration with prominent aphidologists, such as Georges Remaudière (1922–2014) (Fig. 2P), François Leclant (1934–2001) (Fig. 3B), and Miguel Ángel Delfino (Argentina). Similar connections with aphid researchers in India, including Dhirendra Nath Raychaudhuri (1924–1981) (Fig. 2R), Ashish Kumar Ghosh (1938–2018) (Fig. 3D), and Samiran Chakrabarti (1946–2025) (Fig. 3I), served as the starting point for in-depth studies that were subsequently pursued by numerous other researchers in that country. His extensive collaborations with researchers outside Europe contributed significantly to the study of Aphidiinae across Asia (e.g., Starý & Kaddou 1971; Starý & Juchnevič 1978; Starý & Zelený 1983; Starý et al. 1999), Australia (Starý & Carver 1971; Starý & Carver 1980), North America (Starý & Marsh 1982; Pike & Starý 1996a, 1996b; Starý & Zuparko 2002), South America (Starý & Delfino 1987; Starý & Cermeli 1989; Starý et al. 1994b, 2007), and Africa (Starý & van Harten 1974; Starý & Sekkat 1987; Starý et al. 1993a, 1993b, 1994a), resulting in the identification and description of numerous new genera and species. Beyond his professional work on the taxonomy of Aphidiinae, he maintained extensive collaborations with researchers such as Evert Irving Schlinger (1928–2014) (Fig. 2T) and Daniel González (1933–2009), who focused particularly on classical biological control programs (Starý & Schlinger 1967; Starý & González 1978, 1991, 1992). Although the majority of studies in Central Asia were also largely influenced by the sole or collaborative works of Petr Starý, the contributions of scientists such as Nikolai Abramovich Telenga (1905–1966) (Fig. 2H), Medea P. Akhvlediani (Fig. 3A), and Ion G. Chiriac (Fig. 3H) were likewise highly significant.

The Aphidiinae wasps have long been classified as an independent family, Aphidiidae, within the superfamily Ichneumonoidea (Haliday 1838; Mackauer 1961a, 1961d). This classification was revised following phylogenetic and cladistic studies (Chou 1984b; van Achterberg 1984; Kambhampati et al. 2000; Belshaw et al. 1998, 2000, 2003; Belshaw & Quicke 2002; Shi et al. 2005; Zaldivar-Riverón et al. 2006; Kim et al. 2026a), which firmly established the group as the subfamily Aphidiinae within the family Braconidae, as it was primarily outlined by Gahan (1911a). Numerous studies aimed at classifying lower-level taxa within the subfamily achieved partial confirmation of morphologically based classifications (Mackauer 1961a; Tremblay 1967b; Chou 1984b). Despite substantial progress, due to limitations in data matrices or evolutionary incongruences among the studied genes, disagreements persisted, or results remained ambiguous regarding the relationships and phylogenetic positions of certain tribes (Belshaw & Quicke 1997; Smith et al. 1999; Sanchis et al. 2000, 2001; Smith & Kambhampati 2000; Shi & Chen 2005). More recent integrative phylogenetic studies at lower taxonomic levels (below the tribal rank) have provided clearer results (Kocić et al. 2019; Čkrkić et al. 2020), resolving the ambiguities among the less explored taxa.

From an ecological point of view, the parasitoids, positioned as the third trophic level associated with diverse habitats, exhibit a high degree of taxonomic divergence. In some genera, it is not possible to present a clear picture of the phylogenetic relationships or species groupings. Nevertheless, valuable efforts have been made to achieve subgeneric-level classification (Starý 1975e, 1981c; Kocić et al. 2019), which have resolved some of the existing ambiguities. In certain cases, however, these classifications have not gained general acceptance (Starý 1983e) or have ultimately been proposed only as informal species groups (Tomanović et al. 2018). Species originally assigned to large genera, such as *Aphidius,* have frequently been placed in various genera and subgenera over time. Due to the lack of universally applicable morphological and biological characters, many of them have been retained without further subdivision within the genus *Aphidius*. The same approach has led to the widespread species *Diaeretiella rapae* (M'Intosh, 1855) being reclassified based on integrative taxonomy, together with other morphologically similar species within the genus *Aphidius* (Popović et al. 2025). Similar taxonomic changes have also occurred in recent years for other genera, such as *Euaphidius* Mackauer, 1961, and *Remaudierea* Starý, 1973 (Ilić-Milošević et al. 2015).

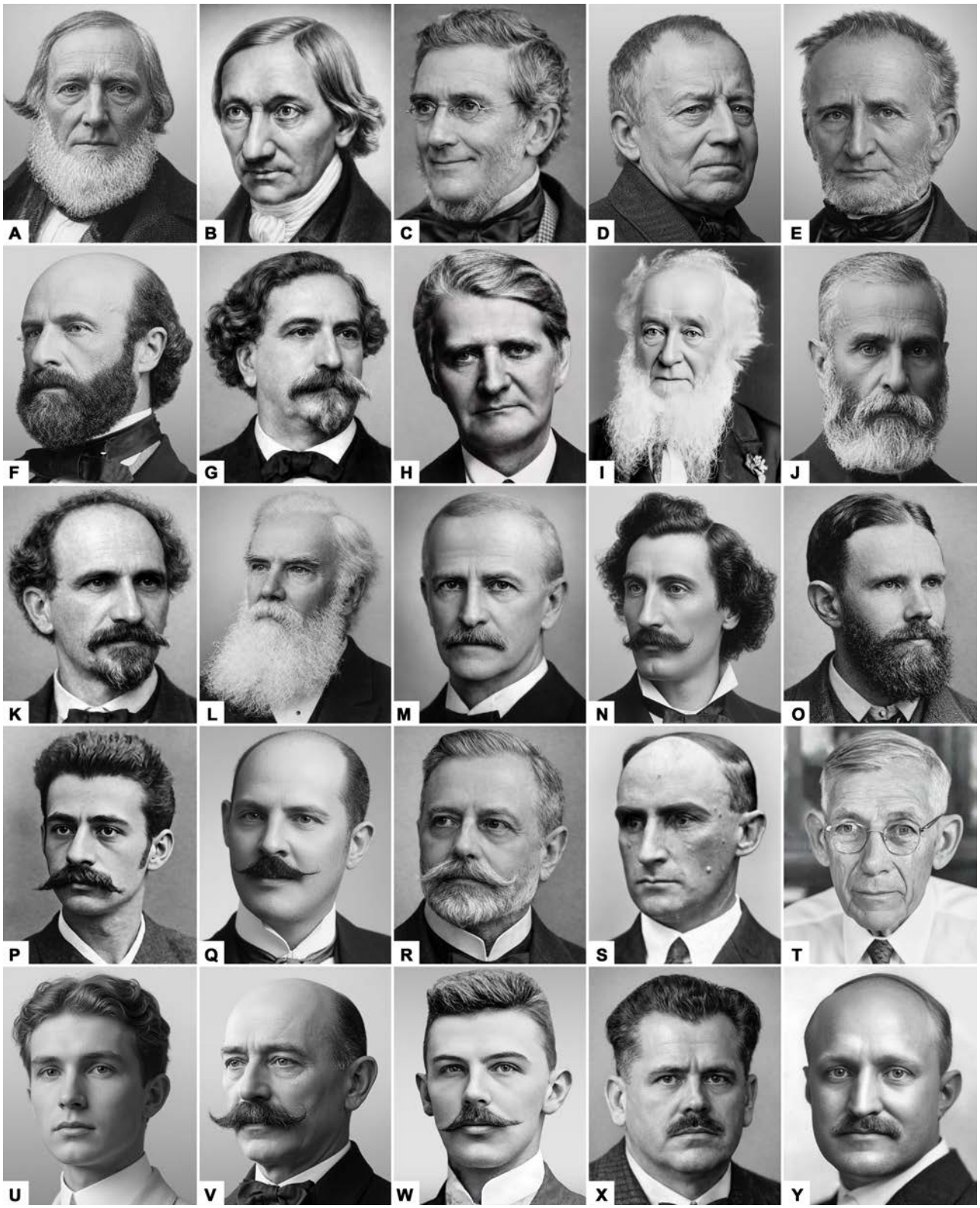



**Figure 1.** The pioneer taxonomists with significant contributions to Aphidiinae. **A.** Christian Gottfried Daniel Nees von Esenbeck (1776–1858); **B.** Johann Friedrich Ruthe (1788–1859); **C.** John Curtis (1791–1862); **D.** Constantin Wesmael (1798–1872); **E.** Julius Theodor Christian Ratzeburg (1801–1871); **F.** Alexander Henry Haliday (1806–1870); **G.** Camillo Rondani (1808–1879); **H.** Arnold Förster (1810–1884); **I.** John Obadiah Westwood (1805–1893); **J.** Léon Provancher (1820–1892); **K.** Carl Gustaf Thomson (1824–1899); **L.** George Carter Bignell (1826–1910); **M.** Ezra Townsend Cresson (1838–1926); **N.** Charles Valentine Riley (1843–1895); **O.** Peter Cameron (1847–1912); **P.** Theodosio De Stefani Perez (1853–1935); **Q.** William Harris Ashmead (1855–1908); **R.** Gyözö Viktor Szépligeti (1855–1915); **S.** Walter Wilson Froggatt (1858–1937); **T.** Otto Herman Swezey (1869–1959); **U.** Charles Fuller Baker (1872–1927); **V.** Juan Brèthes (1871–1928); **W.** Per Abraham Roman (1872–1943); **X.** Josef Fahringer (1876–1950); **Y.** Henry Lorenz Viereck (1881–1931). [Restored]

[**Photo credits: B.** Museum-digital:berlin; **I.** Capinera (2008); **J.** Fondements Scientifiques de l'Encyclopédie; **K.** UNSM; **T.** Pemberton (1960); **V.** Ducloux (1928); **Y.** USNM. Others: Public domain]




**Figure 2.** The pioneer taxonomists with significant contributions to Aphidiinae. **A.** Arthur Burton Gahan (1880–1960); **B.** Arthur Wilson Stelfox (1883–1972); **C.** Edgar Harold Strickland (1889–1962); **D.** Wolter Edward Hellén (1890–1979); **E.** Carl Frederick William Muesebeck (1894–1987); **F.** Erwin Schimitschek (1898–1983); **G.** Modesto Quilis-Pérez (1904–1938); **H.** Nikolai Abramovich Telenga (1905–1966); **I.** János Györfi (1905–1966); **J.** Walter Douglas Hincks (1906–1961); **K.** Chihisa Watanabe (1907–1996); **L.** Keizo Yasumatsu (1908–1983); **M.** Clyde Fuhriman Smith (1913–2000); **N.** Thelma Finlayson (1914–2016); **O.** Ronald Dennis Eady (1919–1977); **P.** Georges Remaudière (1922–2014); **Q.** Ulrich Sedlag (1923–2016); **R.** Dhirendra Nath Raychaudhuri (1924–1981); **S.** Bokinakere Ramakrishnaiya Subba Rao (1925–2020); **T.** Evert Irving Schlinger (1928–2014); **U.** Stanisław K. Wiąckowski (1929–2022); **V.** Mary Carver (1930–2022); **W.** Ermenegildo Tremblay (1932–2010); **X.** Manfred Mackauer (1932–2026); **Y.** Petr Starý (1933–2023). [Restored]

[**Photo credits: A.** USNM; **B.** McMillan et al. (1972); **C.** Hocking (1963); **D.** Senckenberg DEI; **E.** Krombein & Marsh (1988); **F.** Jahn (1958); **G.** Catalá-Gorgues (2018); **H.** ZISP; **I.** Horváth & Varga (2005); **J.** Miles (2015); **K.** EIHU; **L.** IOBC (2024); **M.** Farrier & Deitz (2000); **N.** SFUB; **O.** NHMUK; **P.** Courtesy of J.M. Nieto Nafría; **Q.** Klausnítzer (2016); **R.** ZSI; **S.** ZSI; **T.** EMEC; **U.** Choroby Nowotworowe; **V.** ANIC; **W.** F. Pennacchio; **X.** SFUB]




**Figure 3.** The pioneer and current taxonomists with significant contributions to Aphidiinae. **A.** Medea P. Akhvlediani. **B.** François Leclant (1934–2001); **C.** Eugeniusz Kierych (1936–2018); **D.** Ashish Kumar Ghosh (1938–2018); **E.** Paul Malcolm Marsh (1940–2024); **F.** Hajimu Takada; **G.** Shuja-Uddin; **H.** Ion G. Chiriac; **I.** Samiran Chakrabarti (1946–2025); **J.** Antonius van Harten; **K.** Keith Pike; **L.** Liang-Yih Chou (1948–2000); **M.** Martti Koponen; **N.** Ulf Gärdenfors; **O.** Basant K Agarwala; **P.** Tadeusz Barczak; **Q.** Francesco Pennacchio; **R.** Emilio Jorge Tizado Morales; **S.** Ramesh C. Bhagat; **T.** Maryna Kaliuzhna; **U.** Imran Bodlah; **V.** Ana Mitrovski-Bogdanović; **W.** Katarina Kos; **X.** Belen Lumbierres; **Y.** Edward Baker.

[**Photo credits: A.** Ilia State University (Georgia); **B.** Courtesy of J.M. Nieto Nafría; **C.** MIZ PAS; **D.** ZSI; **E.** KSUC; **F.** Courtesy of Shiro Nakao; **H.** Courtesy of F.I. Chiriac; **I.** Joshi (2025); **K.** ESA; **L.** Lo (2000); **M.** Courtesy of Juho Paukkunen; **N.** Ystads Allehanda; **S.** ZSI]

Identification of genera, and particularly species, within the subfamily Aphidiinae remains a relatively difficult task due to several factors: their small body size, the scarcity of conspicuous diagnostic morphological characters, convergent evolution of certain traits, and considerable intraspecific variability. In nearly all cases, accurate species-level identification is not feasible without sufficient information on the host aphid species or its habitat (Starý 1970a; Das & Chakrabarti 2023b). Identification keys have been published at the genus level (Marsh 1971; van Achterberg 1997b; Gadallah et al. 2022; Ferrer-Suay et al. 2025a), as well as for species occurring in specific biogeographic regions (Smith 1944; Starý & Schlinger 1967; Starý 1976a, 1979a; Starý & Ghosh 1983; Gärdenfors 1986; Johnson 1987; Chen & Shi 2001; Kavallieratos et al. 2001, 2008b, 2010, 2013, 2016; Davidian 2007; Rakhshani et al. 2019; Tomanović et al. 2021). These keys allow reliable identification of many of the more common and widespread species (Mackauer et al. 1996). Nevertheless, for accurate identification of species described in more recent decades, it is essential to consult up-to-date compilations (Rakhshani et al. 2019) and, whenever possible, the original descriptions and the type material as well. Morphological characters, as objective and measurable traits, continue to hold substantial importance in the background of biological studies, taxonomic revisions, and phylogenetic interpretations of the evolutionary history of Aphidiinae. The majority of diagnostic characters used in the identification keys to genera and species are primarily based on female specimens. In this context, detailed studies into functional morphology, i.e., the characters that play a direct role in the interaction between the parasitoid wasp and its habitat or aphid host, have clarified several critical aspects in their taxonomy (Gahan 1913b; Starý 1964b, 1976b; Tremblay & Iaccarino 1971; Tremblay 1981, 1983b; Le Ralec & Rabasse 1988; Mancini & Tremblay 1996a; De Marzo 2000; Kovács 2009; Xi et al. 2010; Völkl & Mackauer 2000; Kaliuzhna 2016b; Parreño et al. 2017; Žikić et al. 2017b; Yamamoto et al. 2020; Hosseini et al. 2021). Despite valuable efforts to use male-specific characteristics, particularly genitalia, for taxonomic studies (Tremblay 1978, 1981, 1983a; Maetô 1987; Pennacchio et al. 1988), their effective application in identifying Aphidiinae species remains uncommon.

During its final developmental stages, the larva of the parasitoid consumes all the internal contents of the aphid host. Upon completion of feeding, it initiates the spinning of the pupal cocoon inside the host's body (or outside in species of *Praon* and *Dyscritulus*), resulting in the empty aphid exoskeleton transforming into a characteristic mummy (Gutierrez Ibanez et al. 2007; Mackauer et al. 1997; Das & Chakrabarti 2023b)(Figs 4–8). The color, shape, and even the spatial orientation or position of the aphid mummy, although influenced by environmental conditions (Starý 1983a, 1983b), represent important biological traits that can help in the identification of the parasitoid both at the generic and sometimes even at species level (Webster 1908; Hafez 1965; Krespi et al. 1994; Singh & Hoy 2007). Additionally, the shape and location of the emergence hole through which the adult parasitoid exits the mummy (Starý 1974f), as well as the mode of attachment of the mummified aphid to the host plant surface (Mackauer 1961d), constitute key diagnostic characters frequently used for identification (Ghaliow et al. 2018). Various morphological and biological traits of the larvae (primarily the first instar) (Schlinger & Hall 1960b; Starý 1964a; Couchman & King 1977; Hofsvang & Høgvar 1978b; Chorney & Mackauer 1979; Chow & Sullivan 1984; Das & Chakrabarti 1988a; O'Donnell 1989; Finlayson 1990; Bi & Ji 1993; Ohta et al. 2001; Muratori et al. 2004) have also long been used in the taxonomy of these parasitoids.

The occurrence of ecotypes (Flint 1980a, 1980b), biotypes (Starý 1983b; Starý et al. 1985b), and especially cryptic species is a well-documented phenomenon in aphid parasitoids that is strongly correlated with variation in their host ranges (Digilio & Pennacchio 1994; Derocles et al. 2016; Petrović et al. 2016). This complexity is particularly pronounced in species with asexual lineages (Belshaw & Quicke 2003; Belshaw et al. 1999; Rasekh et al. 2011), where the absence of gene flow through sexual crosses precludes direct assessment of reproductive isolation or population-level compatibility (Sandrock et al. 2010, 2011). An ambitious approach involving the application of molecular markers (Hufbauer et al. 2001, 2004; Weathersbee et al. 2004b; Sandrock et al. 2007; Nyabuga et al. 2009), and especially DNA barcoding using the mitochondrial COI gene region (Tomanović et al. 2013, 2014, 2018; Zhou et al. 2014; Petrović et al. 2015; Stanković et al. 2015; Haddadian et al. 2016, 2026; Uesugi & Nagasaka 2017; Hwang et al. 2018; López-Monzón et al. 2019; Mitrovski-Bogdanović et al. 2021; Hu et al. 2023; Yoneya et al. 2023), has proven highly effective in the accurate detection and delimitation of cryptic species or very closely related ones. Molecular data have reshaped the systematics of parasitoid wasps (and other insects), profoundly influencing individual identification, kinship assessment, and broader evolutionary inference.

Complementing molecular studies, geometric morphometric analyses (Lazarević et al. 2017; Mitrovski-Bogdanović & Radojičić 2017; Parreño et al. 2017; Žikić et al. 2017a) and also wing interference patterns (Hosseini et al. 2021) have substantially improved the clarity and resolution of taxonomic and evolutionary inferences. Genomic characteristics at the level of the entire genome serve as essential genetic assets for determining species and conducting phylogenetic studies. Complete mitochondrial genomes have been sequenced and analyzed for a few species of Aphidiinae (Wei et al. 2010; Xu et al. 2023; Lin et al. 2024).

Numerous scattered lists of Hymenoptera have been published, either as biological control agents or representing the fauna of various regions (Smith 1853; Ashmead 1890; Slosson 1898; Rühl 1911; Muesebeck 1928; Poos 1928; Strickland 1946, 1952; Sonan 1944; Kloet & Hincks 1945; Zimmerman 1948; Esquivel 1950; Parker et al. 1950; Leclercq 1952; Gibson & Carillos 1959; Beardsley 1961; Aubert 1966; Baltazar 1966; De Santis & Esquivel 1966; Valentine 1967; Fulmek 1968; Haeselbarth 1983; Alayo 1970, 1973; Bergamesco et al. 1995; Silfverberg 1996; Báez et al. 2001; Borges et al. 2005; van Achterberg 2006; Fallahzadeh & Saghaei 2010; Long & van Achterberg 2014; Farahani et al. 2016). These studies often include a limited number of Aphidiinae and, in some cases, their host associations. Nevertheless, dedicated compilations specifically documenting Aphidiinae reported from various countries such as: **Algeria** (Laamari et al. 2012), **Australia** (Carver & Starý 1974), **Belgium** (Lopes et al. 2016), **Bulgaria** (Atanassova 1997; Kolarov 1997; Balevski 2004a, 2004b), **Chile** (Starý 1995c), **China** (Chen & Shi 2001), **Canada** (Batulla & Robinson 1984), **Costa Rica** (Zamora-Mejías et al. 2010), **Cuba** (Starý 1981a), **Czech Republic** (Starý 1966c, 2006), **Egypt** (Gadallah et al. 2017), **Finland** (Halme 1977), **Germany** (Belokobylskij et al. 2003), **Greece** (Kavallieratos et al. 2001), **Guam** (Miller et al. 2002), **Hungary** (Polgár 1983), **India** (Ghosh & Agarwala 1982; Starý & Ghosh 1983; Akhtar et al. 2011a; Das & Chakrabarti 2023a; Singh 2024a, 2024b, 2024c, 2024d, 2025a, 2025b, 2025c, 2025f, 2025g, 2025h; Singh & Ahmad 2025; Agarwala & Singh 2026; Singh & Agarwala 2026), **Iran** (Starý et al. 2000; Barahoei et al. 2014), **Iraq** (Starý & Kaddou 1971), **Italy** (Starý 1966d), **Japan** (Takada 1968), **Korean Peninsula** (Paik 1975; Starý & Choi 2000), **Madagascar** (Starý 2005), **Malaysia** (Ng & Starý 1986), **Malta** (Rakhshani et al. 2015b), **Mexico** (Starý 1983d), **Mongolia** (Watanabe 1949), **Montenegro** (Tomanović et al. 2026a), **Morocco** (Mimeur 1934), **Norway** (Westrum et al. 2010), **Pakistan** (Starý et al. 1999), **Poland** (Wiackowski et al. 2001), **Portugal** (Cecilio 1996; Cecilio et al. 2009), **Russia** (Davidian 2007, 2019b; Davidian & Gavrilyuk 2014), **Serbia** (Tomanović et al. 2021), **Thailand** (Martens et al. 2021), **Tunisia** (Zouari et al. 2018), **United Kingdom** (Broad et al. 2016); **USA** (Schlinger & Hall 1960a; Muesebeck 1967; Marsh 1979; Pike et al. 2000) and **Vietnam** (Starý & Zelený 1983; Tomanović et al. 2026b) have also been published. These provide valuable information and are presented in the form of checklists, catalogs, or taxonomic studies, thereby reflecting the fauna of those regions. Some lists focus exclusively on the tribes (Davidian 2016b, 2017, 2018b, 2018c, 2019a; Singh 2025d, 2025e), or genera (Gärdenfors 1986; Kerkig et al. 2025; Singh 2025i, 2025j).

Key monographs focused on the fauna of Central Asia (Starý 1979a), the Mediterranean region (Starý 1976a), the Far East (Starý 1975a), and the Middle East and North Africa (Rakhshani et al. 2019) contained comprehensive lists, identification keys, and even descriptions of new species (e.g., Starý & Schlinger 1967). First attempts to compile a global catalog of parasitoid wasps in the subfamily Aphidiinae were undertaken by Narayanan et al. (1960), followed shortly thereafter by a more complete and revised version (Narayanan et al. 1962). The most comprehensive global catalog of Aphidiinae remains Mackauer & Starý (1967), which includes many valid names, reviews of prior taxonomic studies on each taxon, as well as information on biology, host associations, and geographic distributions of the species. Shortly after, Mackauer (1968a) published the catalog of Aphidiinae (as the family Aphidiidae), in which he offered a comprehensive classification system down to the subfamily level and provided an in-depth taxonomic history of the nomenclature for the genera and species. Additionally, that catalog provides a list of countries and biogeographical regions where these species are found. The Nearctic Aphidiinae were also cataloged in a series of subsequent monographs (Muesebeck 1928, 1958a, 1967; Marsh 1979). Taxapad (Yu et al. 2016) constitutes the most exhaustive resource up to its date of publication for almost all published information on Aphidiinae (and the entire superfamily Ichneumonoidea). It compiles almost all recorded data on species biology and geographic ranges, but without critical screening. Recent findings on host associations and species distributions, the large number of taxa described since the publication of Taxapad, and the absence of suitable, verified checklists for many countries emphasize the urgent need for a thorough review, validation, and updating of existing information. Such an effort would provide a solid foundation for planning future studies.

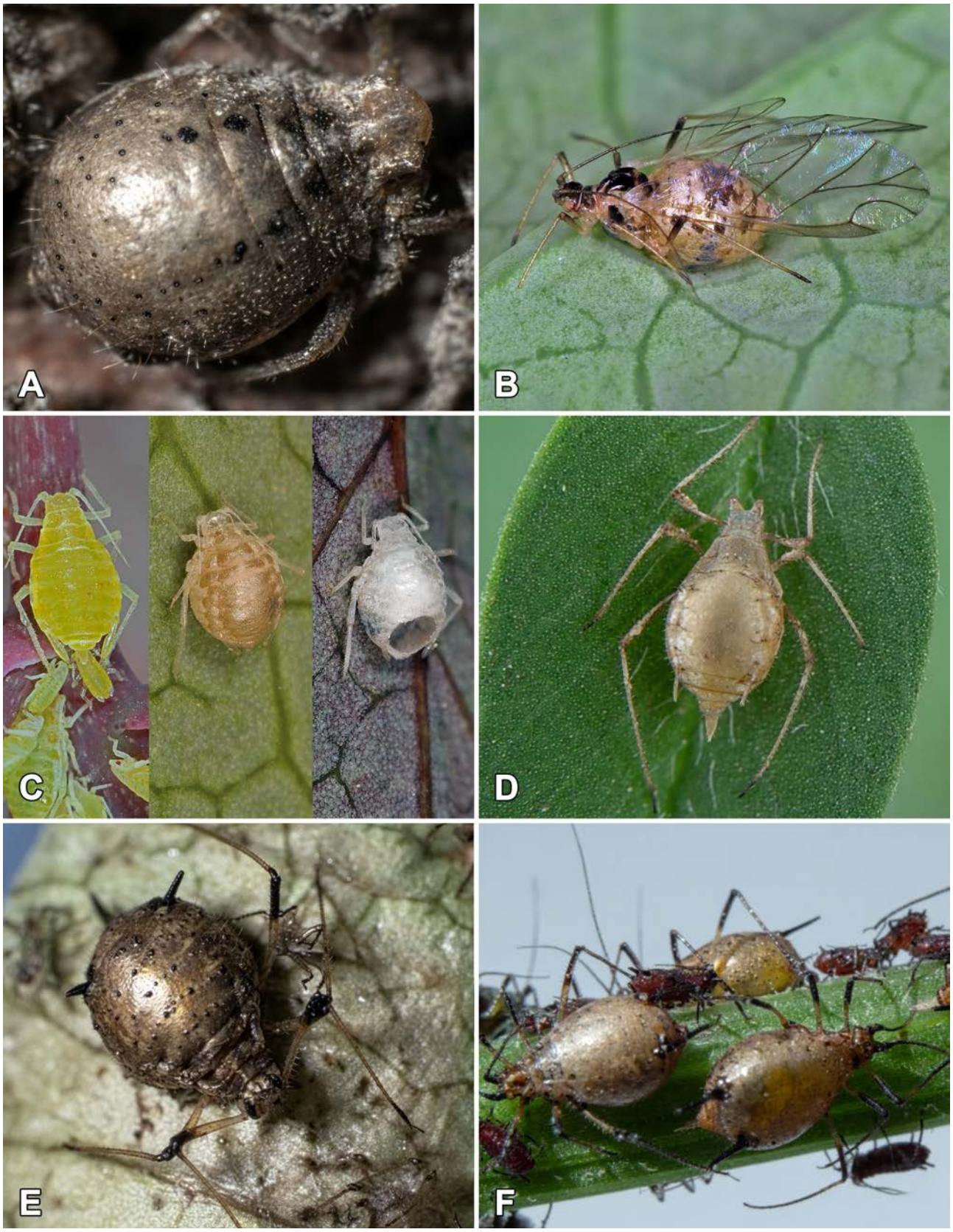



**Figure 4.** Aphid colonies including mummified aphids, parasitized by Aphidiinae. **A.** *Pterocomma* sp., by *Aphidius cingulatus* Ruthe, 1859; **B.** *Ericaphis scammelli* (Mason) by *Aphidius ericaphidis* Pike & Starý, 2011; **C.** *Liosomaphis berberidis* (Kaltenbach), by *Aphidius hortensis* Marshall, 1896; **D.** *Acyrthosiphon pisum* (Harris), by *Aphidius ervi* Haliday, 1834; **E.** *Uroleucon* sp., by *Aphidius funebris* Mackauer, 1961; **F.** *Uroleucon chondrillae* (Nevsky), by *Aphidius persicus* Rakhshani & Starý, 2006.

[**Photo credits: A.**, **D–F.** by E. Rakhshani; **B–C.** by J. Havelka]




**Figure 5.** Aphid colonies including mummified aphids, parasitized by Aphidiinae. **A.** *Macrosiphum rosae* (Linnaeus), by *Aphidius rosae* Haliday, 1833; **B.** *Sitobion avenae* (Fabricius), by *Aphidius uzbekistanicus* Luzhetzki, 1960; **C.** *Sipha flava* (Forbes), by *Adialytus ambiguus* (Haliday, 1834); **D.** *Aphis craccivora* Koch, by *Lysiphlebus fabarum* (Marshall, 1896); **E.** Oviposition of female *Lysiphlebus confusus* Tremblay & Eady, 1978 on *Aphis farinosa* Gmelin, and a dark brown mummy; **F.** *Amphorophora rubi* (Kaltenbach), by *Aphidius rubi* Starý, 1962.

[**Photo credits: A.** by A. Petrović; **B.** and **D.** by E. Rakhshani; **C.** by Y. Nazari; **E–F.** by J. Havelka]




**Figure 6.** Aphid colonies including mummified aphids, parasitized by Aphidiinae. **A.** Oviposition of a female *Lysiphlebus hirticornis* Mackauer, 1960, on its specific host aphid, *Metopeurum fuscoviride* Stroyan; **B.** *Chaitophorus populialbae* (Boyer de Fonscolombe, 1841) by *Adialytus salicaphis* (Fitch, 1855); **C.** *Thelaxes dryophila* (Schrank), by *Adialytus thelaxis* (Starý, 1961); **D.** *Eucallipterus tiliae* (Linnaeus), by *Trioxys curvicaudus* Mackauer, 1967, and a *Praon* species; **E.** *Aphis fabae* Scopoli, by *Aphidius* sp.; **F.** *Tuberculatus annulatus* (Hartig), by *Trioxys pallidus* (Haliday, 1833). [**Photo credits:** J. Havelka]




**Figure 7.** Aphid colonies including mummified aphids, parasitized by Aphidiinae. **A.** *Pterochloroides persicae* (Cholodkovsky), by *Pauesia antennata* (Mukerji, 1950); **B.** *Cinara tujafilina* (Del Guercio), by *Pauesia hazratbalensis* Bhagat, 1981; **C.** *Cinara* sp. by a *Pauesia* sp.; **D.** *Cinara palaestinensis* Hille Ris Lambers, by *Pauesia silana* Tremblay, 1969; **E.** *Cinara pineti* (Fabricius), by *Pauesia* sp. **F.** *Stomaphis* sp., by *Protaphidius nawaii* (Ashmead, 1906).

[**Photo credits: A.**, **B.** by E. Rakhshani; **C.**, **E.** by J. Havelka; **D.** by M.K. Ben Halima; **F.** by S. Kim]




**Figure 8.** Aphid colonies including mummified aphids, parasitized by Aphidiinae. **A.** *Eriosoma lanuginosum* (Hartig), by *Areopraon lepelleyi* (Waterston, 1926); **B.** *Drepanosiphum platanoidis* (Schrank), by *Dyscritulus planiceps* (Marshall, 1896); **C.** *Uroleucon* sp., by *Praon yomenae* Takada, 1968; **D.** *Illinoia liriodendri* (Monell), by *Praon* sp.; **E.** *Pemphigus spyrothecae* Passerini, by *Monoctonia vesicarii* Tremblay, 1991; **F.** *Aphis hederae* Kaltenbach, by *Ephedrus persicae* Froggatt, 1904.

[**Photo credits: A.** by S. Kazemzadeh; **B.** by R. Dransfield – InfluentialPoints; **C.** by A. Petrović; **D.** by J. Havelka; **E.** by M. Ghafouri-Moghaddam; **F.** by E. Rakhshani]

The fossil record of Aphidiinae is limited, and part of the historical material is presumed lost. Early investigations of specimens from France and Baltic amber (Brues 1933; Théobald 1937; Quilis 1940; Timon-David 1944) provided the first foundation for knowledge of fossil Aphidiinae, later supplemented by additional studies (Mackauer 1959a; Starý 1970a, 1973b). Much of the Baltic amber material formerly housed in the Königsberg Museum (now Kaliningrad) is believed to have been destroyed or lost. The French specimens from the Quievreux Collection were deposited in the Muséum National d'Histoire Naturelle in Paris. However, according to a letter dated 12 October 1935, nearly all of this material had been loaned to M.P. Quilis, who died in 1938. His work on these specimens was published posthumously (Quilis 1940). For a long period, the material was considered irretrievably lost, largely due to the disruptions of the Second World War. Unexpectedly, subsequent efforts led to the rediscovery of the specimens in good condition in Valencia. The material was returned to Paris and later examined by the late Petr Starý, who published a comprehensive revision and described several new genera (Starý 1973b). More recent studies of Albian (Ortega-Blanco et al. 2009), Sakhalinian (Davidian et al. 2021a, 2021b), and Baltic amber material (Davidian et al. 2023a, 2023b) have revealed the existence of several additional fossil taxa, significantly expanding our understanding of Aphidiinae evolutionary history.

Taxonomic work on the Aphidiinae is essential yet hindered by major knowledge gaps and a shortage of specialists. Despite their importance as solitary endoparasitoids widely used in biological control, many species remain understudied. Over the past decade, integrative taxonomic approaches have clarified species boundaries, revealed new and alien species, and refined classification schemes. These advances highlight both the progress made and the persistent limitations in documenting their diversity. Overall, the group illustrates how taxonomic impediments continue to shape our understanding of insect biodiversity (Petrović 2021, 2022). We undertook the preparation of this catalog to document the distributions of the aphidiine fauna of the world so that the species can be better understood within a systematic, biogeographic, and conservation context, and to gather in one place a detailed, authoritative, and annotated compilation of the names and type material of Aphidiinae. This catalog has relied on the study of specimens in collections and is based mainly on the examination of the resources consisting of over 3,370 references, including all taxonomic revisions and reviews of Aphidiinae and all the numerous regional insect surveys that began in the early 1810s and continue to date. Our catalog, based on virtually all the relevant literature through mid-2026, attempts to summarize the state of knowledge about the aphidiine species of the world and their distributions.

Despite the extensive efforts to compile and critically assess the available taxonomic literature, this global catalog should be regarded as a dynamic synthesis rather than a definitive and error-free account of Aphidiinae diversity. The preparation of a worldwide catalog is inherently challenging because original descriptions, type material, nomenclatural acts, taxonomic revisions, host associations, and distributional records are scattered across a large and heterogeneous literature, often published over a period spanning more than two centuries and in multiple languages. For some taxa, primary and secondary types could not be examined directly, original descriptions may be insufficient for an unambiguous interpretation, and subsequent taxonomic treatments may be incomplete or inconsistent. Consequently, some generic placements, synonymies, type depositories, geographical records, host associations, and bibliographic citations may require future reassessment. In particular, host and distributional data derived from secondary sources should be interpreted cautiously unless supported by verified primary evidence. Although every effort has been made to detect and correct errors, omissions, and inaccuracies cannot be fully excluded. Undiscovered synonymies, overlooked publications, misidentifications, and future phylogenetic or integrative taxonomic studies will inevitably lead to changes in the classification and species-level treatment of Aphidiinae. The catalog is therefore intended as a transparent, evidence-based baseline and a framework for continuous updating and refinement by the taxonomic community.

## MATERIALS AND METHODS

The core structure of this catalog was originally based on the Taxapad database (Yu et al. 2016) and subsequently updated using all available information and recent taxonomic revisions within the group. Classification of the subfamily Aphidiinae follows the framework established by Mackauer (1968a) and partly modified in Taxapad (Yu et al. 2016), which recognizes a four-tribe system comprising Aclitini,

Aphidiini, Ephedrini, and Praini. Within Aphidiini, six subtribes are currently distinguished. We incorporated the genera *Neopauesia* Paonam & Singh, 1988 and *Papilloma* Wang, 1989 into the tribe Aphidiini; however, *Autriquella* Starý, 1988 remains unassigned to any subtribe due to its unresolved phylogenetic placement (see Kim et al. 2026a). The genera *Parephedrus* Starý & Carver, 1971, *Protephedrus* Quilis, 1940, and *Pseudephedrus* Starý, 1972 are placed in the tribe Ephedrini, while the genus *Archipraon* Starý, 1973 is placed within Praini, remaining consistent with their general descriptions.

The currently accepted names and taxonomic classifications of the aphid species are based primarily on Favret (2026). In the few cases where that source does not clearly indicate the author(s), we followed Remaudière & Remaudière (1997). In addition to the main content, the supplementary files provided for Pons et al. (2018) and Derocles et al. (2014a) were also reviewed to explore the list of species and host associations. Host associations that are highlighted in **bold** represent the most reliable records currently available. In contrast, non-bold records are considered doubtful because they may reflect outdated taxonomy, misidentifications, laboratory rearings, augmentative releases, or secondary literature. Apparent broad host ranges may therefore partly reflect historical misidentifications, unresolved species complexes, or changes in parasitoid taxonomy rather than genuine polyphagy. These records require independent confirmation before being interpreted or used to infer host range, host specificity, or biological-control potential.

All available records (29,266 records; 09 April 2026) of the subfamily were also retrieved from BOLD and compiled into a standardized dataset. Only records identified to the species level were retained and, where possible, confirmed and validated through examination of voucher specimens. Species names were alphabetically ordered and subsequently cross-checked against the compiled catalog and known distributional data. Each taxon was then verified individually to ensure correct nomenclature, including validation of accepted names and synonyms using authoritative taxonomic sources. Species not previously reported from a given country were identified as new country records and incorporated into the catalog. For each newly recognized country record, the corresponding BOLD Barcode Index Number (BIN) entry was cited as the supporting reference. BINs are considered to approximately characterize species limits, following the BIN concept detailed in Ratnasingham and Hebert (2013).

The current distribution areas of certain species, which have been recorded from countries that have since been divided into smaller territories over the past years, have been identified as accurately as possible based on information from relevant sources. The names of countries, islands with independent governance, and autonomous republics are listed in their currently accepted format, primarily as they appear in the original source. The present study adopts the geographic framework already implemented by Rosa et al. (2024), defining “Palestine” as a territory that includes the modern State of Israel, the West Bank, and the Gaza Strip. In this context, the term "Palestine" refers to a region located in Western Asia and does not imply any connection to the contemporary territorial claims made by the State of Israel. The faunal analyses were performed at the country/territory level in Python using *pandas* (McKinney 2010), *NumPy* (Harris et al. 2020), *SciPy* (Virtanen et al. 2020), *statsmodels* (Seabold & Perktold 2010), *Matplotlib* (Hunter 2007), and *GeoPandas* (Jordahl et al. 2020) libraries. The dataset was cleaned and standardized, and associations between species richness and generic richness were evaluated using Pearson’s product–moment correlation (Pearson 1896), Spearman’s rank correlation (Spearman 1904), and ordinary least-squares (OLS) regression (NIST/SEMATECH 2012). The species–area relationship was evaluated using an OLS model fitted to $\log_{10}$-transformed species richness and $\log_{10}$-transformed country area, corresponding to the standard linearized form of the species–area power function (Arrhenius 1921; Lomolino 2001). Ranked richness profiles were generated by ordering countries in descending order of species richness and calculating the cumulative percentage contribution of total recorded richness. Country-level world maps were generated from a global country polygon layer from Natural Earth (Natural Earth, n.d.), with bubbles positioned at country centroids. Bubble area was scaled to represent richness values, and color gradients were used to visualize variation in richness or density. Scatterplots, ranked-richness curves, and comparative box/strip plots were produced directly from the cleaned analysis table in Python. Parametric regression analyses treated countries/territories as independent observational units and assumed approximate linearity, constant error variance, and independent residuals at the analyzed scale (NIST/SEMATECH 2012). For the species–area model, $\log_{10}$ transformation

was used to reduce positive skewness and improve linearity (West 2022). Pearson correlation was used to quantify linear association, whereas Spearman correlation and rank-based nonparametric comparisons are appropriate when normality-based assumptions are less suitable or when monotonic rather than strictly linear association is of interest (Mann & Whitney 1947; Kruskal & Wallis 1952; de Winter et al. 2016). Because the dataset is based on country-level recorded richness, the results should be interpreted as macroecological patterns of documented diversity that may also reflect uneven sampling intensity and taxonomic coverage among regions (Quicke 2012).

For every species, details on nomenclatural history, type specimen depositories, and type localities are provided, along with a complete list of synonyms. These data were compiled from original taxonomic descriptions and published catalogs (Mackauer 1961b, 1968a; Mackauer & Starý 1967; Zuparko & Hamai 1994; van Achterberg 1997a), and later refined based on direct information obtained from curators of relevant collections and museums. Reference images were sourced from public digital repositories of the major museums, including **CASC** (Chris Grinter and Denise Montelongo), **CNC** (Caroline Boudreault, Gil Felipe Gonçalves Miranda, and Jose Fernandez-Triana), **EMEC** (Peter Oboysk), **MZLU** (Christoffer Fägerström), **RMNH** (Rudy Soethof), **USNM** (Bekah Rogers, Rachel Osborn, and Natasha Young), **ZMHF** (Simo Väänänen, Pekka Malinen), **NZAC** (Darren Ward), among others (see Abbreviations), in accordance with licensing terms. Representative images from the lateral habitus of the type and nontype specimens deposited in private collections of the authors or accessible museums were selected and photographed using available local imaging systems. Specimens deposited in the collection of the first author (**DPPZ**) were photographed using a motorized autofocus macrophotography system (Fast-Macro®, Omega Optics Co. Ltd., Iran) equipped with a Sony® a7R III camera and Mitutoyo® Plan Apo objectives (5× and 10× magnifications) under diffused LED illumination. Specimens deposited in other collections were similarly photographed as focus-stacked image series using the imaging systems available at each institution, as follows: **FBUB** – Zeiss® Discovery V12 stereomicroscope/a Leica® Flexacam C3 camera; **UWIM** – Olympus® SZX12 stereomicroscope/a Canon® EOS RP camera; and **ZISP** – Nikon® SMZ25 stereomicroscope/a Nikon DS-10 camera. The resulting image stacks were merged into fully focused composite images. Minor graphical adjustments were applied to harmonize background tones and to ensure that the natural coloration of the specimens was rendered as faithfully as possible. The following acronyms are used in this study for the collections (depositories), institutes, and organizations cited herein:

| | |
|---|---|
| **ANIC** | Australian National Insect Collection, CSIRO, Canberra, Australia. |
| **AROV** | Agricultural Research Organization, The Volcani Center, Bet Dagan, Palestine. |
| **ASCT** | NSW Insect & Mite Collection, Orange, New South Wales, Australia. |
| **ASM** | Museum of Entomology, Academy of Science of Moldova, Chișinău, Moldova. |
| **AUAG** | Agricultural Zoology and Entomology, Agricultural University of Athens, Athens, Greece. |
| **AUPB** | Todorov collection, Department of Agroecology, Agricultural University of Plovdiv, Bulgaria. |
| **BIOUG** | Center for Biodiversity Genomics, University of Guelph, Guelph, Ontario, Canada |
| **BNHM** | Belgrade Natural History Museum, Beograd, Serbia. |
| **CAES** | Colorado Agricultural Experiment Station, Fort Collins, Colorado, USA. |
| **CASC** | California Academy of Sciences, San Francisco, California, USA. |
| **CIRPON** | Centro de Investigaciones para la Regulación de Poblaciones de Organismos Nocivos, Argentina. |
| **CNC** | Canadian National Collection of Insects, Arachnids and Nematodes, Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada. |
| **CNHM** | Croatian Natural History Museum, Zagreb, Croatia. |
| **CSCU** | C.P. Gillette Museum of Arthropod Diversity, Colorado State University, Fort Collins, Colorado, USA. |
| **CSU** | Colorado State University, Fort Collins, Colorado, USA. |
| **CUCE** | Collection of Entomology Laboratory, Department of Zoology, Calcutta University, Kolkata, West Bengal, India. |
| **CUMZ** | Chulalongkorn University Museum of Natural History, Bangkok, Thailand. |
| **DAUN** | Department of Agriculture, University of Naples “Federico II”, Portici, Naples, Italy. |

**DPPZ** Collection of the Department of Plant Protection, University of Zabol, Zabol, Iran.
**DZKU** Entomological collection of the Museum of the Department of Zoology, Kashmir University, Srinagar, India.
**EIHU** Collection of Systematic Entomology, Hokkaido University Museum, Sapporo, Hokkaido, Japan.
**EMEC** Essig Museum of Entomology, University of California, Berkeley, California, USA.
**ESA** Entomological Society of America.
**FAES** Florida Agricultural Experiment Station, Gainesville, Florida, USA.
**FAFU** Beneficial Insect Research Laboratory of Fujian Agriculture and Forestry University, Fujian, China.
**FBUB** Faculty of Biology, Institute of Zoology, University of Belgrade, Belgrade, Serbia.
**GPIH** Collection of Mr. Carsten Gröhn, Geologisch-Paläontologisches Institut und Museum, Universität Hamburg, Germany.
**HAU** Insect Collection, Hebei Agricultural University, Baoding, Hebei, China.
**HNHM** Hungarian Natural History Museum, Budapest, Hungary.
**HNIBR** Honam National Institute of Biological Resources, Mokpo-si, Republic of Korea.
**IARA** Institut Agro Rennes-Angers, Rennes, France.
**ICBiBE** Cavanilles Institute of Biodiversity and Evolutionary Biology, University of Valencia, Spain.
**ICBT** Instituto de Ciencias Biológicas, Universidad de Talca, Talca, Maule, Chile.
**IECA** Czech Academy of Sciences, Institute of Entomology, České Budějovice, Czech Republic.
**IPPUL** Katarina Kos personal collection, Institute for Plant Protection, Biotechnical Faculty, University of Ljubljana, Slovenia.
**IVIA** Instituto Valenciano de Investigaciones Agrarias, Spain.
**IZAS** Institute of Zoology, Chinese Academy of Sciences, Beijing, China.
**JHPC** Jussi Halme personal collection, Anjalankoski, Finland.
**KAM** Kaliningrad Regional Amber Museum, Kaliningrad, Russia.
**KIZ** Kunming Natural History Museum of Zoology, Kunming Institute of Zoology, Chinese Academy of Sciences, Kunming, Yunnan, China.
**KNA** Korean National Arboretum, Gyeonggi-do, Republic of Korea.
**KSNU** Kunsan National University, Gunsan, Republic of Korea.
**KSUC** Kansas State University Collection, Manhattan, USA.
**KUEC** Entomological Laboratory and Institute of Tropical Agriculture, Faculty of Agriculture, Kyushu University, Fukuoka, Japan.
**MACN** Bernardino Rivadavia Natural Sciences Argentine Museum, Buenos Aires, Argentina.
**MANEC** Collections of Entomology Unit, Department of Life Sciences, University of Manipur, India.
**MCL** Musée des Confluences; former Muséum d'histoire naturelle de Lyon, France.
**MCNA** Museo de Ciencias Naturales de Alava, Vitoria-Gasteiz, Spain.
**MCNP** Museo de Ciencias Naturales de La Plata, La Plata, Buenos Aires, Argentina.
**MCZ** Museum of Comparative Zoology, Harvard University, Cambridge, USA.
**MHBU** Museum of Hebei University, Hebei, China.
**MIZ PAS** Museum and Institute of Zoology, Polish Academy of Sciences, Poland.
**MMUE** Manchester Museum, The University of Manchester, United Kingdom.
**MNCN** Museo Nacional de Ciencias Naturales, Madrid, Spain.
**MNHN** Muséum national d'Histoire naturelle, Paris, France.
**MRSN** Museo Regionale di Scienze Naturali di Torino, Torino, Italy.
**MSUC** Collections of Michigan State University, East Lansing, USA.
**MZLU** University Zoological Museum, Lund, Sweden.
**NAS** National Institute of Agricultural Sciences, Wanju-gun, Jeonbuk-do, Republic of Korea.
**NCSU** Collection of Clyde F. Smith, North Carolina State University, Raleigh, USA.
**NHMB** Naturhistorisches Museum, Basel, Switzerland.

**NHMUK** The Natural History Museum, London, United Kingdom.
**NHMUS** Collection of E.J. Tizado, Natural History Museum, University of Santiago de Compostela, Spain.
**NHMW** Naturhistorisches Museum Wien, Vienna, Austria.
**NIBR** National Institute of Biological Resources, Incheon collection, Republic of Korea.
**NMID** National Museum of Ireland, Dublin, Ireland.
**NMS** National Museums of Scotland, Edinburgh, United Kingdom.
**NMV** Museum Victoria, Melbourne, Australia.
**NPCI** National Pusa Collection, Indian Agricultural Research Institute, New Delhi, India.
**NWAFU** Northwest Agriculture and Forestry University, Shaanxi, China.
**NZAC** New Zealand Arthropod Collection, Landcare Research, Auckland, New Zealand.
**OÖLM** Biologiezentrum Linz, Oberösterreichisches Landesmuseum, Linz, Austria.
**OSUC** The Ohio State University, C.A. Triplehorn Insect Collection, USA.
**PIN** Borissiak Paleontological Institute of the Russian Academy of Sciences, Moscow, Russia.
**PLYM** Plymouth Museum, Plymouth City Museum and Art Gallery, Plymouth, United Kingdom
**QSBG** Queen Sirikit Botanic Garden, Chiang Mai, Thailand.
**RMCA** Musée Royal de l'Afrique Centrale, Tervuren, Belgium.
**RMNH** Naturalis Biodiversity Center, Leiden, The Netherlands.
**RNHM** Regional Natural History Museum, Plovdiv, Bulgaria.
**SANC** South African National Collection of Insects, Pretoria, South Africa.
**SAUT** Department of Agriculture, Shanxi Agriculture University, Taigu, China.
**SDEI** Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany.
**SFUB** Manfred Mackauer collection, Simon Fraser University, Burnaby, British Columbia, Canada.
**SIZK** Schmalhausen Institute of Zoology, Kyiv, Ukraine.
**SMF** Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt-am-Main, Germany.
**SMIRC** Severin-McDaniel Insect Research Collection, South Dakota State University, USA.
**SNUC** Institute of Zoology, Shaanxi Normal University, Xi'an, Shaanxi, China.
**TARI** Taiwan Agricultural Research Institute, Taichung, Taiwan, China.
**TMUC** Collection of the Department of Entomology, Tarbiat Modares University, Tehran, Iran.
**UAES** The Utah State Agricultural Experiment Station, Logan, Utah, USA.
**UCDC** R. M. Bohart Museum of Entomology, University of California, Davis, California, USA.
**UCRC** Entomology Research Museum, University of California, Riverside, California, USA.
**ULQC** University of Laval, Quebec City, Canada.
**USC** Collection of Ulrich Sedlag, Greifswald, Germany.
**USNM** National Museum of Natural History, Smithsonian Institution, Washington, USA.
**USU** Utah State University, Logan, Utah, USA.
**UWIM** University of Wyoming Insect Museum, Laramie, Wyoming, USA.
**WSUJ** Washington State University, Maurice T. James Entomological Collection, Pullman, Washington, USA.
**WSUP** Washington State University Collection, Prosser, Washington, USA.
**ZISP** Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia.
**ZIUG** Zoologisches Institut, Universität Göttingen, Göttingen, Germany.
**ZJUH** Hymenoptera Collection of Zhejiang University, Hangzhou, China.
**ZMAU** Zoological Museum, Aligarh Muslim University, Uttar Pradesh, India.
**ZMHB** Museum für Naturkunde Berlin der Humboldt- Universität, Berlin, Germany.
**ZMHF** Zoological Museum, University of Helsinki, Finland.
**ZMUC** Zoological Museum of the University of Copenhagen, Copenhagen, Denmark.
**ZSI** Zoological Survey of India, Calcutta, India.

## RESULTS

### Superfamily Ichneumonoidea Latreille, 1802

### Family Braconidae Nees, 1811

### Subfamily Aphidiinae Haliday, 1833

Aphidiidae Haliday, 1833:212, 183. Type genus: *Aphidius* Nees von Esenbeck, 1819.

### Tribe Aclitini Mackauer, 1961 [1 genus, 3 species]

Aclitini Mackauer, 1961a:799. Type genus: *Aclitus* Förster, 1862.

### Genus *Aclitus* Förster, 1863 [3 species]

*Aclitus* Förster, 1863:248. Type species: *Aclitus obscuripennis* Förster, 1863.

#### *Aclitus obscuripennis* Förster, 1863 [Fig. 9A]

*Aclitus obscuripennis* Förster, 1863:248. Holotype ♀ (ZMHB). – Germany.

***Hosts.*** ***Anoecia corni*** (Fabricius) (Starý 1981b); ***Anoecia vagans*** (Koch) (Mackauer & Starý 1967; Starý et al. 1971); ***Anoecia*** sp. (Mackauer 1962c; Mackauer & Starý 1967); *Thelaxes dryophila* (Schrank); *Tuberculatus annulatus* (Hartig), *Tuberculatus neglectus* (Krzywiec) (Wiackowski et al. 2001).

***Distribution.*** **Czech Republic** (Starý 1966c, 1989a, 2006; Mackauer & Starý 1967); **France** (Noury 1962; Mackauer & Starý 1967; Starý et al. 1971; Starý 1981b); **Germany** (Kirchner 1867; Starý 1959b; Mackauer 1962c; Mackauer & Starý 1967; Belokobylskij & Taeger 2001; Belokobylskij et al. 2003); **Hungary** (Mackauer & Starý 1967; Polgár 1981, 1983, 1987); **Iran** (Farahani et al. 2017; Rakhshani et al. 2019); **Netherlands** (BOLD:ADX6165); **Poland** (Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Serbia** (Tomanović et al. 1998a; Žikić et al. 2000, 2012; Kavallieratos et al. 2004).

#### *Aclitus sappaphis* Takada & Shiga, 1974 [Figs 9B–C]

*Aclitus sappaphis* Takada & Shiga, 1974:283. Holotype ♀, paratypes ♀♀ ♂♂ (KUEC). – Japan.

***Hosts.*** ***Hamamelistes betulinus*** (de Horváth) (Kim et al. 2025b); ***Sappaphis piri*** Matsumura (Takada & Shiga 1974; Takada & Hashimoto 1983).

***Distribution.*** **Japan** (Takada & Shiga 1974; Takada & Hashimoto 1985); **Russia** (Davidian 2007, 2017, 2019b); **South Korea** (Kim et al. 2025b; Kim 2026).

#### *Aclitus wyomingensis* Martens, 2026 [Fig. 9D]

*Aclitus wyomingensis* Martens [in Martens et al.], 2026:594. Holotype ♀ (UWIM), paratypes ♀♀ (UWIM, BIOUG). – USA.

***Hosts.*** Unknown.

***Distribution.*** **Canada, USA** (Martens et al. 2026).

### Tribe Aphidiini Haliday, 1833 [51 genera, 553 species (including 20 fossils)]

### Subtribe Aphidiina Haliday, 1833 [15 genera, 174 species (including 15 fossils)]

Aphidiina Haliday, 1833 - *sensu* Mackauer, 1961:482. Type genus: *Aphidius* Nees von Esenbeck, 1819.

### Genus *Aphidius* Nees von Esenbeck, 1819 [138 species]

*Aphidius* Nees von Esenbeck, 1819:302. Type species: *Aphidius avenae* Haliday, 1834.

**Syn.:** *Incubus* Schrank, 1802:315. Type species: *Ichneumon aphidum* Linnaeus, 1758; *Theracmion* Holmgren, 1872:99. Type species: *Theracmion arcticus* Holmgren, 1872; *Euaphidius* Mackauer, 1961:110. Type species: *Aphidius pterocommae* Ashmead, 1889. *Aphidius* – subgenus *Lysaphidus* Smith, 1944:35. Type species: *Aphidius* (*Lysaphidus*) *adelocarinus* Smith, 1944. *Diaeretiella* Starý, 1960:242. Type species: *Aphidius rapae* M'Intosh, 1855.

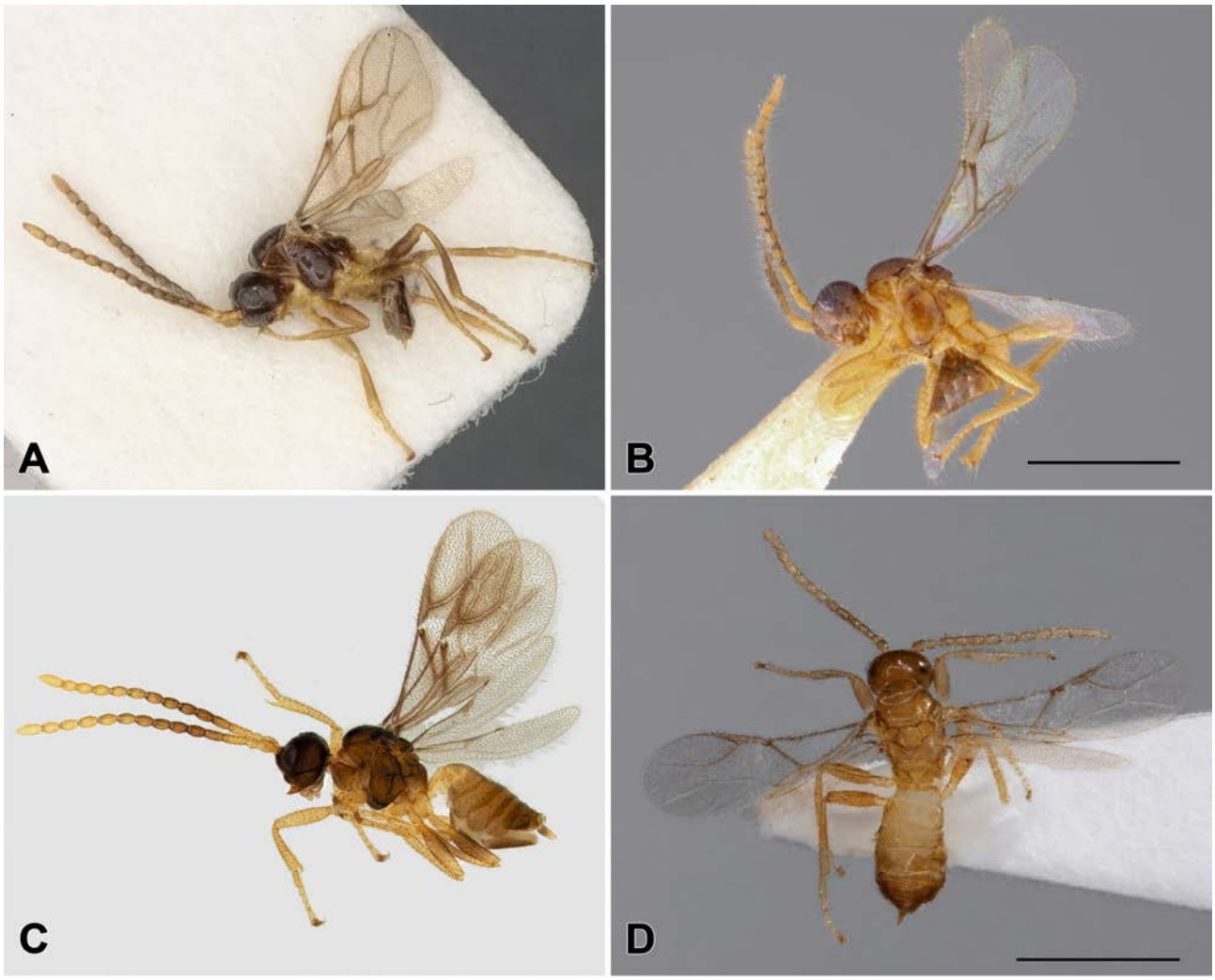



**Figure 9.** Species of the genus *Aclitus* Förster, 1863. **A.** *Aclitus obscuripennis* Förster, 1863 – CNC; **B.** *Aclitus sappaphis* Takada & Shiga, 1974 – Holotype, KUEC; **C.** *Aclitus sappaphis* Takada & Shiga, 1974 – South Korea, KNA; **D.** *Aclitus wyomingensis* Martens, 2026 – Paratype, UWIM. Scale bar: 1 mm.

### *Aphidius absinthii* Marshall, 1896 [Fig. 10A]

*Aphidius absinthii* Marshall, 1896:605. Holotype ♂ (NHMUK). – United Kingdom.

**Syn.:** *Aphidius lutescens* Haliday, 1834; *Aphidius commodus* Gahan, 1926 [Fig. 12D]; *Aphidius artemisiae* Ivanov, 1927; *Bracon melanocephalus* (Nees, 1811).

***Hosts.*** *Aphis glycines* Matsumura, *Aphis* sp. (Chen & Shi 2001); *Brachycaudus persicae* Passerini (Chalver 1973); *Brevicoryne brassicae* (Linnaeus) (Chen & Shi 2001); *Capitophorus* sp. (Aslan et al. 2004); *Lipaphis erysimi* (Kaltenbach) (Ward et al. 2021a, 2021b); ***Macrosiphoniella abrotani*** (Walker) (Starý et al. 2000; Rakhshani et al. 2008a, 2011, 2019; Talebi et al. 2009); ***Macrosiphoniella absinthii*** (Linnaeus) (Marshall 1896; Bignell 1901; Starý 1961c, 1964d, 1965a, 1966c, 1966d, 1973a, 1976a, 1977, 1987a, 2006; Mackauer 1962c; Mackauer & Starý 1967; Starý et al. 1971; Kierych 1980; Michelena Saval & González Funes 1987; Suay Cano & Michelena Saval 1998; Chen & Shi 2001; Naeem et al. 2005; Rakhshani et al. 2011; Pons et al. 2018); ***Macrosiphoniella aktashica*** Nevsky (Starý 1979a; Rakhshani et al. 2011); ***Macrosiphoniella artemisiae*** (Boyer de Fonscolombe) (Starý 1961c, 1964d, 1966c, 1966d, 1973a, 1976a, 1977, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975; Kierych 1980; Michelena Saval & González Funes 1987; Pennacchio 1989; Suay Cano & Michelena Saval 1998; Tomanović et al. 1998a, 2003c; Aslan et al. 2004; Kavallieratos et al. 2004, 2006; Uysal et al. 2004; Rakhshani et al. 2008a, 2011; Talebi et al. 2009; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); ***Macrosiphoniella chamaemelifoliae*** Remaudière &

Leclant (Starý et al. 1971; Starý 1973a; Rakhshani et al. 2011); ***Macrosiphoniella formosartemisiae*** Takahashi (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a; Chou 1981; Starý & Choi 2000; Chen & Shi 2001; Chen et al. 2009; Hwang & Lee 2021); ***Macrosiphoniella helichrysi*** Remaudière (Starý et al. 1971, 1973, 1975, 2000; Starý 1973a, 1976a; Rakhshani et al. 2011, 2019); ***Macrosiphoniella kaufmanni*** Börner (Starý 1966c, 1973a, 2006; Mackauer & Starý 1967; Rakhshani et al. 2011); ***Macrosiphoniella kikungshana*** Takahashi (Das & Chakrabarti 1991a); ***Macrosiphoniella leucanthemi*** (Ferrari) (Rakhshani et al. 2011); ***Macrosiphoniella ludovicianae*** (Oestlund) (Liu 1977); ***Macrosiphoniella millefolii*** (De Geer) (Starý 1961c, 1964d, 1965a, 1966c, 1973a, 1976a, 1977, 1979a, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975, 2000; Kierych 1975; Pennacchio 1989; Michelena et al. 1998; Tomanović et al. 2003c; Kavallieratos et al. 2004; Kos et al. 2009a, 2012; Rakhshani et al. 2011); ***Macrosiphoniella oblonga*** (Mordvilko) (Starý et al. 2000; Rakhshani et al. 2008a, 2011, 2019; Talebi et al. 2009); ***Macrosiphoniella papillata*** Holman (Starý et al. 1973; Starý 1979a; Pennacchio 1989; Rakhshani et al. 2011); ***Macrosiphoniella persequens*** (Walker) (Starý et al. 1971; Starý 1973a; Rakhshani et al. 2011); ***Macrosiphoniella pseudoartemisiae*** Shinji (Takada 1968; Starý 1975a; Raychaudhuri et al. 1982); ***Macrosiphoniella pulvera*** (Walker) (Starý 1966c, 1973a, 1976a, 1979a; Mackauer & Starý 1967; Starý et al. 1973, 2000; Rakhshani et al. 2011, 2019); ***Macrosiphoniella riedeli*** Szelegiewicz (Mescheloff & Rosen 1990b; Rakhshani et al. 2011, 2019); ***Macrosiphoniella sanborni*** (Gillette) (Starý 1966d, 1973a, 1975a; Mackauer & Starý 1967; Starý & Schlinger 1967; Raychaudhuri et al. 1982; Starý & Choi 2000; Chen & Shi 2001; Naeem et al. 2005; Kavallieratos et al. 2006; Rakhshani et al. 2011); ***Macrosiphoniella sejuncta*** (Walker) (Mackauer & Starý 1967; Starý et al. 1971; Starý 1973a; Rakhshani et al. 2011); ***Macrosiphoniella staegeri*** Hille Ris Lambers (Starý 1961c, 1964d, 1966c, 1973a, 1976a, 2006; Starý et al. 1971; Rakhshani et al. 2011); ***Macrosiphoniella tanacetaria*** (Kaltenbach) (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1977, 2006; Chen & Shi 2001; Kavallieratos et al. 2001, 2004, 2006; Rakhshani et al. 2011); ***Macrosiphoniella tapuskae*** (Hottes & Frison) (Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975; Starý 1973a, 1976a; Rakhshani et al. 2011); ***Macrosiphoniella tuberculata*** (Nevsky) (Starý et al. 1971, 2000; Starý 1973a, 1979a; Rakhshani et al. 2011, 2019); ***Macrosiphoniella turanica*** Narzikulov & Umarov (Starý 1979a; Rakhshani et al. 2011); ***Macrosiphoniella usquertensis*** Hille Ris Lambers (Starý 1973a; Starý et al. 1973; Rakhshani et al. 2011; Pons et al. 2018); ***Macrosiphoniella xeranthemi*** Bozhko (Starý 1964d, 1973a; Mackauer & Starý 1967; Rakhshani et al. 2011); ***Macrosiphoniella yomenae*** (Shinji) (Takada 1968; Starý 1975a; Agarwala et al. 1980; Chou 1981; Starý & Ghosh 1983; Chen & Shi 2001; Chen et al. 2009); ***Macrosiphoniella yomogifoliae*** (Shinji) (Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968; Starý 1975a; Agarwala et al. 1980; Chou 1981; Raychaudhuri et al. 1982; Paonam & Singh 1986a; Starý & Choi 2000; Chen & Shi 2001); ***Macrosiphoniella*** spp. (Starý 1961c, 1961h, 1964d, 1965a, 1966c, 1973a, 1979a, 1995b, 2006; Mackauer & Starý 1967; Das & Chakrabarti 1991a; Tomanović et al. 1998a, 2003c; Starý et al. 2000; Kavallieratos et al. 2004; Rakhshani et al. 2011, 2019; Žikić et al. 2012); *Macrosiphum* sp. (Liu 1977); *Melanaphis sacchari* (Zehntner) (Chen & Shi 2001); *Myzus persicae* (Sulzer) (Starý & Choi 2000; Chen & Shi 2001; Ward et al. 2021b); ***Paczoskia major*** Börner (Starý 1973a, 1977; Rakhshani et al. 2011); *Pentalonia nigronervosa* Coquerel (Lomerio & Calilung 2008); ***Phalangomyzus*** sp. (Starý et al. 2000); *Rhopalosiphum maidis* (Fitch) (Ward et al. 2021a, 2021b); *Rhopalosiphum padi* (Linnaeus) (Chen & Shi 2001); *Sitobion avenae* (Fabricius) (Chen & Shi 2001; Wei et al. 2005); ***Staticobium limonii*** Contarini (Starý et al. 1975; Starý 1976a); ***Titanosiphon artemisiae*** (Koch) (Mackauer & Starý 1967; Starý et al. 1971; Starý 1973a); ***Titanosiphon dracunculi*** Nevsky (Starý 1979a); ***Titanosiphon neoartemisiae*** (Takahashi) (Starý et al. 1999); *Uroleucon inulae* (Ferrari) (Rakhshani et al. 2015b).

***Distribution.*** **Algeria** (Mohdeb et al. 2021); **Andorra** (Sanchis et al. 1999); **Australia** (Ward et al. 2021b); **Austria** (Mackauer & Starý 1967); **Azerbaijan** (Starý 1973a, 1976a; Rakhshani et al. 2011); **Bulgaria** (Todorov 2008; Todorov & Ivanova 2016); **China** (Gahan 1926; Mackauer & Starý 1967; Starý & Schlinger 1967; Tao & Chiu 1971; Chou 1981; Dong & Wang 1985, 1993; Lu & Ji 1992; Shen et al. 1994; Gu et al. 1995; Chen & Shi 2001; He et al. 2004; Chen et al. 2009); **Croatia** (Starý 1973a; Rakhshani et al. 2011; Mitrovski-Bogdanović et al. 2021); **Czech Republic** (Starý 1961c, 1966c, 1973a, 1977, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Pennacchio 1989; Starý & Havelka 2008; Rakhshani et al. 2011); **Finland** (Hellén 1966; Mackauer & Starý 1967; Fulmek 1968); **France** (Mackauer & Starý 1967; Starý 1973a, 1976a; Starý et al. 1971, 1973, 1975; Rakhshani et al. 2011); **Georgia** (Akhvlediani 1964; Starý 1965a, 1973a, 1976a;

Rakhshani et al. 2011); **Germany** (Starý 1961c, 1973a; Mackauer 1962c; Mackauer & Starý 1967; Rakhshani et al. 2011); **Greece** (Kavallieratos et al. 2001, 2004, 2006; Rakhshani et al. 2011); **Hungary** (Polgár 1981, 1983; Rakhshani et al. 2011); **India** (Agarwala et al. 1980, 1981a; Raychaudhuri et al. 1982, 1990; Starý & Ghosh 1983; Paonam & Singh 1986a; Das & Chakrabarti 1991a; Bhagat & Ahmad 1995; Dey & Akhtar 2007; Ahmad & Wani 2014); **Iran** (Starý 1979a; Starý et al. 2000; Rakhshani et al. 2008a, 2011, 2019; Talebi et al. 2009); **Italy** (Starý 1966d, 1973a, 1976a; Mackauer & Starý 1967; Pennacchio 1989; Bergamesco et al. 1995; Rakhshani et al. 2011); **Japan** (Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968); **Malta** (Rakhshani et al. 2015b; Mitrovski-Bogdanović et al. 2021); **Moldova** (Talitzky & Kuslitzky 1990); **Mongolia** (Takada 1979a); **Montenegro** (Mitrovski-Bogdanović et al. 2021); **Netherlands** (Mackauer & Starý 1967); **North Korea** (Takada 1979b; Starý & Choi 2000); **Norway** (Mjøs et al. 2024); **Pakistan** (Starý & Ghosh 1983; Starý et al. 1999; Naeem et al. 2005); **Palestine** (Mescheloff & Rosen 1990b); **Philippines** (Lomerio & Calilung 2008); **Poland** (Kierych 1975, 1980; Huflejt 1997; Wiackowski et al. 2001; Rakhshani et al. 2011; Tran & Piekarska-Boniecka 2017); **Russia** (Starý 1961c, 1965a, 1973a; Davidian 2007; Rakhshani et al. 2011; Davidian & Gavrilyuk 2014); **Serbia** (Starý 1973a; Tomanović et al. 1998a, 1999b, 2003c; Žikić et al. 2000, 2012; Kavallieratos et al. 2004; Rakhshani et al. 2011; Mitrovski-Bogdanović et al. 2021); **Slovakia** (Starý 1977, 1989a; Starý & Lukáš 2009); **Slovenia** (Kos et al. 2008, 2009a, 2012; Rakhshani et al. 2011); **South Korea** (Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1976b, 1979b; Chang et al. 1994; Starý & Choi 2000; Hwang & Lee 2021; Kim 2026); **Spain** (Starý 1976a; Michelena Saval & González Funes 1987; Tizado & Núñez-Perez 1991; Sanchis et al. 1995; Michelena et al. 1998; Suay Cano & Michelena Saval 1998; Nieves-Aldrey et al. 2003; Michelena Saval & Martínez De Murguía 2012; Pons et al. 2018); **Sweden** (Mackauer & Starý 1967; Rakhshani et al. 2011); **Switzerland** (Mackauer & Starý 1967); **Tajikistan** (Starý 1965a, 1979a; Pennacchio 1989; Rakhshani et al. 2011); **Türkiye** (Starý 1976a; Aslan et al. 2004; Uysal et al. 2004; Çetin Erdoğan et al. 2008, 2010; Rakhshani et al. 2011, 2019); **Ukraine** (Starý 1961h, 1965a, 1973a, 1976a; Rakhshani et al. 2011; Kaliuzhna 2013b); **United Kingdom** (Marshall 1896, 1899; Bignell 1901; Starý 1961c, 1973a; Mackauer & Starý 1967; Pennacchio 1989; Rakhshani et al. 2011; Davidian & Rispin 2016); **USA** (Liu 1977); **Uzbekistan** (Starý 1979a; Daminova et al. 2001; Aripov 2003; Rakhshani et al. 2011).

***Remarks.*** The recorded associations with *Staticobium limonii* Contarini (Starý et al. 1975; Starý 1976a) most probably refer to *Aphidius staticobii* Tomanović & Petrović, 2012.

### *Aphidius adelocarinus* Smith, 1944 [Fig. 10B]

*Aphidius* (*Lysaphidus*) *adelocarinus* Smith, 1944:73. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, UAES, NCSU). – USA.

***Hosts.*** ***Aphis canae*** Williams (Pike et al. 2000); ***Aphis gossypii*** Glover (MacGillivray & Spicer 1953; Muesebeck 1967); ***Artemisaphis artemisicola*** (Williams) (Pike et al. 1997a, 2000); ***Capitophorus shepherdiae*** Gillette & Bragg (Muesebeck 1967; Marsh 1979); ***Epameibaphis atricornis*** Gillette & Palmer, ***Flabellomicrosiphum knowltoni*** Smith (Pike et al. 1997a, 2000); ***Flabellomicrosiphum tridentatae*** (Wilson) (Pike et al. 2000); ***Microsiphoniella acophorum*** (Smith & Knowlton) (Pike et al. 1997a); ***Microsiphoniella artemisiae*** (Gillette) (Pike et al. 2000; Tomanović et al. 2007c); ***Microsiphoniella*** sp. (Pike et al. 1997a); ***Obtusicauda coweni*** (Hunter) (Pike et al. 2000); ***Obtusicauda filifoliae*** (Gillette & Palmer) (Pike et al. 1997a); ***Pleotrichophorus elongatus*** (Knowlton) (Hollingbery et al. 2012); ***Pleotrichophorus glandulosus*** (Kaltenbach) (Smith 1944; Mackauer & Starý 1967; Marsh 1979); ***Pleotrichophorus oestlundi*** (Knowlton) (Hollingbery et al. 2012); ***Pleotrichophorus palmerae*** (Knowlton); ***Pleotrichophorus*** spp. (Pike et al. 2000); ***Pseudoepameibaphis essigi*** Knowlton & Smith (Pike et al. 1997a, 2000); ***Pseudoepameibaphis glauca*** Gillette & Palmer (Smith 1944; Mackauer & Starý 1967; Marsh 1979; Pike et al. 1997a, 2000); ***Pseudoepameibaphis tridentatae*** (Wilson) (Pike et al. 1997a, 2000); ***Pseudoepameibaphis xenotrichus*** Knowlton & Smith (Smith 1944; Mackauer & Starý 1967; Marsh 1979); ***Uroleucon erigeronense*** (Thomas) (Hollingbery et al. 2012).

***Distribution.*** **Canada** (MacGillivray & Spicer 1953; Mackauer & Starý 1967; Muesebeck 1967); **USA** (Smith 1944; Muesebeck & Walkley 1951; Shands et al. 1965; Muesebeck 1967; Pike et al. 1997a, 2000; Tomanović et al. 2007c; Hollingbery et al. 2012).

### *Aphidius alius* Muesebeck, 1958 [Fig. 10C]

*Aphidius alius* Muesebeck, 1958b:142. Holotype ♀ (after Mackauer 1968a), paratypes ♀♀♂♂ (USNM). – USA.

***Hosts.*** ***Macrosiphum euphorbiae*** (Thomas) (Starý 1967a; Liu 1977; Marsh 1979; Finlayson 1990); ***Macrosiphum rosae*** (Linnaeus) (Muesebeck 1958b, 1967; Schlinger 1960a; Schlinger & Hall 1960a; Mackauer & Starý 1967; Liu 1977; Marsh 1979); ***Rhodobium porosum*** (Sanderson), ***Wahlgreniella nervata*** (Gillette) (Liu 1977).

***Distribution.*** **Canada** (Liu 1977); **China** (Chen & Shi 2001); **USA** (Muesebeck 1958b, 1967; Schlinger 1960a; Schlinger & Hall 1960a; Mackauer & Starý 1967; Starý 1967a; Liu 1977; Finlayson 1990).

### *Aphidius amamioshimensis* Takada, 1968

*Aphidius amamioshimensis* Takada, 1968:98. Holotype ♀, paratypes ♂♂ (EIHU). – Japan.

***Host.*** ***Pseudomegoura nipponica*** (Essig & Kuwana) (Takada 1968, 1973; Liu 1975; Starý 1975a; Chou 1981; Chen et al. 2009).

***Distribution.*** **China** (Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); **Japan** (Takada 1968, 1973; Starý 1975a).

### *Aphidius amelanchieri* Liu, 1977

*Aphidius amelanchieri* Liu, 1977:23. Holotype ♀, paratypes ♀♀ ♂♂ (CASC). – Canada.

***Host.*** ***Acyrthosiphon macrosiphum*** (Wilson) (Liu 1977).

***Distribution.*** **Canada** (Liu 1977).

### *Aphidius amphorophori* Liu, 1977

*Aphidius amphorophori* Liu, 1977:24. Holotype ♀, paratypes ♂♂ (CASC). – USA.

***Host.*** ***Amphorophora*** sp. (Liu 1977).

***Distribution.*** **USA** (Liu 1977).

### *Aphidius angustastigmatus* Čkrkić & Tomanović, 2024

*Aphidius angustastigmatus* Čkrkić & Tomanović [in Čkrkić et al.], 2024:434. Holotype ♀, paratype ♀ (IECA). – South Africa.

***Host.*** Unknown.

***Distribution.*** **South Africa** (Čkrkić et al. 2024).

### *Aphidius apolloni* Kavallieratos & Tomanović, 2006

*Aphidius apolloni* Kavallieratos & Tomanović [in Kavallieratos et al.], 2006:1185. Holotype ♀, paratypes ♀♀ ♂♂ (BNHM). – Greece.

***Host.*** ***Macrosiphum daphnidis*** Börner (Kavallieratos et al. 2006).

***Distribution.*** **Greece** (Kavallieratos et al. 2006).

### *Aphidius aquilus* Mackauer, 1961 [Fig. 10D]

*Aphidius aquilus* Mackauer, 1961c:177. Holotype ♀, paratypes ♀♀ ♂♂ (CNC). – Netherlands.

**Syn.:** *Aphidius sicarius* Mackauer, 1961; *Lysaphidus callipterinellae* Takada, 1966.

***Hosts.*** *Aphis pomi* De Geer (Wiackowski et al. 1997, 2001); ***Betulaphis brevipilosa*** Börner (Mackauer 1962c; Starý 2006); ***Betulaphis brevisetosa*** Börner (Starý 1973a, 1978a); ***Betulaphis quadrituberculata*** (Kaltenbach) (Mackauer 1961c, 1962c; Starý & Rupais 1964; Mackauer & Starý 1967; Starý et al. 1971, 1977a; Starý 1973a, 1977, 1978a, 2006; Kierych 1975, 1980; Vassileva-Sumnalieva 1976; Kolarov 1997; Derocles et al. 2012; Kavallieratos et al. 2016; Mitrovski-Bogdanović et al. 2021); ***Betulaphis*** spp. (Starý 1987a; Ferrer-Suay et al. 2017); ***Calaphis betulicola*** (Kaltenbach) (Starý 1973a, 1987a, 2006); ***Calaphis flava*** Mordvilko (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tomanović et al. 2003c, 2007c; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); ***Calaphis*** sp. (Starý 1964d); ***Callipterinella calliptera***

(Hartig) (Takada 1966d, 1968, 1973); ***Callipterinella tuberculata*** (von Heyden) (Mackauer & Starý 1967; Starý 1975a; Finlayson 1990; Kavallieratos et al. 2016); ***Cavariella aegopodii*** (Scopoli) (Wiackowski et al. 2001); ***Eucallipterus tiliae*** (Linnaeus) (Kavallieratos et al. 2016); ***Euceraphis betulae*** (Koch) (Žikić et al. 2012); ***Euceraphis punctipennis*** (Zetterstedt) (Mackauer 1961c, 1962c; Mackauer & Starý 1967; Starý 1978a; Finlayson 1990; Michelena et al. 1998; Tomanović et al. 2003c, 2007c; Kavallieratos et al. 2004, 2016); ***Glyphina betulae*** (Linnaeus) (Starý 1965a, 1973a; Mackauer & Starý 1967); ***Monaphis antennata*** (Kaltenbach) (Mackauer 1961c; Mackauer & Starý 1967; Starý 1973a, 1978a); *Pemphigus* sp. (Sadat et al. 2019).

***Distribution.*** **Algeria** (Neffah-Baziz et al. 2020); **Belarus** (Davidian 2017); **Bulgaria** (Vassileva-Sumnalieva 1976; Kolarov 1997); **Canada** (Varty 1964; Mackauer & Starý 1967); **Czech Republic** (Starý 1966c, 1977, 1987a, 1989a, 2006; Starý & Havelka 2008); **Finland** (Mackauer & Starý 1967; Starý 1978a); **France** (Starý et al. 1971, 1977a; Starý 1973a, 1978a; Derocles et al. 2012); **Georgia** (Starý 1973a, 1978a; Davidian 2017); **Germany** (Mackauer 1961c, 1962c; Mackauer & Starý 1967; Starý 1973a, 1978a; Belokobylskij et al. 2003); **Hungary** (Polgár 1983, 1987); **Italy** (Tremblay & Mancini 1996); **Japan** (Takada 1966d, 1968, 1973; Mackauer & Starý 1967; Starý 1975a); **Latvia** (Starý 1978a; Davidian 2017); **Lithuania** (Starý & Rupais 1964; Starý 1973a); **Mongolia** (Takada 1979a); **Netherlands** (Mackauer 1961c; Mackauer & Starý 1967; Starý 1973a; Papp et al. 1996); **Norway** (Mjøs et al. 2024); **Poland** (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Starý 1965a, 1973a; Davidian 2007, 2017, 2019b; Davidian & Gavrilyuk 2014); **Serbia** (Tomanović et al. 1998a, 2003c, 2007c; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); **Slovakia** (Starý 1977, 1989a; Ferrer-Suay et al. 2017); **Spain** (Michelena et al. 1998); **United Kingdom** (Starý 1973a, 1978a; Davidian & Rispin 2016).

### *Aphidius areolatus* Ashmead, 1906 [Fig. 10E]

*Aphidius areolatus* Ashmead, 1906:189. Lectotype ♀ (after Watanabe 1957), paralectotypes ♀♂♂ (USNM). – Japan.

***Hosts.*** *Capitophorus elaeagni* (Del Guercio) (Hwang & Lee 2021); *Macrosiphoniella pseudoartemisiae* Shinji (Starý & Choi 2000); ***Periphyllus aesculi*** Hille Ris Lambers (Bhagat 1984); ***Periphyllus californiensis*** (Shinji) (Takada 1968, 1973; Starý 1975a; Liu 1977; Furuta & Mao 1986; Takada & Kamijo 2012); ***Periphyllus koelreuteriae*** (Takahashi), ***Periphyllus testudinaceus*** (Fernie) (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a); ***Periphyllus vandenboschi*** Hille Ris Lambers (Bhagat 1984).

***Distribution.*** **India** (Starý & Ghosh 1983; Bhagat 1984, 1985; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Japan** (Ashmead 1906; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968, 1973; Starý 1975a; Konishi & Maetô 2000; Takada & Kamijo 2012); **Russia** (Davidian 2007, 2017, 2019b); **South Korea** (Chang & Youn 1983b; Starý & Choi 2000; Kim et al. 2021; Kim 2026); **USA** (Liu 1977).

***Remarks.*** Given the morphological affinity of this species to *Aphidius setiger* (Mackauer, 1961), a similar specific host range pattern is expected. So, the recorded host other than *Periphyllus* species might be erroneous. Based on the morphological illustrations provided by Hwang & Lee (2021 – fig. 2), the identity of their specimens of *Aphidius areolatus* recorded from South Korea is doubtful. After that, Kim et al. (2021) documented the occurrence of *A. areolatus* in South Korea.

### *Aphidius artemisicola* Tizado & Núñez-Pérez, 1995

*Aphidius artemisicola* Tizado & Núñez-Pérez, 1995:26. Holotype ♀, paratypes ♀♀ ♂ (MNCN). – Spain.

***Hosts.*** ***Macrosiphoniella pulvera*** (Walker) (Kök & Tomanović 2022); ***Macrosiphoniella*** spp. (Tomanović 2000; Kavallieratos & Tomanović 2001, 2003; Tomanović et al. 2003c, 2007c; Kavallieratos et al. 2004; Rakhshani et al. 2011; Žikić et al. 2012); ***Titanosiphon artemisiae*** (Koch) (Tizado & Núñez-Pérez 1995; Tomanović et al. 2007c); ***Titanosiphon dracunculi*** Nevsky (Gavrilyuk & Novgorodova 2007).

***Distribution.*** **Andorra** (Sanchis et al. 1999); **Montenegro** (Rakhshani et al. 2011); **Russia** (Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Davidian & Ruchin 2023); **Norway** (Mjøs et al. 2024); **Serbia** (Tomanović 2000; Kavallieratos & Tomanović 2001, 2003; Tomanović et al. 2003c, 2007c; Kavallieratos et al. 2004; Žikić et al. 2012); **Spain** (Tizado & Núñez-Perez 1995; Suay Cano & Michelena Saval 1998; Tomanović et al. 2007c); **Türkiye** (Kök & Tomanović 2022).

### *Aphidius arvensis* (Starý, 1960) [Fig. 10F]

*Lysaphidus arvensis* Starý, 1960d:359. Holotype ♀ (IECA), paratypes ♀♀ ♂♂ (IECA, CNC, USNM). – Czech Republic.

***Hosts.*** ***Coloradoa achilleae*** Hille Ris Lambers (Starý 1960d, 1963b, 1964d, 1965a, 1966c, 1987a, 1995b; Mackauer & Starý 1967; Starý et al. 1971, 1973; Talebi et al. 2009; Nazari et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Ferrer-Suay et al. 2017; Rakhshani et al. 2019); ***Coloradoa artemisiae*** (Del Guercio) (Mackauer & Starý 1967; Starý 1995b, 2006; Starý et al. 1973; Tomanović et al. 2007c); ***Coloradoa bournieri*** Remaudière & Leclant (Starý et al. 1971; Starý 1973a, 1976a; Michelena Saval & Sanchis Segovia 1995); ***Coloradoa moralesi*** Remaudière & Leclant (Michelena Saval & Sanchis Segovia 1995); ***Coloradoa santolinae*** Hille Ris Lambers (Starý 1979a; Starý et al. 2000); ***Coloradoa tanacetina*** (Walker) (Mackauer 1962c; Starý 1963b, 1966c; Mackauer & Starý 1967; Kierych 1980); ***Coloradoa*** spp. (Starý 1977, 1987a; Žikić et al. 2012; Ferrer-Suay et al. 2017; Davidian 2019c); ***Cryptosiphum*** sp. (Ferrer-Suay et al. 2017); ***Macrosiphoniella artemisiae*** (Boyer de Fonscolombe) (Kavallieratos et al. 2004; Žikić et al. 2012).

***Distribution.*** **Bulgaria** (Todorov 2007); **Czech Republic** (Starý 1960d, 1977, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Tomanović et al. 2007c; Ferrer-Suay et al. 2017); **Finland** (LEFIJ36064-23); **France** (Starý et al. 1971, 1977a; Starý 1973a, 1976a); **Germany** (Mackauer 1962c; Mackauer & Starý 1967; Boness & Starý 1988; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **Iran** (Starý 1979a; Starý et al. 2000; Talebi et al. 2009; Nazari et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Rakhshani et al. 2019); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Kavallieratos et al. 2004; Žikić et al. 2012); **Poland** (Mackauer & Starý 1967; Kierych 1975, 1980; Huflejt 1997); **Russia** (Starý 1965a; Mackauer & Starý 1967; Davidian & Gavrilyuk 2014; Davidian 2017, 2019b, 2019c; Davidian & Ruchin 2023); **Serbia** (Tomanović et al. 1998a, 2007c; Kavallieratos et al. 2004; Žikić et al. 2012); **Slovakia** (Starý 1989a); **Spain** (Michelena Saval & Sanchis Segovia 1995); **United Kingdom** (Davidian & Rispin 2016).

### *Aphidius asiaticus* Kim & Tomanović, 2021

*Aphidius asiaticus* Kim & Tomanović [in Kim et al.], 2021:71. Holotype ♀, paratypes ♀ (KNA). – South Korea.

***Host.*** Unknown.

***Distribution.*** **South Korea** (Kim et al. 2021; Kim 2026); **Norway** (Mjøs et al. 2024).

### *Aphidius asteris* Haliday, 1834 [Fig. 11A]

*Aphidius asteris* Haliday, 1834:100. Lectotype ♀ (after Mackauer 1961b), paralectotype ♂ (NHMUK). – Ireland.

***Hosts.*** ***Macrosiphoniella asteris*** (Walker), ***Macrosiphoniella jankei*** Börner (Mackauer 1962c; Mackauer & Starý 1967); ***Macrosiphoniella medvedevi*** (Bozhko) (Kierych 1980); ***Macrosiphoniella sanborni*** (Gillette) (Mitrovski-Bogdanović et al. 2021); ***Macrosiphoniella*** sp. (Rakhshani et al. 2011).

***Distribution.*** **Belgium** (Lopes et al. 2016); **Bulgaria** (Mitrovski-Bogdanović et al. 2021); **Czech Republic** (Rakhshani et al. 2011); **Egypt** (El-Ghiet et al. 2014); **Finland** (BOLD:ACI1385); **France** (Rakhshani et al. 2011); **Germany** (Mackauer 1962c; Mackauer & Starý 1967); **Poland** (Kierych 1980); **Russia** (Davidian & Ruchin 2023); **Ukraine** (Kaliuzhna 2013a, 2017b, 2019a, 2019b), **United Kingdom** (Mackauer 1961b; Mackauer & Starý 1967).

***Remarks.*** Given that *Aphidius absinthii* was considered a junior synonym of *Aphidius asteris* in Taxapad (2013–2016), it is likely that some of the records still pertain to *Aphidius absinthi*. Anyway, the identity of these two species needs a thorough taxonomic revision.

### *Aphidius atropetiolatus* Ashmead, 1890 [Fig. 11B]

*Aphidius atropetiolatus* Ashmead, 1890:20. Syntype ♂ (USNM). – USA.

***Host.*** Unknown.

***Distribution.*** **USA** (Ashmead 1890; Szépligeti 1904; Gahan 1911a; Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967).

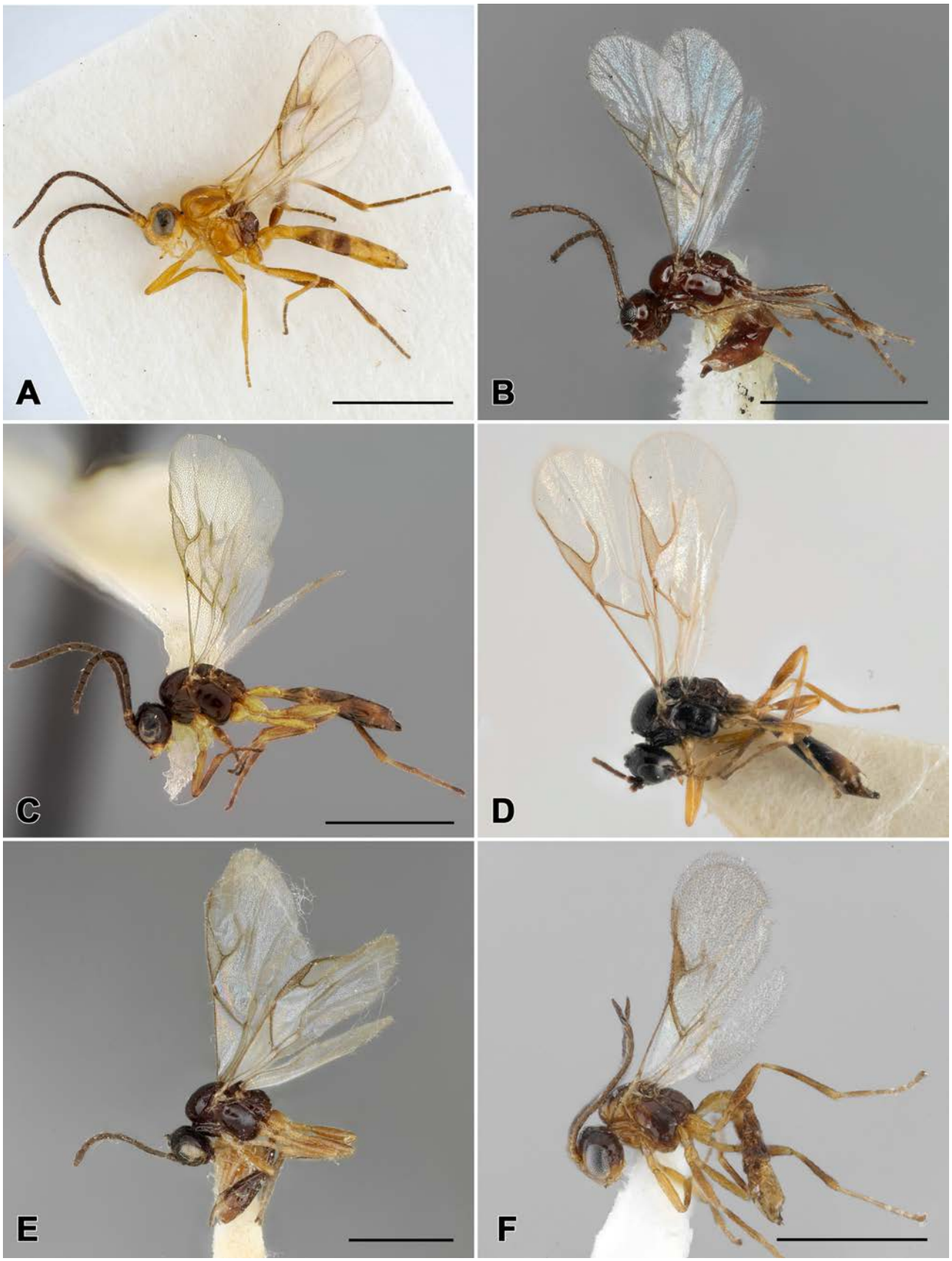



**Figure 10.** Species of the genus *Aphidius* Nees von Esenbeck, 1819. **A.** *Aphidius absinthii* Marshall, 1896 – Czech Republic, DPPZ; **B.** *Aphidius adelocarinus* Smith, 1944 – Holotype, USNM; **C.** *Aphidius alius* Muesebeck, 1958 – Holotype, USNM; **D.** *Aphidius aquilus* Mackauer, 1961 – Holotype, CNC; **E.** *Aphidius areolatus* Ashmead, 1906 – Lectotype, USNM; **F.** *Aphidius arvensis* (Starý, 1960) – Iran, DPPZ. Scale bar: 1 mm.

### *Aphidius autriquei* Starý, 1985

*Aphidius autriquei* Starý, 1985c:134. Holotype ♀, paratypes ♀ (IECA). – Burundi.

***Host.*** ***Rhopalosiphum padi*** (Linnaeus) (Starý et al. 1985c).

***Distribution.*** **Burundi** (Starý et al. 1985c); **Madagascar** (Starý 2005; Madl & van Achterberg 2014); **Thailand** (Starý et al. 2008, 2010c); **Vietnam** (Tomanović et al. 2026b).

### *Aphidius avenae* Haliday, 1834 [Fig. 11C]

*Aphidius avenae* Haliday, 1834:99. Lectotype ♀ (after Mackauer 1961b), paralectotypes ♀♀ ♂♂ (NHMUK). – Ireland.

**Syn.:** *Bracon picipes* Nees, 1811; *Aphidius crithmi* Marshall, 1896; *Aphidius pascuorum* Marshall, 1896; *Aphidius granarius* Marshall, 1896; *Lysiphlebus hungaricus* Györfi, 1958; *Aphidius caraganae* Starý, 1963.

***Hosts.*** ***Acyrthosiphon auctum*** (Walker) (Starý 1963b, 1966c); ***Acyrthosiphon caraganae*** (Cholodkovsky) (Starý 1963a, 1964d, 1966c, 1972b, 1972d, 1973a, 1974c, 2006; Starý & Rupais 1964; Mackauer & Starý 1967; Kierych 1975; Pennacchio 1989; Wiackowski et al. 1997); ***Acyrthosiphon cyparissiae*** (Koch) (Starý 1972b, 1974e); ***Acyrthosiphon malvae*** (Mosley) (Fulmek 1968; Tomanović et al. 2003c, 2006a, 2007a; Kavallieratos et al. 2004; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021; Hubert & van Achterberg 2023); ***Acyrthosiphon nigripes*** Hille Ris Lambers (Starý 1972b, 1974e); ***Acyrthosiphon pisum*** (Harris) (Dunn 1949; Starý et al. 1971, 1973, 1974c; Starý 1972b, 1972d, 1972f, 1973a, 1976a, 1977, 1978b, 1987a, 1995b, 2006; Kierych 1975; Cameron et al. 1984; Tremblay et al. 1985; Pennacchio & Tremblay 1988; Pennacchio 1989; Tomanović et al. 1996, 1999b, 2003c; Atanassova 1997; Atanassova et al. 1998; Müller et al. 1999; Kavallieratos et al. 2004; Naeem et al. 2005; Laamari et al. 2011; Žikić et al. 2012); ***Acyrthosiphon*** spp. (Tomanović et al. 2003c; Kavallieratos et al. 2004; Derocles et al. 2012; Žikić et al. 2012); ***Amphorophora rubi*** (Kaltenbach) (Marshall 1896; Fulmek 1968); ***Aphis aurantii*** Boyer de Fonscolombe (Starý 1976a); ***Aphis fabae*** Scopoli (Ismail et al. 2023); ***Aphis gossypii*** Glover (Zhang 1992; Subhrani et al. 2006); ***Aphis nasturtii*** Kaltenbach (Heinze & Profft 1940); ***Aphis spiraephaga*** Müller (Wiackowski et al. 1997, 2001); ***Aphis ulmariae*** Schrank (Fulmek 1968); ***Aulacorthum solani*** (Kaltenbach) (Heinze & Profft 1940; Dunn 1949; Fulmek 1968; Starý 1972b, 1976a; Starý et al. 1977a; Rabasse et al. 2001; Žikić et al. 2012; Peñalver-Cruz et al. 2017); ***Brachycaudus cardui*** (Linnaeus) (Mackauer & Starý 1967; Starý 1969a); ***Brachycaudus helichrysi*** (Kaltenbach) (Marshall 1896; Fulmek 1968); ***Brachycaudus lychnidis*** (Linnaeus) (Starý et al. 1971); ***Brachycaudus tragopogonis*** (Kaltenbach) (Fulmek 1968); ***Brachycaudus*** spp. (Starý 1969a); ***Brevicoryne brassicae*** (Linnaeus) (Fulmek 1968); ***Capitophorus carduina*** (Walker) (Wiackowski et al. 2001); ***Ceratovacuna silvestrii*** (Takahashi) (Samanta & Raychaudhuri 1984a); ***Chaetosiphon chaetosiphon*** (Nevsky) (Bhagat 1987); ***Chaetosiphon glabrum*** David, Rajasingh & Narayanan (Bhagat 1984); ***Diuraphis noxia*** (Mordvilko) (Liang et al. 1997; Bosque-Pérez et al. 2002); ***Dysaphis crithmi*** (Buckton) (Marshall 1896; Bignell 1901); ***Dysaphis plantaginea*** (Passerini) (Beirne 1942; Mackauer & Starý 1967; Starý et al. 1973; Starý 1976a; O'Connor et al. 1999); ***Dysaphis ranunculi*** (Kaltenbach) (Fulmek 1968); ***Hyadaphis coriandri*** (Das) (Subhrani et al. 2006); ***Hyadaphis foeniculi*** (Passerini) (Marshall 1896; Fulmek 1968); ***Hyalopteroides humilis*** (Walker) (Mackauer & Heie 1965); ***Hyalopterus pruni*** (Geoffroy) (Fulmek 1968; Sadat et al. 2019); ***Hyperomyzus lactucae*** (Linnaeus) (Fulmek 1968; Laamari et al. 2011); ***Longicaudus trirhodus*** (Walker) (Starý 1973a, 1974c; Starý et al. 1973); ***Macrosiphum cerinthiacum*** Börner (Starý et al. 1971; Starý 1972b, 1973a, 1974c); ***Macrosiphum doronicicola*** Leclant (Starý et al. 1973; Starý 1974e, 1976a); ***Macrosiphum euphorbiae*** (Thomas) (Heinze & Profft 1940; Dunn 1949; Griffiths 1960; Starý 1967a, 1972b, 1976a, 1987a, 2006; Roberti 1969; Kavallieratos et al. 2010); ***Macrosiphum prenanthidis*** Börner (Starý 1972b, 1972d, 1973a, 1974c, 2006); ***Macrosiphum rosae*** (Linnaeus) (Starý et al. 1973; Starý 1974e, 1987a, 2006; Kierych 1980; Bhagat 1982b); ***Macrosiphum stellariae*** Theobald (Wiackowski et al. 1997, 2001); ***Macrosiphum*** spp. (Bhagat 1984; Tomanović et al. 1999b, 2003c; Kavallieratos et al. 2004; Žikić et al. 2012); ***Metopolophium albidum*** Hille Ris Lambers (Mackauer & Starý 1967); ***Metopolophium dirhodum*** (Walker) (Marshall 1896; Bignell 1901; Mackauer & Starý 1967; Dean 1974; Jones & Dean 1975; Dean et al. 1981; Starý 1981b; Powell 1982; Ankersmit 1983; Plewka & Pankanin-Franczyk 1989; Höller et al. 1993; Kavallieratos et al. 2001, 2004, 2005b, 2006); ***Metopolophium festucae*** (Theobald) (Arthur 1945; Mackauer 1962c; Mackauer & Starý

1967); ***Microlophium carnosum*** (Buckton) (Marshall 1896; Goury & Guignon 1905; MacGill 1923; Starý 1983f, 2006; Cameron et al. 1984; Pungerl 1984; Müller et al. 1999); ***Myzaphis rosarum*** (Kaltenbach) (Chakrabarti & Debnath 2009); ***Myzaphis turanica*** Nevsky (Bhagat 1984); ***Myzus certus*** (Walker) (Mackauer 1962c; Mackauer & Starý 1967); ***Myzus persicae*** (Sulzer) (Dunn 1949; Mackauer 1962c, 1968d; Starý 1963b, 1966a, 1966c, 1967a, 1972b, 1972d, 1973a, 1974c, 1976a, 2006; Mackauer & Starý 1967; Roberti 1969; Starý et al. 1971, 1975; Yamauchi & Takada 1978; Marsh 1979; Tian et al. 1981; Takada & Takenaka 1982; Pennacchio 1989; Tomanović et al. 1998b, 1999b, 2003c; Kavallieratos et al. 2001, 2004, 2005b, 2006, 2008b, 2010; Wiackowski et al. 2001; Uysal et al. 2004; Barjadze & Gratiashvili 2010; Subhrani et al. 2010; Žikić et al. 2012; Hubert & van Achterberg 2023); ***Nasonovia ribisnigri*** (Mosley) (Arthur 1944; Starý et al. 1977a); ***Ovatus crataegarius*** (Walker) (Marshall 1896); ***Phorodon humuli*** (Schrank) (Rondani 1876); ***Prociphilus xylostei*** (De Geer), ***Rhopalomyzus lonicerae*** (Siebold) (Fulmek 1968); ***Rhopalomyzus poae*** (Gillette) (Starý et al. 1973; Starý 1974e); ***Rhopalosiphum maidis*** (Fitch) (Taheri & Rakhshani 2013); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Fulmek 1968); ***Rhopalosiphum padi*** (Linnaeus) (Meyer 1934; Mackauer & Starý 1967; Starý 1972b, 1974e, 1981b; Takada 1973; Tian et al. 1981; Powell 1982; Polgár 1984; Leather et al. 1989; Höller et al. 1993; Kavallieratos et al. 2001, 2002b, 2004, 2005b, 2006; Peñalver-Cruz et al. 2017); ***Schizaphis graminum*** (Rondani) (Mackauer & Starý 1967; Starý 1981b; Gruber & Coutinot 1984; Gruber et al. 1994); ***Schizaphis longicaudata*** Hille Ris Lambers (Thuneberg 1963; Mackauer & Starý 1967); ***Sitobion avenae*** (Fabricius) (Marshall 1896; Bignell 1901; Meyer 1929; Watanabe 1941b; Arthur 1945; Yasumatsu 1947; Starý 1961h, 1965a, 1966d, 1972b, 1972d, 1973a, 1974c, 1975a, 1976a, 1976c, 1977, 1978b, 1981b, 1995b, 1999b, 2006; Mackauer 1962c; Mackauer & Heie 1965; Mackauer & Starý 1967; Takada 1968, 1973; Tremblay 1967a; Roberti 1969; Starý et al. 1971, 1973; Dean 1974; Berest 1980, 1985; Kierych 1980; Dean et al. 1981; Tian et al. 1981; Powell 1982; Vickerman 1982; Ankersmit 1983; Pankanin-Franczyk 1983, 1986; Cameron et al. 1984; Polgár 1984; Pungerl 1984; Kuo-Sell & Eggers 1987; Pennacchio 1989; Höller et al. 1993; Pankanin-Franczyk & Ceryngier 1995; Atanassova 1997; Kolarov 1997; Tomanović et al. 1998a, 1999b, 1999c, 2003c; Liu & Li 1999; Chen & Shi 2001; Kavallieratos et al. 2001, 2004, 2005b, 2006; Wiackowski et al. 2001; Naeem et al. 2005; Wei et al. 2005; Derocles et al. 2012, 2014a; Kos et al. 2012; Žikić et al. 2012); ***Sitobion fragariae*** (Walker) (Mackauer & Starý 1967; Starý et al. 1971, 1973; Starý 1973a, 1974c, 1981b; Pungerl 1984; Tomanović et al. 1999b, 1999c, 2003c; Chen & Shi 2001; Kavallieratos et al. 2004; Žikić et al. 2012; Davidian 2017; Peñalver-Cruz et al. 2017); ***Sitobion ibarae*** (Matsumura) (Takada 1968; Starý 1975a); ***Sitobion rosaeiformis*** (Das) (Naeem et al. 2005); ***Sitobion*** spp. (Starý 1964d, 1966c; Tomanović et al. 2012; Žikić et al. 2012); ***Uroleucon sonchi*** (Linnaeus) (Morley 1908; Fulmek 1968); ***Wahlgreniella ossiannilssoni*** Hille Ris Lambers (Starý et al. 1971, 1973; Starý 1972b, 1973a, 1974c).

***Distribution.*** **Algeria** (Laamari et al. 2011; Neffah-Baziz et al. 2020); **Andorra** (Sanchis et al. 1999); **Austria** (Fulmek 1968); **Belgium** (Marshall 1891, 1896; Lameere 1907; Leclercq 1946, 1952; Mackauer & Starý 1967; Starý 1981b; Langer & Hance 2004; Jansen 2005; Alhmedi et al. 2006, 2009; Lopes et al. 2016; Ismail et al. 2023); **Bulgaria** (Atanassova 1997; Kolarov 1997; Atanassova et al. 1998); **Canada** (BOLD:ACE3727); **Canary Islands** (Mackauer & Starý 1967; Mackauer 1962b; Starý 1976a; Báez et al. 2001); **Chile** (Starý 1995c; Peñalver-Cruz et al. 2017); **China** (Fahringer 1935; Watanabe 1947; Mackauer & Starý 1967; Tian et al. 1981; Han 1983; Dong & Wang 1985, 1993; Zheng et al. 1987; Li et al. 1991; Zhang 1992; Luo et al. 1994; Liang et al. 1997; Chen & Shi 2001; He et al. 2004; Tursun et al. 2006; Zhou et al. 2009; Wang et al. 2010; Lopes et al. 2012; Xie et al. 2012; Zhao et al. 2012, 2013); **Croatia** (Graeffe 1908); **Czech Republic** (Starý 1963a, 1966c, 1967a, 1972f, 1974c, 1976c, 1977, 1978b, 1981b, 1987a, 1989a, 1995b, 1999b, 2006; Mackauer & Starý 1967; Starý & Havelka 2008); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967); **Finland** (Thuneberg 1963; Mackauer & Starý 1967; Starý 1973a, 1974c, 1981b; Koponen & Vikberg 1984b; Leather et al. 1989); **France** (Gaulle 1908; Baume-Pluvinel & Keilin 1915; Cavro 1954; Mackauer & Starý 1967; Starý et al. 1971, 1975, 1977a; Starý 1973a, 1974c, 1976a, 1981b; Rabasse & Dedryver 1983; Gruber & Coutinot 1984; Fougeroux et al. 1988; Dedryver et al. 1991; Gruber et al. 1994; Rabasse et al. 2001; van Baaren et al. 2009; Derocles et al. 2012, 2014a; Andrade et al. 2015); **Georgia** (Barjadze & Gratiashvili 2010); **Germany** (Nees von Esenbeck 1834a; Marshall 1896; Mackauer 1962c; Mackauer & Starý 1967; Eady 1969; Starý 1973a, 1974c, 1981b; Kuo-Sell & Eggers 1987; Borgemeister & Poehling 1988, 1990; Kuo-Sell et al. 1989; Borgemeister et al. 1991; Höller et al. 1993;

Belokobylskij et al. 2003; Vollhardt et al. 2008; Kos et al. 2011; Davidian 2017); **Greece** (Kavallieratos et al. 2001, 2002b, 2004, 2005b, 2006, 2008b, 2010); **Greenland** (Lundbeck 1897; Henriksen & Lundbeck 1917; Lesse & Granger 1952; van Achterberg 2006); **Hungary** (Szépligeti 1898, 1899, 1904; Györfi 1958; Polgár 1982, 1983, 1984); **India** (Agarwala et al. 1981a; Bhagat 1982a, 1984, 1987; Samanta & Raychaudhuri 1984a; Raychaudhuri et al. 1990; Subhrani et al. 2006; Chakrabarti & Debnath 2009; Das & Chakrabarti 2023a); **Iran** (Taheri & Rakhshani 2013; Ameri et al. 2019); **Ireland** (Mackauer & Starý 1967; Giller et al. 1995; O'Connor et al. 1999; Hubert & van Achterberg 2023); **Italy** (Rondani 1876; Graeffe 1908; Starý 1966d, 1967a, 1976a; Mackauer & Starý 1967; Tremblay 1967a; Roberti 1969; Tremblay & Pennacchio 1988a; Pennacchio 1989; Pennacchio & Tremblay 1988; Bergamesco et al. 1995; Tomanović et al. 2023c); **Japan** (Watanabe 1941b; Yasumatsu 1947; Mackauer & Starý 1967; Takada 1968, 1973; Starý 1975a; Yamauchi & Takada 1978; Takada & Takenaka 1982; Maetô & Nakamura 1995); **Kyrgyzstan** (Petrović et al. 2021a); **Latvia** (Mackauer & Starý 1967; Starý 1973a); **Lebanon** (Tremblay et al. 1985); **Lithuania** (Starý & Rupais 1964); **Madeira Islands** (Graham 1986); **Moldova** (Adaškevič et al. 1971; Starý 1972f; Talitzky & Kuslitzky 1990); **Mongolia** (Starý 1979a; Takada 1979a; Davidian 2017); **Montenegro** (Tomanović et al. 2003c, 2006a, 2007a, 2012; Kavallieratos et al. 2004; Derocles et al. 2012; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **Morocco** (Bleton & Fieuzet 1939); **Netherlands** (Mackauer & Starý 1967; Starý 1981b); **Norway** (Mjøs et al. 2024; Artsdatabanken 2026); **Pakistan** (Naeem et al. 2005); **Paraguay** (González Torres et al. 2018); **Poland** (Niezabitowski 1910; Mackauer & Starý 1967; Kierych 1975, 1980; Pankanin-Franczyk 1983, 1986; Plewka & Pankanin-Franczyk 1989; Pankanin-Franczyk & Ceryngier 1995; Huflejt 1997; Wiackowski et al. 1997, 2001; Pankanin-Franczyk & Sobota 1998; Tran & Piekarska-Boniecka 2017); **Russia** (Fahringer 1929; Meyer 1929; Mackauer & Starý 1967; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian 2017, 2019b, 2020b; Davidian & Humala 2023; Shpanev 2025); **Saudi Arabia** (Rakhshani et al. 2019); **Serbia** (Graeffe 1908; Mackauer & Starý 1967; Starý 1981b; Tomanović et al. 1996, 1998a, 1999c, 2003c, 2006a; Tomanović & Brajković 2001; Kavallieratos et al. 2004, 2005b, 2008b; Žikić et al. 2012); **Slovakia** (Starý 1977, 1989a; Al Dobai et al. 1999; Praslička et al. 2003; Praslička & Huszar 2005; Starý & Lukáš 2009); **Slovenia** (Kos et al. 2012); **Spain** (Quilis-Pérez 1931b; Ceballos 1956; Mackauer & Starý 1967; Starý 1973a, 1974c, 1976a; Tizado & Núñez-Pérez 1991; Sanchis et al. 1995; Nieves-Aldrey et al. 2003; Michelena Saval & Martínez De Murguía 2012); **Sweden** (Thomson 1895; Mackauer & Starý 1967); **Switzerland** (Ferrière 1928, 1947; Mackauer & Starý 1967); **Syria** (Abo Kaf & Alrostom 2020); **Türkiye** (Uysal et al. 2004; Çetin Erdoğan et al. 2008, 2010; Akar & Çetin Erdoğan 2017; Davidian 2017; Demirhan & Çetin Erdoğan 2023); **Ukraine** (Starý 1961h, 1965a, 1976a, 1981b, 1985, 1987; Berest 1980; Kaliuzhna 2013a, 2019b); **United Kingdom** (Curtis 1837; Smith 1853; McIntosh 1855; Kirchner 1867; Marshall 1872a, 1896, 1899; Parfitt 1881; Bignell 1901; Szépligeti 1904; Morley 1908; Lyle 1933; Arthur 1944, 1945; Kloet & Hincks 1945; Dunn 1949; Griffiths 1960; Mackauer 1961b; Mackauer & Starý 1967; Jones 1972, 1980; Starý 1973a, 1974c, 1981b; Dean 1974, 1975; Jones & Dean 1975; Dean et al. 1981; Powell 1982; Vickerman 1982; Cameron et al. 1984; Chambers et al. 1986; Vorley 1986; Leather et al. 1989; Pennacchio 1989; Atanassova et al. 1998; Müller et al. 1999; van Veen et al. 2008; Hazell & Fellowes 2009; Perez-Rodriguez et al. 2015; Davidian & Rispin 2016); **USA** (Mackauer 1963a; Bosque-Pérez et al. 2002).

### *Aphidius avenaphis* (Fitch, 1861) [Fig. 11D]

*Praon avenaphis* Fitch, 1861:840. Holotype ♂ (USNM). – USA.

**Syn.:** *Aphidius xanthus* Ashmead, 1889; *Aphidius granariaphis* Cook, 1890.

***Hosts.*** ***Acyrthosiphon lactucae*** (Passerini) (Pike et al. 2000); *Aphis pomi* De Geer (Hopkins 1892); ***Aulacorthum solani*** (Kaltenbach) (Shands et al. 1965; Mackauer & Starý 1967; Marsh 1979); ***Capitophorus*** sp. (Shands et al. 1955); ***Diuraphis noxia*** (Mordvilko) (Pike et al. 1997b, 2000; Bosque-Pérez et al. 2002; Day 2005; Noma et al. 2005; Kos et al. 2011; Tomanović et al. 2013); ***Illinoia liriodendri*** (Monell) (Zuparko & Dahlsten 1993); ***Macrosiphum euphorbiae*** (Thomas) (Shands et al. 1955; Mackauer & Starý 1967; Marsh 1979; Boiteau 1983); ***Myzus persicae*** (Sulzer) (Smith 1944; Muesebeck & Walkley 1951; Shands et al. 1955; Mackauer & Starý 1967; Marsh 1979; McFadden & Creighton 1979); ***Rhopalosiphum padi*** (Linnaeus) (Muesebeck 1928; Mackauer & Starý 1967; Marsh 1979; Pike et al. 2000); ***Sitobion avenae*** (Fabricius)

(Ashmead 1889; Cook 1890; Riley & Howard 1890; Webster 1899; Pergande 1904; Gahan 1911a; Phillips 1916; Treherne 1916; Muesebeck 1928; Smith 1944; Mackauer & Starý 1967; Liu 1977; Marsh 1979; Pike et al. 1996, 1997b, 2000; Kos et al. 2011; Tomanović et al. 2013).

***Distribution.*** **Canada** (Fletcher 1899; Treherne 1916; Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Liu 1977; Boiteau 1983; Olfert et al. 2002); **USA** (Ashmead 1889, 1900a; Cook 1890; Riley & Howard 1890; Smith 1890; Hopkins 1892; Szépligeti 1904; Nason 1905; Viereck 1910; Gahan 1911a; Smith 1944; Muesebeck & Walkley 1951; Shands et al. 1955; Mackauer 1963a, 1968a; Mackauer & Starý 1967; McFadden & Creighton 1979; Finlayson 1990; Zuparko & Dahlsten 1993; Pike et al. 1996, 1997b, 2000; Bosque-Pérez et al. 2002; Day 2005; Noma et al. 2005; Kos et al. 2011; Tomanović et al. 2013).

### *Aphidius balcanicus* Tomanović & Petrović, 2011

*Aphidius balcanicus* Tomanović & Petrović [in Petrović et al.], 2011:60. Holotype ♀, paratypes ♀♀ ♂♂ (FBUB). – Serbia.

***Host.*** ***Acyrthosiphon malvae*** (Mosley) (Petrović et al. 2011; Žikić et al. 2012; Davidian 2017).

***Distribution.*** **Croatia** (Mitrovski-Bogdanović et al. 2021); **Georgia** (Davidian 2017); **Montenegro** (Petrović et al. 2011; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **Norway** (Mjøs et al. 2024); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2019b, 2019c; Davidian & Ruchin 2023); **Serbia** (Petrović et al. 2011; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021).

### *Aphidius banksae* Kittel, 2016

*Aphidius staryi* Chen & Luhman [in Chen et al.], 1991:509. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (FAFU, USNM, UCRC). – Türkiye. [Replacement by Kittel 2016]

***Hosts.*** ***Acyrthosiphon pisum*** (Harris) (Chen et al. 1991; Atanassova 1997; Kök et al. 2020; Mitrovski-Bogdanović et al. 2021); ***Megoura viciae*** Buckton (Mitrovski-Bogdanović et al. 2021).

***Distribution.*** **Bulgaria** (Atanassova 1997); **Belgium**, **France**, **Greece** (Petrović et al. 2019); **Montenegro** (Petrović et al. 2019; Mitrovski-Bogdanović et al. 2021); **Palestine** (Chen et al. 1991; Petrović et al. 2019); **Serbia** (Petrović et al. 2019; Mitrovski-Bogdanović et al. 2021); **Türkiye** (Chen et al. 1991; Kök et al. 2020); **Slovenia**, **United Kingdom** (Petrović et al. 2019).

### *Aphidius bertrandi* Benoit, 1955

*Aphidius bertrandi* Benoit, 1955:348. Holotype ♀ (RMCA). – Rwanda.

***Host.*** ***Acyrthosiphon pisum*** (Harris) (Starý et al. 1985c).

***Distribution.*** **Burundi**, **Kenya** (Starý et al. 1985c); **Rwanda** (Benoit 1955; Mackauer & Starý 1967).

### *Aphidius bifurcatus* Rakhshani & Tomanović, 2012 [Fig. 11F]

*Aphidius bifurcatus* Rakhshani & Tomanović [in Rakhshani et al.], 2012a:46. Holotype ♀ (FBUB), paratypes ♀♀ ♂♂ (IECA, DPPZ, ZMAU).

***Host.*** Unknown.

***Distribution.*** **India** (Rakhshani et al. 2012a).

### *Aphidius biocarinatus* Chen & Shi, 2001

*Aphidius biocarinatus* Chen & Shi, 2001:40. Holotype ♀, paratypes ♀ ♂♂ (FAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chen & Shi 2001).

### *Aphidius brethes* Tomanović & Kocić, 2025

*Aphidius brethes* Tomanović & Kocić [in Tomanović et al.], 2025:314. Holotype ♀ (MACN), paratypes ♀♀ (MACN, FBUB, NHMB). – Argentina.

***Host.*** Unknown.

***Distribution.*** **Argentina** (Tomanović et al. 2025).

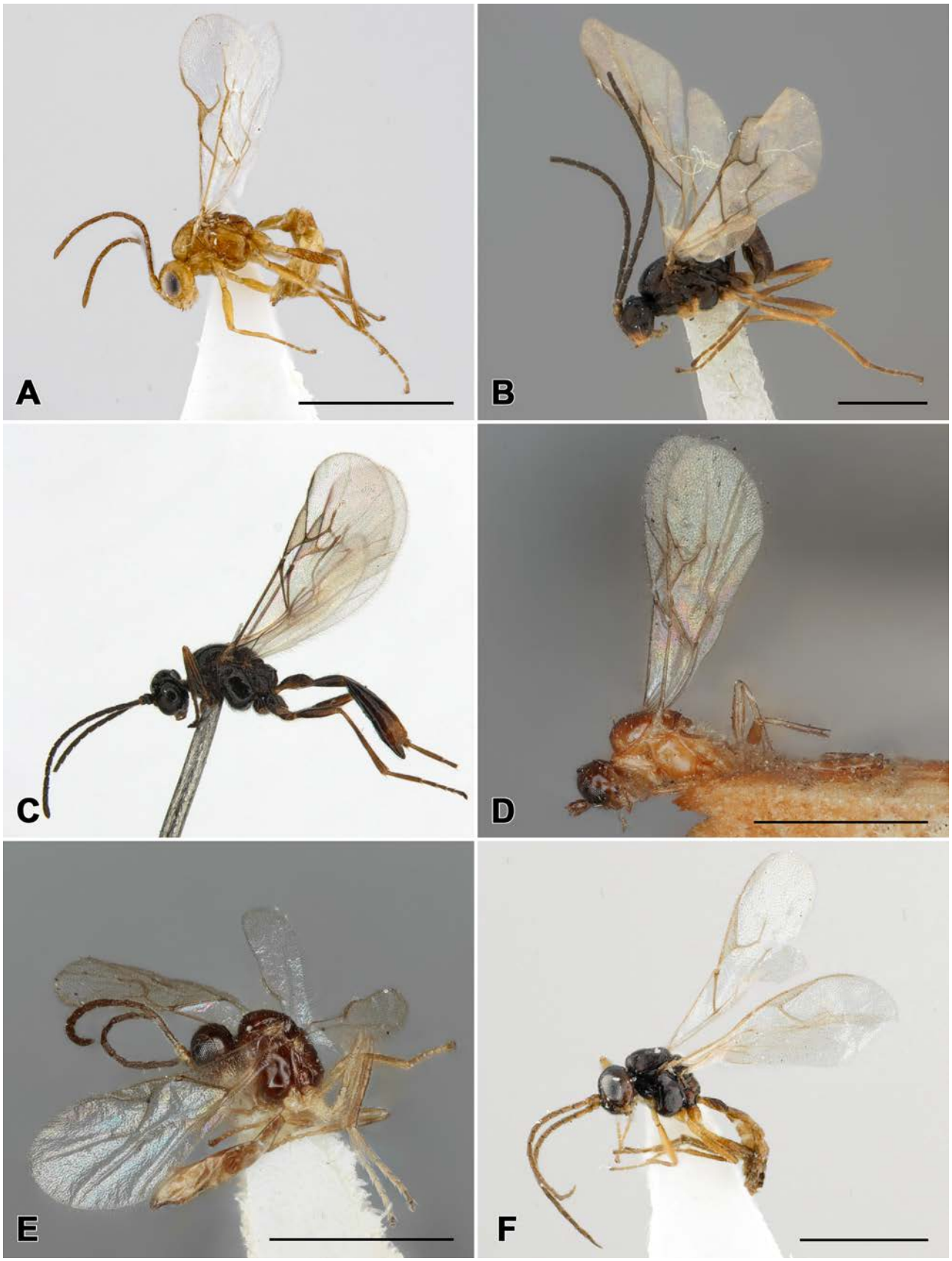



**Figure 11.** Species of the genus *Aphidius* Nees von Esenbeck, 1819. **A.** *Aphidius asteris* Haliday, 1834 – Iran, DPPZ; **B.** *Aphidius atropetiolatus* Ashmead, 1890 – Syntype, USNM; **C.** *Aphidius avenae* Haliday, 1834 – Netherland, RMNH; **D.** *Aphidius avenaphis* (Fitch, 1861) – Holotype of *Aphidius xanthus* Ashmead, 1889, USNM; **E.** *Aphidius berberidis* Smith, 1944 – Holotype (= *Aphidius hortensis* Marshall, 1896), USNM; **F.** *Aphidius bifurcatus* Rakhshani & Tomanović, 2012 – Paratype, DPPZ. Scale bar: 1 mm.

### *Aphidius breviatus* Shi & Chen, 2001

*Aphidius breviatus* Shi & Chen [in Chen & Shi], 2001:41. Holotype ♀, paratypes ♀♀ ♂♂ (FAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chen & Shi 2001).

### *Aphidius brevis* Tomanović & van Achterberg, 2026

*Aphidius breviatus* Tomanović & van Achterberg [in Tomanović et al.], 2026b:5. Holotype ♀ (RMNH). – Vietnam.

***Host.*** Unknown.

***Distribution.*** **Vietnam** (Tomanović et al. 2026b).

### *Aphidius brevicarpus* Čkrkić & Tomanović, 2024

*Aphidius brevicarpus* Čkrkić & Tomanović [in Čkrkić et al.], 2024:435. Holotype ♀ (IECA). – Ethiopia.

***Host.*** ***Diuraphis noxia*** (Mordvilko) (Čkrkić et al. 2024).

***Distribution.*** **Ethiopia** (Čkrkić et al. 2024).

### *Aphidius breviflagellaris* Tomanović & van Achterberg, 2024

*Aphidius breviflagellaris* Tomanović & van Achterberg [in Tomanović et al.], 2024:7. Holotype ♀ (RMNH). – South Korea.

***Host.*** Unknown.

***Distribution.*** **South Korea** (Tomanović et al. 2024; Kim 2026).

### *Aphidius camerunensis* Mackauer, 1966

*Aphidius camerunensis* Mackauer, 1966:115. Holotype ♀, paratypes ♀♀ ♂♂ (NHMUK). – Cameroon.

***Hosts.*** ***Eucarazzia elegans*** (Ferrari), ***Macrosiphum rosae*** (Linnaeus), ***Myzus persicae*** (Sulzer) (Starý & Schmutterer 1973); ***Sitobion africanum*** (Hille Ris Lambers) (Mackauer 1966, 1968a; Mackauer & Starý 1967); ***Sitobion anselliae*** (Hall), ***Sitobion mucatha*** (Eastop), ***Sitobion nigrinectaria*** (Theobald) (Starý & Schmutterer 1973); ***Sitobion*** spp. (Starý & Schmutterer 1973).

***Distribution.*** **Cameroon** (Mackauer 1966); **Kenya** (Starý & Schmutterer 1973; Todorov 2009a); **Madagascar** (Starý 2005; Madl & van Achterberg 2014); **Nigeria** (Mackauer & Starý 1967; Mackauer 1968a); **Réunion** (Starý et al. 1994a; Madl & van Achterberg 2014).

### *Aphidius chaetosiphonis* Tomanović & Petrović, 2011

*Aphidius chaetosiphonis* Tomanović & Petrović [in Petrović et al.], 2011:59. Holotype ♀, paratypes ♀ ♂ (FBUB). – Montenegro.

***Host.*** ***Chaetosiphon*** sp. (Petrović et al. 2011; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021).

***Distribution.*** **Montenegro** (Petrović et al. 2011; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021).

### *Aphidius cingulatus* Ruthe, 1859 [Fig. 12A]

*Aphidius cingulatus* Ruthe, 1859:315. Syntypes ♀♂ (NHMW). – Iceland.

**Syn.:** *Aphidius gregarius* Marshall, 1872; *Theracmion arcticus* Holmgren, 1872; *Aphidius lachni* Ashmead, 1889 [Fig. 15B]; *Aphidius pterocommae* Ashmead, 1889; *Aphidius pterocommae* Marshall, 1896; *Aphidius luzhetzki* Telenga, 1958.

***Hosts.*** *Acyrthosiphon pisum* (Harris) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); *Aphis glycines* Matsumura (Chang et al. 1994); *Brevicoryne brassicae* (Linnaeus) (Ataeva 1961; Fulmek 1968); *Chaitophorus populicola* Thomas (Starý 1965a); *Chaitophorus pruinosae* Narzikulov (Luzhetzki 1960); *Cinara pineti* (Fabricius), *Cinara pini* (Linnaeus) (Györfi 1961); *Macrosiphum rosae* (Linnaeus) (Gaprindashvili 1956); *Metopeurum fuscoviride* Stroyan (Barnea & Mustata 2007); *Periphyllus kuwanaii* (Takahashi) (Davidian 2017); ***Pterocomma beulahense*** (Cockerell) (Pike et al. 2000); ***Pterocomma bicolor*** (Oestlund) (Smith 1944;

Schlinger & Hall 1960a; Mackauer & Starý 1967; Muesebeck 1967; Liu 1977; Marsh 1979; Pike et al. 1996, 2000); ***Pterocomma jacksoni*** (Theobald) (Žikić et al. 2012); ***Pterocomma pilosum*** Buckton (Marshall 1896; Benoit 1955; Mackauer 1962c; Thuneberg 1963; Starý 1966c, 1967b, 1973a, 1976a, 1979a; Mackauer & Starý 1967; Tremblay 1967a; Starý et al. 1971, 1973, 2000; González & Michelena 1987; Pennacchio 1989; Rakhshani et al. 2007b, 2008a, 2012b, 2019; Talebi et al. 2009; Davidian & Manukyan 2024); ***Pterocomma populeum*** (Kaltenbach) (Benoit 1955; Mackauer 1962c; Starý 1966d, 1967b, 1973a, 1976a, 1979a; Mackauer & Starý 1967; Starý et al. 1971, 1973; Starý & Juchnevič 1978; Marsh 1979; Takada & Rishi 1980; Starý & Ghosh 1983; González & Michelena 1987; Michelena Saval & González Funes 1987; Moraal 1990; Suay Cano & Michelena Saval 1998; Cecilio & Ilharco 2002; Kavallieratos et al. 2004; Lumbierres et al. 2005; Tomanović et al. 2006a; Rakhshani et al. 2007b, 2008a, 2012b, 2019; Žikić et al. 2012, 2013; Pons et al. 2018); ***Pterocomma populifoliae*** (Fitch) (MacGillivray & Spicer 1953; Mackauer & Starý 1967; Muesebeck 1967; Liu 1977; Marsh 1979); ***Pterocomma pseudopopuleum*** Palmer (Liu 1977); ***Pterocomma rufipes*** (Hartig) (Starý & Juchnevič 1978; Starý et al. 1971; Starý 1973a, 1979a; Kavallieratos et al. 2004; Tomanović et al. 2006a; Žikić et al. 2012; Davidian 2017); ***Pterocomma salicicola*** (Uhler) (Ashmead 1889; Riley & Howard 1890); ***Pterocomma salicis*** (Linnaeus) (Bignell 1901; Benoit 1955; Starý & Rupais 1964; Starý 1965a, 1966c, 1967b, 1973a, 1979a, 2006; Mackauer & Starý 1967; Starý & Juchnevič 1978; Marsh 1979; Žikić et al. 2012); ***Pterocomma sanguiceps*** Richards (Pike et al. 2000); ***Pterocomma smithiae*** (Monell) (Smith 1944; Mackauer & Starý 1967; Marsh 1979; Starý & Remaudière 1983; Pennacchio 1989; Pike et al. 2000); ***Pterocomma tremulae*** Börner (Starý & Juchnevič 1978; Starý 1979a); ***Pterocomma*** spp. (Benoit 1955; Starý 1964d, 1965a, 1966b, 1966c, 1966d, 1967b, 1973a, 1975a, 2006; Mackauer & Starý 1967; Takada 1968; Kierych 1980; Pennacchio 1989; Das & Chakrabarti 1991a; Tomanović et al. 1999b, 2006a; Starý et al. 2000; Kavallieratos et al. 2004; Lumbierres et al. 2005; Derocles et al. 2012; Kos et al. 2012; Žikić et al. 2012, 2013; Davidian 2017; Pons et al. 2018; Mitrovski-Bogdanović et al. 2021).

***Distribution.*** **Austria** (Mackauer & Starý 1967); **Belarus** (Davidian 2017); **Canada** (MacGillivray & Spicer 1953; Mackauer & Starý 1967; Muesebeck 1967; Liu 1977); **China** (Gu et al. 1995; Chen & Shi 2001); **Czech Republic** (Starý 1966c, 1973a, 1989a, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Ilić-Milošević et al. 2015); **Finland** (Thuneberg 1960, 1963; Mackauer & Starý 1967; Mackauer 1968c; Koponen & Vikberg 1984b); **France** (Starý et al. 1971, 1973, 1977a; Starý 1973a, 1976a; Derocles et al. 2012); **Georgia** (Starý 1973a, 1976a); **Germany** (Kirchner 1867; Mackauer 1962c; Schimitschek 1962; Mackauer & Starý 1967; Starý 1973a; Belokobylskij et al. 2003); **Greenland** (Aurivillius 1890; Petersen 1956; Muesebeck 1958a; Starý 1961c; Mackauer & Starý 1967; Marsh 1979; van Achterberg 2006); **Hungary** (Szépligeti 1898, 1904; Györfi 1961; Mackauer & Starý 1967; Polgár 1981, 1983); **Iceland** (Ruthe 1859; Szépligeti 1904; Lindroth 1931; Petersen 1956; Muesebeck 1958a; Starý 1961c, 1973a; Mackauer & Starý 1967); **India** (Takada & Rishi 1980; Agarwala et al. 1981a; Starý & Ghosh 1983; Das & Chakrabarti 1991a, 2023a; Dey & Akhtar 2007; Ahmad & Wani 2014); **Iran** (Mackauer & Starý 1967; Starý 1979a; Starý et al. 2000; Rakhshani et al. 2007b, 2008a, 2019; Fallahzadeh & Saghaei 2010; Ilić-Milošević et al. 2015); **Italy** (Graeffe 1908; Starý 1966d, 1973a, 1976a; Mackauer & Starý 1967; Tremblay 1967a; Pennacchio 1989; Bergamesco et al. 1995); **Japan** (Takada 1968; Starý 1975a); **Kazakhstan** (Starý 1965a, 1979a; Starý & Juchnevič 1978; Davidian 2017); **Latvia** (Starý & Rupais 1964; Mackauer & Starý 1967; Starý 1973a); **Lithuania** (Starý & Rupais 1964; Starý 1973a; Ilić-Milošević et al. 2015); **Mexico** (Starý & Remaudière 1983, 1988; Pennacchio 1989); **Moldova** (Starý 1973a; Talitzky & Kuslitzky 1990; Davidian 2017); **Mongolia** (Takada 1979a); **Montenegro** (Kavallieratos et al. 2004; Tomanović et al. 2006a; Žikić et al. 2012); **Netherlands** (Mackauer & Starý 1967; Moraal 1990; Papp et al. 1996); **Norway** (Riedel & Hansen 2014; Mjøs et al. 2024); **Poland** (Niezabitowski 1910; Mackauer & Starý 1967; Kierych 1975, 1980; Huflejt 1997; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Portugal** (Cecilio & Ilharco 2002; Ilić-Milošević et al. 2015); **Romania** (Barnea & Mustata 2007); **Russia** (Starý 1965a, 1973a; Mackauer & Starý 1967; Mackauer 1968c; Davidian 2007, 2017, 2019b; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Ilić-Milošević et al. 2015; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Graeffe 1908; Mackauer & Starý 1967; Tomanović et al. 1998a, 2006a; Kavallieratos et al. 2004; Žikić et al. 2012, 2013; Ilić-Milošević et al. 2015; Mitrovski-Bogdanović et al. 2021); **Slovakia** (Starý 1989a); **Slovenia** (Kos et al. 2012; Ilić-Milošević et al. 2015); **South Korea** (Chang & Youn 1983b; Chang et al. 1994); **Spain** (González & Michelena 1987;

Michelena Saval & González Funes 1987, 1987; Tizado & Núñez-Pérez 1991; Suay Cano & Michelena Saval 1998; Lumbierres et al. 2005; Michelena Saval & Martínez De Murguía 2012; Pons et al. 2018); **Sweden** (Mackauer & Starý 1967); **Switzerland** (Mackauer & Starý 1967; Mackauer 1968c); **Tajikistan** (Fulmek 1968; Starý 1979a); **Ukraine** (Niezabitowski 1910); **United Kingdom** (Marshall 1872b, 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer & Starý 1967; Starý 1973a); **USA** (Ashmead 1889, 1900a; Riley & Howard 1890; Szépligeti 1904; Viereck 1910; Gahan 1911a; Smith 1944; Muesebeck & Walkley 1951; Schlinger & Hall 1960a; Mackauer & Starý 1967; Muesebeck 1967; Liu 1977; Pike et al. 1996, 2000; Ilić-Milošević et al. 2015); **Uzbekistan** (Starý 1965a, 1979a; Mackauer 1968a).

***Remarks.*** According to Kim (2026), records of *Aphidius cingulatus* from South Korea (Chang & Youn 1983b; Chang et al. 1994) are doubtful.

### *Aphidius colemani* Viereck, 1912 [Fig. 12B]

*Aphidius colemani* Viereck, 1912:141. Holotype ♀, paratypes ♀♂ (USNM). – India.

**Syn.:** *Aphidius huebrichi* Brèthes, 1913; *Aphidius aphidiphilus* Benoit, 1955; *Aphidius leroyi* Benoit, 1955.

***Hosts.*** *Acyrthosiphon pisum* (Harris) (Silva 2016); ***Anuraphis catonii*** Hille Ris Lambers (Starý 2002, 2006); ***Aphis aurantii*** Boyer de Fonscolombe (Rosen 1967, 1969; Avidov & Harpaz 1969; Starý 1976a; Tremblay 1984; Tremblay et al. 1985; Muraleedharan et al. 1988; Yumruktepe & Uygun 1994; Uysal et al. 2004; Kavallieratos et al. 2005b, 2008a; Tomanović et al. 2009a; Yoldaş et al. 2011; Labdaoui et al. 2026); ***Aphis craccivora*** Koch (Betancourt & Scatoni 2001; Kavallieratos et al. 2001, 2004, 2006, 2010, 2016; Miller et al. 2002; Ölmez & Ulusoy 2003; Uysal et al. 2004; Tomanović et al. 2009a; Alzugaray et al. 2010; Yoldaş et al. 2011; Ahmad & Bakr 2013; Satar et al. 2014, 2021; Silva 2016; Gamal et al. 2022); ***Aphis fabae*** Scopoli (Starý 1975b, 2002, 2006; Abou-Fakhr 1982; Tremblay et al. 1985; Kavallieratos et al. 2001, 2004, 2006, 2010; Tomanović et al. 2009a, 2014; Laamari et al. 2012; Starý et al. 2014a; Albittar et al. 2016; Mkenda et al. 2019; Satar et al. 2021; Woolley et al. 2022; Ismail et al. 2023); ***Aphis farinosa*** Gmelin (Starý 2002, 2006); ***Aphis glycines*** Matsumura (Pike et al. 2007; Noma & Brewer 2008); ***Aphis gossypii*** Glover (Starý & Ghosh 1978, 1983; Raychaudhuri et al. 1982; Paonam & Singh 1986b; Guenaoui & Ait Chaabane 1991; Burgio et al. 1997; Vidal 1997a; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2002a, 2004, 2005b, 2006, 2008b, 2010, 2016; Betancourt & Scatoni 2001; Rabasse et al. 2001; Messing & Klungness 2002; Yoldaş et al. 2002, 2011; Cecilio et al. 2004; Uysal et al. 2004; Lumbierres et al. 2005; Rhainds & Messing 2005; Starý 2006; Tomanović et al. 2009a, 2014; Boukhris-Bouhachem 2011; Irshaid & Hasan 2011; Laamari et al. 2012; Satar et al. 2014, 2021; Ayadi et al. 2017; Pons et al. 2018; Zouari et al. 2018; Kök et al. 2020; Alaserhat et al. 2021; Ismail et al. 2024); ***Aphis hederae*** Kaltenbach (González & Michelena 1987; Michelena Saval & González Funes 1987; Kavallieratos et al. 2006; El-Gantiry et al. 2012); ***Aphis illinoisensis*** Shimer (Havelka et al. 2011); ***Aphis intybi*** Koch (Abou-Fakhr 1982; Abou-Fakhr & Kawar 1998; Laamari et al. 2012); ***Aphis nasturtii*** Kaltenbach (Starý & Kaddou 1971; Starý 1975b, 1976a, 2006; Kavallieratos et al. 2010); ***Aphis nerii*** Boyer de Fonscolombe (Takada & Rishi 1980; Abou-Fakhr 1982; Tremblay et al. 1985; Pennacchio 1989; Abou-Fakhr & Kawar 1998; Pike et al. 2000; Kavallieratos et al. 2001, 2004, 2006; Cecilio et al. 2004; Tomanović et al. 2009a, 2014; Laamari et al. 2012; Mifsud et al. 2013; Kök et al. 2020); ***Aphis parietariae*** Theobald (Kavallieratos et al. 2001, 2004, 2006; Tomanović et al. 2009a); ***Aphis pomi*** De Geer (Laamari et al. 2011, 2012); ***Aphis punicae*** Passerini (Starý 1975b, 1976a; Kavallieratos et al. 2001, 2004, 2006, 2016; Tomanović et al. 2009a, 2014; Laamari et al. 2012); ***Aphis ruborum*** (Börner) (Kavallieratos et al. 2001, 2004, 2006; Tomanović et al. 2009a; Havelka et al. 2012); ***Aphis rumicis*** Linnaeus (Starý 2002); ***Aphis sambuci*** Linnaeus (Pons et al. 2018); ***Aphis schneideri*** (Börner) (Starý 2002, 2006); ***Aphis spiraecola*** Patch (Kavallieratos et al. 2001, 2004, 2005b, 2006; Tomanović et al. 2009a); ***Aphis spiraephaga*** Müller (Starý 1995a, 2002, 2006); ***Aphis solanella*** Theobald (Starý & Ghosh 1983; Kavallieratos et al. 2001, 2004, 2006, 2010; Tomanović et al. 2009a; Ayadi et al. 2017); ***Aphis symphyti*** Schrank (Starý 2002, 2006); ***Aphis umbrella*** (Börner) (Kavallieratos et al. 2001, 2004, 2006; Tomanović et al. 2009a); ***Aphis viburni*** Scopoli (Starý 2006); ***Aphis viticis*** Ferrari (Kavallieratos et al. 2001, 2004, 2006, 2008a; Tomanović et al. 2009a); ***Aphis*** spp. (Ramakrishna Ayyar & Margabandhu 1934; Krishnamurti & Usman 1955; Raychaudhuri et al. 1982; Das & Chakrabarti 1990a; Mifsud et al. 2013; Tomanović et al. 2014); ***Aulacorthum solani*** (Kaltenbach)

(Alaserhat et al. 2021); ***Brachycaudus cardui*** (Linnaeus) (Abou-Fakhr 1982; Tremblay et al. 1985; Abou-Fakhr & Kawar 1998; Kavallieratos et al. 2001, 2004, 2006; Starý 2002, 2006; Tomanović et al. 2009a); ***Brachycaudus helichrysi*** (Kaltenbach) (Abou-Fakhr 1982; Tremblay et al. 1985; Abou-Fakhr & Kawar 1998; Pike et al. 2000; Kavallieratos et al. 2001, 2004, 2006; Starý 2002, 2006; Ölmez & Ulusoy 2003; Uysal et al. 2004; Tomanović et al. 2009a; Satar et al. 2014; Kök & Tomanović 2022); ***Brachycaudus lychnidis*** (Linnaeus) (Starý 2002, 2006); ***Brachycaudus schwartzi*** (Börner) (Čkrkić et al. 2024); ***Brachycorynella asparagi*** (Mordvilko) (Starý 2006); ***Brevicoryne brassicae*** (Linnaeus) (Devi et al. 1996; Betancourt & Scatoni 2001; Long & van Achterberg 2014); ***Capitophorus mitegoni*** Eastop (Starý 1975b); ***Cavariella*** sp., ***Chaitophorus*** sp. (Starý 2006); ***Corylobium avellanae*** (Schrank) (Starý 2002, 2006); ***Cryptomyzus alboapicalis*** (Theobald) (Mitrovski-Bogdanović et al. 2021); ***Diuraphis noxia*** (Mordvilko) (Reed et al. 1992; Starý 2002, 2006; Bosque-Pérez et al. 2002; Heddle et al. 2020; Ward et al. 2021b); ***Dysaphis apiifolia*** (Theobald) (Kavallieratos et al. 2004, 2006; Tomanović et al. 2009a); ***Dysaphis pyri*** (Boyer de Fonscolombe) (Khan & Shah 2017); ***Hyadaphis foeniculi*** (Passerini) (Pike et al. 2000); ***Hyalopterus pruni*** (Geoffroy) (Starý 1975b, 1976a, 1979a, 1995b; Raychaudhuri et al. 1979, 1982; Chou 1981; Starý & Ghosh 1983; Paonam & Singh 1986b; González & Michelena 1987; Michelena Saval & González Funes 1987; Starý & Sekkat 1987; Al Rubeae et al. 1988; Costa 1988; Pennacchio 1989; Das & Chakrabarti 1990a; Michelena et al. 1994; Varatharajan et al. 1995; Cecilio 1996; Suay Cano & Michelena Saval 1998; Sanchis et al. 2000; Cecilio & Ilharco 2002; Chen et al. 2009; Saleh et al. 2013; Sadat et al. 2019; Mustafayeva 2020); ***Hyperomyzus lactucae*** (Linnaeus) (Güz & Kılınçer 2005; Bayram et al. 2018); ***Impatientinum asiaticum*** Nevsky (Starý 2002, 2006; Starý et al. 2014a); ***Ipuka dispersum*** (van der Goot) (Starý 1975b); ***Lipaphis erysimi*** (Kaltenbach) (Starý et al. 1977a; Paonam & Singh 1986b; Pike et al. 2000; Kavallieratos et al. 2006; Fidelis et al. 2019; Satar et al. 2021); ***Macrosiphoniella tapuskae*** (Hottes & Frison) (Kök & Tomanović 2022); ***Macrosiphum euphorbiae*** (Thomas) (Vidal 1997a; Pike et al. 2000); ***Melanaphis donacis*** (Passerini) (Starý 1975b, 1976a; Bhagat 1986a; González & Michelena 1987; Michelena Saval & González Funes 1987; Starý & Sekkat 1987; Singh et al. 1995; Cecilio 1996); ***Melanaphis sacchari*** (Zehntner) (Mercer et al. 2021; Pecina-Quintero et al. 2021); ***Metopolophium festucae cerealium*** Stroyan (Starý et al. 1994b); ***Myzus cerasi*** (Fabricius) (Kavallieratos et al. 2001, 2004, 2006, 2008b; Tomanović et al. 2009a); ***Myzus persicae*** (Sulzer) (Hofsvang & Høgvar 1975b, 1983b; Starý 1975b, 2002, 2006; Abou-Fakhr 1982; Starý & Ghosh 1983; Tremblay et al. 1985; Paonam & Singh 1986b; Ahmad & Singh 1995b, 1996a; Vidal 1997a; Abou-Fakhr & Kawar 1998; Devi et al. 1999; Kavallieratos & Lykouressis 1999a; Pike et al. 2000; Betancourt & Scatoni 2001; Kavallieratos et al. 2001, 2004, 2005a, 2005b, 2006, 2010; van Emden & Kifle 2002; Güz & Kılınçer 2005; Petrović et al. 2009; Tomanović et al. 2009a; Yoldaş et al. 2011; Laamari et al. 2012; Žikić et al. 2012; Ahmad & Bakr 2013; Satar et al. 2014, 2021; Albittar et al. 2016; Hasan 2016; Zouari et al. 2018; Aparicio et al. 2019; Alaserhat et al. 2021; Ward et al. 2021b); ***Myzus varians*** Davidson (Kavallieratos et al. 2001, 2004, 2006, 2016; Subhrani et al. 2006; Tomanović et al. 2009a); ***Myzus*** spp. (Pike et al. 2000; Ward et al. 2021b); ***Nasonovia ribisnigri*** (Mosley) (Nebreda et al. 2005); ***Ovatus mentharius*** (van der Goot) (Güz & Kılınçer 2005); ***Pentalonia nigronervosa*** Coquerel (Stadler & Völkl 1991); ***Rhopalosiphum maidis*** (Fitch) (Raychaudhuri et al. 1982; Ghanim & El-Adl 1983; Betancourt & Scatoni 2001; El-Heneidy et al. 2001, 2002, 2004; Starý 2002, 2006; Sobhy et al. 2004; Güz & Kılınçer 2005; Kavallieratos et al. 2006; Gadallah et al. 2017; Ward et al. 2021a, 2021b); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Starý 1975b, 1976a, 2006; Starý & Ghosh 1983; Tomanović et al. 2012); ***Rhopalosiphum padi*** (Linnaeus) (Starý 1981b, 2002, 2006; Ghanim & El-Adl 1983; Starý & Ghosh 1983; Tremblay et al. 1985; Abdel-Rahman et al. 2000; El-Heneidy et al. 2001, 2002, 2004; Kavallieratos et al. 2001, 2002b, 2004, 2005b, 2006; Sobhy et al. 2004; Abdel-Rahman 2005; Slman 2006; Tomanović et al. 2009a; Mifsud & Starý 2011, 2012; Gadallah et al. 2017); ***Schizaphis graminum*** (Rondani) (Ghanim & El-Adl 1983; Starý & Ghosh 1983; Abdel-Rahman et al. 2000; Betancourt & Scatoni 2001; El-Heneidy et al. 2001, 2002, 2004; Sobhy et al. 2004; Abdel-Rahman 2005; Kavallieratos et al. 2006; Slman 2006; Čkrkić et al. 2024); ***Sitobion avenae*** (Fabricius) (Starý 1981b; Ghanim & El-Adl 1983; El-Heneidy et al. 2001, 2002; Sobhy et al. 2004; Gadallah et al. 2017); ***Sitobion fragariae*** (Walker) (Muraleedharan et al. 1988; Radhakrishnan & Muraleedharan 1992, 1997; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2004, 2006).

***Distribution.*** **Algeria** (Starý 1975b, 1976a; Guenaoui & Ait Chaabane 1991; Laamari et al. 2011, 2012; Chehma & Laamari 2014; Tomanović et al. 2014; Sadat et al. 2019; Hemidi & Laamari 2020; Gacem et al.

2022; Khaladi et al. 2025; Labdaoui et al. 2026); **Angola** (Čkrkić et al. 2024); **Australia** (Johnson 1959; Mackauer & Starý 1967; Starý 1972a, 1974c, 1975b; Carver & Starý 1974; Chadwick & Nikitin 1976; Carver 1992; Carver et al. 1993; Milne 1995; Bowie et al. 1999; Heddle et al. 2020; Ward et al. 2021b); **Azerbaijan** (Mustafayeva 2020); **Belgium** (Derocles et al. 2012; Dassonville et al. 2013; Lopes et al. 2016; Neffah-Baziz et al. 2020; Mitrovski-Bogdanović et al. 2021; Ismail et al. 2023); **Bulgaria** (Kavallieratos et al. 2013); **Burundi** (Čkrkić et al. 2024); **Canada** (BOLD:AAC7809); **Canary Islands** (Báez et al. 2001); **Cape Verde Islands** (Čkrkić et al. 2024); **China** (Chou 1981; Lu & Ji 1992; Gu et al. 1995; Chen et al. 2009); **Colombia** (BOLD:AAC7809); **Costa Rica** (BOLD:AAC7809); **Czech Republic** (Starý 1975b, 1989a, 1995a, 1995b, 2002, 2006; Starý & Havelka 2008; Tomanović et al. 2012); **Egypt** (Starý 1975b, 1976a; Ghanim & El-Adl 1983; Selim et al. 1987; 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; Abdel-Samad & Gomaa 2004; El-Gantiry et al. 2012; El-Ghiet et al. 2014; Saleh & Khedr 2014; Gadallah et al. 2017; Youssif et al. 2017; Gamal et al. 2022; Ismail et al. 2024); **Ethiopia** (Čkrkić et al. 2024); **France** (Starý 1975b, 1976a; Starý et al. 1977a; Rabasse et al. 2001); **Georgia** (Starý 1976a; Davidian 2017); **Germany** (Vidal 1997a; Adisu et al. 2002; Belokobylskij et al. 2003); **Greece** (Vidal 1997a; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2002a, 2002b, 2004, 2005a, 2005b, 2006, 2008a, 2008b, 2010, 2013, 2016; Tomanović et al. 2009a, 2014; Havelka et al. 2012); **Guam** (Miller et al. 2002); **India** (Viereck 1912; Ramakrishna Ayyar 1927; Ramakrishna Ayyar & Margabandhu 1934; Krishnamurti & Usman 1955; Sharma & Subba Rao 1964; Mackauer & Starý 1967; Starý 1975b; Starý & Ghosh 1978, 1983; Raychaudhuri et al. 1979, 1982, 1990; Takada & Rishi 1980; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Saha et al. 1982; Bhagat 1986a; Paonam & Singh 1986b; Muraleedharan et al. 1988; Trivedi & Saxena 1988; Das & Chakrabarti 1990a, 2023a; Radhakrishnan & Muraleedharan 1992, 1997; Ahmad & Singh 1995b, 1996a; Singh et al. 1995; Varatharajan et al. 1995; Devi et al. 1996, 1999; Dey & Akhtar 2007; Rafi et al. 2010; Ahmad & Wani 2014); **Iraq** (Al-Azawi 1970; Starý & Kaddou 1971; Starý 1975b, 1976a; Al Rubeae et al. 1988); **Italy** (Starý 1975b, 1976a; Pennacchio 1989; Bergamesco et al. 1995; Burgio et al. 1997); **Japan** (BOLD:AAC7809); **Jordan** (Tanigoshi et al. 1995; Irshaid & Hasan 2011; Hasan 2016); **Kenya** (Woolley et al. 2022); **Lebanon** (Starý 1975b, 1976a; Abou-Fakhr 1982; Tremblay 1984; Tremblay et al. 1985; Abou-Fakhr & Kawar 1998); **Libya** (Havelka et al. 2011; Tomanović et al. 2014); **Madeira Islands** (Cecilio et al. 2004); **Malawi** (Woolley et al. 2022); **Malta** (Mifsud & Starý 2011, 2012; Mifsud et al. 2013; Rakhshani et al. 2015b); **Mexico** (Pecina-Quintero et al. 2021); **Montenegro** (Petrović et al. 2009; Kavallieratos et al. 2010, 2013, 2016; Žikić et al. 2012; Tomanović et al. 2014); **Morocco** (Starý & Sekkat 1987); **Netherlands** (TZBCA033-06); **New Zealand** (Accidental introduction - Bulman et al. 2021; Ward 2026); **Norway** (Starý 1975b; Hofsvang & Høgvar 1983b; Mjøs et al. 2024); **Palestine** (Rosen 1967, 1969; Avidov & Harpaz 1969; Starý 1975b, 1976a, 1981b; Pennacchio 1989; Davidian 2017); **Poland** (Huflejt 1997; Barczak et al. 2005; Tran & Piekarska-Boniecka 2017); **Portugal** (Costa 1988; Cecilio 1996; Cecilio & Ilharco 2002; Marcelino et al. 2021); **Qatar** (Davidian 2017); **Reunion Island** (Čkrkić et al. 2024); **Russia** (Davidian 2017, 2019b, 2019c); **Saudi Arabia** (Ahmad & Bakr 2013; Asiry 2015); **South Africa** (BOLD:AAC7809); **South Korea** (Davidian 2017; Kim 2026); **Spain** (Starý 1975b, 1976a; González & Michelena 1987; Michelena Saval & González Funes 1987; Tizado & Núñez-Perez 1991; Michelena et al. 1994; Suay Cano & Michelena Saval 1998; Sanchis et al. 2000; Lumbierres et al. 2005, 2011; Nebreda et al. 2005; Quinto et al. 2012; Pons et al. 2018); **Syria** (Starý 1975b, 1976a); **Tajikistan** (Starý 1979a); **Tanzania** (Mkenda et al. 2019; Woolley et al. 2022); Tristan da Cunha (Čkrkić et al. 2024); **Tunisia** (Starý 1976a; Ben Halima & Ben Hamouda 2005; Boukhris-Bouhachem 2011; Ayadi et al. 2017; Zouari et al. 2018); **Türkiye** (Starý 1976a; Düzgüneş et al. 1982; Erkin 1983; Yumruktepe & Uygun 1994; Ölmez & Ulusoy 2003; Uysal et al. 2004; Güz & Kılınçer 2005; Çetin Erdoğan et al. 2008; Guncan et al. 2010; Yoldaş et al. 2002, 2011; Satar et al. 2014; Tomanović et al. 2014; Akar & Çetin Erdoğan 2017; Bayram et al. 2018; Kök et al. 2020; Alaserhat et al. 2021; Gülmez et al. 2021; Demirhan & Çetin Erdoğan 2023; Yalçınkaya & Kaya, 2025); **Turkmenistan** (Starý 1979a); **United Kingdom** (Starý 1975b); **Uruguay** (Betancourt & Scatoni 2001; Alzugaray et al. 2010; Silva 2016); **USA** (Starý 1975b; Pike et al. 1996, 2000, 2007; Bosque-Pérez et al. 2002; Messing & Klungness 2002; Rhainds & Messing 2005; Kaiser et al. 2007; Noma & Brewer 2008; Brewer & Noma 2010; Burd & Puterka 2012); **Uzbekistan** (Starý 1975b, 1979a); **Vietnam** (Long & van Achterberg 2014).

***Remarks.*** A long list of synonyms for this species in the literature (Starý 1972a, 1975b) causes complication

to separate the host records, at least from *A. platensis* that has recently been revalidated (Tomanović et al. 2014). Furthermore, records for the associations of both *Aphidius colemani* and *Aphidius platensis* with *Hyalopterus pruni* most probably refer to misidentification with *Aphidius transcaspicus*. According to the natural and purposeful augmentation release of *Aphidius colemani* in various countries, there are still many records that inherently refer to the occurrence of *Aphidius platensis*, which need to be confirmed by examination of the original material. The original description of *Aphidius colemani* from India (Viereck 1912) has yet to be retained until the examination of the type material.

### *Aphidius coloratus* Baker, 1909 [Fig. 12C]

*Aphidius coloratus* Baker, 1909:24. Lectotype ♀ (after Mackauer 1963a), paralectotypes ♀♀ (CASC). – USA.

***Host.*** Unknown.

***Distribution.*** **USA** (Baker 1909; Muesebeck & Walkley 1951; Mackauer 1963a; Mackauer & Starý 1967).

### *Aphidius confusus* Ashmead, 1889 [Fig. 12E]

*Aphidius confusus* Ashmead, 1889:662. Holotype ♀ (USNM). – USA.

***Hosts.*** ***Acyrthosiphon pisum*** (Harris) (Davis 1915; Fluke 1925; Campbell 1926; Walden 1926; Muesebeck 1928; Fluke 1929; Knowlton et al. 1938); *Aphis aurantii* Boyer de Fonscolombe (Essig 1926; Quayle 1938); ***Macrosiphoniella ludovicianae*** (Oestlund) (Marsh 1979); ***Macrosiphum rosae*** (Linnaeus) (Schlinger 1960a, 1960b; Schlinger & Hall 1960a; Mackauer & Starý 1967; Muesebeck 1967; Marsh 1979); ***Uroleucon ambrosiae*** (Thomas) (Marsh 1979); ***Uroleucon rudbeckiae*** (Fitch) (Muesebeck 1967; Mackauer & Starý 1967; Marsh 1979).

***Distribution.*** **USA** (Ashmead 1889; Szépligeti 1904; Gahan 1911a; Muesebeck & Walkley 1951; Schlinger & Hall 1960a; Schlinger 1960a, 1960b; Mackauer & Starý 1967; Finlayson 1990).

***Remarks.*** *Aphidius confusus* was synonymized with *A. rosae* Haliday, 1833 by Liu (1977), based on the redescription provided by Smith (1944). However, its host associations and morphological differences suggest its taxonomic identity needs further examination.

### *Aphidius cupressi* Wang & Dong, 1996

*Aphidius cupressi* Wang & Dong [in Dong & Wang], 1996:197. Holotype ♀, paratypes ♀♀ ♂♂ (KIZ). – China.

***Host.*** *Aphis* sp. (Dong & Wang 1996; Wei et al. 2005).

***Distribution.*** **China** (Dong & Wang 1996; Chen & Shi 2001).

### *Aphidius delicatus* Baker, 1909 [Fig. 12F]

*Aphidius delicatus* Baker, 1909:24. Lectotype ♂ (after Mackauer 1963a) (CASC). – USA.

***Host.*** ***Macrosiphoniella ludovicianae*** (Oestlund) (Liu 1977).

***Distribution.*** **USA** (Baker 1909; Muesebeck & Walkley 1951; Mackauer 1963a).

### *Aphidius dianensis* Dong & Wang, 1996

*Aphidius dianensis* Dong & Wang, 1996:198. Holotype ♀, paratypes ♀♀ ♂♂ (KIZ). – China.

***Host.*** ***Aphis gossypii*** Glover (Dong & Wang 1996).

***Distribution.*** **China** (Dong & Wang 1996; Chen & Shi 2001).

### *Aphidius dimidiatus* Curtis, 1831

*Aphidius dimidiatus* Curtis, 1831:353. Types ♀♂ (NHMUK?). – United Kingdom.

***Host.*** Unknown.

***Distribution.*** **United Kingdom** (Curtis 1831; Curtis 1837; Smith 1853).

***Remarks.*** The description is insufficient to determine the taxonomic status of the species, and the type specimens are unavailable for examination, so it should be considered as *species inquirenda.*

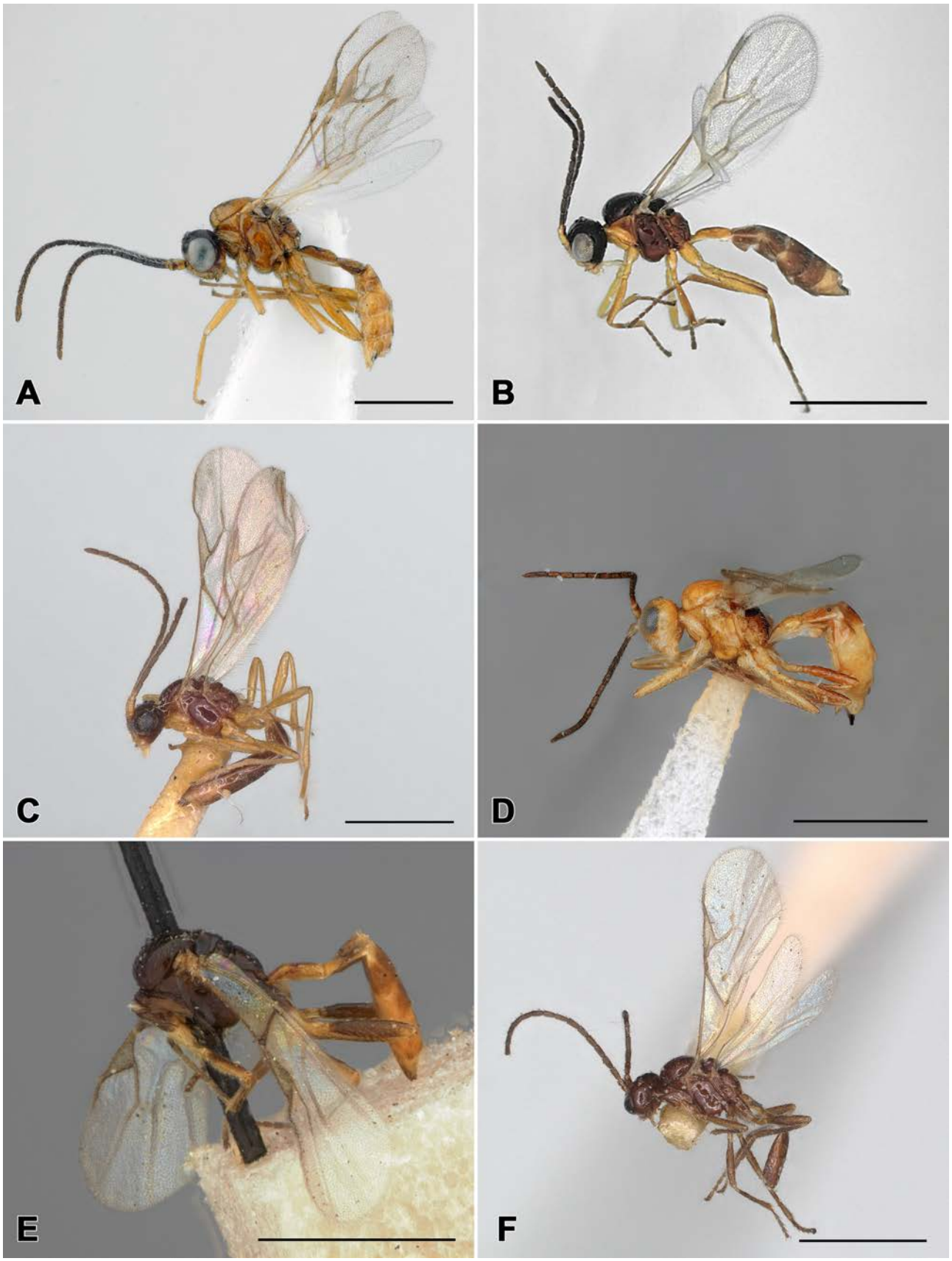



**Figure 12.** Species of the genus *Aphidius* Nees von Esenbeck, 1819. **A.** *Aphidius cingulatus* (Ruthe, 1859) – Iran, DPPZ; **B.** *Aphidius colemani* Viereck, 1912 – Mexico (J. Refugio Lomeli Flores); **C.** *Aphidius coloratus* Baker, 1909 – Lectotype, CASC; **D.** *Aphidius commodus* Gahan, 1926 – Lectotype (= *Aphidius absinthii* Marshall, 1896), USNM; **E.** *Aphidius confusus* Ashmead, 1889 – Holotype, USNM; **F.** *Aphidius delicatus* Baker, 1909 – Lectotype, CASC. Scale bar: 1 mm.

### *Aphidius eadyi* Starý, González & Hall, 1980 [Fig. 13A]

*Aphidius eadyi* Starý, González & Hall [in Starý et al.], 1980. Holotype ♀, paratype ♂ (IECA). – Czech Republic.

***Hosts.*** ***Acyrthosiphon caraganae*** (Cholodkovsky) (Starý 2006); ***Acyrthosiphon pisum*** (Harris) (González et al. 1978, 1980, 2000; Starý 1979a, 1987a, 1995b, 2006; Starý & Lyon 1980; Aeschlimann 1981; Michelena Saval & González Funes 1987; Starý & Sekkat 1987; Pennacchio & Tremblay 1988; Tremblay & Pennacchio 1988a; Pennacchio 1989; Lukas 1996; Tomanović et al. 1996, 1999a, 1999b, 2003c; Atanassova 1997; Atanassova et al. 1998; Suay Cano & Michelena Saval 1998; Müller et al. 1999; Sanchis et al. 2000; Ölmez & Ulusoy 2003; Kavallieratos et al. 2004; Michelena et al. 2004; Uysal et al. 2004; Rakhshani et al. 2006a, 2008a; Derocles et al. 2012, 2014a; Kos et al. 2012; Laamari et al. 2012; Nazari et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Chaouche & Laamari 2015; Lopes et al. 2016; Davidian 2017; Mitrovski-Bogdanović et al. 2021); ***Acyrthosiphon*** sp. (Davidian 2019c); *Aphis loti* Kaltenbach (Starý & Lyon 1980); *Megoura viciae* Buckton (Davidian 2017); *Sitobion avenae* (Fabricius) (Wei et al. 2005).

***Distribution.*** **Algeria** (Laamari et al. 2012; Chaouche & Laamari 2015; Rakhshani et al. 2019); **Andorra** (Sanchis et al. 1999); **Australia** (Ward et al. 2021b); **Belgium** (Lopes et al. 2016); **Bulgaria** (Atanassova 1997; Atanassova et al. 1998); **Canada** (BOLD:ACB8429); **China** (BOLD:ACB8429); **Czech Republic** (Starý 1978b, 1987a, 1989a, 1995b, 2006; Starý et al. 1980; Starý & Havelka 2008; Petrović et al. 2019); **Finland** (Starý et al. 1980); **France** (Starý & Lyon 1980; Starý et al. 1980; Aeschlimann 1981; Derocles et al. 2012, 2014a); **Georgia** (Starý et al. 1980); **Germany** (BOLD:ACB8429 | BOLD:ACH7338); **Greece** (Starý et al. 1980; Aeschlimann 1981; Kavallieratos et al. 2004); **Iran** (Starý 1979a; Starý et al. 1980, 2000; Pennacchio 1989; Rakhshani et al. 2006a, 2008a, 2019; Fallahzadeh & Saghaei 2010; Nazari et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Petrović et al. 2019); **Italy** (Starý et al. 1980; Pennacchio & Tremblay 1988; Tremblay & Pennacchio 1988a; Pennacchio 1989; Bergamesco et al. 1995); **Kazakhstan** (Starý 1979a; Starý et al. 1980); **Lithuania** (Starý et al. 1980); **Moldova** (Starý et al. 1980; Pennacchio 1989; Davidian 2017); **Montenegro** (Mitrovski-Bogdanović et al. 2021); **Morocco** (Starý et al. 1980; Starý & Sekkat 1987; Pennacchio 1989); **New Zealand** (Purposeful introduction - Cameron et al. 1981, 2013; Walker & Cameron 1981; Milne 1988; Cameron & Walker 1989; Valentine & Walker 1991; Bulman et al. 2021; Ward 2026); **Norway** (BOLD:ACH7338 | Artsdatabanken 2026); **Russia** (Starý et al. 1980; Davidian & Gavrilyuk 2014; Davidian 2017, 2019b, 2019c; Davidian & Humala 2023; Davidian & Ruchin 2023; Shpanev 2025); **Serbia** (Starý et al. 1980; Tomanović et al. 1996, 1998a, 1999b, 2003c; Žikić et al. 2000, 2012; Tomanović & Brajković 2001; Kavallieratos et al. 2004; Petrović et al. 2019); **Slovakia** (Starý et al. 1980; Starý 1989a; Lukas 1996); **Slovenia** (Kos et al. 2012; Petrović et al. 2019; Mitrovski-Bogdanović et al. 2021); **Spain** (Michelena Saval & González Funes 1987; Pennacchio 1989; Tizado & Núñez-Perez 1991; Sanchis et al. 1995, 2000; Suay Cano & Michelena Saval 1998; Nieves-Aldrey et al. 2003; Michelena et al. 2004; Pons et al. 2011; Michelena Saval & Martínez De Murguía 2012); **Sweden** (Mitrovski-Bogdanović et al. 2021); **Switzerland** (Starý et al. 1980); **Türkiye** (Ölmez & Ulusoy 2003; Uysal et al. 2004; Çetin Erdoğan et al. 2008; Akar & Çetin Erdoğan 2017; Demirhan & Çetin Erdoğan 2023; Rakhshani et al. 2019); **Ukraine** (Kaliuzhna 2019b); **United Kingdom** (Atanassova et al. 1998; Müller et al. 1999; van Veen et al. 2008; Davidian & Rispin 2016); **Uzbekistan** (Starý 1979a; Starý et al. 1980; Pennacchio 1989; Aripov 2003).

### *Aphidius eglanteriae* Haliday, 1834 [Fig. 13B]

*Aphidius eglanteriae* Haliday, 1834:102. Lectotype ♀ (after Mackauer 1961b), paralectotype ♂ (NHMUK). – United Kingdom.

***Hosts.*** *Aphis odinae* (van der Goot) (Samanta & Raychaudhuri 1984a); ***Capitophorus formosartemisiae*** (Takahashi) (Das & Chakrabarti 1990a); ***Chaetosiphon alpestre*** Hille Ris Lambers (Starý et al. 1971; Starý 1973a, 1976a); ***Chaetosiphon chaetosiphon*** (Nevsky) (Starý et al. 1971; Starý 1973a, 1976a; Tomanović et al. 1999b, 2003c; Kavallieratos et al. 2004; Žikić et al. 2012); ***Chaetosiphon fragaefolii*** (Cockerell) (Rabasse et al. 2001); ***Chaetosiphon glabrum*** David, Rajasingh & Narayanan, 1971 (Chakrabarti & Debnath 2009); ***Chaetosiphon tetrarhodum*** (Walker) (Starý et al. 1971; Starý 1973a; Bhagat 1984; Barjadze et al. 2010); ***Chaetosiphon*** sp. (Starý 2006; Žikić et al. 2012; Davidian 2018b); ***Longicaudus trirhodus*** (Walker) (Starý et al. 1971; Starý 1973a; Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012; Davidian 2017); ***Macrosiphoniella pseudoartemisiae*** Shinji (Das & Chakrabarti 1990a); ***Myzaphis rosarum*** (Kaltenbach)

(Bhagat 1984); ***Myzus ornatus*** Laing (Samanta & Raychaudhuri 1984a); ***Myzus sorbi*** Bhattacharya & Chakrabarti (Das & Chakrabarti 1990a).

***Distribution.*** **Bulgaria** (Todorov & Ivanova 2016); **Czech Republic** (Starý 1973a, 1989a, 2006); **France** (Starý et al. 1971; Starý 1973a, 1976a; Rabasse et al. 2001; Kaliuzhna & van Achterberg 2019); **Germany** (Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **India** (Bhagat 1984; Das & Chakrabarti 1990a, 2023a; Raychaudhuri et al. 1990; Dey & Akhtar 2007); **Italy** (Graeffe 1908; Bergamesco et al. 1995); **Lithuania** (Rakauskas 1985); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Tomanović et al. 2003c; Kavallieratos et al. 2004, 2013; Žikić et al. 2012); **Netherlands** (Kaliuzhna & van Achterberg 2019); **Poland** (Kierych 1980; Huflejt 1997); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2018b, 2019b; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a, 2003c; Kavallieratos et al. 2004, 2013; Žikić et al. 2012); **Spain** (Quilis-Pérez 1931b); **Türkiye** (Barjadze et al. 2010; Rakhshani et al. 2019); **United Kingdom** (Curtis 1837; Kirchner 1867; Marshall 1872a, 1896, 1899; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1961b; Mackauer & Starý 1967).

### *Aphidius egypti* Čkrkić & Tomanović, 2024

*Aphidius egypti* Čkrkić & Tomanović [in Čkrkić et al.], 2024:437. Holotype ♀ (IECA). – Egypt.

***Host.*** Unknown aphid on tomato.

***Distribution.*** **Egypt** (Čkrkić et al. 2024).

### *Aphidius ericaphidis* Pike & Starý, 2011

*Aphidius ericaphidis* Pike & Starý [in Pike et al.], 2011:59. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (WSUJ, WSUP, CNC, IECA, USNM). – USA.

***Hosts.*** ***Ericaphis latifrons*** (Börner) (Petrović et al. 2017); ***Ericaphis scammelli*** (Mason) (Pike et al. 2011; Mitrovski-Bogdanović et al. 2021).

***Distribution.*** **Canada** (Pike et al. 2011); **Germany** (BOLD:AGA9334); **Ireland** (BOLD:AGA9334); **Serbia** (Petrović et al. 2017; Mitrovski-Bogdanović et al. 2021); **Netherlands** (Petrović et al. 2017); **Scotland** (Mitrovski-Bogdanović et al. 2021); **Sweden**, **United Kingdom** (Petrović et al. 2017); **USA** (Pike et al. 2011).

### *Aphidius erodii* Michelena & Tomanović, 2021

*Aphidius erodii* Michelena & Tomanović [in Petrović et al.], 2021b:95. Holotype ♀ (ICBiBE), paratypes ♀ ♂ (ICBiBE, FBUB). – Spain.

***Host.*** ***Acyrthosiphon malvae*** (Mosley) (Petrović et al. 2021b).

***Distribution.*** **Spain** (Petrović et al. 2021b).

### *Aphidius ervi* Haliday, 1834 [Fig. 13C]

*Aphidius ervi* Haliday, 1834:100. Syntypes ♀♂ (NMID, uncertain). – United Kingdom [Ireland?].

**Syn.:** *Bracon infirmus* Nees, 1811; *Aphidius ulmi* Marshall, 1896; *Aphidius medicaginis* Marshall, 1898; *Aphidius fumipennis* Györfi, 1958; *Aphidius nigrescens* Mackauer, 1962; *Aphidius mirotarsi* Starý, 1963.

***Hosts.*** ***Acyrthosiphon auctum*** (Walker) (Mackauer & Heie 1965; Mackauer & Starý 1967); ***Acyrthosiphon caraganae*** (Cholodkovsky) (Mackauer 1962g; Starý 1965a, 1966c, 1972d, 1973a, 1974c, 1977, 1987a, 2006; Mackauer & Starý 1967; Kierych 1975; Marsh 1977, 1979; Wiackowski et al. 1997, 2001; Davidian 2017; Ferrer-Suay et al. 2017); ***Acyrthosiphon chelidonii*** (Kaltenbach) (Mackauer 1962c); ***Acyrthosiphon cyparissiae*** (Koch) (Ferrière & Voukassovitch 1928; Starý 1963a, 1964d, 1966c, 1972d, 1973a, 1974c, 2006; Mackauer & Starý 1967); ***Acyrthosiphon euphorbiae*** Börner (Mackauer & Starý 1967); ***Acyrthosiphon gossypii*** Mordvilko (Mackauer & Starý 1967; Zheng et al. 1985; Laamari et al. 2011, 2012; Barahoei et al. 2013); ***Acyrthosiphon ignotum*** Mordvilko (Mackauer 1962c; Mackauer & Starý 1967); ***Acyrthosiphon ilka*** Mordvilko (Starý 1976a); ***Acyrthosiphon kondoi*** Shinji (González et al. 1978, 1979; Milne 1982; Starý & Ghosh 1983; Milne 1986; Milne & Bishop 1987; Starý & Delfino 1987; Carver 1992; Starý 1993b, 1995c; Starý et al. 1993a, 1999, 2000, 2007; Lamp et al. 1994; Milne 1999; Pike et al. 2000;

Nakashima & Akashi 2005; Rakhshani et al. 2006a, 2008a, 2008b; Alzugaray et al. 2010; Nazari et al. 2012; Barahoei et al. 2013; Silva 2016; Bulman et al. 2021; Chirgwin et al. 2026); ***Acyrthosiphon lactucae*** (Passerini) (Zeren & Düzgüneş 1983; Pike et al. 2000; Uysal et al. 2004; Hemidi & Laamari 2020); ***Acyrthosiphon lambersi*** Leclant & Remaudière (Starý et al. 1973; Starý 1974e, 1976a); ***Acyrthosiphon loti*** (Theobald) (Mackauer 1962g; Starý et al. 1971); ***Acyrthosiphon malvae*** (Mosley) (Mackauer 1962c; Mackauer & Starý 1967; Starý 1972d, 1973a, 1974c, 1993b, 1995b, 1995c, 2006; Hubert & van Achterberg 2023); ***Acyrthosiphon nigripes*** Hille Ris Lambers (Starý 1964d, 1966c, 1972d, 1974c, 1973a, 2006; Mackauer & Starý 1967); ***Acyrthosiphon pisum*** (Harris) (Meyer 1927; Ferrière & Voukassovitch 1928, 1932; Bodenheimer & Swirski 1957; Markkula 1960; Obrtel 1961; Mackauer 1962c, 1969; Starý 1962c, 1964d, 1965a, 1966c, 1966d, 1969e, 1969f, 1971b, 1972b, 1972f, 1973a, 1974c, 1975a, 1976a, 1977, 1978b, 1978c, 1979a, 1981b, 1987a, 1993b, 1995c, 1999b, 2006; Mackauer & Starý 1967; Tremblay 1967a; Avidov & Harpaz 1969; Eady 1969; Kralovic & Vallo 1969; Hozák 1970; Starý et al. 1971, 1993a, 2000; Mackauer & Campbell 1972; Campbell & Mackauer 1973; Kierych 1975; Liu 1975; Angalet & Fuester 1977; Marsh 1977, 1979; González et al. 1978; Starý & González 1978; Aeschlimann 1981; Chou 1981; Dean et al. 1981; Monajemi & Esmaili 1981; Düzgüneş et al. 1982; Powell & Zhang 1983; Zeren & Düzgüneş 1983; Cameron et al. 1984; Pungerl 1984; Makhova 1985; Němec & Starý 1985b; Tremblay et al. 1985; Zheng et al. 1985; Bhagat 1986b; Mackauer & Kambhampati 1986; Mustata 1986; Starý & Delfino 1987; González & Michelena 1987; Michelena Saval & González Funes 1987; Starý & Sekkat 1987; Thiboldeaux et al. 1987; Costa 1988; Pennacchio & Tremblay 1988; Powell & Wright 1988; Tremblay & Pennacchio 1988a; Digilio & Pennacchio 1989; Pennacchio 1989; Rasulian 1989; Mescheloff & Rosen 1990b; Sequeira & Mackauer 1992a, 1992b; Battaglia et al. 1993; Pennacchio et al. 1994a; Henter 1995; Henter & Via 1995; Mackauer & Lardner 1995; Cecilio 1996; Danyk & Mackauer 1996; Lukas 1996; Pike et al. 1996, 2000; Schooler et al. 1996; Tomanović et al. 1996, 1999a, 1999b, 2003a, 2007c, 2009a; Christiansen-Weniger & Hardie 1997; Du et al. 1997; Guerrieri et al. 1997; Kolarov 1997; Losey et al. 1997; Poppy et al. 1997; Vidal 1997a; Wiackowski et al. 1997, 2001; Atanassova et al. 1998; Digilio et al. 1998; Otto & Mackauer 1998; Suay Cano & Michelena Saval 1998; Taylor et al. 1998; Müller et al. 1999; Olbrycht 1999; Sanchis et al. 2000; Chen & Shi 2001; French et al. 2001; Kavallieratos et al. 2001, 2004, 2006; Rauwald & Ives 2001; Daza-Bustamante et al. 2002; Hufbauer 2002; Bultman et al. 2003; Snyder & Ives 2003; Michelena et al. 2004; Naeem et al. 2005; Nakashima & Akashi 2005; Wei et al. 2005; Rakhshani et al. 2006a, 2008a, 2012b; Chen et al. 2009; Talebi et al. 2009; Alzugaray et al. 2010; Laamari et al. 2011, 2012; Derocles et al. 2012, 2014a; Kos et al. 2012; Nazari et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Taheri & Rakhshani 2013; Chaouche & Laamari 2015; Silva 2016; Ferrer-Suay et al. 2017; Pons et al. 2018; Kök et al. 2020; Mustafayeva 2020; Mitrovski-Bogdanović et al. 2021); ***Acyrthosiphon*** spp. (Starý 1964d, 1966c, 1987a; Žikić et al. 2012); ***Amphorophora rubi*** (Kaltenbach) (Marshall 1896; Hill 1952; Fulmek 1968); ***Aphis acetosae*** Linnaeus (Hemidi & Laamari 2020); ***Aphis confusa*** Walker (Marshall 1896; Pontin 1960); ***Aphis coronillae*** Ferrari (Pontin 1960; Wiackowski et al. 2001); ***Aphis craccae*** Linnaeus (Wiackowski et al. 2001); ***Aphis craccivora*** Koch (Ataeva 1961; Zeren & Düzgüneş 1983; Starý 1993b, 1995c; Pike et al. 2000; Wiackowski et al. 2001; Alzugaray et al. 2010; Laamari et al. 2011; Chaouche & Laamari 2015; Silva 2016; Hemidi & Laamari 2020; Alaserhat et al. 2021; Oğuzoğlu & Avcı 2025); ***Aphis fabae*** Scopoli (Maloquin & Moitie 1914; Zeren & Düzgüneş 1983; Wiackowski et al. 2001; Uysal et al. 2004; Laamari et al. 2011); ***Aphis glycines*** Matsumura (Pike et al. 2007); ***Aphis gossypii*** Glover (Mimeur 1934; Zheng et al. 1985; Starý et al. 2007; Ghelamallah et al. 2018; Hemidi & Laamari 2020); ***Aphis pomi*** De Geer (Feraru & Mustata 2004; Sadat et al. 2019; Hemidi & Laamari 2020); ***Aphis ruborum*** (Börner) (Starý 1993b, 1995c; Starý et al. 1993a; Havelka et al. 2012); ***Aphis rumicis*** Linnaeus (Hemidi & Laamari 2020); ***Aphis schneideri*** (Börner) (Wiackowski et al. 2001); ***Aphis spiraephaga*** Müller (Wiackowski et al. 2001); ***Aphis umbrella*** (Börner) (Cecilio & Ilharco 2002); ***Aphis urticata*** Gmelin (Wiackowski et al. 2001); ***Aspidophorodon longicauda*** (Richards) (Pike et al. 2000); ***Aulacorthum knautiae*** Heie (Mackauer & Heie 1965; Mackauer & Starý 1967); ***Aulacorthum solani*** (Kaltenbach) (Dunn 1949; Mackauer & Starý 1967; Starý 1972b, 1973a, 1974c, 1993b, 1995c; Marsh 1977, 1979; Starý & Delfino 1987; Tomanović et al. 1999a, 2003c, 2009a; Kavallieratos et al. 2001, 2004, 2006, 2010; Rabasse et al. 2001; Žikić et al. 2012); ***Aulacorthum*** spp. (Starý 1973a, 2006; Tomanović et al. 2012); ***Brachycaudus cardui*** (Linnaeus) (González & Michelena 1987; Michelena et al. 2004; Bayram et al. 2018); ***Brachycaudus helichrysi*** (Kaltenbach)

(González & Michelena 1987; Starý 1993b, 1995c; Pike et al. 2000); ***Brachycaudus rumexicolens*** (Patch) (Hemidi & Laamari 2020); ***Brachycaudus schwartzi*** (Börner) (Starý 1972d, 1973a, 1974c); ***Brachycaudus*** spp. (Starý 1973a, 1987a, 2006; Ferrer-Suay et al. 2017); ***Brevicoryne brassicae*** (Linnaeus) (Pike et al. 1996, 2000; Ghelamallah et al. 2018; Ward et al. 2021b; Hubert & van Achterberg 2023); ***Capitophorus elaeagni*** (Del Guercio) (Ayadi et al. 2017); ***Capitophorus inulae*** (Passerini) (Hemidi & Laamari 2020); ***Capitophorus*** sp. (Starý 1972d, 1973a, 1974c, 1987a, 2006); ***Chaetosiphon tetrarhodum*** (Walker) (Chakrabarti & Debnath 2009); *Cinara juniperi* (De Geer) (Jaskiewicz 2003); ***Corylobium avellanae*** (Schrank) (Pennacchio 1989); ***Delphiniobium carpaticae*** Mamontova (Starý 1973a, 1974c); ***Delphiniobium junackianum*** (Karsch) (Pennacchio 1989); ***Diuraphis noxia*** (Mordvilko) (Feng et al. 1992; Robinson 1992; Starý 1993b, 1995c, 1999b, 2006; Starý et al. 1993a; Pike et al. 1996, 1997b, 2000; Tomanović et al. 1999b, 1999c, 2003c, 2009a; Bosque-Pérez et al. 2002; Kavallieratos et al. 2004, 2005b; Day 2005; Noma et al. 2005; Žikić et al. 2012; Heddle et al. 2020; Ward et al. 2021b); ***Dysaphis foeniculus*** (Theobald) (Ayadi et al. 2017); ***Dysaphis plantaginea*** (Passerini) (Vidal 1997a; Alhmedi et al. 2025); ***Dysaphis*** spp. (Laamari et al. 2011, 2012); ***Eriosoma ulmi*** (Linnaeus) (Marshall 1896; Bignell 1901; Fulmek 1968); ***Hayhurstia atriplicis*** (Linnaeus), ***Hyalopteroides humilis*** (Walker) (Pike et al. 2000); ***Hyalopterus amygdali*** (Blanchard) (Gagui et al. 2023); ***Hyalopterus pruni*** (Geoffroy) (Pike et al. 2000; Sadat et al. 2019); ***Hyperomyzus lactucae*** (Linnaeus) (Starý et al. 1977a; Aeschlimann & Vitou 1985; Pike et al. 2000; Tomanović et al. 2009a; Laamari et al. 2011, 2012; Derocles et al. 2014a; Hemidi & Laamari 2020); ***Hyperomyzus nigricornis*** (Knowlton), ***Illinoia davidsoni*** (Mason) (Pike et al. 2000); ***Illinoia liriodendri*** (Monell) (Zuparko & Dahlsten 1993; Kavallieratos et al. 2004; Laamari et al. 2012; Meseguer et al. 2024); ***Lambersius*** sp. (Pike et al. 2000); ***Lipaphis pseudobrassicae*** (Davis) (Chaouche & Laamari 2015); ***Macrosiphoniella absinthii*** (Linnaeus) (Chen & Shi 2001); ***Macrosiphum albifrons*** Essig (Starý & Havelka 1990, 1991; Pike et al. 2000; Starý 2006); ***Macrosiphum cholodkovskyi*** (Mordvilko) (Tomanović et al. 2003c, 2007a, 2009a; Kavallieratos et al. 2004; Starý 2006; Žikić et al. 2012); ***Macrosiphum daphnidis*** Börner (Kavallieratos et al. 2006; Tomanović et al. 2007a); ***Macrosiphum dryopteridis*** (Holman) (Mackauer & Starý 1967); ***Macrosiphum euphorbiae*** (Thomas) (Hobby 1933; Dunn 1949; Starý 1972b, 1972d, 1973a, 1974c, 1976a, 1993b, 1995c; Starý et al. 1975, 2007; Marsh 1977, 1979; Abou-Fakhr 1982; Zeren & Düzgüneş 1983; Tremblay et al. 1985; González & Michelena 1987; Michelena Saval & González Funes 1987; Starý & Delfino 1987; Pennacchio 1989; Mescheloff & Rosen 1990b; Feng et al. 1992; Ben Halima & Ben Hamouda 1993; Walgenbach 1994; Cecilio 1996; Abou-Fakhr & Kawar 1998; Suay Cano & Michelena Saval 1998; Tomanović et al. 1999a, 2003c, 2009a; Pike et al. 2000; Kavallieratos et al. 2001, 2004, 2006, 2010; Rabasse et al. 2001; Cecilio et al. 2004; Michelena et al. 2004; Uysal et al. 2004; Nebreda et al. 2005; Rakhshani et al. 2008a; Laamari et al. 2011, 2012; Žikić et al. 2012; Derocles et al. 2014a; Müller et al. 2014; Davidian 2017; Zouari et al. 2018; Khaladi et al. 2025); ***Macrosiphum euphorbiellum*** Theobald (Hobby 1933); ***Macrosiphum gaurae*** (Williams) (Pike et al. 2000); ***Macrosiphum hellebori*** Theobald & Walton (Badmin 1991); ***Macrosiphum inexspectatum*** Leclant (Starý et al. 1973, 1975; Starý 1974e, 1976a); ***Macrosiphum rosae*** (Linnaeus) (Marshall 1896; Ferrière 1928; Starý 1962c, 1964d, 1966c, 1993b, 1995c; Vassileva-Sumnalieva 1976; Atanassova 1997; Wiackowski et al. 1997, 2001; Pike et al. 2000; Rabasse et al. 2001; Delfino & Buffa 2008; Pons et al. 2018; Hubert & van Achterberg 2023); ***Macrosiphum*** spp. (Takahashi 1925; Gahan 1926; Telenga 1950; Starý 1973a, 1975a, 2006; Michelena Saval & González Funes 1987); ***Megoura viciae*** Buckton (Wiackowski et al. 2001; Davidian 2017); ***Metopolophium dirhodum*** (Walker) (Dean 1974; Jones & Dean 1975; Dean et al. 1981; Starý 1981b, 1993b, 1995c, 2006; Powell 1982; Powell & Zhang 1983; Polgár 1984; Zheng et al. 1985; González & Michelena 1987; Starý & Delfino 1987; Starý & Sekkat 1987; Farrell & Stufkens 1988; Plewka & Pankanin-Franczyk 1989; Feng et al. 1991, 1992; Aguirre Segura & Tizado Morales 1993; Höller et al. 1993; Starý et al. 1993a, 1994b; Elmali & Toros 1994; Tomanović et al. 1999a, 1999b, 1999c, 2003c, 2009a; Pike et al. 2000; Kavallieratos et al. 2001, 2004, 2005b, 2006; Güçlü & Özbek 2002; Michelena et al. 2004; Uysal et al. 2004; Starý et al. 2007; Delfino & Buffa 2008; Žikić et al. 2012; Derocles et al. 2014a; Hemidi & Laamari 2020; dos Santos et al. 2022; Ward et al. 2021b; Khaladi et al. 2025); ***Metopolophium festucae*** (Theobald) (Starý 1993b, 1995c; Haerri et al. 2008, 2009); ***Microlophium carnosum*** (Buckton) (Marshall 1896; Goury & Guignon 1905; Starý 1962c, 1964d, 1966c, 1966d, 1972d, 1973a, 1974c, 1976a, 1977, 1983a, 1983c, 1983f, 1987a, 1995b; Tremblay 1967a; Starý et al. 1973, 1985b; Kierych 1975, 1980; Marsh 1977, 1979;

Starý & Lyon 1980; Bhagat 1984; Cameron et al. 1984; Pungerl 1984; Powell & Wright 1988; Tomanović et al. 1999b, 2009a; Kavallieratos et al. 2001, 2004, 2006; Wiackowski et al. 2001; Rakhshani et al. 2008a; Chakrabarti & Debnath 2009; Talebi et al. 2009); ***Microlophium rubiformosanum*** (Takahashi) (Chen et al. 2009; Sonan 1944); ***Myzus certus*** (Walker) (Starý 1973a, 1974c, 2006; Marsh 1977, 1979); ***Myzus persicae*** (Sulzer) (Starý 1972b, 1972d, 1973a, 1974c, 1976a, 1977, 1978c, 1983d, 1993b, 1995c, 2006; Starý et al. 1973, 1975, 1993a, 2007; Hofsvang & Høgvar 1975a, 1983b; Marsh 1977, 1979; Zeren & Düzgüneş 1983; González & Michelena 1987; Michelena Saval & González Funes 1987; Starý & Sekkat 1987; Ben Halima & Ben Hamouda 1993; Pike et al. 2000; Kavallieratos et al. 2001, 2004, 2005b, 2006, 2010; Feraru & Mustata 2004; Michelena et al. 2004; Uysal et al. 2004; Naeem et al. 2005; Andorno et al. 2007; Rakhshani et al. 2008a; Tomanović et al. 2009a; Barjadze & Gratiashvili 2010; Laamari et al. 2012; Barahoei et al. 2013; Derocles et al. 2014a; Gavkare et al. 2014; Chaouche & Laamari 2015; Ghelamallah et al. 2018; Pons et al. 2018; Zouari et al. 2018; Aparicio et al. 2019; Mustafayeva 2020; Alaserhat et al. 2021; Ward et al. 2021a, 2021b; Plećaš et al. 2023); ***Myzus varians*** Davidson (Arzone & Alma 1986); ***Nasonovia ribisnigri*** (Mosley) (Starý et al. 1977a; Starý & Delfino 1987; Starý 1993b, 1995c); ***Ovatus crataegarius*** (Walker) (Pike et al. 2000); ***Ovatus inulae*** (Walker) (Hemidi & Laamari 2020); ***Phorodon humuli*** (Schrank) (Costa 1988; Pike & Starý 1996a; Pike et al. 2000; Wright & James 2001); ***Pleotrichophorus pycnorhysus*** (Knowlton & Smith) (Hollingbery et al. 2012); ***Rhodobium porosum*** (Sanderson) (Rabasse et al. 2001; Starý et al. 2007); ***Rhopalosiphum maidis*** (Fitch) (Feng et al. 1992; Starý 1993b, 1995c; Pike et al. 2000; Kos et al. 2012; Hemidi & Laamari 2020); ***Rhopalosiphum padi*** (Linnaeus) (Starý 1974c, 1976c, 1977, 1981b; Marsh 1977, 1979, 1993b, 1995c, 2006; Powell 1982; Starý & Delfino 1987; Leather et al. 1989; Pennacchio 1989; Feng et al. 1992; Höller et al. 1993; Starý et al. 1993a; Pike et al. 1996, 1997b, 2000; Tomanović et al. 1999a, 1999b, 1999c, 2003c, 2009a; Kavallieratos et al. 2001, 2002b, 2004, 2005b, 2006; Michelena et al. 2004; Uysal et al. 2004; Laamari et al. 2011; Kos et al. 2012; Žikić et al. 2012; Taheri & Rakhshani 2013; Gadallah et al. 2017; Khaladi et al. 2025); *Shivaphis celticola* (Nevsky) (Ataeva 1961); ***Schizaphis graminum*** (Rondani) (Starý 1981b, 1993b, 1995c, 2006; Gruber & Coutinot 1984; Starý & Sekkat 1987; Feng et al. 1992; Gruber et al. 1994; Tomanović et al. 1999a, 1999b, 1999c, 2003c, 2009a; Kavallieratos et al. 2004, 2005b; Žikić et al. 2012; dos Santos et al. 2022); ***Sitobion avenae*** (Fabricius) (Gautier & Bonnamour 1929; Quilis-Pérez 1931b; Telenga 1950; Starý 1973a, 1974c, 1976a, 1976c, 1977, 1978b, 1978c, 1981b, 1983a, 1987a, 1993b, 1995c, 2006; Starý et al. 1973, 1975, 1993a, 2000, 2007; Dean 1974; Berest 1980, 1985; Starý & Lyon 1980; Dean et al. 1981; Powell 1982; Vickerman 1982; Pankanin-Franczyk 1983, 1986; Cameron et al. 1984; Polgár 1984; Pungerl 1984; González & Michelena 1987; Kuo-Sell & Eggers 1987; Michelena Saval & González Funes 1987; Starý & Delfino 1987; Gerding & Figueroa 1989; Pennacchio 1989; Feng et al. 1991, 1992, 1993; Höller et al. 1993; Elmali & Toros 1994; Darvish-Mojeni & Bayat-Asadi 1995; Pankanin-Franczyk & Ceryngier 1995; Pike et al. 1996, 1997b, 2000; Stilmant 1996; Christiansen-Weniger et al. 1998; Otto & Mackauer 1998; Starý 1999b; Tomanović et al. 1999a, 1999b, 1999c, 2003c, 2007c, 2008c, 2009a; Chen & Shi 2001; Kavallieratos et al. 2001, 2004, 2005b, 2006; Daza-Bustamante et al. 2002; Michelena et al. 2004; Uysal et al. 2004; Rakhshani et al. 2008a, 2008b; Laamari et al. 2011, 2012; Kos et al. 2012; Žikić et al. 2012; Derocles et al. 2012, 2014a; Alikhani et al. 2013; Barahoei et al. 2013; Ayadi et al. 2017; Davidian 2017; Gadallah et al. 2017; Mitrovski-Bogdanović et al. 2021; dos Santos et al. 2022; Khaladi et al. 2025); ***Sitobion fragariae*** (Walker) (Dunn 1949; Starý et al. 1973, 1975, 1993a, 1994b; Starý 1981b, 1993b, 1995c; González & Michelena 1987; Costa 1988; Christiansen-Weniger & Hardie 1997; Wiackowski et al. 1997, 2001; Tomanović et al. 1999a, 1999b, 1999c, 2003c, 2009a; Kavallieratos et al. 2004, 2005b; Laamari et al. 2011, 2012; Žikić et al. 2012; Khaladi et al. 2025); ***Sitobion*** spp. (Starý 1972d, 1973a, 1974c, 1983d; Tomanović et al. 2003c; Žikić et al. 2012); *Smynthurodes betae* Westwood (Marshall 1896); *Therioaphis langloisi* Remaudière & Leclant (Hemidi & Laamari 2020); *Therioaphis luteola* (Börner), *Therioaphis trifolii* (Monell) (Wiackowski et al. 2001); ***Uroleucon aeneum*** (Hille Ris Lambers) (Starý 1995c; Laamari et al. 2011); ***Uroleucon ambrosiae*** (Thomas) (Delfino & Buffa 2008; Hemidi & Laamari 2020); ***Uroleucon cichorii*** (Koch) (Telenga 1950); ***Uroleucon picridis*** (Fabricius) (Ferrière & Voukassovitch 1928; Mimeur 1934; Telenga 1950); ***Uroleucon sonchi*** (Linnaeus) (Telenga 1950; Carver 1999; Laamari et al. 2011; Hemidi & Laamari 2020); ***Wahlgreniella nervata*** (Gillette) (Barahoei et al. 2013); ***Wahlgreniella ossiannilssoni*** Hille Ris Lambers (Starý 1973a, 1974c; Starý et al. 1973).

***Distribution.*** **Afghanistan** (González et al. 1978); **Algeria** (Starý 1976a; Laamari et al. 2011, 2012; Chehma & Laamari 2014; Chaouche & Laamari 2015; Aroun et al. 2016; Ghelamallah et al. 2018; Rakhshani et al. 2019; Sadat et al. 2019; Hemidi & Laamari 2020; Neffah-Baziz et al. 2020; Mohdeb et al. 2021; Gagui et al. 2023; Khaladi et al. 2024, 2025; Taleb et al. 2026); **Andorra** (Sanchis et al. 1999); **Argentina** (Starý & Delfino 1987; Berta et al. 2002; Andorno et al. 2007; Delfino & Buffa 2008; Tomanović et al. 2025); **Armenia** (Davidian 2017); **Australia** (Milne 1982, 1986, 1999; Milne & Bishop 1987; Carver 1992, 1999; Heddle et al. 2020; Ward et al. 2021b; Chirgwin et al. 2026); **Austria** (Mackauer & Starý 1967); **Azerbaijan** (Davidian 2017; Mustafayeva 2020); **Belarus** (BOLD:AAA4188); **Belgium** (Latteur 1973; González et al. 1978; Langer et al. 1998; Langer & Hance 2000, 2004; Jansen 2005; Alhmedi et al. 2009; Verheggen et al. 2009; Lopes et al. 2015, 2016; Alhmedi et al. 2025); **Brazil** (Mendes et al. 2000; Sampaio et al. 2005; Starý et al. 2007; dos Santos et al. 2022); **Bulgaria** (Grigorov 1962; Starý 1976a, 1981b; Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997; Atanassova et al. 1998; Kavallieratos et al. 2004, 2005b; Todorov 2007, 2009c, 2014; Tomanović et al. 2009a; Todorov & Ivanova 2016); **Canada** (Mackauer 1969, 1996; Mackauer & Campbell 1972; Campbell & Mackauer 1973; Starý 1974a; Mackauer & Kambhampati 1986; Sequeira & Mackauer 1993a; Mackauer & Lardner 1995; Wylie et al. 2005; Raworth et al. 2008); **Canary Islands** (Mackauer 1962b; Mackauer & Starý 1967; Báez et al. 2001); **Chile** (Suzuki & Vargas 1980; Gerding & Figueroa 1982; Gerding et al. 1989; Starý 1993b, 1994, 1995c; Starý et al. 1993a, 1994b, 2014c; Daza-Bustamante et al. 2002, 2004; Rodriguez et al. 2002; Derocles et al. 2012; Havelka et al. 2012); **China** (Gahan 1926; Fahringer 1935; Sonan 1944; Watanabe 1947; Mackauer & Starý 1967; Liu 1975; Chou 1981; Dong & Wang 1985; Zheng et al. 1985, 1987; Li et al. 1991; Lu & Ji 1992; Gu et al. 1995; Chen & Shi 2001; Chen et al. 2009); **Colombia** (BOLD:AAA4188); **Croatia** (Graeffe 1908); **Cyprus** (Aeschlimann 1981); **Czech Republic** (Starý 1962c, 1963a, 1966c, 1968d, 1969e, 1969f, 1971b, 1972d, 1972f, 1973a, 1974c, 1976a, 1977, 1978b, 1981b, 1983f, 1987a, 1989a, 1995b, 1999b, 2006; Mackauer & Starý 1967; Hozák 1970; González et al. 1978; Němec & Starý 1985b; Pennacchio 1989; Starý & Havelka 1990, 1991, 2008; Starý & González 1992; Zeman & Vanek 2001; Seidenglanz et al. 2011; Tomanović et al. 2012; Ferrer-Suay et al. 2017); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967; Langer 2001; Sigsgaard 2002); **Ecuador** (Starý et al. 2014c); **Egypt** (Gadallah et al. 2017; Rakhshani et al. 2019; Galal et al. 2025); **Eritrea** (Mackauer & Starý 1967); **Finland** (Markkula 1960; Mackauer & Starý 1967; Starý 1973a, 1974c); **France** (Marshall 1900; Szépligeti 1904; Gaulle 1908; Mackauer 1961b; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975, 1977a; Starý 1973a, 1974c, 1976a, 1981b; Starý & Lyon 1980; Aeschlimann 1981; Rabasse & Dedryver 1983; Gruber & Coutinot 1984; Aeschlimann & Vitou 1985; Fougeroux et al. 1988; Gruber et al. 1994; Rabasse et al. 2001; Derocles et al. 2012, 2014a; Andrade et al. 2015); **Georgia** (Starý 1976a; Barjadze & Gratiashvili 2010; Davidian 2017); **Germany** (Nees von Esenbeck 1834a; Kirchner 1867; Mackauer 1962c; Mackauer & Starý 1967; Eady 1969; Starý 1973a, 1974c, 1981b; Kuo-Sell & Eggers 1987; Boness & Starý 1988; Borgemeister & Poehling 1988, 1990; Kuo-Sell et al. 1989; Borgemeister et al. 1991; Höller et al. 1993; Vidal 1997a; Belokobylskij & Taeger 2001; Adisu et al. 2002; Belokobylskij et al. 2003; Vollhardt et al. 2008; Lazarević et al. 2024); **Greece** (González et al. 1978; Aeschlimann 1981; Starý 1981b; Aeschlimann & Vitou 1985; Vidal 1997a; Kavallieratos et al. 2001, 2002b, 2004, 2005b, 2006, 2010; Tomanović et al. 2007a, 2007c, 2009a); **Hungary** (Szépligeti 1898; Györfi 1958; Mackauer & Starý 1967; Starý 1973a, 1974c; Polgár 1981, 1982, 1983, 1984, 1987); **India** (Bhagat 1984, 1986b; Raychaudhuri et al. 1990; Gavkare et al. 2014; Das & Chakrabarti 2023a); **Iran** (Starý 1974e, 1979a; González et al. 1978; Starý & González 1978; Monajemi & Esmaili 1981; Starý et al. 2000; Rakhshani et al. 2006a, 2008a, 2008b, 2012b, 2019; Fallahzadeh & Saghaei 2010; Nazari et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Taheri & Rakhshani 2013; Ghotbi Ravandi et al. 2017; Ameri et al. 2019); **Iraq** (Al-Azawi 1970; Starý 1974c, 1976a); **Ireland** (Giller et al. 1995; O'Connor et al. 1999; Hubert & van Achterberg 2023); **Italy** (Graeffe 1908; Starý 1966d, 1973a, 1974c, 1976a; Tremblay 1967a; Aeschlimann 1981; Arzone & Alma 1986; Pennacchio & Tremblay 1988; Tremblay & Pennacchio 1988a; Digilio & Pennacchio 1989; Pennacchio 1989; Ferrari & Nicoli 1994; Pennacchio et al. 1994a, 1994b; Bergamesco et al. 1995; Tomanović et al. 2023c); **Japan** (Takada 1968; Starý 1975a; González et al. 1979; Takada & Tada 2000; Senoo et al. 2002; Nakashima & Akashi 2005); **Kenya** (BOLD:AAA4188); **Kyrgyzstan** (Petrović et al. 2021a); **Latvia** (Starý 1965a; Mackauer & Starý 1967); **Lebanon** (Mackauer & Starý 1967; Starý 1976a; Marsh 1977; Abou-Fakhr 1982; Tremblay et al. 1985; Abou-Fakhr & Kawar 1998; Rakhshani et al. 2019); **Lithuania** (Starý 1973a; Davidian 2017); **Madeira Islands** (Graham 1986; Cecilio et al. 2004;

Cecilio et al. 2009); **Mexico** (Starý 1983d; Starý & Remaudière 1988; Robinson 1992; Coronado-Blanco et al. 2004); **Moldova** (Starý 1972f, 1973a, 1974c; Talitzky & Kuslitzky 1990; Davidian 2017); **Montenegro** (Tomanović et al. 2003c, 2007a, 2009a; Kavallieratos et al. 2004, 2005b; Žikić et al. 2012); **Morocco** (Mimeur 1934; Mackauer & Starý 1967; Eady 1969; Starý 1976a; González et al. 1978; Starý & Sekkat 1987); **Nepal** (Tamrakar & Singh 2000); **Netherlands** (Mackauer & Starý 1967; van Achterberg 1976; Starý 1981b; Papp et al. 1996); **New Zealand** (Purposeful introduction – Cameron et al. 1980, 2013; Farrell & Stufkens 1988; Cameron & Walker 1989; Valentine & Walker 1991; Bulman et al. 2021; Ward 2026); **Norway** (Hofsvang & Høgvar 1983b; Mjøs et al. 2024); **Pakistan** (Starý & Ghosh 1983; Starý et al. 1999; Saleem et al. 2009); **Palestine** (Bodenheimer & Swirski 1957; Mackauer & Starý 1967; Avidov & Harpaz 1969; Starý 1976a; González et al. 1978; Pennacchio 1989; Mescheloff & Rosen 1990b; Samara & Qubbaj 2012; Rakhshani et al. 2019); **Paraguay** (González Torres et al. 2018); **Poland** (Niezabitowski 1910; Mackauer & Starý 1967; Starý 1968d; Kierych 1975, 1980; Pankanin-Franczyk 1979, 1983, 1986; Pankanin-Franczyk et al. 1986, 1995; Plewka & Pankanin-Franczyk 1989; Olszak 1994; Pankanin-Franczyk & Ceryngier 1995; Huflejt 1997; Wiackowski et al. 1997, 2001; Pankanin-Franczyk & Sobota 1998; Olbrycht 1999; Jaskiewicz 2003; Barczak et al. 2014; Tran & Piekarska-Boniecka 2017); **Portugal** (Costa 1988; De Gouveia & Araujo 1988; Cecilio 1996; Pike & Starý 1996a; Cecilio & Ilharco 2002; Marcelino et al. 2021); **Romania** (Mustata 1986; Feraru & Mustata 2004); **Russia** (Meyer 1927; Fahringer 1929; Starý 1965a, 1973a, 1974c; Mackauer & Starý 1967; Davidian 2007, 2017, 2019b; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024; Shpanev 2025); **Saudi Arabia** (El-Hag & El-Meleigi 1991); **Serbia** (Ferrière & Voukassovitch 1928; Tomanović et al. 1996, 1998a, 1999c, 2003c, 2007c, 2008c, 2009a; Tomanović & Brajković 2001; Žikić et al. 2000, 2012; Kavallieratos et al. 2004, 2005b; Mitrovski-Bogdanović et al. 2021; Plećaš et al. 2023); **Slovakia** (Kralovic & Vallo 1969; Starý 1977, 1989a; Lukas 1996; Al Dobai & Prasličká 1999; Al Dobai et al. 1999; Prasličká et al. 2003; Prasličká & Huszar 2005; Starý & Lukáš 2009); **Slovenia** (Kos et al. 2009b, 2012; Mitrovski-Bogdanović et al. 2021); **South Africa** (Müller et al. 2014); **South Korea** (Paik 1976; Starý & Choi 2000; Davidian 2017; Kim 2026); **Spain** (Quilis-Pérez 1931b; Mackauer & Starý 1967; Starý 1974c, 1976a, 1981b; González & Michelena 1987; Michelena Saval & González Funes 1987; Tizado & Núñez-Perez 1991; Aguirre Segura & Tizado Morales 1993; Sanchis et al. 1995, 2000; Suay Cano & Michelena Saval 1998; Nieves-Aldrey et al. 2003; Pons & Starý 2003; Michelena et al. 2004; Nebreda et al. 2005; Lumbierres et al. 2007; Pons et al. 2011, 2013, 2018; Michelena Saval & Martínez De Murguía 2012; Quinto et al. 2012; Aparicio et al. 2019); **Sweden** (Thomson 1895; Mackauer & Starý 1967); **Switzerland** (Ferrière 1928; Mackauer & Starý 1967; Starý 1981b); **Syria** (Abo Kaf & Alrostom 2020); **Tajikistan** (Ataeva 1961; Starý 1979a; Davidian 2017); **Tunisia** (Ben Halima & Ben Hamouda 1993; Ayadi et al. 2017; Zouari et al. 2018; Rakhshani et al. 2019); **Türkiye** (Zeren & Düzgüneş 1983; Elmali & Toros 1994; Güçlü & Özbek 2002; Uysal et al. 2004; Çetin Erdoğan et al. 2008, 2010; Akar & Çetin Erdoğan 2017; Davidian 2017; Bayram et al. 2018; Rakhshani et al. 2019; Kök et al. 2020; Alaserhat et al. 2021; Demirhan & Çetin Erdoğan 2023; Oğuzoğlu & Avcı 2025); **Ukraine** (Starý 1968d, 1981b; Berest 1980, 1985, 1987; Makhova 1985; Kaliuzhna 2013a, 2013b, 2016a, 2017b, 2019a, 2019b); **United Arab Emirates** (Starý et al. 2014b; Rakhshani et al. 2019); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Marshall 1896, 1899; Bignell 1901; Szépligeti 1904; Hobby 1933; Lyle 1933; Kloet & Hincks 1945; Dunn 1949; Hill 1952; Pontin 1960; Mackauer & Starý 1967; Jones 1972, 1980; Starý 1973a, 1974c, 1981b; Dean 1974, 1975; Jones & Dean 1975; Dean et al. 1981; Powell 1982; Vickerman 1982; Cameron et al. 1984; Chambers et al. 1986; Powell et al. 1986b; Leather et al. 1989; Badmin 1991; Atanassova et al. 1998; Müller et al. 1999; van Veen et al. 2008; Hazell & Fellowes 2009; Perez-Rodriguez et al. 2015; Davidian & Rispin 2016; Davidian 2017); **Uruguay** (Alzugaray et al. 2010; Silva 2016); **USA** (Mackauer 1963a, 1969; Mackauer & Finlayson 1967; Thiboldeaux et al. 1987; Feng et al. 1991, 1992, 1993; Zuparko & Dahlsten 1993; Lamp et al. 1994; Walgenbach 1994; Henter & Via 1995; Henter 1995; Halbert et al. 1996; Pike et al. 1996, 1997b, 2000, 2007; Schooler et al. 1996; French et al. 2001; Wright & James 2001; Bosque-Pérez et al. 2002; Chen et al. 2002; Hufbauer 2002; Snyder & Ives 2003; Day 2005; Noma et al. 2005; Raworth et al. 2008; Brewer & Noma 2010; Hollingbery et al. 2012; Meisner et al. 2014); **Uzbekistan** (Starý 1965a, 1979a; González et al. 1978; Starý & González 1978; Aripov 2003); **Vietnam** (Tomanović et al. 2026b); **Yemen** (Starý et al. 2014b; Rakhshani et al. 2019).

### *Aphidius erysimi* (Starý, 1960)

*Lysaphidus erysimi* Starý, 1960d:361. Holotype ♀, paratypes ♀♀ ♂ (IECA). – Czech Republic.

***Hosts.*** ***Lipaphis erysimi*** (Kaltenbach) (Starý 1960d, 1963b, 1964d, 1966c, 2006; Mackauer & Starý 1967); *Myzus persicae* (Sulzer) (Raychaudhuri et al. 1990); ***Pseudobrevicoryne erysimi*** Holman (Starý 1963b, 1966c, 1977, 1987a, 2006; Mackauer & Starý 1967; Tomanović et al. 2007c; Mitrovski-Bogdanović et al. 2021).

***Distribution.*** **Czech Republic** (Starý 1960d, 1966c, 1977, 1987a, 1989a, 2006; Mackauer & Starý 1967; Tomanović et al. 2007c; Mitrovski-Bogdanović et al. 2021); **Hungary** (Polgár 1983); **India** (Rishi 1976; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Kazakhstan** (Starý & Juchnevič 1978; Starý 1979a); **Russia** (Davidian 2017, 2019b); **Slovakia** (Starý 1977, 1989a).

### *Aphidius ferruginosus* Baker, 1909 [Fig. 13D]

*Aphidius ferruginosus* Baker, 1909:24. Lectotype ♂ (after Mackauer 1963a) (CASC). – USA.

***Host.*** Unknown.

***Distribution.*** **USA** (Baker 1909; Muesebeck & Walkley 1951; Mackauer 1963a).

### *Aphidius floridaensis* Smith, 1944 [Fig. 13E]

*Aphidius floridaensis* Smith, 1944:56. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, FAES, NCSU). – USA.

***Hosts.*** ***Aphis gossypii*** Glover (Muesebeck 1958a; Starý 1967a; Marsh 1979); ***Macrosiphum*** sp. (Finlayson 1990); ***Uroleucon ambrosiae*** (Thomas) (Smith 1944; Mackauer & Starý 1967; Liu 1977; Marsh 1979; Starý 1981a; Starý et al. 2014c); ***Uroleucon erigeronense*** (Thomas) (Starý 1981a); ***Uroleucon*** sp. (Mackauer & Starý 1967; Starý et al. 2014c).

***Distribution.*** **Cuba** (Starý 1981a; Starý et al. 2014c); **USA** (Smith 1944; Muesebeck & Walkley 1951; Muesebeck 1958a; Mackauer & Starý 1967; Starý 1967a; Liu 1977; Finlayson 1990; Ferguson & Stiling 1996).

### *Aphidius fumatus* Haliday, 1834

*Aphidius fumatus* Haliday, 1834:104. Holotype ♂ (after Mackauer 1961b) (NHMUK). – United Kingdom.

***Host.*** Unknown.

***Distribution.*** **United Kingdom** (Mackauer 1961b).

***Remarks.*** According to Mackauer (1961b), the type specimen (♂) exhibits a combination of characters that falls within the range of variation of several species in the genus, making it impossible to assign confidently to a single taxon. Consequently, *Aphidius fumatus* Haliday is best regarded as a *species dubia*.

### *Aphidius funebris* Mackauer, 1961 [Fig. 13F]

*Aphidius funebris* Mackauer, 1961c:279. Holotype ♀ (CNC), paratypes ♀♀ ♂♂ (CNC, IECA). – Germany.

**Syn.:** *Aphidius cirsii* Ivanov, 1925; *Aphidius cardui* subsp. *cirsii* Ivanov, 1925; *Aphidius bispinosus* Telenga, 1958; *Aphidius eriophori* Mackauer, 1967.

***Hosts.*** *Acyrthosiphon pisum* (Harris) (Starý et al. 1973; Ward et al. 2021b); *Aphis craccivora* Koch (Bandyan et al. 2021); *Aphis fabae* Scopoli (Starý 1976a; Chaouche & Laamari 2015; Bandyan et al. 2021); *Aphis farinosa* Gmelin (Akhvlediani 1964; Starý 1976a); *Aulacorthum solani* (Kaltenbach) (Halme 1977); *Brachycaudus cardui* (Linnaeus) (Güz & Kılınçer 2005; Laamari et al. 2011, 2012); *Capitophorus carduina* (Walker) (Wiackowski et al. 2001); *Hyperomyzus lactucae* (Linnaeus) (Laamari et al. 2011; Kök & Tomanović 2022); *Linosiphon* sp. (Kavallieratos et al. 2004); ***Macrosiphoniella*** sp. (Mitrovski-Bogdanović et al. 2021); *Macrosiphum euphorbiae* (Thomas) (Aeschlimann & Vitou 1985); *Myzus persicae* (Sulzer) (Ghelamallah et al. 2018); *Nasonovia pilosellae* (Börner) (Starý et al. 1977a); ***Paczoskia major*** Börner (Starý 1964d; Mackauer & Starý 1967); ***Uroleucon achilleae*** (Koch) (Mackauer & Starý 1967; Starý 1973a, 2006; Starý et al. 1973); ***Uroleucon acroptilidis*** Kadyrbekov, Renxin & Shao (Barahoei et al. 2013); ***Uroleucon aeneum*** (Hille Ris

Lambers) (Starý 1962d, 1964d, 1966c, 1973a, 2006; Mackauer & Starý 1967; Starý et al. 1971; Michelena Saval & González Funes 1987; Völkl & Starý 1988; Kavallieratos et al. 2001, 2004, 2006; Wiackowski et al. 2001; Tomanović et al. 2003b; Güz & Kılınçer 2005; Laamari et al. 2011, 2012); ***Uroleucon bielawskii*** (Szelegiewicz) (Starý et al. 1977a); ***Uroleucon campanulae*** (Kaltenbach) (Starý 1962b, 1964d, 1966c, 1973a, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971); ***Uroleucon carthami*** (Hille Ris Lambers) (Pennacchio 1989; Starý 1966d, 1973a, 1976a; Mackauer & Starý 1967); ***Uroleucon chondrillae*** (Nevsky) (Starý et al. 1971, 1973, 1975, 2000; Starý 1973a, 1976a, 1977, 1979a; González & Michelena 1987; Cecilio 1996; Kavallieratos et al. 2001, 2004, 2006; Tomanović et al. 2003b; Rakhshani et al. 2008a); ***Uroleucon cichorii*** (Koch) (Mackauer 1961c; Starý 1962b, 1962d, 1964c, 1965a, 1966c, 1966d, 1973a, 1976a, 1977, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975; Kierych 1975; González & Michelena 1987; Cecilio 1996; Atanassova 1997; Kolarov 1997; Tomanović et al. 2003b, 2003c; Kavallieratos et al. 2004, 2006; Michelena et al. 2004; Rakhshani et al. 2008a; Kos et al. 2009a, 2012; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); ***Uroleucon cirsii*** (Linnaeus) (Starý 1962d, 1966c, 1973a, 2006; Starý et al. 1973; Völkl & Starý 1988; Barczak 1993); ***Uroleucon compositae*** (Theobald) (Rakhshani et al. 2008a; Talebi et al. 2009; Nazari et al. 2012; Laamari et al. 2012; Barahoei et al. 2013); ***Uroleucon doronici*** (Börner) (Kavallieratos et al. 2001, 2004, 2006; Tomanović et al. 2003b, 2003c; Žikić et al. 2012); ***Uroleucon erigeronense*** (Thomas) (Starý 1973a, 1987a, 2006; Rakhshani et al. 2008a; Talebi et al. 2009); ***Uroleucon grossum*** (Hille Ris Lambers) (Mackauer & Heie 1965; Tomanović et al. 2003b, 2003c; Kavallieratos et al. 2004; Žikić et al. 2012); ***Uroleucon hypochoeridis*** (Fabricius) (Mackauer & Heie 1965; Mackauer & Starý 1967; Kos et al. 2012); ***Uroleucon inulae*** (Ferrari) (Starý et al. 1971; Starý 1973a, 1976a); ***Uroleucon jaceae*** (Linnaeus) (Starý 1962b, 1962d, 1964d, 1965a, 1966c, 1966d, 1973a, 1976a, 1977, 1979a, 1995b, 2006; Roberti 1969; Al-Azawi 1970; Starý et al. 1971, 1973; Mustata 1986; González & Michelena 1987; Völkl & Starý 1988; Atanassova 1997; Kolarov 1997; Kavallieratos et al. 2001, 2004, 2006; Tomanović et al. 2003b, 2003c; Güz & Kılınçer 2005; Pareja et al. 2008; Rakhshani et al. 2008a; Talebi et al. 2009; Laamari et al. 2011, 2012; Nazari et al. 2012; Žikić et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013); ***Uroleucon jaceicola*** (Hille Ris Lambers) (Pennacchio 1989); ***Uroleucon leontodontis*** (Hille Ris Lambers) (Mackauer 1962c); ***Uroleucon murale*** (Buckton) (Starý 1962d, 1964d, 2006; Mackauer & Starý 1967; Starý 1973a; Tomanović et al. 1999b, 2003b, 2003c; Kavallieratos et al. 2004); ***Uroleucon nigrocampanulae*** (Theobald) (Starý & Juchnevič 1978; Starý 1979a); ***Uroleucon obscurum*** (Koch) (Starý 1962d, 1964d, 1966c, 1973a, 2006; Mackauer & Starý 1967; Davidian & Gavrilyuk 2014); ***Uroleucon ochropus*** (Hille Ris Lambers) (Starý et al. 1971; Starý 1973a, 1976a); ***Uroleucon picridis*** (Fabricius) (Starý 1964d, 1966c, 1973a, 1976a; Mackauer & Starý 1967; Starý et al. 1971, 1975; González & Michelena 1987; Cecilio 1996); ***Uroleucon simile*** (Hille Ris Lambers) (Starý et al. 1971; Starý 1973a); ***Uroleucon solidaginis*** (Fabricius) (Takada 1968; Starý et al. 1971; Starý 1973a, 1975a; Tomanović et al. 2003b, 2003c; Kavallieratos et al. 2004; Žikić et al. 2012); ***Uroleucon sonchi*** (Linnaeus) (Mackauer 1962c; Starý 1962b, 1962d, 1964d, 1966c, 1966d, 1973a, 1976a, 2006; Mackauer & Starý 1967; Roberti 1969; Al-Azawi 1970; Starý & Kaddou 1971; Starý et al. 1971, 1975; Düzgüneş et al. 1982; Aeschlimann & Vitou 1985; González & Michelena 1987; Michelena Saval & González Funes 1987; Starý & Sekkat 1987; Costa 1988; Pennacchio 1989; Cecilio 1996; Atanassova 1997; Kolarov 1997; Tomanović et al. 1999b, 2003b; Sanchis et al. 2000; Kavallieratos et al. 2001, 2004, 2006; Cecilio et al. 2004; Uysal et al. 2004; Güz & Kılınçer 2005; Nebreda et al. 2005; Rakhshani et al. 2008a, 2015b; Mifsud & Starý 2011, 2012; Laamari et al. 2011, 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Chaouche & Laamari 2015; Ayadi et al. 2017; Ghelamallah et al. 2018; Kök & Tomanović 2022); ***Uroleucon taraxaci*** (Kaltenbach) (Starý et al. 1977a); ***Uroleucon tussilaginis*** (Walker) (Starý 1973a); ***Uroleucon*** spp. (Starý 1966d, 1973a, 1976a, 1977, 1979a, 1986a, 1987a, 1995b, 2006; Starý et al. 1975; Starý & Juchnevič 1978; Tomanović et al. 1999b, 2003b, 2003c, 2008a; Kavallieratos et al. 2001, 2004, 2006; Aslan et al. 2004; Uysal et al. 2004; Barahoei et al. 2012, 2013; Kos et al. 2012; Derocles et al. 2012, 2014a; Žikić et al. 2012; Alikhani et al. 2013; Davidian 2017; Ferrer-Suay et al. 2017; Kök et al. 2020; Mitrovski-Bogdanović et al. 2021).

***Distribution.*** **Afghanistan** (González et al. 1978); **Algeria** (Mackauer & Starý 1967; Starý 1976a; Laamari et al. 2011, 2012; Chehma & Laamari 2014; Chaouche & Laamari 2015; Ghelamallah et al. 2018; Rakhshani et al. 2019); **Andorra** (Sanchis et al. 1999); **Argentina** (Starý & Delfino 1987); **Australia** (Milne 1982, 1986, 1999; Milne & Bishop 1987; Carver 1992; Ward et al. 2021b); **Belarus** (Davidian 2017); **Belgium** (González

et al. 1978; Alhmedi et al. 2009); **Bulgaria** (Starý 1962b, 1973a, 1976a; Mackauer & Starý 1967; Atanassova 1997; Kolarov 1997; Todorov 2007, 2014; Todorov & Ivanova 2016); **Canada** (BOLD:ACI1385); **Canary Islands** (Guerrero & Koponen 2000); **China** (Chen & Shi 2001); **Colombia** (Martínez-Chávez et al. 2019); **Czech Republic** (Starý 1962d, 1966c, 1973a, 1977, 1986a, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Tomanović et al. 2008a; Ferrer-Suay et al. 2017); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967); **Ecuador** (BOLD:ACI1385); **Finland** (Halme 1977); **France** (Starý 1962d, 1973a, 1976a; Starý et al. 1971, 1973, 1975, 1977a; Aeschlimann & Vitou 1985; Pennacchio 1989; Derocles et al. 2012, 2014a); **Georgia** (Akhvlediani 1964; Starý 1965a, 1973a, 1976a); **Germany** (Mackauer 1961c, 1962c; Mackauer & Starý 1967; Starý 1973a; Völkl & Starý 1988; Belokobylskij et al. 2003); **Greece** (Aeschlimann & Vitou 1985; Kavallieratos et al. 2001, 2004, 2006; Tomanović et al. 2003b); **Hungary** (Mackauer & Starý 1967; Polgár 1983; Starý 1973a); **India** (Rakhshani et al. 2012a; Das & Chakrabarti 2023a); **Iran** (Starý 1979a; Starý et al. 2000; Rakhshani et al. 2008a, 2019; Fallahzadeh & Saghaei 2010; Barahoei et al. 2012, 2013; Nazari et al. 2012; Alikhani et al. 2013; Taheri & Rakhshani 2013); **Iraq** (Al-Azawi 1970; Starý 1976a; Aeschlimann & Vitou 1985; Al-Hussainawy et al. 2019; Bandyan et al. 2021); **Italy** (Starý 1966d, 1973a, 1976a; Mackauer & Starý 1967; Roberti 1969; Pennacchio 1989; Bergamesco et al. 1995); **Japan** (Takada 1968; Starý 1975a); **Kazakhstan** (Starý & Juchnevič 1978; Starý 1979a); **Madeira Islands** (Cecilio et al. 2004); **Malta** (Mifsud & Starý 2011, 2012; Rakhshani et al. 2015b); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Tomanović et al. 2003b, 2003c, 2008a; Kavallieratos et al. 2004; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **Morocco** (Starý & Sekkat 1987; Rakhshani et al. 2019); **Norway** (Mjøs et al. 2024; Artsdatabanken 2026); **Poland** (Kierych 1975; Barczak 1993; Huflejt 1997; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Portugal** (Costa 1988, 1996); **Romania** (Mustata 1986); **Puerto Rico** (BOLD:ACI1385); **Russia** (Starý 1965a, 1973a; Mackauer & Starý 1967; Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Starý 1973a; Tomanović et al. 1998a, 1999b, 2003b, 2003c, 2008a; Žikić et al. 2000, 2012; Kavallieratos et al. 2004; Mitrovski-Bogdanović et al. 2021); **Slovakia** (Starý 1977, 1989a; Pennacchio 1989); **Slovenia** (Kos et al. 2008, 2009a, 2012); **South Africa** (BOLD:ACI1385); **South Korea** (Kim et al. 2020; Kim 2026); **Spain** (Quilis-Pérez 1931b; González & Michelena 1987; Michelena Saval & González Funes 1987; Tizado & Núñez-Perez 1991; Sanchis et al. 2000; Michelena et al. 2004; Nebreda et al. 2005; Michelena Saval & Martínez De Murguía 2012); **Tajikistan** (Starý 1979a); **Türkiye** (Düzgüneş et al. 1982; Aeschlimann & Vitou 1985; Uysal et al. 2004; Aslan et al. 2004; Güz & Kılınçer 2005; Çetin Erdoğan et al. 2008, 2010; Akar & Çetin Erdoğan 2017; Rakhshani et al. 2019; Kök et al. 2020; Kök & Tomanović 2022); **Turkmenistan** (Starý 1965a, 1979a); **Ukraine** (Ivanov 1927; Kaliuzhna 2013a, 2016a, 2019b); **United Kingdom** (Pennacchio 1989; van Veen et al. 2008; Davidian & Rispin 2016); **USA** (BOLD:ACI1385); **Uzbekistan** (Starý 1979a; Aripov 2003).

### *Aphidius galii* Tomanović & Kavallieratos, 2002

*Aphidius galii* Tomanović & Kavallieratos, 2002b:343. Holotype ♀, paratypes ♀♀ ♂♂ (BNHM). – Montenegro.

***Host. Linosiphon*** sp. (Tomanović & Kavallieratos 2002b; Tomanović et al. 2003c, 2007a; Kavallieratos et al. 2004; Žikić et al. 2012).

***Distribution.*** **Montenegro** (Kavallieratos & Tomanović 2001; Tomanović & Kavallieratos 2002b; Tomanović et al. 2003c, 2007a; Kavallieratos et al. 2004; Žikić et al. 2012).

### *Aphidius geranii* Tomanović & Kavallieratos, 2010

*Aphidius geranii* Tomanović & Kavallieratos [in Petrović et al.], 2010:234. Holotype ♀, paratypes ♀♀ ♂♂ (FBUB). – Montenegro.

***Host. Amphorophora*** sp (Petrović et al. 2010; Žikić et al. 2012).

***Distribution.*** **Montenegro** (Petrović et al. 2010; Žikić et al. 2012).

### *Aphidius gifuensis* Ashmead, 1906 [Fig. 14C]

*Aphidius gifuensis* Ashmead, 1906:188. Lectotype ♀ (after Watanabe 1957), paralectotypes ♀♀ ♂♂ (USNM). – Japan.

***Hosts. Acyrthosiphon kondoi*** Shinji (González et al. 1979); ***Acyrthosiphon pisum*** (Harris) (González et al. 1979); ***Acyrthosiphon*** sp. (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1974c, 1975a); ***Aphis***

***affinis*** Del Guercio (Bhagat 1984); ***Aphis craccivora*** Koch (Chen & Shi 2001); ***Aphis fabae*** Scopoli (Bhagat 1983); ***Aphis glycines*** Matsumura (Takada 1968; Starý 1975a; Takada et al. 2011); ***Aphis gossypii*** Glover (Mackauer & Starý 1967; Starý 1967a, 1974c, 1975a; Takada 1968, 1976b, 2002; Shi 1980; Zheng et al. 1985; Zhang 1992; Ma et al. 2006; Subhrani et al. 2006; Chen et al. 2009; Zhu et al. 2019; Das & Chakrabarti 2023b); ***Aphis*** spp. (Bhagat 1984; Chen & Shi 2001); ***Aulacorthum solani*** (Kaltenbach) (Takada 1968, 2002; Starý 1975a; Liu 1977; Chen et al. 2009); ***Brevicoryne brassicae*** (Linnaeus) (Chen et al. 2009); ***Capitophorus*** sp. (Mackauer & Starý 1967; Starý 1975a); ***Lipaphis erysimi*** (Kaltenbach) (Chiu & Liu 1969; Tao & Chiu 1971; Liu 1975; Starý 1975a; Chou 1981; Zheng et al. 1985; Chen & Shi 2001; Chen et al. 2009); ***Macrosiphum euphorbiae*** (Thomas) (Takada 2002); ***Macrosiphum*** sp. (Mackauer & Starý 1967; Starý 1974c, 1975a); ***Myzus persicae*** (Sulzer) (Beardsley 1961; Mackauer & Starý 1967; Shiga 1967; Starý 1967a, 1974c, 1975a; Watanabe & Takada 1967; Takada 1968, 1973, 1976b, 2002; Chiu & Liu 1969; Tao & Chiu 1971; Liu 1975; Yamauchi & Takada 1978; Chou 1981; Takada & Takenaka 1982; Zheng et al. 1985; Fukui & Takada 1988; Finlayson 1990; Lu et al. 1992; Kuo 1995a; Bi & Ji 1996; Starý & Choi 2000; Wu et al. 2000b; Chen & Shi 2001; Hou et al. 2002; Wei et al. 2005; Subhrani et al. 2006; Chen et al. 2009; Zhang et al. 2014a, 2014b; Davidian 2017); ***Schizaphis graminum*** (Rondani) (Zheng et al. 1985; Chen & Shi 2001); ***Sitobion avenae*** (Fabricius) (Mackauer & Starý 1967; Takada 1968; Starý 1974c, 1975a; Chou 1981; Liu & Li 1999; Chen & Shi 2001; Chen et al. 2009); ***Sitobion ibarae*** (Matsumura) (Mackauer & Starý 1967; Chiu & Liu 1969; Tao & Chiu 1971; Starý 1974c, 1975a; Chen & Shi 2001).

***Distribution.*** **Canada** (Liu 1977); **China** (Mackauer & Starý 1967; Starý 1967a, 1974c, 1975a; Chiu & Liu 1969; Tao & Chiu 1971; Liu 1975; Takada 1977b; Shi 1980; Chou 1981; Dong & Wang 1985, 1993; Zheng et al. 1985, 1987; Wu et al. 1987, 1999, 2000b; Liu et al. 1990; Li et al. 1991; Lu & Ji 1992; Zhang 1992; Gu et al. 1995; Chen & Shi 2001, 2002; Chen et al. 2001, 2009; Hou et al. 2002; He et al. 2004; Ma et al. 2006; Feng et al. 2007; Huang et al. 2008; Zhou et al. 2009; Lopes et al. 2012; Xie et al. 2012; Zhao et al. 2012, 2013; Davidian 2017); **India** (Bhagat 1984; Raychaudhuri et al. 1990; Subhrani et al. 2006; Das & Chakrabarti 2023b); **Ireland** (BOLD:AAD6802); **Japan** (Ashmead 1906; Mackauer & Starý 1967; Shiga 1967; Starý 1967a, 1974c, 1975a; Watanabe & Takada 1967; Takada 1968, 1973, 1976b, 2002; Yamauchi & Takada 1978; González et al. 1979; Takada & Takenaka 1982; Yano et al. 1983; Finlayson 1990; Nakata 1994, 1995; Konishi & Maetô 2000; Takada et al. 2011); **Norway** (Mjøs et al. 2024); **Russia** (Davidian 2007, 2017, 2019b); **South Korea** (Mackauer & Starý 1967; Starý 1967a, 1974c, 1975a; Paik 1975; Starý & Choi 2000; Kim et al. 2020; Kim 2026); **USA** (Beardsley 1961).

***Remarks.*** Unpublished data suggested a wide distribution of this species in Europe (Petrović et al. in prep.).

### *Aphidius glacialis* Ashmead, 1902 [Fig. 14D]

*Aphidius glacialis* Ashmead, 1902:245. Holotype ♀ (USNM). – USA.

***Host.*** Unknown.

***Distribution.*** **USA** - Alaska (Ashmead 1902; Szépligeti 1904; Gahan 1911a; Muesebeck & Walkley 1951; Mackauer & Starý 1967).

### *Aphidius hieraciorum* Starý, 1962 [Fig. 14E]

*Aphidius hieraciorum* Starý, 1962d:109. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Czech Republic.

***Hosts.*** *Aphis schneideri* (Börner), *Aphis triglochinis* Theobald (Wiackowski et al. 2001); *Brevicoryne brassicae* (Linnaeus) (Samanta & Raychaudhuri 1984a); *Cryptomyzus ribis* (Linnaeus) (Wiackowski et al. 2001); *Metopeurum fuscoviride* Stroyan (Žikić et al. 2012); ***Nasonovia brachycyclica*** Holman (Starý et al. 1973; Starý 1987a, 2006); ***Nasonovia brevipes*** (Börner) (Starý et al. 1971; Starý 1973a); ***Nasonovia compositellae nigra*** (Hille Ris Lambers) (Starý 1962d, 1963b, 1964d, 1966c, 1973a, 1976a, 1977, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975; Starý & Remaudière 1973; Kierych 1975; Tomanović et al. 2008a); ***Nasonovia dasyphylli*** Stroyan (Starý 1973a, 2006); ***Nasonovia pilosellae*** (Börner) (Starý 1962d, 1963b, 1964d, 1973a, 2006; Mackauer & Heie 1965; Mackauer & Starý 1967; Tomanović et al. 2008a); ***Nasonovia ribisnigri*** (Mosley) (Starý 1966c, 1973a, 1976a, 2006; Mackauer & Starý 1967; Starý et al. 1971; Kierych 1980; Wiackowski et al. 2001; Nebreda et al. 2005; Tomanović et al. 2008a; Nazari et al. 2012; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); ***Nasonovia*** spp. (Starý 1963b, 1965a, 1966c; Mackauer & Starý

1967; Tomanović et al. 2003c, 2008a, 2023c; Kavallieratos et al. 2004; Žikić et al. 2012; Davidian 2017; Ferrer-Suay et al. 2017; Mitrovski-Bogdanović et al. 2021); *Sitobion takahashii* (Eastop) (Samanta & Raychaudhuri 1984a); *Trama troglodytes* von Heyden (Wiackowski et al. 2001).

***Distribution.*** **Canary Islands** (Guerrero & Koponen 2000); **Czech Republic** (Starý 1962d, 1966c, 1973a, 1977, 1987a, 1989a, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Tomanović et al. 2008a; Ferrer-Suay et al. 2017); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967); **France** (Starý et al. 1971, 1973, 1975, 1977a; Starý 1973a, 1976a; Tomanović et al. 2008a; Derocles et al. 2014a); **Germany** (Belokobylskij et al. 2003); **Greece** (BOLD:AFS3452); **Hungary** (Polgár 1983); **India** (Samanta & Raychaudhuri 1984a); **Iran** (Mossadegh et al. 2011; Nazari et al. 2012; Rakhshani et al. 2019); **Italy** (Tomanović et al. 2023c); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Tomanović et al. 2003c, 2008a; Kavallieratos et al. 2004; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **Netherlands** (Papp et al. 1996); **Poland** (Kierych 1975, 1980; Huflejt 1997; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Portugal** (LEFIJ36054-23); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2019b); **Serbia** (Tomanović et al. 1998a, 2003c, 2008a; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **Slovakia** (Starý 1977, 1989a; Ferrer-Suay et al. 2017); **Spain** (Starý & Remaudière 1973; Starý 1976a; Tizado & Núñez-Perez 1991; Nebreda et al. 2005); **Sweden** (Mitrovski-Bogdanović et al. 2021); **Ukraine** (Starý 1962d, 1965a, 1973a; Tomanović et al. 2008a; Kaliuzhna 2019b).

### *Aphidius hortensis* Marshall, 1896

*Aphidius hortensis* Marshall [in André], 1896:590. Syntypes ♀♂ (Lost). – United Kingdom.
*Aphidius hortensis*: Starý, 1961c:217. Neotype ♀ (IECA). – Czech Republic.

**Syn.:** *Aphidius berberidis* Smith, 1944 [Fig. 11E].

***Hosts.*** *Aphis varians* Patch (MacGillivray & Spicer 1953); *Diuraphis noxia* (Mordvilko) (Miller & Haile 1988); *Drepanosiphum platanoidis* (Schrank) (Atanassova 1997); ***Liosomaphis berberidis*** (Kaltenbach) (Smith 1944; Starý 1961c, 1963b, 1964d, 1965a, 1966c, 1966d, 1973a, 1976a, 1977, 1987a, 1995b, 2006; Mackauer 1962c; Starý & Rupais 1964; Mackauer & Heie 1965; Mackauer & Starý 1967; Starý et al. 1971, 1973; Vassileva-Sumnalieva 1976; Halme 1977; Marsh 1979; Starý & Němec 1985; Pennacchio 1989; Pike et al. 1996; Kolarov 1997; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tomanović et al. 2003c, 2007c; Kavallieratos et al. 2004; Žikić et al. 2012; Davidian 2017; Ferrer-Suay et al. 2017; Kök et al. 2017; Mitrovski-Bogdanović et al. 2021); ***Liosomaphis himalayensis*** Basu (Takada & Rishi 1980); *Lipaphis erysimi* (Kaltenbach) (Subhrani et al. 2006); *Macrosiphum stellariae* Theobald (Wiackowski et al. 2001); *Myzus persicae* (Sulzer) (Subhrani et al. 2006); *Schizaphis graminum* (Rondani) (Miller & Haile 1988).

***Distribution.*** **Bulgaria** (Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997); **Canada** (Mackauer & Starý 1967; Finlayson 1990); **Czech Republic** (Starý 1961c, 1966c, 1973a, 1977, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Starý & Němec 1985; Pennacchio 1989); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967); **Estonia** (Starý & Rupais 1964; Starý 1973a; Ferrer-Suay et al. 2017); **Ethiopia** (Miller & Haile 1988); **Finland** (Halme 1977); **France** (Starý et al. 1971, 1973; Starý 1973a; Pennacchio 1989); **Georgia** (Starý 1965a, 1973a, 1976a); **Germany** (Starý 1961c, 1973a; Mackauer 1962c; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1981, 1983); **India** (Takada & Rishi 1980; Agarwala et al. 1981a; Starý & Ghosh 1983; Raychaudhuri et al. 1990; Subhrani et al. 2006; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Italy** (Starý 1966d, 1973a, 1976a; Mackauer & Starý 1967; Bergamesco et al. 1995); **Latvia** (Starý & Rupais 1964; Mackauer & Starý 1967); **Moldova** (Talitzky & Kuslitzky 1990); **Netherlands** (Papp et al. 1996); **Poland** (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Tomanović et al. 2007c; Davidian 2017, 2019b; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a, 2003c, 2007c; Kavallieratos et al. 2004, 2013; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **Slovakia** (Starý 1961c, 1977, 1989a; Ferrer-Suay et al. 2017); **Slovenia** (Mitrovski-Bogdanović et al. 2021); **Spain** (Tizado & Núñez-Perez 1991); **Türkiye** (Kök et al. 2017); **Ukraine** (Telenga 1950; Starý 1961c; Kaliuzhna 2019b); **United Kingdom** (Marshall 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer & Starý 1967; Starý 1973a); **USA** (Smith 1944; Muesebeck & Walkley 1951; Muesebeck 1958a; Mackauer & Starý 1967; Pike et al. 1996).

### *Aphidius iranicus* Rakhshani & Starý, 2007

*Aphidius iranicus* Rakhshani & Starý [in Tomanović et al.], 2007c:299. Holotype ♀ (TMUC), paratype ♀ (FBUB). – Iran.

***Host.*** ***Titanosiphon neoartemisiae*** (Takahashi) (Tomanović et al. 2007c).

***Distribution.*** **Iran** (Tomanović et al. 2007c; Rakhshani et al. 2019).

***Remarks.*** According to the size of the adult parasitoids and the presence of colonies of various aphid species associated with the host plant (*Artemisia*), the host aphid for this species is likely a species belonging to the genus *Coloradoa* Wilson or another small-bodied aphid. Therefore, its host association with the large-sized aphid of the genus *Titanosiphon* Nevsky seems suspicious and requires further investigation.

### *Aphidius kakimiaphidis* Smith, 1944 [Fig. 15A]

*Aphidius kakimiaphidis* Smith, 1944:58. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, CAES, NCSU). – USA.

***Hosts.*** ***Nasonovia alpina*** (Gillette & Palmer) (Pike et al. 2000); ***Nasonovia aquilegiae*** (Essig), ***Nasonovia cynosbati*** (Oestlund) (Pike et al. 1996, 2000); ***Nasonovia houghtonensis cerei*** (Gillette & Palmer) (Smith 1944; Mackauer & Starý 1967); ***Nasonovia wahinkae*** (Hottes) (Pike et al. 2000).

***Distribution.*** **USA** (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Pike et al. 1996, 2000).

### *Aphidius kunmingensis* (Wang & Dong, 1997)

*Lysaphidus kunmingensis* Wang & Dong, 1997:214. Holotype ♀, paratypes ♀♀ ♂♂ (KIZ). – China.

***Host.*** ***Aphis*** sp. (Wang & Dong 1997; Chen & Shi 2001).

***Distribution.*** **China** (Wang & Dong 1997; Chen & Shi 2001).

### *Aphidius leclanti* Tomanović & Chaubet, 2013

*Aphidius leclanti* Tomanović & Chaubet [in Chaubet et al.], 2013:37. Holotype ♀ (IARA), paratypes ♀♂ (IARA, FBUB). – Norway.

***Hosts.*** ***Acyrthosiphon svalbardicum*** Heikenheimo, ***Macrosiphum calvulum*** (Ossiannilsson) (Chaubet et al. 2013).

***Distribution.*** **Norway** (Chaubet et al. 2013; Artsdatabanken 2026); **USA** (BOLD:AAD7086).

### *Aphidius lincangensis* Dong, 1988

*Aphidius lincangensis* Dong, 1988:24. Holotype ♀, paratypes ♀♀ ♂♂ (KIZ). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Dong 1988; Chen & Shi 2001).

### *Aphidius linosiphonis* Tomanović & Starý, 2001

*Aphidius linosiphonis* Tomanović & Starý, 2001:1. Holotype ♀, paratypes ♀♀ ♂♂ (BNHM). – Serbia.

***Hosts.*** ***Linosiphon asperulophagum*** Holman (Starý 2006); ***Linosiphon galiophagum*** (Wimshurst) (Kavallieratos & Tomanović 2001; Tomanović & Starý 2001; Starý 2006; Tomanović et al. 2007a); ***Linosiphon*** sp. (Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012; Ferrer-Suay et al. 2017; Mitrovski-Bogdanović et al. 2021).

***Distribution.*** **Czech Republic** (Tomanović & Starý 2001; Starý 2006; Ferrer-Suay et al. 2017); **Montenegro** (Mitrovski-Bogdanović et al. 2021); **Serbia** (Kavallieratos & Tomanović 2001; Tomanović & Starý 2001; Tomanović et al. 2003c, 2007a; Kavallieratos et al. 2004; Žikić et al. 2012); **Slovakia** (Tomanović & Starý 2001); **United Kingdom** (Davidian & Rispin 2016).

### *Aphidius liriodendrii* Liu, 1977 [Fig. 15C]

*Aphidius liriodendrii* Liu, 1977:40. Holotype ♀, paratypes ♀♀ (CASC). – USA.

***Host.*** ***Illinoia liriodendri*** (Monell) (Liu 1977; Olkowski et al. 1982b; Daane et al. 1990).

***Distribution.*** **USA** (Liu 1977; Daane et al. 1990).

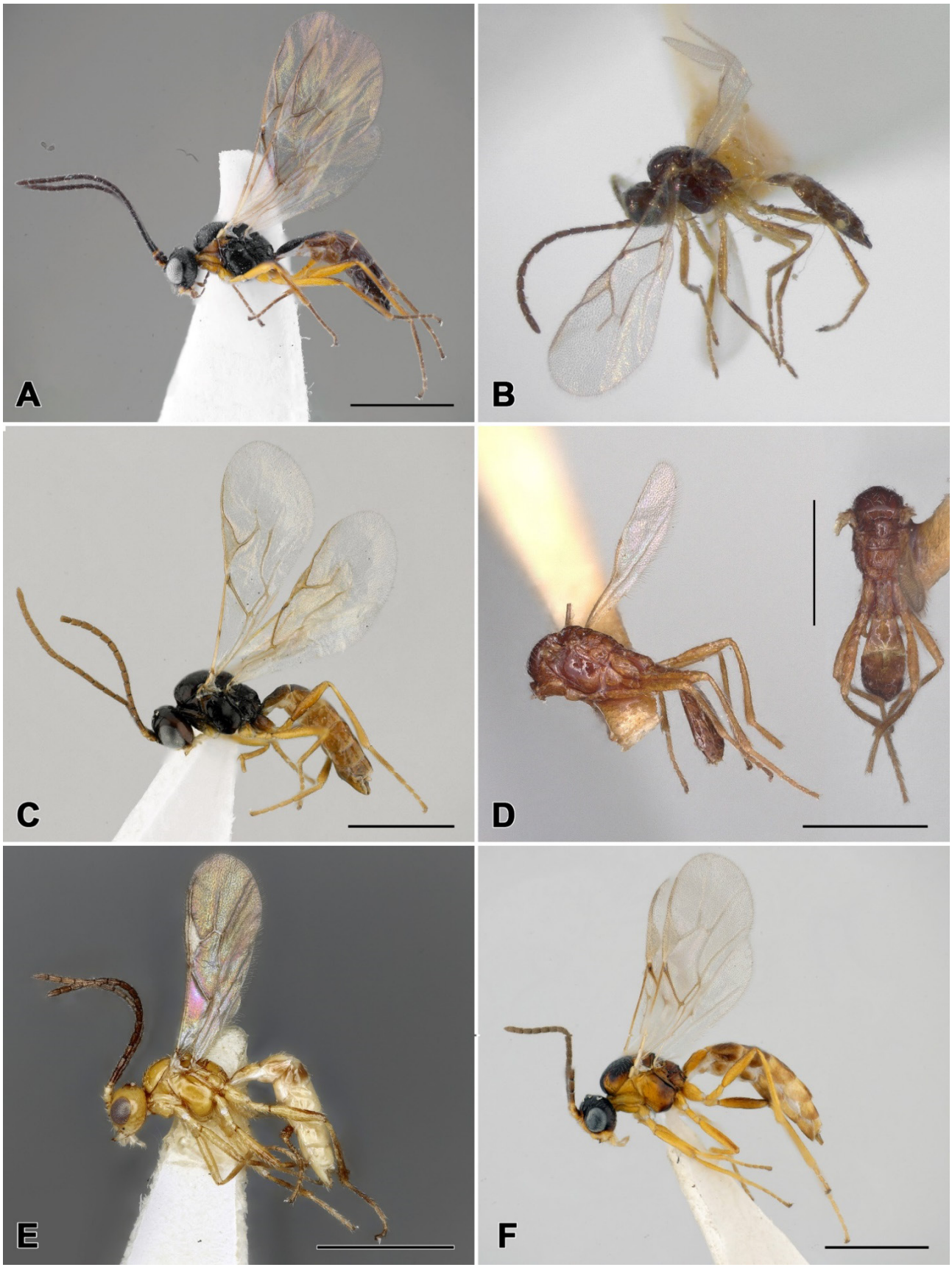



**Figure 13.** Species of the genus *Aphidius* Nees von Esenbeck, 1819. **A.** *Aphidius eadyi* Starý, González & Hall, 1980 – Iran, DPPZ; **B.** *Aphidius eglanteriae* Haliday, 1834 – Netherlands, RMNH; **C.** *Aphidius ervi* Haliday, 1834 – Iran, DPPZ; **D.** *Aphidius ferruginosus* Baker, 1909 – Lectotype, CASC; **E.** *Aphidius floridaensis* Smith, 1944 – Holotype, USNM; **F.** *Aphidius funebris* Mackauer, 1961 – Iran, DPPZ. Scale bar: 1 mm.

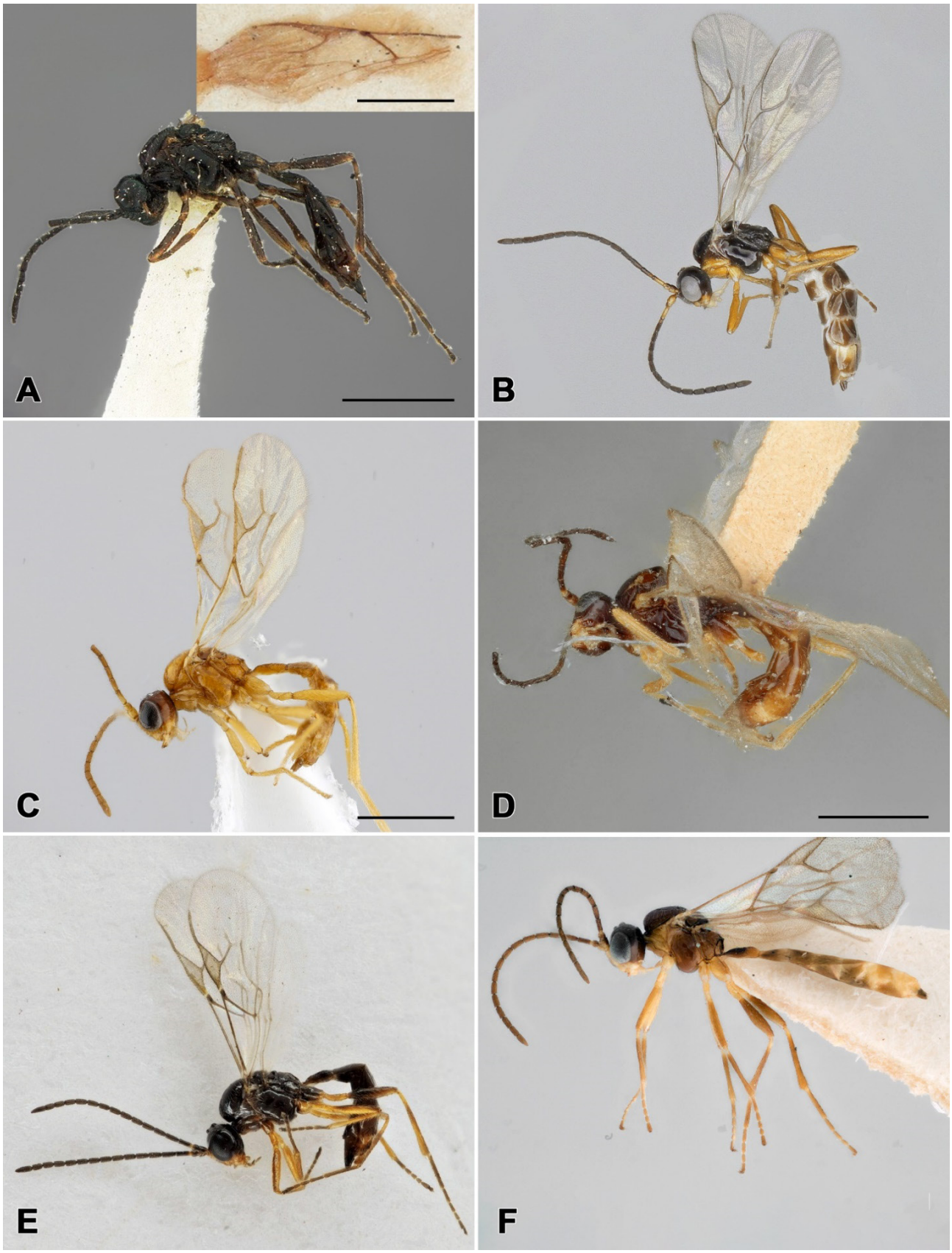



**Figure 14.** Species of the genus *Aphidius* Nees von Esenbeck, 1819. **A.** *Aphidius frigidus* Ashmead, 1902 – Syntype (= *Aphidius propinquus* Ashmead, 1902), USNM; **B.** *Aphidius frumentarius* Latteur, 1979 (= *Aphidius rhopalosiphi* de Stefani-Perez, 1902) – Netherlands (C.J. Zwakhals); **C.** *Aphidius gifuensis* Ashmead, 1906 – Japan, DPPZ; **D.** *Aphidius glacialis* Ashmead, 1902 – Holotype, USNM; **E.** *Aphidius hieraciorum* Starý, 1962 – Netherlands, RMNH; **F.** *Aphidius impressus* Mackauer, 1965 – Holotype (= *Aphidius uzbekistanicus* Luzhetzki, 1960), CNC. Scale bar: 1 mm.

### *Aphidius longiantennatus* Chou & Xiang, 1982

*Aphidius longiantennatus* Chou & Xiang, 1982:39. Holotype ♀, paratypes ♀♀ ♂♂ (NWAFU). – China.

***Host.*** ***Acyrthosiphon pisum*** (Harris) (Chou & Xiang 1982; Wei et al. 2005).

***Distribution.*** **China** (Chou & Xiang 1982; Chen & Shi 2001; Wei et al. 2005).

### *Aphidius longicarpus* Kim & Tomanović, 2021

*Aphidius longicarpus* Kim & Tomanović [in Kim et al.], 2021:68. Holotype ♀ (KNA). – South Korea.

***Host.*** Unknown.

***Distribution.*** **South Korea** (Kim et al. 2021; Kim 2026).

### *Aphidius longipetiolus* Takada, 1968 [Fig. 15D]

*Aphidius longipetiolus* Takada, 1968:101. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Hosts.*** ***Acyrthosiphon pisum*** (Harris) (Paik 1976); ***Macrosiphoniella grandicauda*** Takahashi & Moritsu (Takada 1968, 1973; Starý 1975a; Yamauchi & Takada 1978; Finlayson 1990); ***Macrosiphoniella pseudoartemisiae*** Shinji (Paik 1976).

***Distribution.*** **Japan** (Takada 1968, 1973; Starý 1975a; Yamauchi & Takada 1978; Finlayson 1990); **South Korea** (Paik 1976; Starý & Choi 2000; Kim et al. 2020; Kim 2026).

***Remarks.*** On the basis of morphological and molecular data (COI gene), this species may be a synonym of *A. phalangomyzi* Starý, 1963. The anterolateral area of the petiole in the type specimen is rugose. Further research is needed to clarify this issue (Davidian 2007; Kim 2026).

### *Aphidius longistigmus* Kim & Tomanović, 2021

*Aphidius longistigmus* Kim & Tomanović [in Kim et al.], 2021:69. Holotype ♀, paratypes ♀♀ (KNA). – South Korea.

***Host.*** Unknown.

***Distribution.*** **South Korea** (Kim et al. 2021; Kim 2026).

### *Aphidius lupini* Liu, 1977 [Fig. 15E]

*Aphidius lupini* Liu, 1977:43. Holotype ♀, paratypes ♀♀ ♂♂ (CASC). – USA.

***Host.*** ***Macrosiphum albifrons*** Essig (Liu 1977; Cohen & Mackauer 1986; Pike et al. 1996, 2000).

***Distribution.*** **Canada** (Cohen & Mackauer 1986; Finlayson 1990); **USA** (Liu 1977; Pike et al. 1996, 2000).

### *Aphidius macrosiphoniella* (Tamili & Raychaudhuri, 1984)

*Lysaphidus macrosiphoniella* Tamili & Raychaudhuri, 1984:3. Holotype ♀ (CUCE). – India.

***Host.*** ***Macrosiphoniella yomogifoliae*** (Shinji) (Tamili & Raychaudhuri 1984; Raychaudhuri et al. 1990).

***Distribution.*** **India** (Tamili & Raychaudhuri 1984; Raychaudhuri et al. 1990; Das & Chakrabarti 2023a).

### *Aphidius macrosiphoniellae* Takada, 1968

*Aphidius macrosiphoniellae* Takada, 1968:101. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Hosts.*** ***Macrosiphoniella hikosanensis*** Moritsu, ***Macrosiphoniella sanborni*** (Gillette), ***Macrosiphoniella yomenae*** (Shinji) (Takada 1968; Starý 1975a).

***Distribution.*** **China** (Dong & Wang 1993; Chen & Shi 2001); **Japan** (Takada 1968; Starý 1975a).

### *Aphidius marvelus* Chen & Shi, 2001

*Aphidius marvelus* Chen & Shi, 2001:203. Holotype ♀, paratypes ♀♀ ♂♂ (FAFU). – China.

***Host.*** ***Cavariella salicicola*** (Matsumura) (Chen & Shi 2001).

***Distribution.*** **China** (Chen & Shi 2001).

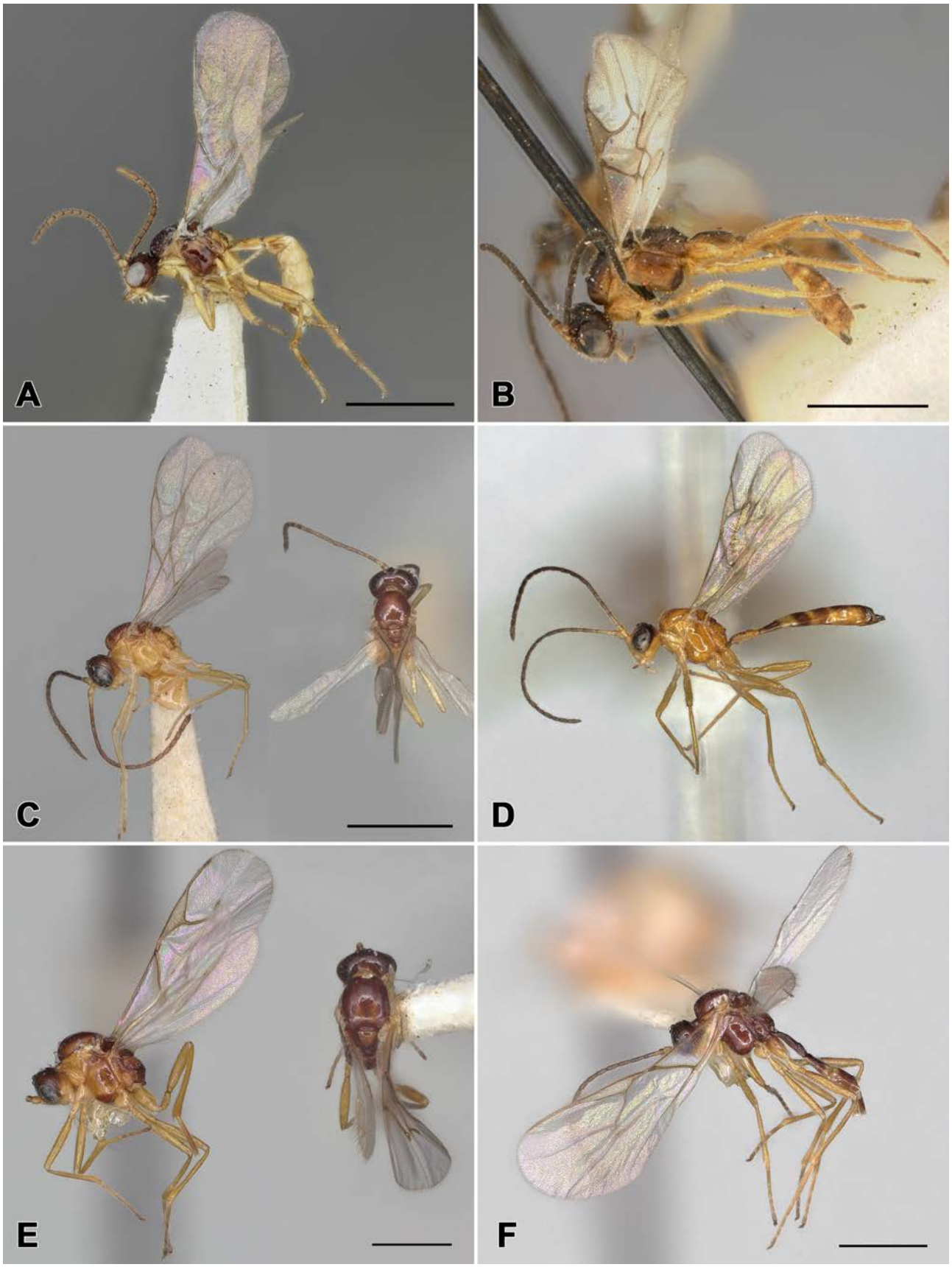



**Figure 15.** Species of the genus *Aphidius* Nees von Esenbeck, 1819. **A.** *Aphidius kakimiaphidis* Smith, 1944 – Holotype, USNM; **B.** *Aphidius lachni* Ashmead, 1889 – Lectotype, USNM (= *Aphidius cingulatus* Ruthe, 1859); **C.** *Aphidius liriodendrii* Liu, 1977 – Holotype, CASC; **D.** *Aphidius longipetiolus* Takada, 1968 – Korea, KSNU; **E.** *Aphidius lupini* Liu, 1977 – Holotype, CASC; **F.** *Aphidius masonaphis* Liu, 1977 – Holotype, CASC. Scale bar: 1 mm.

### *Aphidius masonaphis* Liu, 1977 [Fig. 15F]

*Aphidius masonaphis* Liu, 1977:45. Holotype ♀, paratypes ♀ ♂♂ (CASC). – Canada.

***Host.*** ***Macrosiphum aetheocornum*** Smith & Knowlton, ***Masonaphis*** sp. (Liu 1977).

***Distribution.*** **Canada** (Liu 1977).

### *Aphidius matricariae* Haliday, 1834 [Fig. 16A]

*Aphidius matricariae* Haliday, 1834:103. Lectotype ♀ (after Mackauer 1961b) (NHMUK). – United Kingdom.

**Syn.:** *Aphidius arundinis* Haliday, 1834; *Aphidius cirsii* Haliday, 1834, *nec* Curtis, 1831; *Aphidius phorodontis* Ashmead, 1889; *Aphidius chrysanthemi* Marshall, 1896; *Aphidius lychnidis* Marshall, 1896; *Aphidius polygoni* Marshall, 1896; *Aphidius affinis* Quilis, 1931; *Aphidius baudysi* Quilis, 1931; *Aphidius discrytus* Quilis, 1931; *Aphidius merceti* Quilis, 1931; *Aphidius obscuriformis* Quilis, 1931; *Aphidius valentinus* Quilis, 1931; *Aphidius renominatus* Hincks, 1943; *Aphidius nigriteleus* Smith, 1944 [Fig. 17B].

***Hosts.*** ***Acyrthosiphon ghanii*** Eastop (Starý et al. 1999); ***Acyrthosiphon gossypii*** Mordvilko (Chaouche & Laamari 2015); ***Acyrthosiphon lactucae*** (Passerini) (Kök et al. 2020); ***Acyrthosiphon lambersi*** Leclant & Remaudière (Starý et al. 1973; Starý 1976a); ***Acyrthosiphon malvae*** (Mosley) (Hubert & van Achterberg 2023); ***Acyrthosiphon primulae*** (Theobald) (Starý et al. 1973; Starý 1974b); ***Amegosiphon platicaudum*** (Narzikulov) (Nazari et al. 2012); ***Anoecia*** sp. (Starý 1973a, 1974b, 1974c, 2006); ***Aphis affinis*** Del Guercio (Starý & Kaddou 1971; Starý et al. 1971; Starý 1973a, 1974b, 1974c, 1976a, 1979a; Costa & Starý 1988; Aslan et al. 2004; Uysal et al. 2004; Nazari et al. 2012; Rakhshani et al. 2012b; Barahoei et al. 2013); ***Aphis aurantii*** Boyer de Fonscolombe (Tremblay 1967a, 1984; Roberti 1969; Starý et al. 1975; Starý 1976a, 1995c; Marsh 1979; Tremblay et al. 1980, 1985; Hussein & Kawar 1984; Costa & Starý 1988; Pennacchio 1989; Ben Halima et al. 1994; Kavallieratos & Lykouressis 1999a; Hazarika et al. 2001; Kavallieratos et al. 2001, 2004, 2005b, 2006, 2008a; Cecilio & Ilharco 2002; Uysal et al. 2004; Ben Halima & Ben Hamouda 2005; Boukhris-Bouhachem 2011; Labdaoui et al. 2026); ***Aphis catalpae*** Mamontova (Starý 1979a); ***Aphis chilopsidi*** Davletshina (Starý 1974c, 1979a); ***Aphis chloris*** Koch (Starý 1974c, 1979a); ***Aphis craccivora*** Koch (Starý & Kaddou 1971; Starý et al. 1973, 1975, 1999; Starý 1974b, 1976a; Costa & Starý 1988; Mescheloff & Rosen 1990b; Aguirre Segura & Tizado Morales 1993; Bhagat & Ahmad 1995; Singh et al. 1995; Chen & Shi 2001; Kavallieratos et al. 2001, 2004, 2006, 2010, 2016; Cecilio & Ilharco 2002; Andorno et al. 2007; Rakhshani et al. 2008a; Abdel-Samad & Ahmed 2009; Talebi et al. 2009; Laamari et al. 2011, 2012; Mossadegh et al. 2011; Nazari et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Chaouche & Laamari 2015; Pons et al. 2018; Zouari et al. 2018; Satar et al. 2021; Gamal et al. 2022); ***Aphis crepidis*** (Börner) (Starý et al. 2000); ***Aphis dlabolai*** Holman (Barahoei et al. 2013); ***Aphis euphorbiae*** Kaltenbach (Ahmad 1993; Rakhshani et al. 2008a; Talebi et al. 2009; Mossadegh et al. 2011; Barahoei et al. 2013); ***Aphis fabae*** Scopoli (Mackauer & Starý 1967; Tremblay 1967a; Starý et al. 1975, 1999, 2014a; Starý 1976a, 2006; Liu 1977; Marsh 1979; Abou-Fakhr 1982; Saha et al. 1982; Tremblay et al. 1985; Michelena Saval & González Funes 1987; Barczak 1988, 1990, 1991b; Costa & Starý 1988; Pennacchio 1989; Mescheloff & Rosen 1990b; Ben Halima & Ben Hamouda 1993; Bhagat & Ahmad 1995; Wiackowski et al. 1997, 2001; Abou-Fakhr & Kawar 1998; Pike et al. 2000; Kavallieratos et al. 2001, 2004, 2006, 2010; Rakhshani et al. 2008a; Talebi et al. 2009; Laamari et al. 2011, 2012; Mossadegh et al. 2011; Nazari et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Ayadi et al. 2017; Pons et al. 2018; Sadat et al. 2019; Alaserhat et al. 2021; Satar et al. 2021; Ismail et al. 2023); ***Aphis fabae cirsiiacanthoidis*** Scopoli (Quilis-Pérez 1931a; Völkl 1989; Kavallieratos et al. 2001, 2004, 2006); ***Aphis farinosa*** Gmelin (Starý 2006); ***Aphis frangulae*** Kaltenbach (Starý et al. 1973; Starý 1976a); ***Aphis galiiscabri*** Schrank (Quilis-Pérez 1934; Fulmek 1968); ***Aphis gossypii*** Glover (Wille 1936; McLeod 1937, 1938; Mendes 1959; Schlinger & Hall 1960a; Mackauer 1962c; Schlinger & Mackauer 1963; Mackauer & Starý 1967; Starý 1967a, 1976a, 1979a, 1995c; Roberti 1969; Starý et al. 1975, 2000; Liu 1977; Marsh 1979; Agarwala et al. 1980; Tremblay et al. 1980, 1985; Abou-Fakhr 1982; Raychaudhuri et al. 1982; Paonam & Singh 1986b; Costa & Starý 1988; Pennacchio 1989; Finlayson 1990; Mescheloff & Rosen 1990b; Singh et al. 1995; Kolarov 1997; Kavallieratos & Lykouressis 1999a, 1999; Pike et al. 2000; Chen & Shi 2001; Kavallieratos et al. 2001, 2002a, 2004, 2005b, 2006, 2008b, 2010, 2016; Cecilio & Ilharco 2002; Miller et al. 2002; Lumbierres et al. 2005; Ben Halima & Ben Hamouda 2005; Andorno et al. 2007; Tomanović et al. 2007c; Rakhshani et al. 2008a; Talebi et al.

2009; Boukhris-Bouhachem 2011; Laamari et al. 2011, 2012; Mossadegh et al. 2011; Kos et al. 2012; Nazari et al. 2012; Ahmad & Bakr 2013; Barahoei et al. 2013; Satar et al. 2014, 2021; Ayadi et al. 2017; Pons et al. 2018; Zouari et al. 2018; Sadat et al. 2019; Kök et al. 2020); ***Aphis hederae*** Kaltenbach (Starý et al. 1973, 1975; Starý 1974b, 1976a; González & Michelena 1987; Mescheloff & Rosen 1990b); ***Aphis illinoisensis*** Shimer (Barjadze et al. 2010; Havelka et al. 2011); ***Aphis intybi*** Koch (Tomanović et al. 2003c; Kavallieratos et al. 2004; Kos et al. 2012; Žikić et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013); ***Aphis lambersi*** (Börner) (Starý et al. 1975, 1977a; Starý 1976a); ***Aphis lamiorum*** (Börner) (Starý et al. 1971; Starý 1973a, 1974b); ***Aphis nasturtii*** Kaltenbach (Shands et al. 1955; Mackauer & Starý 1967; Starý 1976a, 1987a; Marsh 1979; Saha et al. 1982; Costa & Starý 1988; Mescheloff & Rosen 1990b; Kolarov 1997; Rabasse et al. 2001; Kavallieratos et al. 2010; Nazari et al. 2012; Satar et al. 2021); ***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; Chakrabarti & Debnath 2009; Laamari et al. 2012; Sadat et al. 2019); ***Aphis parietariae*** Theobald (Tremblay 1967a; Starý et al. 1971; Starý & Kaddou 1971; Starý 1973a, 1974b, 1974c, 1976a; Pennacchio 1989; Kavallieratos et al. 2001, 2004, 2006); ***Aphis plantaginis*** Goeze (Barahoei et al. 2013); ***Aphis pomi*** De Geer (Starý 1979a; Ölmez & Ulusoy 2003; Michelena et al. 2004; Rakhshani et al. 2008a; Rakhshani 2012; Barahoei et al. 2013; Zouari et al. 2018); ***Aphis punicae*** Passerini (Laamari et al. 2012; Nazari et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Zouari et al. 2018; Rakhshani et al. 2019; Kök et al. 2020); ***Aphis ruborum*** (Börner) (Starý et al. 1973, 1975, 1999; Starý 1974b, 1976a; Kavallieratos et al. 2001, 2004, 2006; Havelka et al. 2012); ***Aphis rumicis*** Linnaeus (Wilkinson 1926; Schlinger & Hall 1960a; Marsh 1979); ***Aphis solanella*** Theobald (Starý 1976a; Starý & Ghosh 1983; Kavallieratos et al. 2001, 2004, 2006, 2010; Barahoei et al. 2013); ***Aphis spiraecola*** Patch (Starý et al. 1973, 1975; Starý 1974b, 1976a; Agarwala et al. 1980; Raychaudhuri et al. 1982; Pennacchio 1989; Kavallieratos et al. 2001, 2004, 2006; Naeem et al. 2005; Laamari et al. 2012; Rakhshani 2012; Zouari et al. 2018; Behi et al. 2019); ***Aphis symphyti*** Schrank (Rondani 1876; Fulmek 1968); ***Aphis tirucalis*** Hille Ris Lambers (Starý et al. 1971; Starý 1973a, 1974b, 1974c); ***Aphis umbrella*** (Börner) (Schlinger & Mackauer 1963; Mackauer & Starý 1967; Starý 1974c; Starý et al. 1975, 1976a, 1979a; Abou-Fakhr 1982; Tremblay et al. 1985; Costa 1988; Costa & Starý 1988; Abou-Fakhr & Kawar 1998; Mescheloff & Rosen 1990b; Starý et al. 2000; Kavallieratos et al. 2001, 2004, 2006; Cecilio & Ilharco 2002; Rakhshani et al. 2008a; Talebi et al. 2009; Laamari et al. 2011, 2012; Nazari et al. 2012; Pons et al. 2018; Kök et al. 2020); ***Aphis urticata*** Gmelin (Starý et al. 1973; Starý 1974b; Kavallieratos et al. 2001, 2004, 2006; Pons et al. 2018); ***Aphis viburni*** Scopoli (Pons et al. 2018); ***Aphis viticis*** Ferrari (Kavallieratos et al. 2008a; Pons et al. 2018); ***Aphis*** spp. (Starý 1966d, 1973a, 1974b, 1976a, 1979a; Mackauer & Starý 1967; Bhagat 1984; Michelena Saval & González Funes 1987; Tomanović et al. 1999b, 2003c; Kavallieratos et al. 2001, 2004, 2006; Žikić et al. 2012); ***Aphthargelia symphoricarpi*** (Thomas) (Pike et al. 2000); ***Aspidaphis porosiphon*** Börner (Starý 1973a, 1974b, 1974c); ***Aulacorthum solani*** (Kaltenbach) (MacGillivray & Spicer 1953; Shands et al. 1955; Griffiths 1960; Schlinger & Hall 1960a; Mackauer & Starý 1967; Starý et al. 1973; Starý 1974b, 1995c; Liu 1977; Marsh 1979; Hussein & Kawar 1984; Finlayson 1990; Kolarov 1997; Kavallieratos et al. 2001, 2004, 2006, 2010; Tomanović et al. 2003c; Kos et al. 2009a, 2012; Chinnu et al. 2023); ***Aulacorthum vaccinii*** Hille Ris Lambers (Mitrovski-Bogdanović et al. 2021); ***Brachycaudus amygdalinus*** (Schouteden) (Mackauer & Starý 1967; Costa & Starý 1988; Mescheloff & Rosen 1990b; Kavallieratos et al. 2001, 2004, 2006, 2008b; Cecilio & Ilharco 2002; Laamari et al. 2011, 2012; Nazari et al. 2012; Rakhshani 2012); ***Brachycaudus cardui*** (Linnaeus) (Bignell 1901; Roberti 1969; Starý 1973a, 1974b, 1974c, 1976a; Starý & Bhagat 1978; Marsh 1979; Raychaudhuri et al. 1982; Starý & Ghosh 1983; Tomanović et al. 1998b, 1999b; Pike et al. 2000; Kavallieratos et al. 2001, 2004, 2006, 2008b; Ölmez & Ulusoy 2003; Rakhshani et al. 2008a; Laamari et al. 2011, 2012; Rakhshani 2012; Žikić et al. 2012); ***Brachycaudus divaricatae*** Shaposhnikov (Jafari Ahmadabadi et al. 2011; Jafari Ahmadabadi & Modarres Awal 2012); ***Brachycaudus helichrysi*** (Kaltenbach) (Marshall 1896; Bignell 1901; Mackauer & Starý 1967; Tremblay 1967a; Roberti 1969; Starý et al. 1971, 1973, 1975, 1993a, 1994a, 1999, 2000; Starý 1973a, 1974b, 1974c, 1976a, 1995c, 2006; Starý & Ghosh 1975, 1983; Marsh 1979; Agarwala et al. 1980; Raychaudhuri et al. 1982; Erkin 1983; Costa 1988; Costa & Starý 1988; Pennacchio 1989; Das & Chakrabarti 1990a; Finlayson 1990; Mescheloff & Rosen 1990b; Aguirre Segura & Tizado Morales 1993; Singh et al. 1995; Pike et al. 1996, 2000; Suay Cano & Michelena Saval 1998; Kavallieratos & Lykouressis

1999a; Kavallieratos et al. 2001, 2004, 2005b, 2006, 2010; Cecilio & Ilharco 2002; Tomanović et al. 2003c, 2007c; Uysal et al. 2004; Rakhshani et al. 2008a, 2012b; Talebi et al. 2009; Jafari Ahmadabadi et al. 2011; Mossadegh et al. 2011; Laamari et al. 2011, 2012; Jafari Ahmadabadi & Modarres Awal 2012; Rakhshani 2012; Nazari et al. 2012; Žikić et al. 2012; Barahoei et al. 2013; Satar et al. 2014; Chaouche & Laamari 2015; Kök et al. 2017; Bayram et al. 2018; Mitrovski-Bogdanović et al. 2021; Kök & Tomanović 2022); ***Brachycaudus klugkisti*** (Börner) (Starý et al. 1971; Starý 1973a, 1974b, 1974c; Žikić et al. 2012); ***Brachycaudus lychnidis*** (Linnaeus) (Marshall 1896; Bignell 1901; Mackauer & Starý 1967; Starý et al. 1973; Starý 1974b); ***Brachycaudus persicae*** Passerini (Starý et al. 1975, 1977a; Starý 1976a; Kavallieratos et al. 2006; Rakhshani 2012); ***Brachycaudus tragopogonis*** (Kaltenbach) (Starý 1995c; Aslan et al. 2004; Uysal et al. 2004; Rakhshani et al. 2008a; Talebi et al. 2009; Alikhani et al. 2013); ***Brachycaudus*** spp. (Mackauer & Starý 1967; Starý 1973a, 1974b; Derocles et al. 2012); ***Brachycolus cerastii*** (Kaltenbach) (Starý et al. 1977a); ***Brevicoryne brassicae*** (Linnaeus) (Barnes 1931; Mackauer & Starý 1967; Starý & Ghosh 1975; Marsh 1979; Raychaudhuri et al. 1982; Starý & Ghosh 1983; Pike et al. 2000; Naeem et al. 2005; Kos et al. 2012; Laamari et al. 2012; Chaouche & Laamari 2015; Satar et al. 2021; Ward et al. 2021a, 2021b); *Calaphis betulaecolens* (Fitch) (MacGillivray & Spicer 1953); *Calaphis* sp. (MacGillivray & Spicer 1953; Schlinger & Mackauer 1963); ***Capitophorus carduina*** (Walker) (Starý 1973a, 1974b, 1974c, 1976a; Saha et al. 1982; González & Michelena 1987; Wiackowski et al. 2001; Tanaka et al. 2002; van Veen et al. 2002; Tomanović et al. 2003c; Kavallieratos et al. 2004; Michelena et al. 2004; Žikić et al. 2012); ***Capitophorus elaeagni*** (Del Guercio) (Starý et al. 1971; Starý 1973a, 1974b, 1974c, 1976a, 1995c; Bhagat 1984; Batulla & Robinson 1984; Starý & Remaudière 1987; Mescheloff & Rosen 1990b; Pike et al. 2000; Kavallieratos et al. 2001, 2004, 2006, 2016; Michelena et al. 2004; Laamari et al. 2011, 2012; Chaouche & Laamari 2015); ***Capitophorus formosartemisiae*** (Takahashi) (Saha et al. 1982); ***Capitophorus hippophaes*** (Walker) (Starý & Rupais 1964; Starý 1973a, 1974b, 1974c, 1976a, 1979a; Starý & Ghosh 1978; Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012); ***Capitophorus horni*** Börner (Starý et al. 1971; Robert et al. 1972; Starý 1973a, 1974b, 1974c, 1976a; Starý & Remaudière 1987); ***Capitophorus inulae*** (Passerini) (Tremblay 1967a; Starý et al. 1973, 1975; Starý 1974b, 1976a; González & Michelena 1987; Starý & Remaudière 1987; Pennacchio 1989; Mescheloff & Rosen 1990b; Cecilio 1996; Suay Cano & Michelena Saval 1998; Kavallieratos et al. 2001, 2002b, 2004, 2006); ***Capitophorus mitegoni*** Eastop (Starý & Ghosh 1978, 1983; Raychaudhuri et al. 1982; Starý et al. 1999); ***Capitophorus similis*** van der Goot (Rakhshani et al. 2008a); ***Capitophorus*** spp. (Shands et al. 1955; Starý 1966d, 1973a, 1974b, 1986a, 1987a, 2006; Starý et al. 1973; Tomanović et al. 1999b, 2003c; Kavallieratos et al. 2004; Žikić et al. 2012; Ferrer-Suay et al. 2017); *Cavariella aegopodii* (Scopoli) (Andorno et al. 2007); ***Chaitophorus kapuri*** Hille Ris Lambers (Bhagat 1986a); ***Coloradoa rufomaculata*** (Wilson) (Smith 1944); ***Coloradoa tanacetina*** (Walker) (Marshall 1896; Mackauer & Starý 1967); *Corylobium avellanae* (Schrank) (Viggiani 1988); ***Diuraphis noxia*** (Mordvilko) (Elliott et al. 1992; González et al. 1992; Reed et al. 1992; Hopper et al. 1995; Starý 1995c, 1999b, 2006; Zareh et al. 1995; Chen & Hopper 1997; Starý et al. 1999, 2000; Pike et al. 2000; Kavallieratos et al. 2004, 2005b; Uysal et al. 2004; Day 2005; Noma et al. 2005; Laamari et al. 2011, 2012, 2016b); ***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. 2012); ***Dysaphis lappae cynarae*** (Theobald) (González & Michelena 1987; Michelena et al. 2004); ***Dysaphis plantaginea*** (Passerini) (Bonnemaison 1959; Mackauer & Starý 1967; Tremblay 1967a; Starý et al. 1971, 2000; Starý 1973a, 1974b, 1974c, 1976a; Marsh 1979; González & Michelena 1987; Michelena Saval & González Funes 1987; Pennacchio 1989; Mescheloff & Rosen 1990b; Michelena et al. 1994, 2004; O'Connor et al. 1999; Pike et al. 2000; Kavallieratos et al. 2001, 2004, 2006, 2008b; Ölmez & Ulusoy 2003; Aslan & Karaca 2005; Laamari et al. 2012; Pons et al. 2018; Kök et al. 2020; Alhmedi et al. 2025); ***Dysaphis pyri*** (Boyer de Fonscolombe) (Starý et al. 2000; Ölmez & Ulusoy 2003; Laamari et al. 2012); ***Eucallipterus tiliae*** (Linnaeus) (Mitrovski-Bogdanović et al. 2021); ***Eucarazzia elegans*** (Ferrari) (Starý 1976a; Starý et al. 1977a; Rakhshani et al. 2008a); ***Forda*** sp. (Quilis-Pérez 1931a); ***Galiobium*** sp. (Starý 1979a, 2006); ***Hayhurstia atriplicis*** (Linnaeus) (Quilis-Pérez 1934; Starý 1966d, 1973a, 1974b, 1974c, 1976a; Mackauer & Starý 1967; Marsh 1979); ***Hyalopterus amygdali*** (Blanchard) (Jafari Ahmadabadi et al. 2011; Jafari Ahmadabadi & Modarres Awal 2012); ***Hyalopterus***

***pruni*** (Geoffroy) (Pike et al. 2000; Starý et al. 2000; Derocles et al. 2012; Laamari et al. 2012; Sadat et al. 2019); ***Hyadaphis*** sp. (Ferrer-Suay et al. 2017); ***Hydaphias helvetica*** Hille Ris Lambers (Mackauer & Starý 1967); ***Hydaphias hofmanni*** Börner (Starý 1966c, 1973a, 1974b, 1974c, 2006); ***Hyperomyzus*** sp. (Starý 1995c); ***Illinoia corylina*** (Davidson) (Pike et al. 2000); ***Indoidiopterus geranii*** (Chowdhuri, Basu, Chakrabarti & Raychaudhuri) (Chakrabarti & Debnath 2009); ***Israelaphis lambersi*** Ilharco (Santiago Alvarez 1990); ***Israelaphis*** sp. (Costa 1988; Pennacchio 1989); ***Linosiphon asperulophagum*** Holman (Starý 1966c, 1973a, 1974b, 1974c; Mackauer & Starý 1967; Žikić et al. 2012); ***Linosiphon galii*** (Mamontova) (Starý et al. 1971; Starý 1973a, 1974b, 1974c); ***Linosiphon galiophagum*** (Wimshurst) (Starý 1966c, 1973a, 1974b, 1974c; Mackauer & Starý 1967); ***Liosomaphis berberidis*** (Kaltenbach) (MacGillivray & Spicer 1953); ***Lipaphis erysimi*** (Kaltenbach) (Starý & Ghosh 1978; Raychaudhuri et al. 1982; Starý & Ghosh 1983; Starý et al. 1999; Kavallieratos et al. 2001, 2004, 2006; Chitra Devi et al. 2002; Alaserhat et al. 2021; Satar et al. 2021; Ward et al. 2021a); ***Lipaphis lepidii*** (Nevsky) (Starý 1979a; Starý et al. 2000); ***Macrosiphoniella abrotani*** (Walker) (MacGillivray & Spicer 1953); ***Macrosiphoniella formosartemisiae*** Takahashi (Saha et al. 1982); ***Macrosiphoniella pseudoartemisiae*** Shinji; ***Macrosiphoniella sanborni*** (Gillette) (Smith 1944); ***Macrosiphum euphorbiae*** (Thomas) (McKenny Hughes 1934; Dunn 1949; Shands et al. 1955, 1965; Muesebeck 1958a; Mescheloff & Rosen 1990b; Kolarov 1997; Pike et al. 2000; Zouari et al. 2018); ***Macrosiphum rosae*** (Linnaeus) (MacGillivray & Spicer 1953; Starý 1995c; Naeem et al. 2005); ***Metopolophium dirhodum*** (Walker) (Starý 1981b; Starý et al. 2000; Rakhshani et al. 2008a, 2008b; Bandyan et al. 2021); ***Microlophium carnosum*** (Buckton) (Bhagat 1984); ***Monellia caryella*** (Fitch) (Apak & Akşit 2016); *Myzocallis ulmifoliae* Shinji (Bhagat & Ahmad 1995); ***Myzus ajugae*** Schouteden (Mackauer 1962c; Starý 1966c, 1973a, 1974b, 1974c, 2006; Mackauer & Starý 1967; Ferrer-Suay et al. 2017); ***Myzus ascalonicus*** Doncaster (Starý et al. 1977a); ***Myzus beybienkoi*** (Narzikulov) (Starý et al. 2000); ***Myzus cerasi*** (Fabricius) (Starý 1966a, 1966c, 1973a, 1974b, 1976a, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975, 2000; Marsh 1979; Cravedi 1987; Bhagat & Ahmad 1995; Wiackowski & Wiackowska 1996; Tomanović et al. 1998b, 2003c; Sanchis et al. 2000; Wiackowski et al. 2001; Kavallieratos et al. 2001, 2004, 2006, 2008b; Rakhshani et al. 2008a; Žikić et al. 2012; Pons et al. 2018; Kök et al. 2020); ***Myzus certus*** (Walker) (Mackauer 1962c; Mackauer & Starý 1967; Starý et al. 1971; Starý 1973a, 1974b, 1974c; Marsh 1979); ***Myzus cymbalariae*** Stroyan (Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012); ***Myzus dycei*** Carver (Starý & Ghosh 1975; Raychaudhuri et al. 1982; Saha et al. 1982; Starý & Ghosh 1983; Das & Chakrabarti 1990a, 2023a); ***Myzus langei*** (Börner) (Mackauer 1962c; Starý 1966c, 1966d, 1973a, 1974b, 1974c, 1976a, 1977, 1995b; Mackauer & Starý 1967; Pennacchio 1989; Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012); ***Myzus ligustri*** (Mosley) (Mackauer & Starý 1967; Starý 1973a, 1974b, 1974c; Marsh 1979); ***Myzus lythri*** (Schrank) (Ashmead 1889; Riley & Howard 1890; Muesebeck 1928; Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012; Pons et al. 2018); ***Myzus ornatus*** Laing (Mackauer & Starý 1967; Starý et al. 1971, 1993a, 2000; Starý 1973a, 1974b, 1974c, 1976a, 1995c; Saha et al. 1982; Starý & Ghosh 1983; Cecilio 1996); ***Myzus persicae*** (Sulzer) (Gahan 1911a; Wheeler 1923; Muesebeck 1928; McKenny Hughes 1934; McLeod 1938; Vevai 1942; Smith 1944; Dunn 1949; Muesebeck & Walkley 1951; Shands et al. 1955; Bünzli & Büttiker 1957; George 1957; Griffiths 1960; Schlinger & Hall 1960a; Mackauer 1962c, 1968d; Schlinger & Mackauer 1963; Aubert 1966; Avidov & Kotter 1966; Starý 1966a, 1966d, 1967a, 1973a, 1974b, 1974c, 1976a, 1979a, 1987a, 1995c, 1999b, 2006; Mackauer & Starý 1967; Rosen 1967, 1969; Avidov & Harpaz 1969; Roberti 1969; Starý & Kaddou 1971; Starý et al. 1971, 1973, 1975, 1993a, 1999, 2000; Starý & Ghosh 1975, 1983; Liu 1977; Marsh 1979; Shalaby & Rabasse 1979; Agarwala et al. 1980; Takada & Rishi 1980; Abou-Fakhr 1982; Giri et al. 1982; Raychaudhuri et al. 1982; Erkin 1983; Hofsvang & Høgvar 1983b; Tremblay et al. 1985; Karaat & Goven 1986; González & Michelena 1987; Michelena Saval & González Funes 1987; Singh & Tripathi 1987; Costa 1988; Pennacchio 1989; Radjabi 1989; Finlayson 1990; Mescheloff & Rosen 1990b; Singh & Srivastava 1990; Ben Halima & Ben Hamouda 1993; Ben Halima et al. 1994; Michelena et al. 1994, 2004; Ahmad & Singh 1995b, 1996a; Singh et al. 1995; Cecilio 1996; Atanassova 1997; Kolarov 1997; Tomanović et al. 1998b, 1999b, 2003c, 2007c; Abou-Fakhr & Kawar 1998; Devi et al. 1999; Kavallieratos & Lykouressis 1999a; Pike et al. 2000; Kavallieratos et al. 2001, 2004, 2005a, 2005b, 2006, 2008b, 2010; Cecilio & Ilharco 2002; Ölmez & Ulusoy 2003; Uysal et al. 2004; Ben Halima & Ben Hamouda 2005; Andorno et al. 2007; Rakhshani et al. 2008a; Kos et al. 2009a, 2012; Talebi et al. 2009; Boukhris-

Bouhachem 2011; Jafari Ahmadabadi et al. 2011; Laamari et al. 2011, 2012; Mifsud & Starý 2011, 2012; Mossadegh et al. 2011; Barahoei et al. 2012, 2013; Hermoso de Mendoza et al. 2012; Jafari Ahmadabadi & Modarres Awal 2012; Nazari et al. 2012; Rakhshani 2012; Žikić et al. 2012; Taheri & Rakhshani 2013; Gavkare et al. 2014; Chaouche & Laamari 2015; Ayadi et al. 2017; Davidian 2017; Ferrer-Suay et al. 2017; Ghelamallah et al. 2018; Zouari et al. 2018; Aparicio et al. 2019; Alaserhat et al. 2021; Bandyan et al. 2021; Mitrovski-Bogdanović et al. 2021; Satar et al. 2021; Ward et al. 2021a, 2021b; Hubert & van Achterberg 2023; Plećaš et al. 2023); ***Myzus siegesbeckicola*** Strand (Das & Chakrabarti 1990a); ***Myzus varians*** Davidson (Starý et al. 1971, 1975; Starý 1973a, 1974b, 1974c, 1976a; Arzone & Alma 1986; Pennacchio 1989; Kavallieratos et al. 2001, 2004, 2006); ***Myzus*** spp. (Starý 1995c; Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012; Pons et al. 2018); ***Nasonovia aquilegiae*** (Essig) (Batulla & Robinson 1984); ***Nasonovia ribisnigri*** (Mosley) (Griffiths 1960; Laamari et al. 2011, 2012); ***Nearctaphis crataegifoliae*** (Fitch) (Marsh 1979); ***Neomyzus circumflexus*** (Buckton) (Vevai 1942; Mackauer & Starý 1967; Starý 1973a, 1974b, 1974c, 1987a, 2006; Marsh 1979; Žikić et al. 2012) ***Ovatus crataegarius*** (Walker) (Starý et al. 1993a; Starý 1995c; Cecilio 1996; Pike et al. 2000; Kavallieratos et al. 2001, 2004, 2006, 2016; Alikhani et al. 2013); ***Ovatus insitus*** (Walker) (Kavallieratos et al. 2001, 2004, 2006, 2016; Starý 2006; Rakhshani et al. 2008a; Rakhshani 2012; Pons et al. 2018); ***Ovatus mentharius*** (van der Goot) (Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012); ***Paramyzus heraclei*** Börner (Starý et al. 1977a); *Pemphigus populi* Courchet (Sadat et al. 2019); ***Phorodon cannabis*** Passerini (Starý & Bhagat 1978; Takada & Rishi 1980; Raychaudhuri et al. 1982; Saha et al. 1982; Starý & Ghosh 1983; Paonam & Singh 1986b; Das & Chakrabarti 1990a; Starý et al. 1999); ***Phorodon humuli*** (Schrank) (Schlinger & Mackauer 1963; Mackauer & Starý 1967; Starý 1973a, 1974c, 1976a; Starý et al. 1975, 2000; Marsh 1979; Costa 1988; Pike & Starý 1996a; Pike et al. 1996, 2000; Tomanović et al. 1998b, 1999b, 2003c; Weihrauch 2000; Kavallieratos et al. 2004, 2006, 2008b; Žikić et al. 2012; Pons et al. 2018); ***Rhopalomyzus*** sp. (Starý 1979a); ***Rhopalosiphum maidis*** (Fitch) (Starý 1976a, 1981b, 1995c; 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; Kavallieratos et al. 2001, 2004, 2005b, 2006; 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; Bandyan et al. 2021; Ward et al. 2021a, 2021b; Akrich et al. 2025); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Starý 1979a; Cecilio 1996; Tomanović et al. 1998b, 2003c, 2012; Starý et al. 2000; Kavallieratos et al. 2004; Kos et al. 2012; Žikić et al. 2012); ***Rhopalosiphum oxyacanthae*** (Schrank) (Pike et al. 2000); ***Rhopalosiphum padi*** (Linnaeus) (Mackauer & Starý 1967; Starý 1973a, 1974b, 1974c, 1976a, 1981b, 1995c; Starý et al. 1973, 1993a, 1999, 2000; Marsh 1979; Abou-Fakhr 1982; Powell 1982; Hussein & Kawar 1984; Tremblay et al. 1985; Costa 1988; Paparatti 1989; Pennacchio 1989; Ibrahim 1990b; Mescheloff & Rosen 1990b; Milevoj 1992; Höller et al. 1993; El-Heneidy 1994; Abou-Fakhr & Kawar 1998; Pike et al. 2000; El-Heneidy et al. 2001, 2002, 2003; Kavallieratos et al. 2002b, 2004, 2005b, 2006; Michelena et al. 2004; Abdel-Rahman 2005; Slman 2006; Lee et al. 2007; 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; Satar et al. 2021; Ward et al. 2021a, 2021b); ***Schizaphis graminum*** (Rondani) (Starý et al. 1971; Starý 1973a, 1974b, 1974c, 1976a, 1981b, 1995c; Berest 1980, 1985; Gruber & Coutinot 1984; Michelena Saval & González Funes 1987; Mescheloff & Rosen 1990b; El-Heneidy 1994; Gruber et al. 1994; Starý et al. 2000; El-Heneidy et al. 2001, 2002, 2003; El-Heneidy & Abdel-Samad 2001; Abdel-Rahman 2005; Slman 2006; Kavallieratos et al. 2006; Rakhshani et al. 2008a, 2008b; Nazari et al. 2012; Barahoei et al. 2013); ***Schizaphis pyri*** Shaposhnikov (Pons et al. 2018); ***Schizaphis rosazebedoi*** (Ilharco) (Mescheloff & Rosen 1990b); ***Shinjia orientalis*** (Mordvilko) (Starý & Ghosh 1979, 1983); *Sipha burakowskii* Holman & Szelegiewicz (Saha et al. 1982); ***Sitobion avenae*** (Fabricius) (Mescheloff & Rosen 1990b; El-Heneidy 1994; Pike et al. 2000; Starý et al. 2000; El-Heneidy et al. 2001, 2002, 2003; Kavallieratos et al. 2001, 2004, 2005b, 2006; Slman 2006; Rakhshani et al. 2008a, 2008b; Laamari et al. 2011, 2012; Mossadegh et al. 2011; Barahoei et al. 2013; Gadallah et al. 2017; Khaladi et al. 2025); ***Sitobion fragariae*** (Walker) (Mescheloff & Rosen 1990b; Starý et al. 1994b; Starý 1995c; Kavallieratos et al. 2001, 2004, 2005b, 2006; Barahoei et al. 2013; Khaladi et al. 2025); ***Tubaphis ranunculinus*** (Walker) (Starý et al. 1973); *Uroleucon cichorii* (Koch) (Kos et al. 2012); *Uroleucon compositae* (Theobald) (Laamari et al. 2011); *Uroleucon inulae*

(Ferrari) (Roberti 1969; Starý 1976a); *Uroleucon rudbeckiae* (Fitch) (Schlinger & Hall 1960a); *Uroleucon sonchi* (Linnaeus) (Mescheloff & Rosen 1990b; Starý et al. 1993a; Starý 1995c); ***Wahlgreniella nervata*** (Gillette) (Barahoei et al. 2013).

***Distribution.*** **Algeria** (Starý 1976a; Guenaoui & Ait Chaabane 1991; Laamari et al. 2011, 2012, 2016b; Chehma & Laamari 2014; Chaouche & Laamari 2015; Aroun et al. 2016; Ghelamallah et al. 2018; Rakhshani et al. 2019; Sadat et al. 2019; Neffah-Baziz et al. 2020; Mohdeb et al. 2021; Khaladi et al. 2024, 2025; Akrich et al. 2025; Labdaoui et al. 2026; Taleb et al. 2026); **Andorra** (Sanchis et al. 1999); **Argentina** (Andorno et al. 2007; Tomanović et al. 2025); **Australia** (Mackauer & Starý 1967; Starý 1967a, 1974c; Ward et al. 2021b); **Austria** (Mitrovski-Bogdanović et al. 2021); **Belarus** (Davidian 2017); **Belgium** (Jansen 2005; Lopes et al. 2015, 2016; Ismail et al. 2023; Alhmedi et al. 2025); **Bermuda** (Hilburn et al. 1990); **Brazil** (Mendes 1959; Mackauer & Starý 1967; Peronti et al. 2007); **Bulgaria** (Starý 1974b, 1976a; Atanassova 1997; Kolarov 1997; Kavallieratos et al. 2004, 2005b, 2013; Todorov 2014; Todorov & Ivanova 2016); **Canada** (Ashmead 1889; Riley & Howard 1890; McLeod 1937, 1938; Muesebeck & Walkley 1951; Judd 1953; MacGillivray & Spicer 1953; Mackauer & Starý 1967; Batulla & Robinson 1984; Olfert et al. 2002; Lee et al. 2007 - Prince Edward Islands; Hulle et al. 2010; Lee & Chown 2016); **Canary Islands** (Mackauer 1962b; Mackauer & Starý 1967; Báez et al. 2001); **Chile** (Starý et al. 1993a, 2014c; Starý 1994, 1995c); **China** (Gu et al. 1995; Chen & Shi 2001); **Colombia** (Martínez-Chávez et al. 2019); **Cyprus** (Wilkinson 1926; Mackauer & Starý 1967; Starý 1976a; Havelka et al. 2011); **Czech Republic** (Quilis-Pérez 1934; Starý 1966c, 1973a, 1974b, 1974c, 1977, 1986a, 1987a, 1989a, 1995b, 1999b, 2006; Mackauer & Starý 1967; Pennacchio 1989; Starý & Havelka 2008; Tomanović et al. 2012; Ferrer-Suay et al. 2017); **Denmark** (Starý 1974b); **Egypt** (Ibrahim 1990a, 1990b; El-Serafy 1999; El-Heneidy 1994; El-Heneidy & Abdel-Samad 2001; El-Heneidy et al. 2001, 2002, 2003, 2004; Abdel-Rahman 2005; Abdel-Samad & Ahmed 2006, 2009; Mahmoud et al. 2009; El-Gantiry et al. 2014; El-Ghiet et al. 2014; Saleh & Khedr 2014; Gadallah et al. 2017; Youssif et al. 2017; Rakhshani et al. 2019; Gamal et al. 2022); **Finland** (Starý 1973a, 1974b, 1974c); **France** (Dours 1873; Bonnemaison 1951, 1959; Aubert 1966; Starý 1967a, 1973a, 1974b, 1974c, 1976a, 1981b; Mackauer & Starý 1967; Robert et al. 1972; Starý et al. 1971, 1973, 1975; Bartlett et al. 1978; 1977a; Rabasse & Dedryver 1983; Gruber & Coutinot 1984; Völkl 1989; Dedryver et al. 1991; Gruber et al. 1994; Hopper et al. 1995; Pike & Starý 1996a; Chen & Hopper 1997; Rabasse et al. 2001; Hulle et al. 2010; Derocles et al. 2012, 2014a; Havelka et al. 2012); **Georgia** (Starý 1973a, 1976a, 1981b); **Germany** (Jensen 1957; Mackauer 1962c; Mackauer & Starý 1967; Starý 1973a, 1974b, 1974c, 1981b; Haeselbarth 1983; Boness & Starý 1988; Höller et al. 1993; Pike & Starý 1996a; Belokobylskij et al. 2003; Weihrauch 2000); **Greece** (Starý 1976a; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2002a, 2002b, 2004, 2005a, 2005b, 2006, 2008a, 2008b, 2010, 2013, 2016; Tomanović et al. 2007c; Havelka et al. 2012); **Guam** (Miller et al. 2002); **Hungary** (Szócs 1979; Polgár 1981, 1983); **India** (Starý & Ghosh 1975, 1978, 1979, 1983; Starý & Bhagat 1978; Agarwala et al. 1980, 1981a; Takada & Rishi 1980; Ghosh & Agarwala 1982; Raychaudhuri et al. 1982, 1990; Saha et al. 1982; Bhagat 1984, 1986a; Paonam & Singh 1986b; Singh & Tripathi 1987; Das & Chakrabarti 1988b, 1990a, 2023a; Singh & Srivastava 1990; Raychaudhuri 1992; Ahmad & Singh 1995b, 1996a; Bhagat & Ahmad 1995; Singh et al. 1995; Devi et al. 1996; Devi et al. 1999; Chitra Devi et al. 2002; Subhrani et al. 2006; Dey & Akhtar 2007; Ahmad & Wani 2014; Gavkare et al. 2014); **Iran** (Schlinger & Mackauer 1963; Mackauer & Starý 1967; Starý 1979a; Pike & Starý 1996a; Starý et al. 2000; Rakhshani et al. 2008a, 2008b, 2012b, 2019; Adabi et al. 2010; Fallahzadeh & Saghaei 2010; Jafari Ahmadabadi et al. 2011; Mossadegh et al. 2011; Barahoei et al. 2012, 2013; Jafari Ahmadabadi & Modarres Awal 2012; Nazari et al. 2012; Rakhshani 2012; Alikhani et al. 2013; Khayrandish et al. 2013; Taheri & Rakhshani 2013; Ghotbi Ravandi et al. 2017; Ameri et al. 2019; Abdoli et al. 2026); **Iraq** (Starý & Kaddou 1971; Starý 1974c, 1976a; Al-Hussainawy et al. 2019; Rakhshani et al. 2019; Bandyan et al. 2021; Al-Hadi & Mansor 2025); **Ireland** (Beirne 1942; Mackauer & Starý 1967; O'Connor et al. 1999; Hubert & van Achterberg 2023); **Italy** (Rondani 1876; Starý 1966d, 1967a, 1973a, 1974b, 1974c, 1976a, 1981b; Mackauer & Starý 1967; Tremblay 1967a; Roberti 1969; Tremblay et al. 1978, 1980; Arzone & Alma 1986; Cravedi 1987; Viggiani 1988; Paparatti 1989; Pennacchio 1989; Ferrari & Nicoli 1994; Bergamesco et al. 1995); **Kazakhstan** (Davidian 2017); **Kyrgyzstan** (Petrović et al. 2021a); **Latvia** (Starý & Rupais 1964); **Lebanon** (Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay 1984; Tremblay et al. 1985; Abou-Fakhr & Kawar 1998; Rakhshani et al. 2019); **Lithuania** (Starý 1973a); **Madeira**

**Islands** (Graham 1986); **Malta** (Mifsud & Starý 2011, 2012; Rakhshani et al. 2015b); **Mongolia** (Watanabe 1949; Mackauer & Starý 1967); **Montenegro** (Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **Morocco** (Tanigoshi et al. 1995); **Nepal** (Tamrakar & Singh 2000; Todorov 2009b); **Netherlands** (Hafez 1961; Mackauer & Starý 1967; Papp et al. 1996); **North Macedonia** (Kavallieratos et al. 2004, 2005b); **Norway** (Hofsvang & Høgvar 1983b); **Pakistan** (Starý & Ghosh 1983; Starý et al. 1999; Naeem et al. 2005; Havelka et al. 2012); **Palestine** (Schlinger & Mackauer 1963; Avidov & Kotter 1966; Rosen 1966, 1967, 1969; Avidov & Harpaz 1969; Starý 1967a, 1974c, 1976a, 1981b; Mescheloff & Rosen 1990b; Chyzik et al. 2003); **Peru** (Wille 1940; de Huiza & Ortiz 1980; Redolfi de Huiza 1995); **Poland** (Barczak 1988, 1990, 1991a; Wiackowski & Wiackowska 1996; Huflejt 1997; Wiackowski et al. 1997, 2001; Barczak et al. 2005; Tran & Piekarska-Boniecka 2017); **Portugal** (Starý 1976a, 1981b; Costa 1988; Costa & Starý 1988; Cecilio 1996; De Gouveia & Araujo 1988; Cecilio & Ilharco 2002; Marcelino et al. 2021); **Russia** (Starý 1974b; Tomanović et al. 2007c; Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Réunion** (Starý et al. 1994a); **Saudi Arabia** (Ahmad & Bakr 2013; Rakhshani et al. 2019; Asiry 2022); **Serbia** (Tomanović et al. 1998a, 1999b, 2003c, 2007c, 2012; Žikić et al. 2000, 2012; Kavallieratos et al. 2004, 2005b, 2008b, 2010, 2013; Mitrovski-Bogdanović et al. 2021; Plećaš et al. 2023); **Slovakia** (Starý 1977, 1989a; Ferrer-Suay et al. 2017); **Slovenia** (Milevoj 1992; Kos et al. 2008, 2009b, 2012); **South Africa** (Starý 1967a, 1974c); **Spain** (Quilis-Pérez 1931a, 1931b; Ceballos 1956; Mackauer & Starý 1967; Starý 1976a, 1981b; González & Michelena 1987; Michelena Saval & González Funes 1987; Pennacchio 1989; Santiago Alvarez 1990; Tizado & Núñez-Perez 1991; Tizado Morales et al. 1992; Aguirre Segura & Tizado Morales 1993; Michelena et al. 1994, 2004; Sanchis et al. 1995, 2000; Suay Cano & Michelena Saval 1998; Nieves-Aldrey et al. 2003; Lumbierres et al. 2005, 2007, 2011; Michelena Saval & Martínez De Murguía 2012; Quinto et al. 2012; Hermoso de Mendoza et al. 2012; Pons et al. 2018; Aparicio et al. 2019); **Switzerland** (BOLD:ACI1385); **Tunisia** (Ben Halima & Ben Hamouda 1993, 2005; Ben Halima et al. 1994; Boukhris-Bouhachem 2011; Ayadi et al. 2017; Zouari et al. 2018; Behi et al. 2019; Rakhshani et al. 2019); **Türkiye** (Starý 1976a; Erkin 1983; Karaat & Goven 1986; Tanigoshi et al. 1995; Yasarakinci & Hincal 2000; Ölmez & Ulusoy 2003; Aslan et al. 2004; Uysal et al. 2004; Aslan & Karaca 2005; Çetin Erdoğan et al. 2008, 2010; Barjadze et al. 2010; Guncan et al. 2010; Havelka et al. 2011; Satar et al. 2014, 2021; Aslan 2015; Apak & Akşit 2016; Akar & Çetin Erdoğan 2017; Kök et al. 2017; Bayram et al. 2018; Rakhshani et al. 2019; Kök et al. 2020; Alaserhat et al. 2021; Demirhan & Çetin Erdoğan 2023); **Ukraine** (Berest 1980, 1985; Kaliuzhna 2013a, 2019a, 2019b); **United Arab Emirates** (Starý et al. 2014b; Rakhshani et al. 2019); **United Kingdom** (Curtis 1837; Marshall 1872a, 1896, 1899; Bignell 1901; Szépligeti 1904; Barnes 1931; Lyle 1933; Kloet & Hincks 1945; Griffiths 1960; Mackauer & Starý 1967; Starý 1967a, 1974b, 1974c; Wyatt 1970; Powell 1982; Powell et al. 1986b; Pennacchio 1989; van Veen et al. 2008; Davidian & Rispin 2016); **USA** (Riley & Howard 1890; Gahan 1910, 1911a; Wheeler 1923; Muesebeck 1928, 1958a; Vevai 1942; Smith 1944; Muesebeck & Walkley 1951; Shands et al. 1955, 1965; Schlinger & Hall 1960a; Mackauer 1963a; Schlinger & Mackauer 1963; Mackauer & Starý 1967; Liu 1977; Finlayson 1990; Pike & Starý 1996a; Pike et al. 1996, 2000; Chen et al. 2002; Day 2005; Noma et al. 2005; Straub & Snyder 2006; Raworth et al. 2008); **Uzbekistan** (Starý 1974c, 1979a; Aripov 2003); **Yemen** (Starý et al. 2014b; Rakhshani et al. 2019); **Zimbabwe** (Bünzli & Büttiker 1957; Mackauer & Starý 1967).

***Remarks.*** Records for association of *Aphidius matricariae* with aphid species of the genera *Acyrthosiphon*, *Macrosiphum* and *Macrosiphoniella* should be re-examined.

### *Aphidius matsuyamensis* (Takada, 1966)

*Lysaphidus matsuyamensis* Takada, 1966d:128. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Hosts. Coloradoa artemisicola*** Takahashi (Takada 1968; Starý 1975a); ***Coloradoa*** sp. (Takada 1966d, 1973; Mackauer & Starý 1967; Starý 1975a); *Sinomegoura photiniae* (Takahashi) (Raychaudhuri et al. 1990).

***Distribution.*** **China** (Lu & Ji 1992; Gu et al. 1995; Chen & Shi 2001); **India** (Raychaudhuri et al. 1990; Das & Chakrabarti 2023a); **Japan** (Takada 1966d, 1968, 1973; Mackauer & Starý 1967; Starý 1975a).

***Remarks.*** According to the host range and morphology, it is probably conspecific with *A. arvensis* Starý.

### *Aphidius medvedevi* Davidian, 2010

*Aphidius medvedevi* Davidian [in Davidian & Gavrilyuk], 2010:119. Holotype ♀, paratypes ♀♀ ♂♂ (ZISP). – Russia.

***Host.*** ***Brachycaudus aconiti*** (Mordvilko) (Davidian & Gavrilyuk 2010; Davidian 2017).

***Distribution.*** **Russia** (Davidian & Gavrilyuk 2010, 2014; Davidian 2017, 2019b).

### *Aphidius megourae* Starý, 1965 [Fig. 16B]

*Aphidius megourae* Starý, 1965:215. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Russia.

***Hosts.*** *Acyrthosiphon pisum* (Harris), *Aphis craccivora* Koch, *Aphis fabae* Scopoli (Wiackowski et al. 2001); ***Megoura viciae*** Buckton (Starý 1964a, 1965a, 1966c, 1973a, 2006; Mackauer & Starý 1967; Bartlett et al. 1978; Wiackowski et al. 2001; Davidian 2017; Tomanović et al. 2021).

***Distribution.*** **Czech Republic** (Starý 1964a, 1965a, 1966c, 1973a, 1989a, 2006; Mackauer & Starý 1967); **Finland** (BOLD:ACQ8813); **France** (Starý et al. 1973); **Hungary** (Polgár 1983); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Tomanović et al. 2026a); **Poland** (Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Starý 1965a, 1973a; Mackauer & Starý 1967; Bartlett et al. 1978; Davidian 2017, 2019b); **Serbia** (Tomanović et al. 2021); **Ukraine** (Kaliuzhna 2013a, 2014, 2019a, 2019b).

### *Aphidius microlophii* Pennacchio & Tremblay, 1987 [Fig. 16C]

*Aphidius microlophii* Pennacchio & Tremblay, 1987:105. Holotype ♀, paratypes ♀♀ ♂♂ (DAUN). – Italy.

***Hosts.*** ***Microlophium carnosum*** (Buckton) (Pennacchio & Tremblay 1987; Tremblay & Pennacchio 1988a; Pennacchio 1989; Atanassova 1997; Atanassova et al. 1998; Müller et al. 1999; Tomanović et al. 1999a, 2003c; Kavallieratos et al. 2004; Starý 2006; Derocles et al. 2012, 2014a; Kos et al. 2012; Žikić et al. 2012; Akar & Çetin Erdoğan 2017; Ferrer-Suay et al. 2017; Mitrovski-Bogdanović et al. 2021); ***Microlophium*** sp. (Davidian 2017); ***Wahlgreniella ossiannilssoni*** Hille Ris Lambers (Petrović et al. 2006, 2009; Tomanović et al. 2007a; Žikić et al. 2012).

***Distribution.*** **Belgium** (Mitrovski-Bogdanović et al. 2021); **Bulgaria** (Atanassova 1997; Atanassova et al. 1998); **Czech Republic** (Pennacchio & Tremblay 1987; Pennacchio 1989; Starý 2006; Starý & Havelka 2008; Ferrer-Suay et al. 2017); **France** (Derocles et al. 2012, 2014a); **Ireland** (BOLD:AAA4188); **Italy** (Pennacchio & Tremblay 1987; Tremblay & Pennacchio 1988a; Pennacchio 1989; Pennacchio et al. 1994b; Bergamesco et al. 1995); **Montenegro** (Kavallieratos et al. 2004; Tomanović et al. 2007a; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2018b, 2019b, 2019c; Davidian & Humala 2023; Davidian & Ruchin 2023); **Serbia** (Tomanović et al. 1998a, 1999b, 2003c; Žikić et al. 2000, 2012; Kavallieratos et al. 2004; Petrović et al. 2006; Mitrovski-Bogdanović et al. 2021); **Slovakia** (Starý & Lukáš 2009); **Slovenia** (Kos et al. 2012); **Türkiye** (Akar & Çetin Erdoğan 2017; Rakhshani et al. 2019; Demirhan & Çetin Erdoğan 2023); **United Kingdom** (Pennacchio 1989; Atanassova et al. 1998; Müller et al. 1999; van Veen et al. 2008; Davidian & Rispin 2016); **USA** (BOLD:AAA4188).

### *Aphidius montanus* Ashmead, 1890 [Fig. 16D]

*Aphidius montanus* Ashmead, 1890:20. Holotype ♂ (USNM). – USA.

***Host.*** Unknown.

***Distribution.*** **USA** (Ashmead 1890; Szépligeti 1904; Muesebeck & Walkley 1951; Mackauer & Starý 1967).

### *Aphidius montenegrinus* Tomanović & Kavallieratos, 2004

*Aphidius montenegrinus* Tomanović & Kavallieratos [in Tomanović et al.], 2004:222. Holotype ♀ (BNHM), paratypes ♀♀ ♂ (AUAG). – Montenegro.

***Host.*** ***Acyrthosiphon daphnidis*** Ilharco (Tomanović et al. 2003c, 2004a, 2007a; Žikić et al. 2012).

***Distribution.*** **Montenegro** (Tomanović et al. 2003c, 2004a, 2007a; Žikić et al. 2012).

### *Aphidius montereyensis* Liu, 1977

*Aphidius montereyensis* Liu, 1977:48. Holotype ♀, paratypes ♀♀ ♂ (CASC). – USA.

***Host.*** ***Macrosiphum californicum*** (Clarke) (Liu 1977).

***Distribution.*** **USA** (Liu 1977).

### *Aphidius multiarticulatus* (Ashmead, 1889) [Fig. 16E]

*Lysiphlebus multiarticulatus* Ashmead, 1889:664. Holotype ♂ (USNM). – USA.

***Host.*** Unknown.

***Distribution.*** **USA** (Ashmead 1889; Szépligeti 1904; Gahan 1911a; Muesebeck & Walkley 1951; Mackauer & Starý 1967).

### *Aphidius myzocallidis* Mescheloff & Rosen, 1990

*Aphidius myzocallidis* Mescheloff & Rosen, 1990b:85 Holotype ♀, paratypes ♀ (AROV). – Palestine [Israel].

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

***Distribution.*** **Palestine** (Mescheloff & Rosen 1990b).

### *Aphidius niger* Shi & Chen, 2001

*Aphidius niger* Shi & Chen, 2001:203. Holotype ♀, paratypes ♀♀ ♂♂ (FAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chen & Shi 2001).

### *Aphidius nigripes* Ashmead, 1901 [Fig. 17A]

*Aphidius nigripes* Ashmead, 1901:588. Lectotype ♂ (after Marsh 1977) (USNM). – USA.

**Syn.:** *Aphidius fletcheri* Ashmead, 1900 [*nomen nudum*]; *Aphidius pulcher* Baker, 1909; *Aphidius washingtonensis* Ashmead, 1898 [*nomen nudum*].

***Hosts.*** ***Acyrthosiphon churchillense*** Robinson (Batulla & Robinson 1984); ***Acyrthosiphon pisum*** (Harris) (Sanderson 1900; Chittenden 1901, 1909; Davis 1915; Treherne 1916; Lochhead 1918; Smith 1944; Mackauer & Starý 1967; Mackauer 1969, 1976b; Harper 1976; Angalet & Fuester 1977; Pike et al. 2000); ***Aphis nasturtii*** Kaltenbach (MacGillivray & Spicer 1953; Shands et al. 1955; Mackauer & Starý 1967; Muesebeck 1967; Marsh 1977, 1979); ***Aphis viburniphila*** Patch (Batulla & Robinson 1984); ***Aulacorthum solani*** (Kaltenbach) (Shands et al. 1965; Mackauer & Starý 1967; Marsh 1977, 1979); ***Capitophorus*** sp. (Shands et al. 1955); ***Cryptomyzus galeopsidis*** (Kaltenbach) (Shands et al. 1965; Mackauer & Starý 1967); ***Illinoia liriodendri*** (Monell) (Smith 1944; Mackauer & Starý 1967; Marsh 1977; Marsh 1979; Zuparko & Dahlsten 1993); ***Illinoia*** sp. (Batulla & Robinson 1984); ***Macrosiphoniella tapuskae*** (Hottes & Frison) (Batulla & Robinson 1984); ***Macrosiphum albifrons*** Essig (Marsh 1977, 1979); ***Macrosiphum creelii*** Davis (Marsh 1977, 1979; Halfhill 1982); ***Macrosiphum euphorbiae*** (Thomas) (Smith 1944; Muesebeck & Walkley 1951; MacGillivray & Spicer 1953; Shands et al. 1955, 1965; Mackauer & Starý 1967; Starý 1967a; Sullivan & van den Bosch 1971; Marsh 1977, 1979; Boiteau 1983; Brodeur & McNeil 1989; Walgenbach 1994; Pike et al. 2000); ***Macrosiphum pallidum*** (Oestlund) (Batulla & Robinson 1984); ***Macrosiphum rosae*** (Linnaeus) (Smith 1944; Schlinger 1960a; Schlinger & Hall 1960a; Mackauer & Starý 1967; Marsh 1977, 1979; Finlayson 1990); ***Metopolophium dirhodum*** (Walker) (Smith 1944; Mackauer & Starý 1967); ***Myzus persicae*** (Sulzer) (MacGillivray & Spicer 1953; Shands et al. 1955; Mackauer & Starý 1967; Mackauer 1968d); ***Nasonovia borealis*** Heie (Batulla & Robinson 1984); ***Nasonovia houghtonensis similis*** Heie (Batulla & Robinson 1984); ***Nearctaphis crataegifoliae*** (Fitch) (Smulyan 1920; Mackauer & Starý 1967); ***Pleotrichophorus pseudopatonkus*** Corpuz-Raros & Cook, *Pterocomma smithiae* (Monell) (Batulla & Robinson 1984); ***Rhopalosiphum oxyacanthae*** (Schrank) (Shands et al. 1965; Mackauer & Starý 1967); ***Sitobion avenae*** (Fabricius) (Gahan 1910, 1911b; Phillips 1916; Mackauer & Starý 1967; Muesebeck 1967; Marsh 1977, 1979; Batulla & Robinson 1984); ***Sitobion clydesmithi*** (Robinson) (Pike et al. 2000); ***Uroleucon ambrosiae*** (Thomas) (Muesebeck 1967; Marsh 1977, 1979); ***Uroleucon erigeronense*** (Thomas) (Marsh 1977, 1979).

***Distribution.*** **Canada** (Fletcher 1900; Treherne 1916; Strickland 1952; MacGillivray & Spicer 1953; Duncan & Couture 1957; Mackauer & Bisdee 1965; Mackauer & Starý 1967; Muesebeck 1967; Mackauer 1969, 1976b; Harper 1976; Boiteau 1983; Batulla & Robinson 1984; Brodeur & McNeil 1994b); **Mexico** (Gibson & Carillos 1959; Mackauer & Starý 1967; Starý & Remaudière 1988; Coronado-Blanco et al. 2004); **USA** (Slosson 1898; Sanderson 1900; Ashmead 1901; Chittenden 1901; Baker 1909; Gahan 1910, 1911b; Phillips 1916; Muesebeck 1928, 1958a, 1967; Smith 1944; Muesebeck & Walkley 1951; Shands et al. 1955, 1965; Schlinger 1960a; Schlinger & Hall 1960a; Mackauer 1963a, 1969; Mackauer & Finlayson 1967; Mackauer & Starý 1967; Starý 1967a; Sullivan & van den Bosch 1971; Angalet & Fuester 1977; Liu 1977; Halfhill 1982; Finlayson 1990; Zuparko & Dahlsten 1993; Walgenbach 1994; Stoltz et al. 1997; Pike et al. 2000).

***Remarks.*** According to Marsh (1977), *Aphidius nigripes* is a synonym of *A. pisivorus* Smith, 1941. He believed the specimens used by Smith to redescribe *A. nigripes* are identical with the lectotype of *A. pisivorus*. Furthermore, according to Eady (1969), *A. pisivorus* Smith, 1940 is a junior synonym of *A. pulcher* Baker, 1909. So, the identity of these species should be reconsidered in subsequent studies.

### *Aphidius norvegicus* Tomanović & Kocić, 2024

*Aphidius norvegicus* Tomanović & Kocić [in Kocić et al.], 2024b:6. Holotype ♀, paratype ♀ (FBUB). – Norway.

***Hosts.*** Aphids of the tribe Macrosiphini.

***Distribution.*** **Norway**, **United Kingdom** (Kocić et al. 2024b).

### *Aphidius obscuripes* Ashmead, 1889 [Fig. 17C]

*Aphidius obscuripes* Ashmead, 1889:660. Syntypes ♀♂ (USNM). – USA.

***Hosts.*** ***Acyrthosiphon pisum*** (Harris) (Finlayson 1990); ***Aphis nasturtii*** Kaltenbach (Shands et al. 1965; Mackauer & Starý 1967; Marsh 1979); ***Aulacorthum solani*** (Kaltenbach) (Mackauer & Starý 1967; Marsh 1979); ***Macrosiphum euphorbiae*** (Thomas) (Shands et al. 1965; Mackauer & Starý 1967; Marsh 1979; Boiteau 1983); ***Rhopalosiphum oxyacanthae*** (Schrank) (Mackauer & Starý 1967; Marsh 1979); ***Rhopalosiphum padi*** (Linnaeus) (Marsh 1979); ***Sitobion avenae*** (Fabricius) (Pergande 1904; Smith 1944; Mackauer & Starý 1967; Marsh 1979; Batulla & Robinson 1984; Finlayson 1990).

***Distribution.*** **Canada** (Treherne 1916; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Strickland 1952; Boiteau 1983; Batulla & Robinson 1984); **USA** (Ashmead 1889, 1900a; Slosson 1896; Szépligeti 1904; Nason 1905; Viereck 1912; Smith 1944; Muesebeck & Walkley 1951; Beardsley 1961; Shands et al. 1965; Mackauer & Starý 1967; Finlayson 1990).

### *Aphidius ohioensis* Smith, 1944 [Fig. 17D]

*Aphidius ohioensis* Smith, 1944:63. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, OSUC, NCSU). – USA.

***Hosts.*** ***Aphis chrysothamni*** Wilson (Hollingbery et al. 2012); ***Macrosiphoniella artemisiae*** (Boyer de Fonscolombe) (Pike et al. 2000); ***Macrosiphoniella ludovicianae*** (Oestlund) (Pike et al. 1996, 2000); ***Macrosiphoniella tanacetaria*** (Kaltenbach), ***Macrosiphum creelii*** Davis (Pike et al. 2000); ***Macrosiphum euphorbiae*** (Thomas) (Shands et al. 1955; Mackauer & Starý 1967; Marsh 1979); ***Macrosiphum valerianiae*** (Clarke) (Pike et al. 2000); ***Myzus persicae*** (Sulzer) (Shands et al. 1965); ***Pleotrichophorus elongatus*** (Knowlton), ***Pleotrichophorus oestlundi*** (Knowlton), ***Pleotrichophorus pycnorhysus*** (Knowlton & Smith), ***Pleotrichophorus wasatchii*** (Knowlton), ***Protaphis middletonii*** (Thomas) (Hollingbery et al. 2012); ***Rhopalosiphum oxyacanthae*** (Schrank) (Shands et al. 1965; Mackauer & Starý 1967); ***Uroleucon adenocaulonae*** (Essig) (Pike et al. 2000); ***Uroleucon ambrosiae*** (Thomas) (Schlinger & Hall 1960a; Mackauer & Starý 1967; Liu 1977; Marsh 1979); ***Uroleucon anomalae*** (Hottes & Frison) (Smith 1944; Mackauer & Starý 1967; Marsh 1979); ***Uroleucon baccharidis*** (Clarke) (Liu 1977); ***Uroleucon erigeronense*** (Thomas) (Muesebeck 1958a; Mackauer & Starý 1967; Marsh 1979; Pike et al. 2000; Hollingbery et al. 2012); ***Uroleucon gigantiphagum*** Moran (Pike et al. 2000); ***Uroleucon illini*** (Hottes & Frison) (Smith 1944; Mackauer & Starý 1967; Marsh 1979); ***Uroleucon ivae*** Robinson (Pike et al. 1996; Pike et al. 2000);

***Uroleucon katonkae*** (Hottes), ***Uroleucon olivei*** Moran (Pike et al. 2000); ***Uroleucon rudbeckiae*** (Fitch) (MacGillivray & Spicer 1953; Mackauer & Starý 1967; Muesebeck 1967; Liu 1977; Marsh 1979); ***Uroleucon russellae*** (Hille Ris Lambers), ***Uroleucon sonchi*** (Linnaeus), ***Uroleucon suzannae*** Robinson (Pike et al. 2000); ***Uroleucon*** spp. (Liu 1977; Pike et al. 2000).

***Distribution.*** **Canada** (MacGillivray & Spicer 1953; Schlinger & Hall 1960a; Mackauer & Starý 1967; Muesebeck 1967; Liu 1977); **USA** (Smith 1944; Muesebeck & Walkley 1951; Shands et al. 1955, 1965; Muesebeck 1958a; Mackauer & Starý 1967; Liu 1977; Pike et al. 1996, 2000; Hollingbery et al. 2012).

***Remarks.*** Records of *Aphidius ohioensis* from Brazil (Bartoszeck 1976) are subject to misidentification – Possibly *Aphidius colemani/Aphidius platensis*.

### *Aphidius pelargonii* Starý & Carver, 1980

*Aphidius pelargonii* Starý & Carver, 1980:337. Holotype ♀ (ANIC), paratypes ♀♀ ♂♂ (ANIC, IECA). – Australia.

**Syn.:** *Aphidius pelargonii* Giraud, 1877 [*nomen nudum*].

***Host.*** ***Acyrthosiphon malvae*** (Mosley) (Starý & Carver 1980; Tomanović 2000).

***Distribution.*** **Australia** (Starý & Carver 1980; Ward et al. 2021b); **New Zealand** (Accidental introduction – Valentine & Walker 1991; Bulman et al. 2021; Ward 2026).

***Remarks.*** The record of this species from Montenegro (Tomanović 2000) was due to a misidentification of *Aphidius balkanicus* Tomanović & Petrović, 2011.

### *Aphidius persicus* Rakhshani & Starý, 2006 [Fig. 17E]

*Aphidius persicus* Rakhshani & Starý [in Rakhshani et al.], 2006:1924. Holotype ♀ (FBUB), paratypes ♀♀ ♂♂ (FBUB, TMUC, IECA). – Iran.

***Hosts.*** *Aulacorthum solani* (Kaltenbach) (Sadat et al. 2019); ***Macrosiphoniella*** sp., ***Uroleucon bielawskii*** (Szelegiewicz), ***Uroleucon carthami*** (Hille Ris Lambers) (Barahoei et al. 2013); ***Uroleucon chondrillae*** (Nevsky) (Rakhshani et al. 2006b, 2008a; Nazari et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Taheri & Rakhshani 2013); ***Uroleucon compositae*** (Theobald) (Barahoei et al. 2013); ***Uroleucon jaceae*** (Linnaeus) (Starý & Kaddou 1971; Alikhani et al. 2013); ***Uroleucon ochropus*** (Hille Ris Lambers) (Barahoei et al. 2013); ***Uroleucon sonchi*** (Linnaeus) (Rakhshani et al. 2006b, 2008a; Mossadegh et al. 2011; Barahoei et al. 2012, 2013); ***Uroleucon*** spp. (Rakhshani et al. 2006b, 2012b; Barahoei et al. 2012, 2013).

***Distribution.*** **Algeria** (Sadat et al. 2019); **Iran** (Rakhshani et al. 2006b, 2008a, 2012b; Fallahzadeh & Saghaei 2010; Mossadegh et al. 2011; Barahoei et al. 2012, 2013; Nazari et al. 2012; Alikhani et al. 2013; Taheri & Rakhshani 2013); **Iraq** (Starý & Kaddou 1971 – as *Aphidius funebris*; Rakhshani et al. 2006b).

### *Aphidius petrstaryi* Čkrkić & Tomanović, 2024

*Aphidius petrstaryi* Čkrkić & Tomanović [in Čkrkić et al.], 2024:439. Holotype ♀, paratypes ♀ (IECA). – Angola.

***Host.*** ***Diuraphis noxia*** (Mordvilko), ***Hyperomyzus carduellinus*** (Theobald) (Čkrkić et al. 2024).

***Distribution.*** **Angola, Ethiopia** (Čkrkić et al. 2024).

### *Aphidius phalangomyzi* Starý, 1963

*Aphidius phalangomyzi* Starý, 1963a:606. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Czech Republic.

***Hosts.*** ***Macrosiphoniella oblonga*** (Mordvilko) (Starý 1963a, 1964d, 1966c, 1973a, 1976a, 1977, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971; Kierych 1975; Tomanović et al. 2003c, 2007c; Kavallieratos et al. 2004; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Macrosiphoniella*** sp. (Mitrovski-Bogdanović et al. 2021).

***Distribution.*** **Belgium** (Mitrovski-Bogdanović et al. 2021); **China** (Davidian 2017); **Czech Republic** (Starý 1963a, 1966c, 1973a, 1977, 1987a, 1989a, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Ferrer-Suay et al. 2017); **France** (Starý et al. 1971; Starý 1973a, 1976a); **Germany** (Belokobylskij et al. 2003); **Hungary** (Polgár 1981, 1983); **Moldova** (Talitzky & Kuslitzky 1990); **Poland** (Kierych 1975; Huflejt 1997);

**Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2019b); **Serbia** (Tomanović et al. 1998a, 2003c, 2007c; Kavallieratos et al. 2004; Žikić et al. 2012); **Slovakia** (Starý 1977, 1989a; Kavallieratos et al. 2004); **Ukraine** (Kaliuzhna 2019b).

### *Aphidius phragnitei* Lu & Ji, 1993

*Aphidius phragnitei* Lu & Ji, 1993:63. Holotype ♀, paratypes ♀♀ ♂♂ (MHBU). – China.

***Host.*** ***Hyalopterus amygdali*** (Blanchard) (Chen & Shi 2001; Wei et al. 2005).

***Distribution.*** **China** (Lu & Ji 1993; Chen & Shi 2001).

### *Aphidius pisivorus* Smith, 1941 [Fig. 17F]

*Aphidius pisivorus* Smith, 1941:537. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, OSUC, NCSU). – USA.

***Hosts.*** ***Acyrthosiphon pisum*** (Harris) (Smith 1941, 1944; Knowlton 1951; Hagen & Schlinger 1960; Schlinger & Hall 1960a; Liu 1977; Marsh 1977; Wheeler 1978; Marsh 1979; Mackauer & Kambhampati 1986); ***Aphis nasturtii*** Kaltenbach (MacGillivray & Spicer 1953); ***Macrosiphoniella yomogifoliae*** (Shinji) (Starý & Choi 2000); ***Macrosiphum albifrons*** Essig (Schlinger & Hall 1960a); ***Macrosiphum euphorbiae*** (Thomas) (MacGillivray & Spicer 1953; Shands et al. 1955; Starý 1967a); ***Myzus persicae*** (Sulzer) (MacGillivray & Spicer 1953; Shands et al. 1955; Starý & Choi 2000).

***Distribution.*** **Australia** (Ward et al. 2021b); **Canada** (Strickland 1952; MacGillivray & Spicer 1953; Duncan & Couture 1957; Schlinger & Hall 1960a; Starý 1967a, 1974e; Liu 1977; Mackauer & Kambhampati 1986; Wylie et al. 2005); **USA** (Smith 1941, 1944; Knowlton 1951; Muesebeck & Walkley 1951; Shands et al. 1955; Hagen & Schlinger 1960; Schlinger & Hall 1960a; Starý 1974e; Liu 1977; Wheeler 1978).

***Remarks.*** Records of the Nearctic species *Aphidius pisivorus* Smith, 1941 from South Korea (Starý & Choi 2000) can be a misidentification.

### *Aphidius platensis* Brèthes, 1913 [Fig. 18A]

*Aphidius platensis* Brèthes, 1913: Syntypes ♀♀ (MACN?). – Argentina.

**Syn.:** *Diaeretus porteri* Brèthes, 1910; *Aphidius chilensis* Brèthes, 1912; *Aphidius huebrichi* Brèthes, 1913; *Aphidius porteri* Brèthes, 1915; *Aphidius brasiliensis* Brèthes, 1918.

***Hosts.*** ***Acyrthosiphon gossypii*** Mordvilko (Starý & Erdelen 1982); ***Acyrthosiphon pisum*** (Harris) (Starý & Erdelen 1982; Starý 1995c); ***Amegosiphon platicaudum*** (Narzikulov) (Nazari et al. 2012); ***Aphis acetosae*** Linnaeus, ***Aphis affinis*** Del Guercio (Barahoei et al. 2013); ***Aphis aurantii*** Boyer de Fonscolombe (Hayward 1944; Millan 1956; De Santis & Esquivel 1966; Rosen 1966; Mackauer & Starý 1967; Starý et al. 1973; Starý 1974c, 1975b, 1995c); ***Aphis chloris*** Koch (Mescheloff & Rosen 1990b); ***Aphis citricidus*** (Kirkaldy) (Millan 1956; De Santis & Esquivel 1966; De Santis 1967; Mackauer & Starý 1967; Starý 1975b; Starý & Delfino 1987; Carver 1992; Starý et al. 1994a; Zamora-Mejías et al. 2010, 2011); ***Aphis coreopsidis*** (Thomas) (Starý et al. 2007); ***Aphis craccivora*** Koch (Millan 1956; Johnson 1959; De Santis 1967; Mackauer & Starý 1967; Starý et al. 1973, 1993a, 1994a, 1999; Carver & Starý 1974; Starý 1974c, 1975b, 1989b, 1995c; Starý & Erdelen 1982; Starý & Delfino 1987; Mescheloff & Rosen 1990b; Carver 1992; Starý & van Harten 1992; Rakhshani et al. 2005a, 2006a, 2008a; Andorno et al. 2007; Starý et al. 2007; Delfino & Buffa 2008; Talebi et al. 2009; Zamora-Mejías et al. 2010; Barahoei et al. 2013; Taheri & Rakhshani 2013); ***Aphis cytisorum*** Hartig (De Santis & Esquivel 1966); ***Aphis epilobiaria*** Theobald (Mescheloff & Rosen 1990b); ***Aphis fabae*** Scopoli (Mackauer & Starý 1967; Starý & Erdelen 1982; Starý & Delfino 1987; Mescheloff & Rosen 1990b; Starý et al. 1993a, 1999; Starý 1995c; Naeem et al. 2005; Rakhshani et al. 2008a, 2012b; Talebi et al. 2009; Barahoei et al. 2013; Taheri & Rakhshani 2013); ***Aphis gossypii*** Glover (Lopez Mansilla 1937; Parker et al. 1950; Millan 1956; De Santis & Esquivel 1966; Mackauer & Starý 1967; Starý 1972a, 1974c, 1975b, 1995c; Starý & Schmutterer 1973; Carver & Starý 1974; Chadwick & Nikitin 1976; Starý & Delfino 1987; Starý & Cermeli 1989; Mescheloff & Rosen 1990b; Carver 1992; Starý & van Harten 1992; Carver et al. 1993; Starý et al. 1994a, 1999, 2007, 2014c; Wellings et al. 1994; Imenes et al. 2002; Zamora-Mejías et al. 2010; Naeem et al. 2005; Andorno et al. 2007; Delfino & Buffa 2008; Rakhshani et al. 2008a; Talebi et al. 2009; Nazari et al. 2012; Tomanović et al. 2014; Lokeshwari et al. 2015); ***Aphis hederae*** Kaltenbach (Starý & Delfino 1987;

Mescheloff & Rosen 1990b; Starý 1995c; Starý et al. 2007); ***Aphis intybi*** Koch (Mescheloff & Rosen 1990b; Rakhshani et al. 2008a; Talebi et al. 2009; Barahoei et al. 2013; Taheri & Rakhshani 2013); ***Aphis nasturtii*** Kaltenbach (Starý & Delfino 1987; Mescheloff & Rosen 1990b); ***Aphis nerii*** Boyer de Fonscolombe (Blanchard 1938; De Santis & Esquivel 1966; De Santis 1967; Mackauer & Starý 1967; Starý & Schmutterer 1973; Carver & Starý 1974; Starý 1974c, 1975b, 1995c; Starý & Delfino 1987; Mescheloff & Rosen 1990b; Carver 1992; Starý & van Harten 1992; Starý et al. 1994a, 2007, 2014c; Vaz et al. 2004; Rakhshani et al. 2008a; Talebi et al. 2009; Zamora-Mejías et al. 2010; Barahoei et al. 2013; Taheri & Rakhshani 2013; Tomanović et al. 2014; Mitrovski-Bogdanović et al. 2021); ***Aphis plantaginis*** Goeze (Barahoei et al. 2013); ***Aphis pomi*** De Geer (Mescheloff & Rosen 1990b; Zouari et al. 2018); ***Aphis punicae*** Passerini (Mescheloff & Rosen 1990b; Starý et al. 1993a; Rakhshani et al. 2008a, 2012b; Barahoei et al. 2013; Taheri & Rakhshani 2013; Zouari et al. 2018; Hemidi & Laamari 2020); ***Aphis ruborum*** (Börner) (Starý 1995c; Peña-Martinez et al. 2021); ***Aphis rumicis*** Linnaeus (Esquivel 1950; De Santis & Esquivel 1966; De Santis 1967; Mackauer & Starý 1967; Starý 1975b; Rakhshani et al. 2012b); ***Aphis solanella*** Theobald (Starý & Schmutterer 1973; Starý 1974c, 1975b; Starý & Erdelen 1982; Starý et al. 2007; Barahoei et al. 2013); ***Aphis spiraecola*** Patch (Mackauer & Starý 1967; Rojas 1967; Carver & Starý 1974; Starý 1974c, 1975b, 1995c; Mescheloff & Rosen 1990b; Carver 1992; Starý et al. 2007; Rakhshani et al. 2012b); ***Aphis umbrella*** (Börner) (Mescheloff & Rosen 1990b; Rakhshani et al. 2008a; Talebi et al. 2009; Nazari et al. 2012); ***Aphis verbasci*** Schrank (Mescheloff & Rosen 1990b; Starý et al. 1999); ***Aphis*** spp. (Starý & Delfino 1987; Starý et al. 1994a; Starý 1995c); ***Aulacorthum solani*** (Kaltenbach) (Millan 1956; Silveira Guido & Ruffinelli 1958; Mackauer & Starý 1967; Starý 1975b, 1995c; Starý & Delfino 1987); ***Brachycaudus amygdalinus*** (Schouteden) (Starý & Schmutterer 1973; Starý 1974c; Mescheloff & Rosen 1990b; Rakhshani 2012; Barahoei et al. 2013); ***Brachycaudus cardui*** (Linnaeus) (Rakhshani et al. 2008a; Talebi et al. 2009; Barahoei et al. 2013; Taheri & Rakhshani 2013); ***Brachycaudus helichrysi*** (Kaltenbach) (De Santis & Esquivel 1966; Starý & Schmutterer 1973; Carver & Starý 1974; Starý 1974c, 1975b, 1995c; Starý & Erdelen 1982; Starý & Cermeli 1989; Mescheloff & Rosen 1990b; Carver 1992; Starý et al. 1993a, 1994a, 1999, 2007, 2014c; Rakhshani et al. 2008a; Talebi et al. 2009; Zamora-Mejías et al. 2010; Tomanović et al. 2014; Čkrkić et al. 2024); ***Brachycaudus persicae*** Passerini (Millan 1956; De Santis & Esquivel 1966; De Santis 1967; Mackauer & Starý 1967; Carver & Starý 1974; Starý 1975b, 1995c; Carver 1992); ***Brachycaudus prunicola*** (Kaltenbach) (Lopez Mansilla 1937; Millan 1956; Mackauer & Starý 1967); ***Brachycaudus rumexicolens*** (Patch) (Starý & Schmutterer 1973; Starý 1975b); ***Brachycaudus schwartzi*** (Börner) (Millan 1956; De Santis & Esquivel 1966; De Santis 1967; Starý 1974c, 1975b, 1995c; Starý et al. 1993a, 2007; Auad et al. 1997); ***Brachycaudus tragopogonis*** (Kaltenbach) (Barahoei et al. 2013; Tomanović et al. 2014; Mitrovski-Bogdanović et al. 2021); ***Brevicoryne brassicae*** (Linnaeus) (De Santis & Esquivel 1966; De Santis 1967; Mackauer & Starý 1967; Starý 1975b; Starý et al. 1999, 2007; Vaz et al. 2004; Naeem et al. 2005; Ward et al. 2021b); ***Capitophorus elaeagni*** (Del Guercio) (De Santis & Esquivel 1966; De Santis 1967; Mackauer & Starý 1967; Starý 1975b; Starý & Cermeli 1989; Mescheloff & Rosen 1990b; Rakhshani et al. 2008a; Talebi et al. 2009; Tomanović et al. 2014); ***Capitophorus hippophaes*** (Walker) (Starý 1974c, 1975b); ***Capitophorus*** sp. (Starý 1995c); ***Cavariella aegopodii*** (Scopoli) (Starý et al. 2007); ***Diuraphis noxia*** (Mordvilko) (Starý & Erdelen 1982; Aalbersberg et al. 1984, 1988, 1989; Starý et al. 1993a, 1999, 2000, 2007; Starý 1995c; Heddle et al. 2020); ***Dysaphis apiifolia*** (Theobald) (Starý et al. 1993a, 2007; Starý 1995c); ***Dysaphis pulverina iranica*** Stroyan (Barahoei et al. 2013); ***Dysaphis radicola*** (Mordvilko) (Barahoei et al. 2013); ***Dysaphis tulipae*** (Boyer de Fonscolombe) (Starý 1974c, 1975b; Starý et al. 2007); ***Eucarazzia elegans*** (Ferrari) (Starý et al. 2007; Delfino & Buffa 2008); ***Hayhurstia atriplicis*** (Linnaeus) (Mescheloff & Rosen 1990b; Rakhshani et al. 2012b); ***Hyadaphis coriandri*** (Das) (Starý & van Harten 1992); ***Hyadaphis foeniculi*** (Passerini) (De Santis & Esquivel 1966; De Santis 1967; Mackauer & Starý 1967; Starý 1975b; Mescheloff & Rosen 1990b); ***Hyalopterus amygdali*** (Blanchard) (Taheri & Rakhshani 2013); ***Hyalopterus pruni*** (Geoffroy) (Chiesa-Molinari 1944; Mackauer & Starý 1967; Chen & Shi 2001; Hemidi & Laamari 2020; Čkrkić et al. 2024); ***Hyperomyzus carduellinus*** (Theobald) (Starý 1974c, 1975b); ***Hyperomyzus lactucae*** (Linnaeus) (Starý 1995c); ***Hysteroneura setariae*** (Thomas) (Starý & van Harten 1992; Starý et al. 2007); ***Ipuka dispersum*** (van der Goot) (Starý 1974c, 1975b); ***Lipaphis erysimi*** (Kaltenbach) (Starý et al. 1994a); ***Macrosiphoniella sanborni*** (Gillette) (Starý & Cermeli 1989; Starý et al. 1999); ***Macrosiphum euphorbiae*** (Thomas) (Parker et al. 1950; Millan 1956; De Santis & Esquivel 1966; De Santis 1967; Mackauer & Starý 1967; Starý & Schmutterer 1973; Starý 1975b, 1995c; Mescheloff & Rosen

1990b; Andorno et al. 2007; Starý et al. 2007; Barahoei et al. 2013; Taheri & Rakhshani 2013); ***Macrosiphum rosae*** (Linnaeus) (De Santis & Esquivel 1966; De Santis 1967; Mackauer & Starý 1967; Starý 1975b; Starý & Cermeli 1989; Mescheloff & Rosen 1990b; Taheri & Rakhshani 2013); ***Macrosiphum*** sp. (Starý & Cermeli 1989); ***Melanaphis sacchari*** (Zehntner) (Starý 1989b); ***Melanaphis sorghi*** (Theobald) (Sampaio et al. 2022); ***Metopolophium dirhodum*** (Walker) (Starý 1995c; Starý et al. 2007; Alikhani et al. 2013; Barahoei et al. 2013; dos Santos et al. 2022); ***Metopolophium festucae cerealium*** Stroyan (Starý 1995c); ***Microparsus vignaphilus*** (Blanchard) (Starý et al. 2007); ***Myzus cerasi*** (Fabricius) (Carver 1992); ***Myzus ornatus*** Laing (Starý & Schmutterer 1973; Carver & Starý 1974; Starý 1974c, 1975b, 1995c; Starý & Cermeli 1989; Carver 1992; Starý et al. 1993a, 2007, 2014c; Zamora-Mejías et al. 2010); ***Myzus persicae*** (Sulzer) (Parker et al. 1950; Millan 1956; De Santis & Esquivel 1966; De Santis 1967; Mackauer & Starý 1967; Starý 1972a, 1974c, 1975b, 1995c; Starý & Schmutterer 1973; Carver & Starý 1974; Easwaramoorthy et al. 1976; Starý & Erdelen 1982; Rabasse et al. 1985; Starý & Delfino 1987; Trivedi & Saxena 1988; Starý & Cermeli 1989; Mescheloff & Rosen 1990b; Carver 1992; Starý et al. 1993a, 1994a, 1999, 2007; Naeem et al. 2005; Andorno et al. 2007; Delfino & Buffa 2008; Rakhshani et al. 2008a; Talebi et al. 2009; Rafi et al. 2010; Zamora-Mejías et al. 2010; Mossadegh et al. 2011; Rakhshani 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Starý et al. 2014c; Tomanović et al. 2014; Ghelamallah et al. 2018; Zouari et al. 2018; Mitrovski-Bogdanović et al. 2021); ***Myzus*** spp. (Starý & Delfino 1987; Starý & Cermeli 1989; Ward et al. 2021a); ***Nasonovia ribisnigri*** (Mosley) (Starý & Delfino 1987; Starý et al. 1993a, 2007; Starý 1995c; Andorno et al. 2007); ***Pentalonia nigronervosa*** Coquerel (Starý & Stechmann 1991; Stechmann et al. 1996; Zamora-Mejías et al. 2010; Starý et al. 2014c); ***Phorodon humuli*** (Schrank) (Rakhshani et al. 2008a; Rakhshani 2012); ***Pterocomma populeum*** (Kaltenbach) (De Santis & Esquivel 1966; De Santis 1967; Starý 1975b); ***Rhopalosiphum maidis*** (Fitch) (De Santis & Esquivel 1966; De Santis 1967; Mackauer & Starý 1967; Starý & Schmutterer 1973; Carver & Starý 1974; Starý 1974c, 1975b, 1995c; Starý & Erdelen 1982; Lazzari 1985; Starý & Delfino 1987; Mescheloff & Rosen 1990b; Carver 1992; Starý & van Harten 1992; Starý et al. 1994a, 1999, 2007; Zamora-Mejías et al. 2010; Naeem et al. 2005; Barahoei et al. 2013; Starý et al. 2014c); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Starý 1972a, 1974c, 1975b, 1995c); ***Rhopalosiphum padi*** (Linnaeus) (Starý 1974c, 1975b, 1995c; Lazzari 1985; Starý & Delfino 1987; Mescheloff & Rosen 1990b; Carver 1992; Starý et al. 1993a, 2007; Milne 1995; Ronquim et al. 2004; Andorno et al. 2007; Rakhshani et al. 2008a, 2008b; Khan et al. 2012; Nazari et al. 2012; Barahoei et al. 2013; Tomanović et al. 2014; Mitrovski-Bogdanović et al. 2021; dos Santos et al. 2022); ***Rhopalosiphum rufiabdominale*** (Sasaki) (Starý & Delfino 1987); ***Schizaphis eastopi*** van Harten & Ilharco (Starý 1975b); ***Schizaphis graminum*** (Rondani) (Hayward 1940; Silveira Guido & Conde 1945; Parker et al. 1950; Millan 1956; De Santis & Esquivel 1966; De Santis 1967; Mackauer & Starý 1967; Starý & Schmutterer 1973; Starý 1974c, 1975b; Starý & Erdelen 1982; Lazzari 1985; Starý & Delfino 1987; Mescheloff & Rosen 1990b; Starý et al. 2000, 2007; Rakhshani et al. 2008a, 2008b; Khan et al. 2012; Barahoei et al. 2013; dos Santos et al. 2022); ***Schizaphis rosazebedoi*** (Ilharco) (Mescheloff & Rosen 1990b); ***Schizaphis rotundiventris*** (Signoret) (Starý 1975b); ***Sitobion avenae*** (Fabricius) (De Santis & Esquivel 1966; De Santis 1967; Starý 1975b, 1995c; Starý & Delfino 1987; Starý et al. 2000, 2007; Rakhshani et al. 2008a, 2008b; Barahoei et al. 2013; dos Santos et al. 2022); ***Sitobion fragariae*** (Walker) (Starý & Delfino 1987; Mescheloff & Rosen 1990b; Starý et al. 1993a, 1994b, 2007; Starý 1995c; Khaladi et al. 2025); *Thelaxes suberi* (Del Guercio) (Mescheloff & Rosen 1990b); ***Uroleucon aeneum*** (Hille Ris Lambers) (Starý 1995c); ***Uroleucon ambrosiae*** (Thomas) (Delfino & Buffa 2008); ***Uroleucon bereticum*** (Blanchard) (Starý et al. 2007); ***Uroleucon compositae*** (Theobald) (Hemidi & Laamari 2020); ***Uroleucon erigeronense*** (Thomas) (Starý et al. 2007).

***Distribution.*** **Algeria** (Ghelamallah et al. 2018); **Angola** (Starý 1972a, 1974c, 1975b); **Argentina** (Brèthes 1913; Lopez Mansilla 1937; Blanchard 1938, 1939; Hayward 1940, 1941, 1944; Chiesa-Molinari 1942; Griot 1944; Esquivel 1950; Boerger 1952; Millan 1956; De Santis 1967; Mackauer & Starý 1967; Starý 1975b; Starý & Delfino 1987; Botto 1999; Berta et al. 2002; Andorno et al. 2007; Delfino & Buffa 2008); **Australia** (Heddle et al. 2020; Ward et al. 2021b); **Bolivia** (Starý et al. 2014c); **Brazil** (Millan 1956; Mackauer & Starý 1967; Starý 1975b; Lazzari 1985; Rabasse et al. 1985; Auad et al. 1997; Mendes et al. 2000; Imenes et al. 2002; Sampaio et al. 2003, 2005; Ronquim et al. 2004; Vaz et al. 2004; Starý et al. 2007, 2014c; Bortolotto et al. 2015; dos Santos et al. 2019, 2022); **Burundi** (Starý 1989b; Čkrkić et al. 2024); **Cape Verde Islands** (Starý & van Harten 1992); **Chile** (Brèthes 1915; Porter 1926; Millan 1956; Mackauer & Starý 1967; Starý 1975b, 1994, 1995c; Suzuki & Vargas 1980; Starý et al. 1993a, 1994b, 2014c; Havelka et al. 2012; Tomanović et al.

2014; Mitrovski-Bogdanović et al. 2021); **China** (Chen & Shi 2001); **Colombia** (Mongui et al. 1986; Martínez-Chávez et al. 2019); **Congo** (Benoit 1955; Mackauer & Starý 1967; Starý 1975d); **Costa Rica** (Zamora-Mejías et al. 2010, 2011, 2017; Starý et al. 2014c); **Ecuador** (Starý et al. 2014c); **Egypt**, **Ethiopia** (Čkrkić et al. 2024); **France** (Starý et al. 1973); **India** (Starý 1972a, 1974c, 1975b; Rakhshani et al. 2012a; Ahmad & Wani 2014; Lokeshwari et al. 2015; Das & Chakrabarti 2023a); **Iran** (Starý 1975b, 1979a; Rakhshani et al. 2005a, 2006a, 2008a, 2008b, 2012b; Starý et al. 2000; Talebi et al. 2009; Mossadegh et al. 2011; Nazari et al. 2012; Rakhshani 2012; Alikhani et al. 2013; Barahoei et al. 2013; Taheri & Rakhshani 2013; Tomanović et al. 2014; Ameri et al. 2019; Mitrovski-Bogdanović et al. 2021); **Kenya** (Starý 1972a, 1974c, 1975b; Starý & Schmutterer 1973; Todorov 2009a); **Lebanon** (BOLD:AAI4338); **Madagascar** (Starý 2005; Madl & van Achterberg 2014); **Mexico** (Coronado-Blanco et al. 2004; Peña-Martinez et al. 2021); **Mozambique** (Starý 1975b); **Nepal** (Tamrakar & Singh 2000); **New Caledonia** (Starý 1975b); **New Zealand** (BOLD:AAI4338); **Oman** (Čkrkić et al. 2024); **Pakistan** (Starý 1975b; Starý & Ghosh 1983; Starý et al. 1999; Naeem et al. 2005; Saleem et al. 2009; Khan et al. 2012, 2015); **Palestine** (Mescheloff & Rosen 1990b; Samara & Qubbaj 2012); **Paraguay** (González Torres et al. 2018); **Peru** (de Huiza & Ortiz 1980; Redolfi de Huiza 1995; Starý et al. 2014c); **Réunion** (Starý 1975b; Starý et al. 1994a; Vayssières et al. 2001; Madl & van Achterberg 2014); **Saudi Arabia** (Rakhshani et al. 2019); **South Africa** (Starý 1974c, 1975b; Aalbersberg et al. 1984, 1988, 1989; Laubscher & Von Wechmar 1993; Davidian 2017); **Tonga** (Starý & Stechmann 1991; Carver et al. 1993; Wellings et al. 1994; Stechmann et al. 1996); **Tunisia** (Zouari et al. 2018); **United Arab Emirates** (Starý et al. 2014b); **Uruguay** (Silveira Guido & Conde 1945; Parker et al. 1950; Millan 1956; Mackauer & Starý 1967; Starý 1975b; Betancourt & Scatoni 2001; Pujade-Villar et al. 2002); **USA** (Introduced – Mackauer & Starý 1967); **Venezuela** (Starý & Cermeli 1989; Starý et al. 2014c); **Yemen** (Starý & Erdelen 1982; Starý et al. 2014b).

***Remarks.*** Across several publications, Brèthes (1910, 1912, 1913, 1915), repeatedly described *Aphidius* species, often assigning closely related or identical epithets in different journals and various countries. This fragmented publication history created long-standing taxonomic ambiguity, as subsequent authors attempted to reconcile multiple descriptions that were neither clearly differentiated nor consistently applied. Subsequent systematic revisions have demonstrated that the majority of these names correspond to a single South American species, *Aphidius platensis* (Tomanović et al. 2014). The set of taxa involved includes *Diaeretus porteri* Brethes, 1910; *Aphidius chilensis* Brethes, 1912 and 1913; *Aphidius platensis* Brethes, 1913; *Aphidius huebrichi* Brethes, 1913; and *Aphidius porteri* Brethes, 1915. From a biological point of view, the associations with *Hyalopterus* spp. most probably refer to *Aphidius transcaspicus*.

### *Aphidius pleotrichophori* (Takada, 1966)

*Lysaphidus pleotrichophori* Takada, 1966d:127. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Hosts. Acutosiphon obliquoris*** Basu, Ghosh & Raychaudhuri (Raychaudhuri et al. 1990); ***Pleotrichophorus glandulosus*** (Kaltenbach) (Takada 1966d, 1968, 1973; Mackauer & Starý 1967; Starý 1975a; Finlayson 1990).

***Distribution.*** **India** (Raychaudhuri et al. 1990; Das & Chakrabarti 2023a); **Japan** (Takada 1966d, 1968, 1973; Mackauer & Starý 1967; Starý 1975a; Finlayson 1990); **South Korea** (Paik 1976; Starý & Choi 2000; Kim 2026).

### *Aphidius plocamaphidis* (Starý, 1973) [Fig. 18B]

*Remaudierea plocamaphidis* Starý [in Starý et al.], 1973:322. Holotype ♀, paratypes ♀♀♂♂ (IECA). – France.

***Host. Plocamaphis goernitzi*** Börner (Starý et al. 1973).

***Distribution.*** **Canada** (BOLD:ACR5858 | BOLD:AEO3331); **Czech Republic** (Ilić-Milošević et al. 2015); **France** (Starý et al. 1973); **Netherlands** (GBIF 2022 - 4408316783); **Russia** (Davidian 2017, 2018b, 2019b; Davidian & Humala 2023); **United Kingdom** (BOLD:AEO3331).

***Remarks.*** According to the original description (Starý et al. 1973), some paratypes are also deposited in the collections of G. Remaudière and M. Mackauer. Ilić-Milošević et al. (2015) transferred *Remaudierea plocamaphidis* to the genus *Aphidius*, establishing the new combination *Aphidius plocamaphidis*.

### *Aphidius polycostulari* Das & Chakrabarti, 1991

*Aphidius polycostulari* Das & Chakrabarti, 1991a:409. Holotype ♀, paratypes ♀ ♂♂ (ZSI). – India.

***Host.*** ***Schizaphis*** sp., ***Sitobion miscanthi*** (Takahashi) (Chakrabarti & Debnath 2009); ***Sitobion*** sp. (Das & Chakrabarti 1991a).

***Distribution.*** **India** (Das & Chakrabarti 1991a, 2023a).

### *Aphidius polygonaphis* (Fitch, 1855) [Fig. 18C]

*Praon polygonaphis* Fitch, 1855:136. Syntype ♀ (USNM). – USA.

**Syn.:** *Aphidius canadensis* Provancher, 1881; *Aphidius obscurus* Provancher, 1886; *Aphidius pallidus* Ashmead, 1889, *nec* Haliday, 1833; *Aphidius nigriceps* Ashmead, 1891 [Fig. 16F]; *Lysiphlebus succineus* Viereck, 1905.

***Hosts.*** ***Acyrthosiphon lactucae*** (Passerini), ***Amphorophora parviflori*** Hill, ***Amphorophora*** sp., ***Aphis ceanothi*** Clarke, ***Aphis gossypii*** Glover, ***Brachycaudus cardui*** (Linnaeus), ***Capitophorus elaeagni*** (Del Guercio), ***Ericaphis wakibae*** (Hottes), ***Hyperomyzus nigricornis*** (Knowlton), ***Hyperomyzus sandilandicus*** (Robinson), ***Illinoia davidsoni*** (Mason) (Pike et al. 2000); ***Illinoia liriodendri*** (Monell) (Gahan 1911a; Muesebeck 1928; Mackauer & Starý 1967; Marsh 1979; Zuparko & Dahlsten 1993); ***Macrosiphoniella ludovicianae*** (Oestlund) (Pike et al. 1997a, 2000); ***Macrosiphum euphorbiae*** (Thomas) (Webster 1915; Houser et al. 1917; Smith 1919; Mackauer & Starý 1967; Marsh 1979; Pike et al. 1996, 2000); ***Macrosiphum rosae*** (Linnaeus), ***Macrosiphum valerianiae*** (Clarke), ***Macrosiphum*** spp., ***Nasonovia crenicorna*** (Smith & Knowlton), ***Nasonovia houghtonensis*** (Troop) (Pike et al. 2000); ***Periphyllus negundinis*** (Thomas) (Webster 1917); ***Pleotrichophorus*** sp. (Pike et al. 1997a); ***Sitobion avenae*** (Fabricius) (Pergande 1904); ***Sitobion clydesmithi*** (Robinson), ***Sitobion pteridis*** (Wilson), ***Sitobion*** sp. (Pike et al. 2000); ***Uroleucon ambrosiae*** (Thomas) (Dimmock 1898; Smith 1944; MacGillivray & Spicer 1953; Mackauer & Starý 1967; Liu 1977; Marsh 1979); ***Uroleucon erigeronense*** (Thomas) (Starý & Remaudière 1982); ***Uroleucon ivae*** Robinson (Pike et al. 2000); ***Uroleucon luteolum*** (Williams) (Mackauer & Starý 1967; Marsh 1979); ***Uroleucon nigrotuberculatum*** (Olive) (Mondor et al. 2004); ***Uroleucon rudbeckiae*** (Fitch) (Gahan 1911a; Muesebeck 1928; Knowlton & Harmston 1939; Smith 1944; Mackauer & Starý 1967; Marsh 1979); ***Uroleucon sonchi*** (Linnaeus) (Starý & Remaudière 1982); ***Uroleucon taraxaci*** (Kaltenbach) (Smith 1944; Mackauer & Starý 1967; Marsh 1979); ***Uroleucon*** spp. (Starý & Remaudière 1982; Starý 1983d; Pike et al. 2000); ***Wahlgreniella nervata*** (Gillette) (Pike et al. 2000).

***Distribution.*** **Canada** (Provancher 1881, 1886; Beaulne 1942; Smith 1944; Muesebeck & Walkley 1951; MacGillivray & Spicer 1953; Mackauer & Starý 1967; Muesebeck 1967; Shenefelt 1968; Pike et al. 2000); **Mexico** (Starý & Remaudière 1982, 1988; Starý 1983d); **USA** (Ashmead 1889, 1891, 1900a; Smith 1890; Dimmock 1898; Szépligeti 1904; Nason 1905; Viereck 1905, 1910; Tucker 1909a, 1909b; Gahan 1911a; Webster 1915; Houser et al. 1917; Webster 1917; Britton & Lowry 1918; Smith 1919; Knowlton & Harmston 1939; Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Mackauer 1968a; Liu 1977; Zuparko & Dahlsten 1993; Pike et al. 1996, 1997a, 2000).

### *Aphidius popovi* Starý, 1978 [Fig. 18D]

*Aphidius popovi* Starý [in Starý & González], 1978:140. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Uzbekistan.

***Hosts.*** ***Amphorophora catharinae*** (Nevsky) (Starý & González 1978; Starý 1979a; Rakhshani et al. 2008a, 2012b; Talebi et al. 2009; Nazari et al. 2012; Barahoei et al. 2013); ***Metopolophium dirhodum*** (Walker) (Barahoei et al. 2012, 2013).

***Distribution.*** **Iran** (Rakhshani et al. 2008a, 2012b, 2019; Fallahzadeh & Saghaei 2010; Barahoei et al. 2012, 2013; Nazari et al. 2012); **Uzbekistan** (Starý & González 1978; Starý 1979a; Aripov 2003).

### *Aphidius propinquus* Ashmead, 1902 [Fig. 18E]

*Aphidius propinquus* Ashmead, 1902:245. Syntypes ♂♂ (USNM). – USA.

**Syn.:** *Aphidius frigidus* Ashmead, 1902 [Fig. 14A].

***Host.*** Unknown.

***Distribution.*** **USA –** Alaska (Ashmead 1902; Szépligeti 1904; Gahan 1911a; Viereck 1923; Muesebeck & Walkley 1951; Mackauer & Starý 1967).

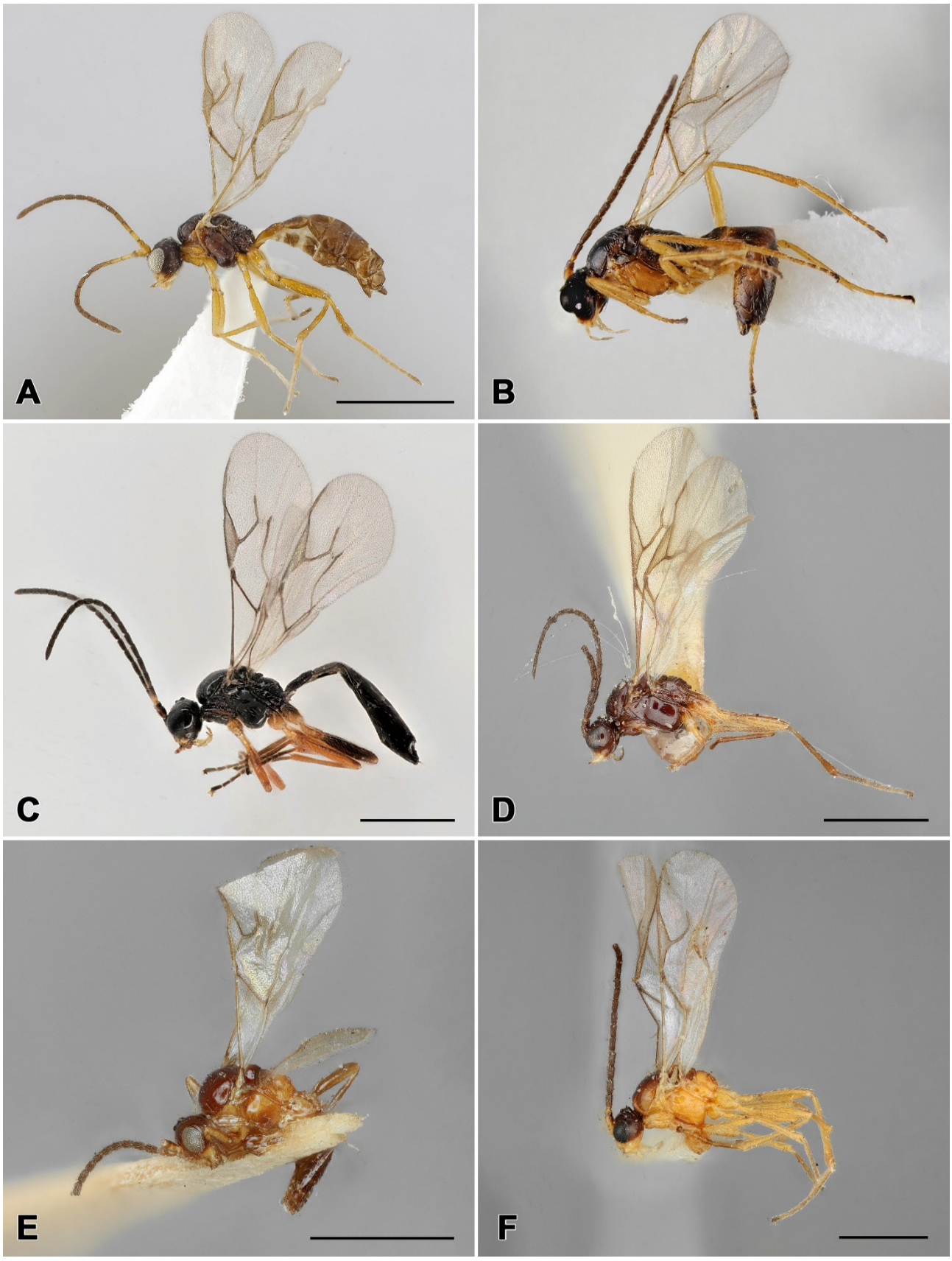



**Figure 16.** Species of the genus *Aphidius* Nees von Esenbeck, 1819. **A.** *Aphidius matricariae* Haliday, 1834, Iran, DPPZ; **B.** *Aphidius megourae* Starý, 1965 – Finland, ZMHF; **C.** *Aphidius microlophii* Pennacchio & Tremblay, 1987 – Netherlands, RMNH; **D.** *Aphidius montanus* Ashmead, 1890 – Holotype, USNM; **E.** *Aphidius multiarticulatus* (Ashmead, 1889) – Holotype, USNM; **F.** *Aphidius nigriceps* Ashmead, 1891 – Syntype (= *Aphidius polygonaphis* (Fitch, 1855)), USNM. Scale bar: 1 mm.

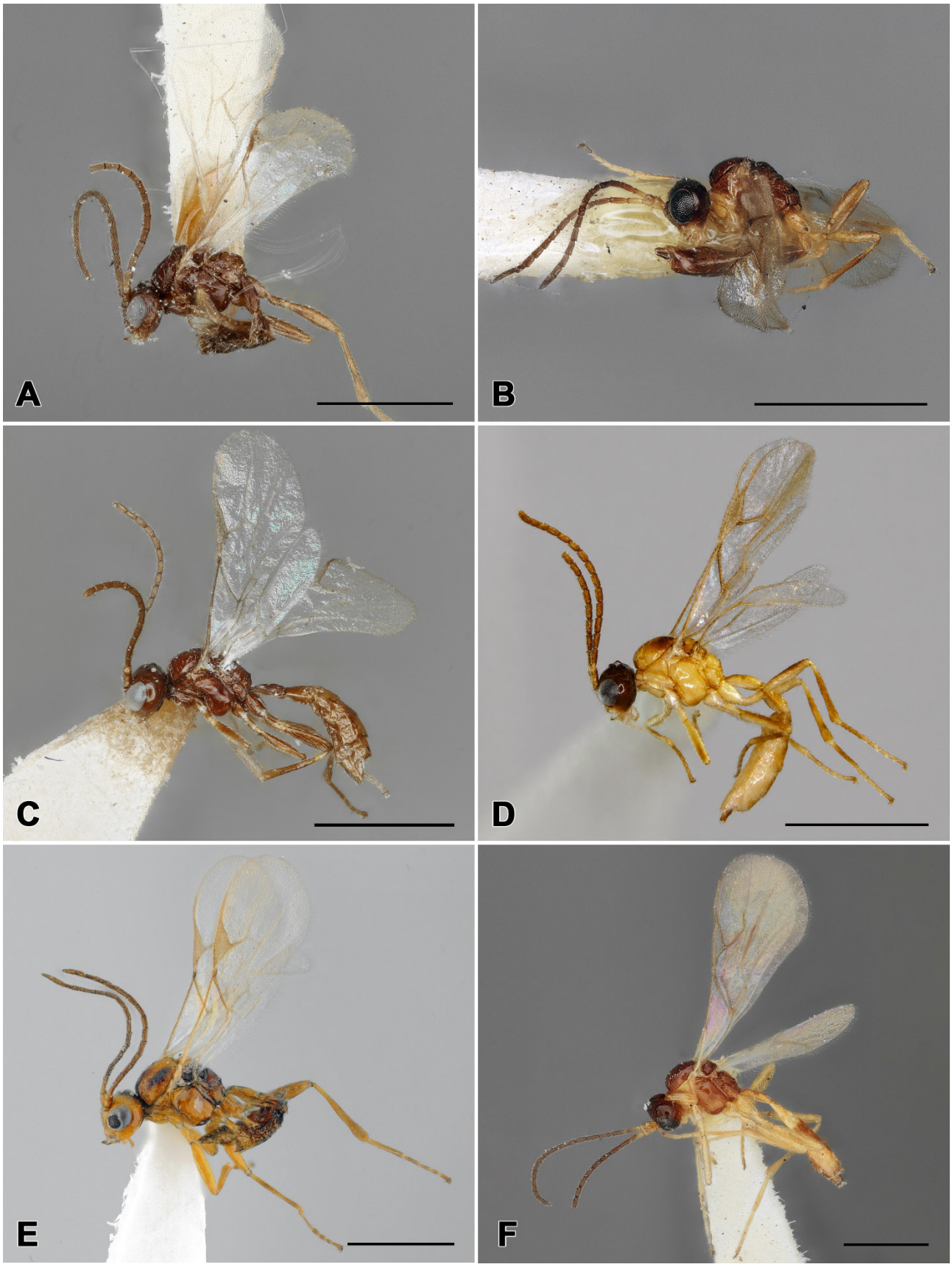



**Figure 17.** Species of the genus *Aphidius* Nees von Esenbeck, 1819. **A.** *Aphidius nigripes* Ashmead, 1901 – Lectotype, USNM; **B.** *Aphidius nigriteleus* Smith, 1944 – Holotype (= *Aphidius matricariae* Haliday, 1834), USNM; **C.** *Aphidius obscuripes* Ashmead, 1889 – Syntype, USNM; **D.** *Aphidius ohioensis* Smith, 1944 – USA, SMIRC; **E.** *Aphidius persicus* Rakhshani & Starý, 2006 – Iran, DPPZ. **F.** *Aphidius pisivorus* Smith, 1941 – Holotype, USNM. Scale bar: 1 mm.

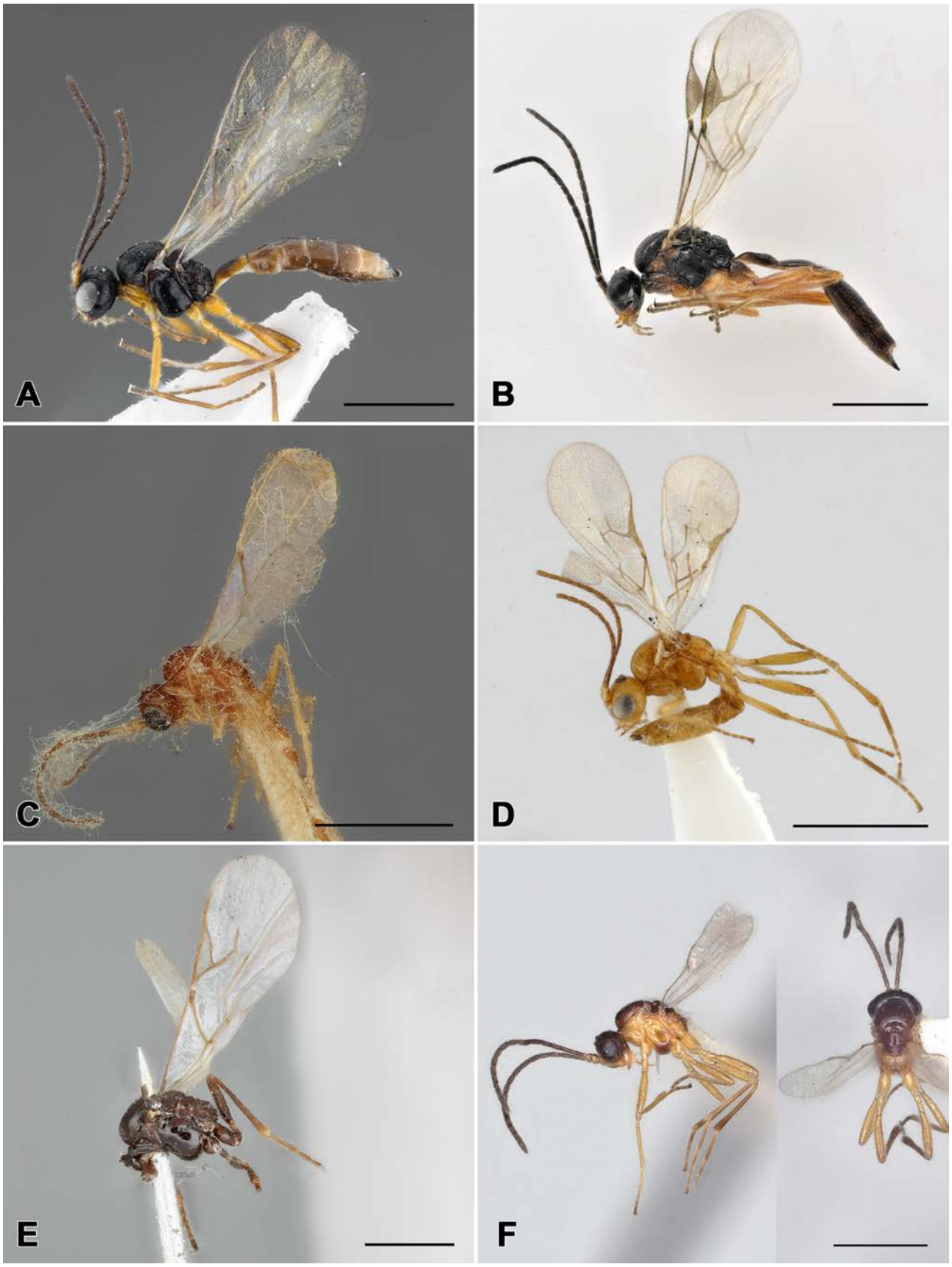



**Figure 18.** Species of the genus *Aphidius* Nees von Esenbeck, 1819. **A.** *Aphidius platensis* Brèthes, 1913 – Iran, DPPZ; **B.** *Aphidius plocamaphidis* (Starý, 1973) – Netherlands, RMNH; **C.** *Aphidius polygonaphis* (Fitch, 1855) – Lectotype, USNM; **D.** *Aphidius popovi* Starý, 1978 – Iran, DPPZ; **E.** *Aphidius propinquus* Ashmead, 1902 – Syntype, USNM; **F.** *Aphidius pteridis* Liu, 1977 – Holotype, CASC. Scale bar: 1 mm.

### *Aphidius pseudopicipes* Starý, 1983

*Aphidius pseudopicipes* Starý, 1983:36. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Mexico.

***Hosts.*** ***Illinoia morrisoni*** (Swain), ***Macrosiphum salviae*** Bartholomew, ***Macrosiphum*** spp., ***Sitobion*** spp., ***Utamphorophora*** sp. (Starý 1983d).

***Distribution.*** **Mexico** (Starý 1983d; Starý & Remaudière 1988).

### *Aphidius pteridis* Liu, 1977 [Fig. 18F]

*Aphidius pteridis* Liu, 1977:57. Holotype ♀, paratypes ♂♂ (CASC). – USA.

***Host.*** ***Sitobion pteridis*** (Wilson) (Liu 1977).

***Distribution.*** **USA** (Liu 1977).

### *Aphidius qadrii* (Shuja-Uddin, 1976)

*Lysaphidus qadrii* Shuja-Uddin, 1976:314. Holotype ♀, paratypes ♂♂ (ZMAU). – India.

***Hosts.*** ***Brachycaudus helichrysi*** (Kaltenbach), ***Brachycaudus*** sp., ***Capitophorus*** sp. (Das & Chakrabarti 1991a); ***Coloradoa rufomaculata*** (Wilson), ***Macrosiphoniella sanborni*** (Gillette) (Raychaudhuri et al. 1990); ***Myzus ornatus*** Laing (Starý & Ghosh 1983; Raychaudhuri et al. 1990; Singh et al. 1995); ***Myzus persicae*** (Sulzer) (Rafi et al. 2010).

***Distribution.*** **India** (Shuja-Uddin 1976; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Das & Raychaudhuri 1983; Starý & Ghosh 1983; Raychaudhuri et al. 1990; Das & Chakrabarti 1991a, 2023a; Singh et al. 1995; Dey & Akhtar 2007; Rafi et al. 2010).

### *Aphidius ramithyrus* Smith, 1944 [Fig. 19A]

*Aphidius* (*Lysaphidus*) *ramithyrus* Smith, 1944:75. Holotype ♀ (USNM), paratypes ♀♀ ♂ (USNM, NCSU). – USA.

***Hosts.*** ***Aphis chrysothamni*** Wilson (Hollingbery et al. 2012); ***Epameibaphis atricornis*** Gillette & Palmer (Starý & Remaudière 1982); ***Pleotrichophorus elongatus*** (Knowlton) (Pike et al. 2000; Hollingbery et al. 2012); ***Pleotrichophorus gnaphalodes*** (Palmer) (Starý & Remaudière 1982); ***Pleotrichophorus gregarius*** (Knowlton) (Smith 1944; Mackauer & Starý 1967; Marsh 1979); ***Pleotrichophorus pseudoglandulosus*** (Palmer) (Marsh 1979); ***Pleotrichophorus pycnorhysus*** (Knowlton & Smith) (Hollingbery et al. 2012); ***Pleotrichophorus*** cf. ***wasatchii*** (Knowlton) (Tomanović et al. 2007c); ***Pleotrichophorus*** spp. (Starý 1983d; Pike et al. 1997a; Tomanović et al. 2007c); ***Protaphis middletonii*** (Thomas), ***Uroleucon erigeronense*** (Thomas) (Hollingbery et al. 2012); ***Zyxaphis*** sp. (Pike et al. 1997a).

***Distribution.*** **Mexico** (Starý & Remaudière 1982, 1988; Starý 1983d; Tomanović et al. 2007c); **USA** (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Pike et al. 1997a, 2000; Tomanović et al. 2007c; Hollingbery et al. 2012).

### *Aphidius rapae* McIntosh, 1855

*Aphidius rapae* McIntosh, 1855:194. Types lost. – USA.

**Syn.:** *Aphidius vulgaris* Bouché, 1834; *Aphidius rapae* Curtis, 1860; *Diaeretus chenopodii* Förster, 1867 [*nomen nudum*]; *Misaphidus halticae* Rondani, 1877; *Trioxys piceus* Cresson, 1880; *Lipolexis chenopodiaphidis* Ashmead, 1889 [Fig. 19B]; *Diaeretus ferruginipes* Ashmead, 1890; *Aphidius brassicae* Marshall, 1896; *Diaeretus californicus* Baker, 1909; *Lysiphlebus crawfordi* Rohwer, 1909; *Diaeretus nipponensis* Viereck, 1911; *Diaeretus* (*Aphidius*) *obsoletus* Kurdjumov, 1913; *Aphidius affinis* Quilis, 1931; *Diaeretus napus* Quilis, 1931; *Diaeretus croaticus* Quilis, 1934; *Diaeretus plesiorapae* Blanchard, 1940; *Diaeretus aphidum* Mukerji & Chatterjee, 1950; *Diaeretus aphidae* Mukerji & Chatterjee, 1949 [objective synonym of *Diaeretus aphidum* Mukerji & Chatterjee, 1950].

***Hosts.*** ***Acyrthosiphon gossypii*** Mordvilko (Chen & Shi 2001); ***Acyrthosiphon kondoi*** Shinji (Starý et al. 2007); ***Acyrthosiphon lactucae*** (Passerini) (Pike et al. 1999a, 2000); ***Acyrthosiphon pisum*** (Harris) (Pike et al. 2000; Starý et al. 2007); ***Amegosiphon platicaudum*** (Narzikulov) (Nazari et al. 2012); ***Anuraphis*** sp. (Starý 1974c, 1979a); ***Aphis aurantii*** Boyer de Fonscolombe (Roberti 1969; Starý 1976a; Tremblay et al. 1980, 1985; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2004, 2005b, 2008a; Tomanović

et al. 2003b); ***Aphis cadiva*** Walker (Starý 1976a; Tomanović et al. 2003b, 2007a; Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis ceanothi*** Clarke (Pike et al. 2004); ***Aphis craccivora*** Koch (Ataeva 1961; Starý 1974c, 1979a; Marsh 1979; Mescheloff & Rosen 1990b; Darwish et al. 1994; Bhagat & Ahmad 1995; Pike et al. 1999a, 2000; Chen & Shi 2001; Kavallieratos et al. 2001, 2004; Miller et al. 2002; Tomanović et al. 2003b; Rakhshani et al. 2006a; Ceballos et al. 2009; Saleh et al. 2009; Nazari et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Ayadi et al. 2017; Gamal et al. 2022); ***Aphis fabae*** Scopoli (MacGillivray & Spicer 1953; Mackauer & Starý 1967; Rao et al. 1969; Starý 1976a, 2006; Starý & Remaudière 1977; Marsh 1979; Abou-Fakhr 1982; Tremblay et al. 1985; Costa & Starý 1988; Chen & Shi 2001; Pike et al. 2000; Güz & Kılınçer 2005; Bodlah et al. 2012a; Laamari et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Bandyan et al. 2021); ***Aphis fabae cirsiiacanthoidis*** Scopoli (Starý 1961a, 1974b, 1974c, 1976a; Völkl 1989); ***Aphis farinosa*** Gmelin (Starý 1974c, 1979a); ***Aphis frangulae beccabungae*** Koch (Starý 1974c, 1979a); ***Aphis glycines*** Matsumura (Pike et al. 2007; Takada et al. 2011); ***Aphis gossypii*** Glover (Mason 1922; Mackauer & Starý 1967; Sethumadhavan & Dharmadhikari 1969; Starý 1974c, 1979a; Takada 1976b, 2002; Marsh 1979; Zheng et al. 1985; Bhagat 1986b; Ben Halima & Ben Hamouda 1993; Kavallieratos & Lykouressis 1999a; Starý et al. 1999, 2007; Pike et al. 2000; Kavallieratos et al. 2001, 2002a, 2004, 2005b, 2010; Miller et al. 2002; Tomanović et al. 2003b; Laamari et al. 2011, 2012; Mossadegh et al. 2011; Bodlah et al. 2012a, 2013; Satar et al. 2014, 2021; El-Sharkawy et al. 2017; Zouari et al. 2018); ***Aphis illinoisensis*** Shimer (El-Gantiry et al. 2012); ***Aphis longisetosa*** Basu (Saha et al. 1982); ***Aphis nasturtii*** Kaltenbach (MacGillivray & Spicer 1953; Starý 1961a; Mackauer & Starý 1967; Marsh 1979; Shands et al. 1955, 1965); ***Aphis nerii*** Boyer de Fonscolombe (Kavallieratos et al. 2001, 2004; Tomanović et al. 2003b; Laamari et al. 2012); ***Aphis pomi*** De Geer (Mackauer & Starý 1967; Starý 1974c, 1979a; Marsh 1979; Feraru & Mustata 2004; Gagui et al. 2023); ***Aphis punicae*** Passerini (Nazari et al. 2012); ***Aphis rumicis*** Linnaeus (MacGillivray & Spicer 1953; Starý 1961a; Marsh 1979); ***Aphis sambuci*** Linnaeus (Barjadze & Gratiashvili 2010); ***Aphis schneideri*** (Börner) (Starý 2006); ***Aphis sedi*** Kaltenbach (Barjadze & Gratiashvili 2010); ***Aphis solanella*** Theobald (Ghosh & Agarwala 1982; Barahoei et al. 2013); ***Aphis spiraecola*** Patch (Kavallieratos et al. 2001, 2004; Tomanović et al. 2003b; Laamari et al. 2012; Halder et al. 2014); ***Aphis spiraephaga*** Müller (Starý 2006); ***Aphis umbrella*** (Börner) (Starý 1974b, 1976a; González & Michelena 1987; Tomanović et al. 2003b; Kavallieratos et al. 2004; Barahoei et al. 2013); ***Aphis urticata*** Gmelin (Ferrer-Suay et al. 2017; Pons et al. 2018); ***Aphis viticis*** Ferrari (Kavallieratos et al. 2008a); ***Aphis*** spp. (Riley & Howard 1890; Quilis-Pérez 1934; Alam & Hafiz 1963; Takada 1968; Starý 1974b, 1975a, 1987a, 2006; Pike et al. 2000); ***Aspidaphis adjuvans*** (Walker) (Mescheloff & Rosen 1990b); ***Aulacorthum solani*** (Kaltenbach) (Kavallieratos et al. 2001, 2004, 2010; Tomanović et al. 2003b; Bayram et al. 2018); ***Brachycaudus amygdalinus*** (Schouteden) (Roberti 1969; Starý 1974b, 1974c, 1976a, 1979a; Starý et al. 1971, 2000; Mescheloff & Rosen 1990b; Kavallieratos et al. 2001, 2004, 2008b; Tomanović et al. 2003b; Kök & Tomanović 2022); ***Brachycaudus cardui*** (Linnaeus) (Starý 1979a; Pike et al. 2000; Kavallieratos et al. 2001, 2004; Tomanović et al. 2003b; Feraru & Mustata 2004; Laamari et al. 2011, 2012); ***Brachycaudus helichrysi*** (Kaltenbach) (Starý 1964d, 1966c, 1969a, 1974b, 1976a, 2006; Mackauer & Starý 1967; Roberti 1969; Marsh 1979; Erkin 1983; Němec & Starý 1984; Das & Chakrabarti 1990a; Pike et al. 1999a, 2000; Starý et al. 1999; Kavallieratos et al. 2001, 2004; Tomanović et al. 2003b; Uysal et al. 2004; Nebreda et al. 2005; Arora et al. 2009; Laamari et al. 2011, 2012; Žikić et al. 2012; Chaouche & Laamari 2015); ***Brachycaudus helichrysi warei*** (Theobald) (Tomanović et al. 2003b; Kavallieratos et al. 2004); ***Brachycaudus lychnidis*** (Linnaeus) (Ferrer-Suay et al. 2017); ***Brachycaudus persicae*** Passerini (Starý & Cermeli 1989); ***Brachycaudus rumexicolens*** (Patch) (Starý 1961a, 1964d, 1966c, 1967b, 1969a, 1974b, 1976a, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971; Marsh 1979; Němec & Starý 1984); ***Brachycaudus tragopogonis*** (Kaltenbach) (Pike et al. 2000); ***Brachycaudus*** spp. (Starý 1966c, 1969a); ***Brachycolus cucubali*** (Passerini) (Cecilio 1996); ***Brachycorynella asparagi*** (Mordvilko) (Angalet & Stevens 1977; Marsh 1979; Carroll & Hoyt 1986; Wright & Cone 1988; Hayakawa et al. 1990; Starý 1990a, 2006; Pike et al. 1996, 1999a, 2000); ***Brachyunguis lycii*** (Nevsky) (Starý 1961a, 1979a); ***Braggia*** sp. (Pike et al. 2000); ***Brevicoryne barbareae*** Nevsky (Starý 1979a); ***Brevicoryne brassicae*** (Linnaeus) (Nees von Esenbeck 1834b; Rondani 1876; Starý & Carver 1980; Marshall 1896; Meyer 1927; Ferrière & Voukassovitch 1928; Barnes 1931; Quilis-Pérez 1931b; Newton 1934; Petherbridge & Mellor 1936; Smith & Knowlton 1940;

Chiesa-Molinari 1942; Smith 1944, 1976; George 1957; Beardsley 1961; Starý 1961a, 1963b, 1964d, 1965a, 1966c, 1966d, 1967b, 1974b, 1975a, 1976a, 1977, 1979a, 1981a, 1987a, 1995b, 1995c; Hafez 1961; Talhouk 1961; Mackauer 1962c, 1964a; Sedlag 1964; Starý & Rupais 1964; Mackauer & Starý 1967; Tremblay 1967a; Davatchi & Shojai 1968; Chiu & Liu 1969; Sethumadhavan & Dharmadhikari 1969; Al-Azawi 1970; Tao & Chiu 1971; Starý et al. 1971, 1973, 1975, 1993a, 1994a, 1996, 1999, 2014c; Starý & Schmutterer 1973; Takada 1973; Carver & Starý 1974; Kierych 1975; Starý & Ghosh 1975; Abou-Fakhr 1982; Düzgüneş et al. 1982; Kılınçer 1982; Saha et al. 1982; Starý & Remaudière 1982; Zeren & Düzgüneş 1983; Bhagat 1984; Hussein & Kawar 1984; Mackauer & Kambhampati 1984; Němec & Starý 1984; Tremblay et al. 1985; Bhagat 1986b; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Starý & Delfino 1987; Starý & Sekkat 1987; Kelm 1988; Starý & Cermeli 1989; Mescheloff & Rosen 1990b; Singh & Srivastava 1990; Avci & Özbek 1991; Carver 1992; Starý & van Harten 1992; Raj & Sharma 1993; Ahmad & Singh 1995b, 1995c, 1996a, 1997; Cecilio 1996; Pike et al. 1996, 1999a; Vidal 1997b; Abou-Fakhr & Kawar 1998; Raj & Lakhanpal 1998; Suay Cano & Michelena Saval 1998; Tomanović et al. 1999b, 2003b; Betancourt & Scatoni 2001; Kavallieratos et al. 2001, 2004; Cividanes 2002; Lotfalizadeh 2002; Mussury & Fernandes 2002; Ölmez & Ulusoy 2003; Zhang & Hassan 2003; Aslan et al. 2004; Baer et al. 2004; Cecilio et al. 2004; Michelena et al. 2004; Uysal et al. 2004; Vaz et al. 2004; Güz & Kılınçer 2005; Nebreda et al. 2005; Kos et al. 2009a, 2012; Talebi et al. 2009; Rafi et al. 2010; Laamari et al. 2011, 2012; Mossadegh et al. 2011; Barahoei et al. 2012, 2013; Bodlah et al. 2012a; Derocles et al. 2012, 2014a; Mifsud & Starý 2012; Nazari et al. 2012; Rakhshani et al. 2012b; Žikić et al. 2012; Alikhani et al. 2013; Taheri & Rakhshani 2013; Elliott et al. 2014a, 2014b; Chaouche & Laamari 2015; Davidian 2017; Ferrer-Suay et al. 2017; Ghelamallah et al. 2018; Pons et al. 2018; Zouari et al. 2018; Kök et al. 2020; Mustafayeva 2020; Bulman et al. 2021; Satar et al. 2021; Ward et al. 2021a, 2021b; Kök & Tomanović 2022; Hubert & van Achterberg 2023; El-Fakharany et al. 2026); ***Brevicoryne*** sp. (Güz & Kılınçer 2005); *Chaitophorus capreae* (Mosley) (Ataeva 1961); *Calaphis betulaecolens* (Fitch) (MacGillivray & Spicer 1953; Starý 1961a); ***Capitophorus inulae*** (Passerini) (Mescheloff & Rosen 1990b); ***Capitophorus*** sp. (Shands et al. 1955); ***Cavariella salicicola*** (Matsumura) (Takada 1968; Starý 1975a); ***Ceratovacuna lanigera*** Zehntner (Tripathi 1995); *Cinara cupressi* Buckton (Ataeva 1961); *Chromaphis juglandicola* (Kaltenbach) (Ataeva 1961); ***Clypeoaphis suaedae*** (Mimeur) (Sanchis et al. 2000); ***Cryptomyzus galeopsidis*** (Kaltenbach) (Shands et al. 1955; Mackauer & Starý 1967); ***Diuraphis bromicola*** (Hille Ris Lambers) (Mackauer 1962c; Mackauer & Starý 1967); ***Diuraphis frequens*** (Walker) (Meyer 1929; Fulmek 1968); ***Diuraphis muehlei*** (Börner) (Mackauer 1962c; Mackauer & Starý 1967); ***Diuraphis noxia*** (Mordvilko) (Kurdjumov 1913; Meyer 1927; Starý 1961a, 1976a, 1981b, 1995c, 1999b; Mackauer & Starý 1967; Marsh 1979; Berest 1980, 1985; Feng et al. 1991, 1992; Reed et al. 1991; Campbell et al. 1992; Elliott et al. 1992; González et al. 1992; Reed et al. 1992; Robinson 1992; Petrović 1993; Wraight et al. 1993; Elmali & Toros 1994; Hopper et al. 1995; Zareh et al. 1995; Pike et al. 1996, 1997b, 1999a, 2000; Chen & Hopper 1997; Brewer et al. 1998; Liang et al. 1998; Vaughn & Antolin 1998; Brewer et al. 1999; Starý et al. 1999, 2000; Tomanović et al. 1999b, 1999c; Ahmadi 2000; Ahern & Brewer 2002; Bosque-Pérez et al. 2002; Baer et al. 2004; Kavallieratos et al. 2004, 2005b; Michelena et al. 2004; Uysal et al. 2004; Day 2005; Noma et al. 2005; Rakhshani et al. 2008b, 2012b; Laamari et al. 2011, 2012, 2016b; Nazari et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Bayram et al. 2018; Heddle et al. 2020); ***Dysaphis devecta*** (Walker) (Alikhani et al. 2013); ***Dysaphis foeniculus*** (Theobald) (Ayadi et al. 2017); ***Dysaphis plantaginea*** (Passerini) (Fulmek 1968; Pike et al. 2000); ***Dysaphis pyri*** (Boyer de Fonscolombe) (Erkin 1983; Uysal et al. 2004); ***Dysaphis tulipae*** (Boyer de Fonscolombe) (Starý 1976a; Wiackowski et al. 1997, 2001; Laamari et al. 2011, 2012); ***Ericaphis leclanti*** Remaudière (Tomanović et al. 2003b); ***Euceraphis betulae*** (Koch) (MacGillivray & Spicer 1953; Starý 1961a); ***Euceraphis punctipennis*** (Zetterstedt), ***Glyphina betulae*** (Linnaeus) (MacGillivray & Spicer 1953); ***Greenidea ficicola*** Takahashi (Gahan 1926; Sonan 1944; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009; Starý et al. 2010a); ***Hayhurstia atriplicis*** (Linnaeus) (Quilis-Pérez 1934; Smith 1944; MacGillivray & Spicer 1953; Shands et al. 1955; Starý 1961a, 1963b, 1964d, 1965a, 1966c, 1967b, 1974b, 1976a, 1977, 1979a, 1983d, 1987a; Mackauer 1962c; Mackauer & Starý 1967; Starý et al. 1971, 2000; Kierych 1975; Starý & Remaudière 1977; Marsh 1979; Němec & Starý 1984; Carroll & Hoyt 1986; Das & Chakrabarti 1990a; Mescheloff & Rosen 1990b; Starý & González 1991; Pike et al. 1996, 1999a, 2000; Tomanović et al. 1999b, 2003b; Kavallieratos et al. 2004;

Güz & Kılınçer 2005; Laamari et al. 2012; Nazari et al. 2012; Rakhshani et al. 2012b; Derocles et al. 2012; Žikić et al. 2012; Ferrer-Suay et al. 2017; Kök et al. 2020); ***Hyadaphis coriandri*** (Das) (Aslan et al. 2004; Güz & Kılınçer 2005); ***Hyadaphis foeniculi*** (Passerini) (Marshall 1896; Bignell 1901; Starý 1961a; Mackauer & Starý 1967; Marsh 1979; Carver 1992; Tomanović et al. 2003b; Kavallieratos et al. 2004; Güz & Kılınçer 2005; Žikić et al. 2012); ***Hyadaphis tataricae*** (Aizenberg) (Aslan et al. 2004; Uysal et al. 2004); ***Hyalopterus amygdali*** (Blanchard) (Lumbierres et al. 2005; Pons et al. 2018); ***Hyalopterus pruni*** (Geoffroy) (Jafari Ahmadabadi et al. 2011; Jafari Ahmadabadi & Modarres Awal 2012; Bodlah et al. 2012a); ***Hyperomyzus lactucae*** (Linnaeus) (Aeschlimann & Vitou 1985; Güz & Kılınçer 2005); ***Hysteroneura setariae*** (Thomas) (Miller et al. 2002); ***Illinoia corylina*** (Davidson) (Pike et al. 2000); ***Illinoia liriodendri*** (Monell) (Zuparko & Dahlsten 1993; Pons et al. 2018; Meseguer et al. 2024); ***Lipaphis alliariae*** Müller (Mackauer 1962c; Starý et al. 1973); ***Lipaphis erysimi*** (Kaltenbach) (Davis & Satterthwait 1916; Paddock 1916; Britton 1917; Poos 1928; Smith 1944; Mackauer 1962c; Alam & Hafiz 1963; Kundu et al. 1965; Mackauer & Starý 1967; Chiu & Liu 1969; Sethumadhavan & Dharmadhikari 1969; Atwal et al. 1971; Daiber 1971; Tao & Chiu 1971; Carver & Starý 1974; Starý 1974b, 1975a, 1981a, 1983d, 1995c, 2006; Liu 1975; Takada 1976b, 1978; Starý & Ghosh 1978, 1983; Yamauchi & Marsh 1979; McFadden & Creighton 1979; Agarwala et al. 1980; Chou 1981; Saha et al. 1982; Starý & Remaudière 1982; Zheng et al. 1985; Bhagat 1986b; Paonam & Singh 1986b; Dhiman & Kumar 1986a, 1986b, 1986c, 1989; González & Michelena 1987; Starý & Delfino 1987; Veda & Shaw 1988; Singh & Srivastava 1990; Starý et al. 1993a, 1994a, 1999, 2007; Raj & Sharma 1993; Boyd & Lentz 1994; Awchar et al. 1995; Ahmad & Singh 1995b, 1995c, 1996a; Dhiman & Ghayyur 1995; Singh et al. 1995; Powell & Nickless 1996; Ahmad & Singh 1997; Men & Kandalkar 1997; Katole et al. 1998; Kakakhel et al. 1998; Raj & Lakhanpal 1998; Gu et al. 1999; Sharma 1999; Songa & Ampofo 1999; Vekarta & Patel 1999; Pike et al. 2000; French et al. 2001; Kavallieratos et al. 2001, 2004; Chitra Devi et al. 2002; Mussury & Fernandes 2002; Dogra et al. 2003; Ölmez & Ulusoy 2003; Tomanović et al. 2003b; Michelena et al. 2004; Uysal et al. 2004; Vekaria & Patel 2005; Güz & Kılınçer 2005; Subhrani et al. 2006; Andorno et al. 2007; Dhiman 2007; Ceballos et al. 2009; Akhtar et al. 2010; Rafi et al. 2010; Zamora-Mejías et al. 2010; Mifsud & Starý 2011, 2012; Mossadegh et al. 2011; Kos et al. 2012; Bodlah et al. 2012a; Bayram et al. 2018; Pons et al. 2018; Fidelis et al. 2019; Satar et al. 2021; Ward et al. 2021a, 2021b); ***Lipaphis fritzmuelleri*** Börner (Starý 1974b, 1987a, 2006; Němec & Starý 1984); ***Lipaphis lepidii*** (Nevsky) (Starý 1979a; Starý et al. 2000; Kavallieratos et al. 2001, 2004; Tomanović et al. 2003b; Talebi et al. 2009; Mossadegh et al. 2011; Nazari et al. 2012); ***Lipaphis pseudobrassicae*** (Davis) (Starý 1961a; Kumar et al. 1989); ***Lipaphis rossi*** Börner (Starý 1974b; Němec & Starý 1984); ***Lipaphis*** sp. (Kos et al. 2012); ***Longicaudus trirhodus*** (Walker) (Starý 1974b); ***Macrosiphoniella absinthii*** (Linnaeus) (Chen & Shi 2001); ***Macrosiphoniella pseudoartemisiae*** Shinji (Saha et al. 1982); ***Macrosiphoniella sanborni*** (Gillette) (Al-Azawi 1970; Starý 1976a; Chakrabarti & Debnath 2009); ***Macrosiphum euphorbiae*** (Thomas) (Spencer 1926; Smith 1944; Shands et al. 1955, 1965; Starý 1961a; Mackauer & Starý 1967; Marsh 1979; González & Michelena 1987; Walgenbach 1994; Pike et al. 1996, 2000; Betancourt & Scatoni 2001; Michelena et al. 2004; Starý et al. 2007; Akrich et al. 2025); ***Macrosiphum*** sp. (Starý 1974b; Pike et al. 2000); ***Melanaphis donacis*** (Passerini) (Mackauer & Starý 1967; Starý 1976a; Mifsud & Starý 2011, 2012); ***Melanaphis sacchari*** (Zehntner) (Chen & Shi 2001); ***Metopolophium dirhodum*** (Walker) (Saha et al. 1982; Starý 2006; Starý et al. 2007; Rakhshani et al. 2008b; Chakrabarti & Debnath 2009; Hemidi & Laamari 2020; Ward et al. 2021b); ***Microlophium carnosum*** (Buckton) (Noury 1962; Mackauer & Starý 1967); ***Myzus beybienkoi*** (Narzikulov) (Starý 1961a; Mackauer & Starý 1967; Starý 1979a; Starý et al. 2000); ***Myzus cerasi*** (Fabricius) (Starý 1979a); ***Myzus certus*** (Walker) (Mackauer 1962c; Mackauer & Starý 1967; Starý et al. 1971; Starý 1974b; Marsh 1979); ***Myzus langei*** (Börner) (Starý 1974b); ***Myzus persicae*** (Sulzer) (Rohwer 1909; Rühl 1911; Fullaway 1913; Timberlake 1918; Mason 1922; Wheeler 1923; Smith 1944; Muesebeck & Walkley 1951; MacGillivray & Spicer 1953; Shands et al. 1955; Schlinger & Hall 1960a; Beardsley 1961; Hafez 1961; Starý 1961a, 1963b, 1964d, 1966a, 1966c, 1967a, 1967b, 1974b, 1975a, 1976a, 1977, 1979a, 1981a, 1983d, 1987a, 1995c, 1999b; Pimentel & Al-Hafidh 1963; Akhvlediani 1964; Avidov & Kotter 1966; De Santis & Esquivel 1966; Mackauer & Starý 1967; Watanabe & Takada 1967; Mackauer 1968d; Takada 1968, 1973, 2002; Avidov & Harpaz 1969; Roberti 1969; Daiber 1971; Liu 1975; Marsh 1979; Chou 1981; Saha et al. 1982; Takada & Takenaka 1982; Erkin 1983; Hofsvang & Høgvar 1983b; Horn 1984; Němec & Starý 1984; Carroll &

Hoyt 1986; Chen & Allen 1986; Paonam & Singh 1986b; González & Michelena 1987; Starý & Sekkat 1987; Hodjat & Moradeshaghi 1988; Horn 1988, 1989; Mescheloff & Rosen 1990b; Shean & Cranshaw 1991; Lu et al. 1992; Starý et al. 1971, 2014c, 1993a, 1994a, 1999, 2000, 2007; Powell & Nickless 1996; Vidal 1997a; Wijerathna & Edirisinghe 1997; Raj & Lakhanpal 1998; Devi et al. 1999; Kavallieratos & Lykouressis 1999a; Pike et al. 1999a, 2000; Betancourt & Scatoni 2001; Chen & Shi 2001; Kavallieratos et al. 2001, 2004, 2005a, 2005b, 2008b, 2010, 2016; Tomanović et al. 2003b; Feraru & Mustata 2004; Michelena et al. 2004; Chen et al. 2009; Kos et al. 2009a, 2012; Zamora-Mejías et al. 2010; Boukhris-Bouhachem 2011; Jafari Ahmadabadi et al. 2011; Laamari et al. 2011, 2012; Mossadegh et al. 2011; Bodlah et al. 2012a; Jafari Ahmadabadi & Modarres Awal 2012; Khan et al. 2012; Mifsud & Starý 2012; Nazari et al. 2012; Rakhshani 2012; Žikić et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Chaouche & Laamari 2015; Davidian 2017; Ferrer-Suay et al. 2017; Ghelamallah et al. 2018; Zouari et al. 2018; Aparicio et al. 2019; Sadat et al. 2019; Hemidi & Laamari 2020; Mustafayeva 2020; Satar et al. 2021; Ward et al. 2021a, 2021b; Plećaš et al. 2023; Gagui et al. 2025; El-Fakharany et al. 2026); ***Myzus*** spp. (Starý 1961a, 1966c, 1987a, 2006; Tomanović et al. 2012); ***Nasonovia ribisnigri*** (Mosley) (Starý & Delfino 1987); ***Neomariaella lambersi*** (Szelegiewicz) (Starý 1979a; Starý et al. 2000); ***Phorodon humuli*** (Schrank) (Pike & Starý 1996a; Pike et al. 1996, 1999a, 2000; Wright & James 2001); ***Pleotrichophorus pycnorhysus*** (Knowlton & Smith) (Hollingbery et al. 2012); ***Pseudobrevicoryne leclanti*** Petrović-Obradović & Remaudière (Kavallieratos et al. 2004; Tomanović et al. 2007a; Žikić et al. 2012); *Pterochloroides persicae* (Cholodkovsky) (Mukerji & Chatterjee 1950; Starý 1961a); ***Rhopalosiphum maidis*** (Fitch) (Mimeur 1934; Starý 1961a, 1976a, 1979a, 1981b, 1995c, 1996, 2006; Mackauer & Starý 1967; Marsh 1979; Gilstrap et al. 1984; Starý & Sekkat 1987; El-Heneidy & Attia 1988/1989; El-Heneidy 1991, 1994; Feng et al. 1992; Elmali & Toros 1994; Pike et al. 1996, 2000; Starý et al. 1999, 2000, 2007; Chen & Shi 2001; El-Heneidy & Abdel-Samad 2001; El-Heneidy et al. 2001, 2002; Kavallieratos et al. 2001, 2004, 2005b; Tomanović et al. 2003b; Uysal et al. 2004; Nebreda et al. 2005; Slman 2006; Laamari et al. 2011, 2012; Barahoei et al. 2013; Ayadi et al. 2017; Zouari et al. 2018; Hemidi & Laamari 2020; Ward et al. 2021a, 2021b); ***Rhopalosiphum oxyacanthae*** (Schrank) (Shands et al. 1965; Mackauer & Starý 1967; Starý et al. 1973; Starý 1974b, 1981b; Marsh 1979; Pike et al. 2000); ***Rhopalosiphum padi*** (Linnaeus) (Riley & Howard 1890; Hassan 1963; Mackauer & Starý 1967; Starý et al. 1971, 1973, 2000, 2007; Starý 1974b, 1976c, 1981b, 1995c, 1996, 2006; Marsh 1979; Němec & Starý 1984; Starý & Delfino 1987; El-Heneidy & Attia 1988/1989; Paparatti 1989; El-Heneidy 1991, 1994; Milevoj 1992; Höller et al. 1993; Pike et al. 1996, 1997b, 1999a, 2000; Chen & Shi 2001; El-Heneidy & Abdel-Samad 2001; El-Heneidy et al. 2001, 2002; French et al. 2001; Kavallieratos et al. 2001, 2002b, 2004, 2005b; Tomanović et al. 2003b; Ronquim et al. 2004; Uysal et al. 2004; Abdel-Rahman 2005; Slman 2006; Andorno et al. 2007; Rakhshani et al. 2008b; Mossadegh et al. 2011; Bodlah et al. 2012a; Barahoei et al. 2013; Stanković et al. 2013; Pons et al. 2018; Sharma et al. 2019; dos Santos et al. 2022; Gagui et al. 2023; Khaladi et al. 2025); ***Saltusaphis scirpus*** Theobald (Starý et al. 2000); ***Saltusaphis*** sp. (Starý 1979a); ***Schizaphis graminum*** (Rondani) (Kurdjumov 1913; Meyer 1927; Silveira Guido & Conde 1945; Esquivel 1950; Parker et al. 1950; Bodenheimer & Swirski 1957; Starý 1961a, 1976a, 1979a, 1981b, 1995c, 2006; De Santis & Esquivel 1966; Mackauer & Starý 1967; Walker et al. 1973; Marsh 1979; Berest 1980, 1985; Kring & Gilstrap 1983; Starý & Ghosh 1983; Gilstrap et al. 1984; Zheng et al. 1985; Starý & Delfino 1987; El-Heneidy & Attia 1988/1989; El-Heneidy 1991, 1994; Feng et al. 1992; Starý et al. 1999, 2000, 2007; Chen & Shi 2001; El-Heneidy & Abdel-Samad 2001; El-Heneidy et al. 2001, 2002; French et al. 2001; Abdel-Rahman 2005; Slman 2006; Rakhshani et al. 2008b; Bodlah et al. 2012a; Khan et al. 2012; Barahoei et al. 2013; Davidian 2017; dos Santos et al. 2022); ***Schizaphis longicaudata*** Hille Ris Lambers (Starý 1966d, 1974b, 1976a; Tomanović et al. 2012); ***Schizaphis rotundiventris*** (Signoret) (Starý 1961a, 1966c; Mackauer & Starý 1967); ***Schizaphis scirpi*** (Passerini) (Starý 1961a, 1964d, 1966c, 1967b, 1974b, 1977, 2006; Němec & Starý 1984; Tomanović et al. 2012; Ferrer-Suay et al. 2017); ***Sitobion avenae*** (Fabricius) (Riley & Howard 1890; Phillips 1916; Atwal et al. 1969; Starý 1976a, 1976c; Pankanin-Franczyk 1983, 1986; González & Michelena 1987; El-Heneidy & Attia 1988/1989; El-Heneidy 1991, 1994; Pankanin-Franczyk & Ceryngier 1995; Pike et al. 1996, 1997b, 1999a, 2000; Starý et al. 1999, 2000, 2007; Tomanović et al. 1999c; El-Heneidy et al. 2001, 2002; Chen & Shi 2001; Michelena et al. 2004; Slman 2006; Rakhshani et al. 2008b, 2012b; Mossadegh et al. 2011; Bodlah et al. 2012a; Barahoei et al. 2013; Davidian 2017; Bandyan et al.

2021); ***Sitobion fragariae*** (Walker) (González & Michelena 1987); ***Sitobion rosaeiformis*** (Das) (Saha et al. 1982); ***Sitobion*** sp. (Starý 1961a, 1966c, 1974b); ***Spatulophorus incanae*** F.P. Müller (Starý 1974b); *Tinocallis saltans* Nevsky (Ataeva 1961); ***Uroleucon sonchi*** (Linnaeus) (Bhagat 1984; Chakrabarti & Debnath 2009); ***Uroleucon*** spp. (Starý & Kaddou 1971; Starý 1974b, 1976a, 1977, 1995c, 2006; Bhagat 1984; Němec & Starý 1984; González & Michelena 1987; Pike et al. 2000); ***Xerobion eriosomatinum*** Nevsky (Starý 1979a).

***Distribution.*** **Afghanistan** (Ramaseshiah 1985); **Algeria** (Starý 1961a, 1976a; Mackauer & Starý 1967; Laamari et al. 2011, 2012, 2016b; Chehma & Laamari 2014; Chaouche & Laamari 2015; Aroun et al. 2016; Ghelamallah et al. 2018; Rakhshani et al. 2019; Sadat et al. 2019; Gagui et al. 2023; Khaladi et al. 2024, 2025; Gagui et al. 2025); **Andorra** (Sanchis et al. 1999); **Argentina** (Blanchard 1938, 1939, 1940, 1942; Chiesa-Molinari 1942; Esquivel 1950; Starý 1961a; De Santis 1967; Mackauer & Starý 1967; Starý & Delfino 1987; de Souza & Bueno 1992; Botto 1999; Berta et al. 2002; Pujade-Villar et al. 2002; Andorno et al. 2007; Manfrino et al. 2011; Tomanović et al. 2025); **Armenia** (Davidian 2017); **Australia** (Cameron 1912; Gourlay 1930; Mackauer & Starý 1967; Carver & Starý 1974; Chadwick & Nikitin 1976; Carver 1992; Heddle et al. 2020; Ward et al. 2021b); **Austria** (Mackauer & Starý 1967; Fulmek 1968); **Azerbaijan** (Starý 1965a, 1976a; Davidian 2017; Mustafayeva 2020); **Belarus** (Davidian 2017); **Belgium** (Jansen 2005; Lopes et al. 2015, 2016); **Bermuda** (Mackauer & Starý 1967; Hilburn et al. 1990); **Brazil** (Parker et al. 1950; Mackauer & Starý 1967; Bueno & De Souza 1993; Cividanes 2002; Mussury & Fernandes 2002; Ronquim et al. 2004; Vaz et al. 2004; Sampaio et al. 2005; Starý et al. 2007; Schuber et al. 2012; Bortolotto et al. 2015); **Bulgaria** (Kaitazov 1963; Mackauer & Starý 1967; Atanassova 1997; Kolarov 1997; Todorov 2009c, 2014); **Canada** (Strickland 1916; Treherne 1916; Strickland 1946; MacGillivray & Spicer 1953; Starý 1961a, 1967a; Mackauer & Starý 1967); **Canary Islands** (Mackauer 1962b; Mackauer & Starý 1967; Starý 1976a; Báez et al. 2001); **Cape Verde Islands** (Starý & van Harten 1992); **Chile** (Suzuki & Vargas 1980; Starý et al. 1993a, 2014c; Starý 1994, 1995c); **China** (Gahan 1926; Sonan 1944; Mackauer & Starý 1967; Chiu & Liu 1969; Liu 1975; Starý 1975a; Chu et al. 1978; Chou 1981; Han 1983; Dong & Wang 1985, 1993; Wu et al. 1987, 2009; Liu et al. 1990; Lu & Ji 1992; Gu et al. 1995, 1999; Liang et al. 1998; Chen & Shi 2001; Wu & Jiang 2003b; Baer et al. 2004; He et al. 2004; Ming et al. 2005; Wu & Miyata 2005; Tursun et al. 2006; Feng et al. 2007; Chen et al. 2009; Starý et al. 2010a; Zhao et al. 2013); **Colombia** (BOLD:AAG1421); **Costa Rica** (Zamora-Mejías et al. 2010; Starý et al. 2014c; Zamora-Mejías & Hanson 2017); **Croatia** (Quilis-Pérez 1934); **Cuba** (Starý 1967a, 1981a; Ceballos et al. 2009; Starý et al. 2014c); **Cyprus** (Starý 1976a); **Czech Republic** (Quilis-Pérez 1934; Starý 1961a, 1966c, 1967a, 1974b, 1976a, 1976c, 1977, 1981b, 1987a, 1989a, 1990a, 1995b, 1996, 1999b, 2006; Mackauer & Starý 1967; Němec & Starý 1984; Starý & González 1991, 1992; Baer et al. 2004; Starý & Havelka 2008; Bicik & Laska 2011; Tomanović et al. 2012; Davidian 2017; Ferrer-Suay et al. 2017); **Denmark** (Mackauer & Starý 1967); **Ecuador** (BOLD:AAG1421); **Egypt** (Hassan 1963; Hafez 1965; Mackauer & Starý 1967; Starý 1976a; El-Heneidy & Attia 1988/1989; El-Heneidy 1991, 1994; Darwish et al. 1994; El-Heneidy & Abdel-Samad 2001; El-Heneidy et al. 2001, 2002; Ragab et al. 2002; Abdel-Samad & Gomaa 2004; Abdel-Rahman 2005; Slman 2006; Saleh et al. 2009; El-Gantiry et al. 2012; Saleh & Khedr 2014; El-Sharkawy et al. 2017; Youssif et al. 2017; Rakhshani et al. 2019; Gamal et al. 2022; El-Fakharany et al. 2026); **El Salvador** (Mackauer & Starý 1967); **Finland** (Markkula 1960; Kaitazov 1963; Mackauer 1968c; Starý 1981b); **France** (Bonnemaison 1951; Mackauer & Starý 1967; Starý 1961a, 1974b, 1974c, 1976a, 1981b; Starý et al. 1971, 1973, 1975, 1977a; Rabasse & Dedryver 1983; Aeschlimann & Vitou 1985; Völkl 1989; Hopper et al. 1995; Chen & Hopper 1997; Baer et al. 2004; Derocles et al. 2012, 2014a); **Georgia** (Akhvlediani 1964; Starý 1965a, 1974c, 1976a; Barjadze & Gratiashvili 2010; Davidian 2017); **Germany** (Kirchner 1867; Sedlag 1958; Mackauer 1962c; Mackauer & Starý 1967; Starý 1974b; Boness & Starý 1988; Hildenhagen et al. 1992; Höller et al. 1993; Lehmhus et al. 1995; Vidal 1997a; Belokobylskij et al. 2003; Vollhardt et al. 2008); **Greece** (Starý 1974b, 1976a, 1981b; Aeschlimann & Vitou 1985; Vidal 1997a; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2002a, 2002b, 2004, 2005a, 2005b, 2008a, 2008b, 2010, 2013, 2016; Tomanović et al. 2003b); **Guam** (Miller et al. 2002); **Guatemala** (Starý et al. 2014c); **Hungary** (Mackauer & Starý 1967; Starý 1974b; Polgár 1981, 1983); **India** (Batra & Wahdi 1962; Mackauer & Starý 1967; Ghosh & Agarwala 1982; Bhagat 1984, 1986b; Pandey et al. 1985; Dhiman & Kumar 1986a, 1986b; Paonam & Singh 1986b; Chandra & Kushwaha 1987; Das & Chakrabarti 1990a, 2023a; Raj & Sharma

1993; Verma et al. 1993; Bhagat & Ahmad 1995; Dhiman & Ghayyur 1995; Ahmad & Singh 1995b, 1995c, 1996a, 1997; Devi et al. 1996, 1999; Men & Kandalkar 1997; Katole et al. 1998; Raj & Lakhanpal 1998; Sharma 1999; Vekarta & Patel 1999; Chitra Devi et al. 2002; Dogra et al. 2003; Baer et al. 2004; Vekaria & Patel 2005; Dey & Akhtar 2007; Akhtar et al. 2010, 2011b; Pramanik et al. 2012; Rakhshani et al. 2012a); **Iran** (Mackauer & Starý 1967; Starý 1979a, 1981b; Starý et al. 2000; Lotfalizadeh & van Veen 2004; Rakhshani et al. 2006a, 2008a, 2012b, 2019; Fallahzadeh & Saghaei 2010; Jafari Ahmadabadi et al. 2011; Mossadegh et al. 2011; Amini et al. 2012; Barahoei et al. 2012, 2013; Jafari Ahmadabadi & Modarres Awal 2012; Nazari et al. 2012; Rakhshani 2012; Alikhani et al. 2013; Taheri & Rakhshani 2013; Nematollahi et al. 2014; Sanati & Takallozadeh 2014; Ghotbi Ravandi et al. 2017; Abdoli et al. 2026); **Iraq** (Al-Azawi 1970; Starý & Kaddou 1971; Starý 1976a; Ameri et al. 2019; Rakhshani et al. 2019; Bandyan et al. 2021; Al-Ameri et al. 2025); **Ireland** (Fulmek 1968; Giller et al. 1995; Hubert & van Achterberg 2023); **Italy** (Rondani 1876; Marshall 1896; Szépligeti 1904; Graeffe 1908; Starý 1966d, 1974b, 1976a; Mackauer & Starý 1967; Tremblay 1967a; Roberti 1969; Paparatti 1989; Tremblay et al. 1980; Ferrari & Nicoli 1994; Bergamesco et al. 1995; Tomanović et al. 2012, 2023c); **Japan** (Viereck 1911; Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1967a, 1975a; Takada 1968, 1973, 1976b, 2002; Yamauchi & Takada 1978; Takada & Takenaka 1982; Nakata 1995; Tatsumi et al. 2003; Takada et al. 2011); **Jordan** (Mustafa & Masha'l 1994; Tanigoshi et al. 1995; Baer et al. 2004); **Kazakhstan** (Starý & Juchnevič 1978; Starý 1979a; Baer et al. 2004; Davidian 2017); **Kenya** (Starý & Schmutterer 1973; Bahana & Karuhize 1986); **Kyrgyzstan** (Starý 1965a, 1967a, 1979a; Baer et al. 2004; Davidian 2017); **Latvia** (Starý & Rupais 1964; Davidian 2017); **Lebanon** (Talhouk 1961; Mackauer & Starý 1967; Starý 1976a; Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay et al. 1985; Abou-Fakhr & Kawar 1998; Rakhshani et al. 2019); **Libya** (Mackauer & Starý 1967; Starý 1976a; Rakhshani et al. 2019); **Lithuania** (Duchovskiene & Raudonis 2008); **Madeira Islands** (Starý et al. 1996; Cecilio et al. 2004, 2009); **Malta** (Mifsud & Starý 2011, 2012; Stanković et al. 2013; Rakhshani et al. 2015b); **Mexico** (Gibson & Carillos 1959; Mackauer & Starý 1967; Starý & Remaudière 1982; Starý 1983d; Starý & Remaudière 1988; Robinson 1992; Coronado-Blanco et al. 2004); **Moldova** (Talitzky & Kuslitzky 1990; Davidian 2017); **Mongolia** (Starý 1979a; Davidian 2017); **Montenegro** (Tomanović et al. 2003b, 2007a; Kavallieratos et al. 2004; Žikić et al. 2012); **Morocco** (Mimeur 1934; Bleton & Fieuzet 1939; Starý 1961a, 1976a, 1981b; Mackauer & Starý 1967; Starý & Sekkat 1987; Tanigoshi et al. 1995; Baer et al. 2004); **Nepal** (Tamrakar & Singh 2000); **Netherlands** (Hafez 1961; Mackauer & Starý 1967; Papp et al. 1996; Bukovinszky et al. 2004; Geiger et al. 2005); **New Zealand** (Gourlay 1930; Miller 1936; Todd 1957; Cumber & Eyles 1961; Cumber 1962; Mackauer & Starý 1967; Valentine 1967; Lowe 1968; Valentine & Walker 1991; Jonsson et al. 2015; Ward 2026); **North Korea** (Takada 1976b; Starý & Choi 2000); **North Macedonia** (Tomanović et al. 2003b; Kavallieratos et al. 2004, 2005b); **Norway** (Hofsvang & Høgvar 1983b; Mjøs et al. 2024); **Pakistan** (Mukerji & Chatterjee 1950; Starý 1961a; Alam & Hafiz 1963; Mackauer & Starý 1967; Starý & Ghosh 1983; Starý et al. 1999; Baer et al. 2004; Naeem et al. 2005; Bodlah et al. 2012a; Khan et al. 2012; Shahid et al. 2012; Khalil et al. 2019); **Palestine** (Bodenheimer & Swirski 1957; Avidov & Kotter 1966; Mackauer & Starý 1967; Starý 1967a, 1976a; Avidov & Harpaz 1969; Mescheloff & Rosen 1990b; Samara & Qubbaj 2012; Davidian 2017); **Peru** (de Huiza & Ortiz 1980; Redolfi de Huiza 1995; Pujade-Villar et al. 2002; Starý et al. 2014c); **Poland** (Niezabitowski 1910; Mackauer & Starý 1967; Kierych 1975; Pankanin-Franczyk 1983; Pankanin-Franczyk et al. 1986; Olszak 1994; Pankanin-Franczyk & Ceryngier 1995; Gabrys et al. 1997, 1998; Huflejt 1997; Wiackowski et al. 1997, 2001; Pankanin-Franczyk & Sobota 1998; Barczak et al. 2005; Tran & Piekarska-Boniecka 2017); **Portugal** (Carthy 1955; Costa 1988; Costa & Starý 1988; Cecilio 1996; Borges et al. 2005); **Puerto Rico** (Medina et al. 1994); **Romania** (Mackauer & Starý 1967; Feraru & Mustata 2004); **Russia** (Meyer 1927, 1929; Starý 1965a, 1974b; Krotova 1993; Davidian 2007, 2017, 2018b, 2019b; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Manukyan 2024; Shpanev 2025); **Réunion** (Quilici et al. 1988; Starý et al. 1994a; Madl & van Achterberg 2014); **Saudi Arabia** (Hafez 1965; Ahmad & Bakr 2013; Rakhshani et al. 2019); **Serbia** (Ferrière & Voukassovitch 1928; Voukassovitch 1928; Quilis-Pérez 1934; Starý 1981b; Petrović 1993; Tomanović et al. 1998a, 1999c, 2003b; Žikić et al. 2000, 2012; Kavallieratos et al. 2004, 2005b, 2010, 2013; Plećaš et al. 2023); **Slovakia** (Starý 1977, 1989a; Al Dobai et al. 1999; Al Dobai & Praslička 1999; Ferrer-Suay et al. 2017); **Slovenia** (Milevoj 1992; Kos et al. 2008, 2009a, 2012); **South Africa** (Moore 1914; Gourlay 1930; Mackauer & Starý 1967; Daiber 1971;

Aalbersberg et al. 1988, 1989); **South Korea** (Paik 1975; Takada 1976b; Starý & Choi 2000; Kim 2026); **Spain** (Quilis-Pérez 1931a, 1931b; Ceballos 1956; Starý 1961a, 1974b, 1974c, 1976a; Mackauer & Starý 1967; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Tizado & Núñez-Perez 1991; Tizado Morales et al. 1992; Aguirre Segura & Tizado Morales 1993; Sanchis et al. 1995; Suay Cano & Michelena Saval 1998; Nieves-Aldrey et al. 2003; Baer et al. 2004; Michelena et al. 2004; Lumbierres et al. 2005, 2007; Nebreda et al. 2005; Pons et al. 2018); **Sri Lanka** (Wijerathna & Edirisinghe 1997); **Syria** (Tanigoshi et al. 1995; Baer et al. 2004; Rakhshani et al. 2019); **Sweden** (Mackauer & Starý 1967); **Switzerland** (Mackauer & Starý 1967); **Tajikistan** (Ataeva 1961; Starý 1961a, 1965a, 1979a; Fulmek 1968; Davidian 2017); **Tunisia** (Ben Halima & Ben Hamouda 1993; Boukhris-Bouhachem 2011; Ayadi et al. 2017; Rakhshani et al. 2019); **Türkiye** (Düzgüneş et al. 1982; Kılınçer 1982; Erkin 1983; Zeren & Düzgüneş 1983; Avci & Özbek 1991; Elmali & Toros 1994; Tanigoshi et al. 1995; Yasarakinci & Hincal 2000; Ölmez & Ulusoy 2003; Aslan et al. 2004; Uysal et al. 2004; Güz & Kılınçer 2005; Çetin Erdoğan et al. 2008; Guncan et al. 2010; Satar et al. 2014, 2021; Aslan 2015; Akar & Çetin Erdoğan 2017; Davidian 2017; Bayram et al. 2018; Rakhshani et al. 2019; Kök et al. 2020; Demirhan & Çetin Erdoğan 2023); **Ukraine** (Kurdjumov 1913; Sacharov 1914; Meyer 1927; Starý 1961a, 1981b; Berest 1980, 1985, 1987; Kaliuzhna 2013a, 2019a, 2019b); **United Kingdom** (McIntosh 1855; Marshall 1872a, 1896, 1899; Bignell 1901; Szépligeti 1904; Barnes 1931; Lyle 1933; Newton 1934; Petherbridge & Mellor 1936; Kloet & Hincks 1945; George 1957; Lowe 1958; Mackauer 1961b; Mackauer & Starý 1967; Starý 1967a, 1974b; Kelm 1988; Baer et al. 2004; Davidian & Rispin 2016); **Uruguay** (Silveira Guido & Conde 1945; Parker et al. 1950; Starý 1961a; Mackauer & Starý 1967; Betancourt & Scatoni 2001); **USA** (Ashmead 1889, 1890, 1900a; Riley & Howard 1890; Nason 1905; Baker 1909; Rohwer 1909; Viereck 1910; Gahan 1911a; Herrick 1911; Fullaway 1913; Cresson 1916; Paddock 1916; Britton 1917; Timberlake 1918; Mason 1922; Wheeler 1923; Spencer 1926; Poos 1928; Swezey 1930; Smith & Knowlton 1940; Smith 1944; Muesebeck & Walkley 1951; Muesebeck 1958a; Schlinger & Hall 1960a; Sekhar 1960; Beardsley 1961; Starý 1961a; Mackauer 1963a; Mackauer & Starý 1967; Godfrey & Root 1968; Walker et al. 1973; Starý & Remaudière 1977; McFadden & Creighton 1979; Starý & Carver 1980; Kring & Gilstrap 1983; Gilstrap et al. 1984; Horn 1984, 1986, 1988, 1989; Wright & Cone 1988; Lopez & van Driesche 1989; Lopez et al. 1990; Feng et al. 1991, 1992; Zuparko & Dahlsten 1993; Walgenbach 1994; Halbert et al. 1996; Pike & Starý 1996a; Pike et al. 1996, 1997b, 1999a, 2000, 2007; Brewer et al. 1998, 1999; Vaughn & Antolin 1998; Mohamed et al. 2000; Brewer et al. 2001; Burd et al. 2001; French et al. 2001; Wright & James 2001; Ahern & Brewer 2002; Bosque-Pérez et al. 2002; Chen et al. 2002; Al-Doghairi & Cranshaw 2004; Baer et al. 2004; Day 2005; Noma et al. 2005; Snyder et al. 2006; Northfield et al. 2010; Burd & Puterka 2012; Hollingbery et al. 2012; Elliott et al. 2014a, 2014b; Davidian 2017); **Uzbekistan** (Starý 1961a, 1965a, 1974c, 1979a; Daminova et al. 2001; Aripov 2003; Baer et al. 2004; Davidian 2017); **Venezuela** (Starý & Cermeli 1989); **Vietnam** (Long & van Achterberg 2014; Tomanović et al. 2026b); **Yemen** (Starý et al. 2014b; Rakhshani et al. 2019).

***Remarks.*** Mackauer (1964a) confirmed McIntosh as the author of the species and treated *Aphidius rapae* Curtis, 1860 as a junior primary homonym and junior subjective synonym. Popović et al. (2025) synonymized *Diaeretiella* Starý, 1960 with *Aphidius* Nees, 1818 and treated the species as *Aphidius rapae* McIntosh, 1855.

### *Aphidius remaudierei* Čkrkić & Tomanović, 2024

*Aphidius remaudierei* Čkrkić & Tomanović [in Čkrkić et al.], 2024:438. Holotype ♀ (IECA). – Burundi.

***Host. Sitobion autriquei*** Remaudière (Čkrkić et al. 2024).

***Distribution.*** **Burundi** (Čkrkić et al. 2024).

### *Aphidius rhopalosiphi* de Stefani-Perez, 1902 [Fig. 19C]

*Aphidius rhopalosiphi* De Stefani-Perez, 1902:633. Syntypes ♀. – Italy.

**Syn.:** *Aphidius equiseticola* Starý, 1963; *Aphidius poacearum* Starý, 1963; *Aphidius frumentarius* Latteur, 1979 [Fig. 14B].

***Hosts. Diuraphis noxia*** (Mordvilko) (Starý et al. 2000; Kavallieratos et al. 2004, 2005b; Uysal et al. 2004; Starý 2006; Laamari et al. 2011, 2012, 2016b; Tomanović et al. 2013; Heddle et al. 2020); *Hyalopteroides*

*humilis* (Walker) (Pennacchio 1989); *Impatientinum asiaticum dalhousiensis* Verma, *Impatientinum impatiens* (Shinji) (Chakrabarti & Debnath 2009); *Israelaphis lambersi* Ilharco (Costa 1988); ***Macrosiphum dryopteridis*** (Holman) (Starý 1973a, 2006); ***Macrosiphum equiseti*** (Holman) (Starý 1963a, 1964d, 1966c, 1973a, 1977, 2006; Mackauer & Starý 1967); ***Metopolophium albidum*** Hille Ris Lambers (Müller et al. 1999); ***Metopolophium dirhodum*** (Walker) (Starý 1977, 1981b, 1987a, 1993b, 1995c, 2006; Starý et al. 1977a, 1993a, 1994b, 2007; Latteur & Rassel 1979; Powell 1982; Ankersmit 1983; Polgár 1984; Pungerl 1984; Powell et al. 1986a; Powell & Wright 1988; Plewka & Pankanin-Franczyk 1989; Farrell & Stufkens 1990; Pennacchio & Höller 1990; Höller et al. 1993; Hance 1995; van Bellinghen et al. 1996; Tomanović et al. 1999a, 1999b, 1999c, 2003c, 2013; Pike et al. 2000; Kavallieratos et al. 2004, 2005b; Rakhshani et al. 2008a, 2008b; Nazari et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Bulman et al. 2021; dos Santos et al. 2022); ***Metopolophium festucae*** (Theobald) (Starý et al. 1977a; Latteur & Rassel 1979; Starý 1981b, 1993b, 1995c; Pennacchio 1989); *Myzus mumecola* (Matsumura) (Subhrani et al. 2006); *Myzus persicae* (Sulzer) (Starý 1995c; Andorno et al. 2007); ***Rhopalosiphum maidis*** (Fitch) (Starý 1981b, 2006; Ghanim & El-Adl 1983; El-Serafy 1999; Starý et al. 1999; Michelena et al. 2004; Laamari et al. 2011, 2012; Kos et al. 2012; Nazari et al. 2012; Gadallah et al. 2017; Bayram et al. 2018); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Tomanović et al. 2012; Mitrovski-Bogdanović et al. 2021); ***Rhopalosiphum padi*** (Linnaeus) (Starý 1976c, 1981b, 1987a, 1993b, 1995c, 2006; Halme 1977; Starý et al. 1977a, 2000; Powell 1982; Ghanim & El-Adl 1983; González & Michelena 1987; Michelena Saval & González Funes 1987; Leather et al. 1989; Paparatti 1989; Pennacchio 1989; Höller et al. 1993; Darwish et al. 1994; El-Serafy 1999; Tomanović et al. 1999a, 1999b, 1999c, 2003c, 2013; Kavallieratos et al. 2004, 2005b; Uysal et al. 2004; Rakhshani et al. 2008a, 2008b; Laamari et al. 2011, 2012; Nazari et al. 2012; Derocles et al. 2012; Kos et al. 2012; Žikić et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Chaouche & Laamari 2015; Bandyan et al. 2021; Bulman et al. 2021; dos Santos et al. 2022); ***Schizaphis graminum*** (Rondani) (Starý 1979a, 1981b, 1993b, 1995c, 2006; Ghanim & El-Adl 1983; Gruber & Coutinot 1984; Gruber et al. 1994; El-Serafy 1999; Chen & Shi 2001; Rakhshani et al. 2008a, 2008b; Nazari et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Bandyan et al. 2021; dos Santos et al. 2022); ***Schizaphis scirpi*** (Passerini) (Tomanović et al. 2012); ***Sitobion avenae*** (Fabricius) (Starý 1963a, 1973a, 1976a, 1976c, 1978b, 1981b, 1987a, 1993b, 1995c, 1999b, 2006; Starý et al. 1977a, 2000, 2007; Latteur & Rassel 1979; Berest 1980, 1985; Powell 1982; Vickerman 1982; Ankersmit 1983; Ghanim & El-Adl 1983; Pankanin-Franczyk 1983, 1986; Polgár 1984; Pungerl 1984; Vorley & Wratten 1985; Ankersmit et al. 1986; Michelena Saval & González Funes 1987; Powell & Wright 1988; Pennacchio 1989; Pennacchio & Höller 1990; Höller 1991; Höller et al. 1993; Darvish-Mojeni 1994; Longley 1994; Hance 1995; Pankanin-Franczyk & Ceryngier 1995; Stilmant 1995, 1996; Fuentes-Contreras et al. 1996; Atanassova 1997; Fuentes-Contreras & Niemeyer 1998; El-Serafy 1999; Tomanović et al. 1999a, 1999b, 1999c, 2003c, 2013; Micha et al. 2000; Pike et al. 2000; Chen & Shi 2001; Kavallieratos et al. 2004, 2005b; Legrand et al. 2004; Outreman et al. 2004; Muratori et al. 2005; Wei et al. 2005; Rakhshani et al. 2008a, 2008b; Chakrabarti & Debnath 2009; Mossadegh et al. 2011; Derocles et al. 2012, 2014a; Kos et al. 2012; Nazari et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Gadallah et al. 2017; Mitrovski-Bogdanović et al. 2021; dos Santos et al. 2022); ***Sitobion fragariae*** (Walker) (Starý 1981b; Pungerl 1984; Tomanović et al. 1999a, 1999b, 1999c, 2003c; Kavallieratos et al. 2004, 2005b; Žikić et al. 2012); ***Sitobion himalayensis*** (Ghosh), ***Sitobion rosaeiformis*** (Das) (Chakrabarti & Debnath 2009); *Uroleucon* sp. (Starý 1995c).

***Distribution.*** **Algeria** (Laamari et al. 2011, 2012, 2016b; Chaouche & Laamari 2015; Rakhshani et al. 2019); **Andorra** (Sanchis et al. 1999); **Argentina** (Andorno et al. 2007); **Australia** (Heddle et al. 2020; Ward et al. 2021b); **Austria** (BOLD:AFS3452); **Belgium** (Latteur & Rassel 1979; Starý 1981b; Hance 1995; van Bellinghen et al. 1996; Langer et al. 1998; Langer & Hance 2000, 2004; Legrand et al. 2004; Muratori et al. 2004; Salin et al. 2004; Muratori et al. 2006; Alhmedi et al. 2009; Lopes et al. 2015, 2016); **Brazil** (Starý et al. 2007; dos Santos et al. 2022); **Bulgaria** (Starý 1981b; Atanassova 1997; Kolarov 1997; Kavallieratos et al. 2005b; Todorov 2008); **Canada** (BOLD:AFS3452 | BOLD:ABV9387 | BOLD:AAD6802); **Chile** (Suzuki & Vargas 1980; Gerding & Figueroa 1982; Gerding et al. 1989; Starý 1993b, 1994, 1995c; Starý et al. 1993a, 1994b; Derocles et al. 2012); **China** (Lu & Ji 1992; Gu et al. 1995; Chen & Shi 2001); **Czech Republic** (Starý 1963a, 1966c, 1973a, 1976a, 1976c, 1977, 1978b, 1981b, 1987a, 1989a; Mackauer & Starý 1967; Starý & González 1992; Starý 1999b, 2006; Starý & Havelka

2008; Kos et al. 2011; Tomanović et al. 2013); **Denmark** (Sigsgaard 2002); **Egypt** (Ghanim & El-Adl 1983; Darwish et al. 1994; El-Serafy 1999; Gadallah et al. 2017; Rakhshani et al. 2019); **Finland** (Halme 1977; Starý 1981b); **France** (Starý et al. 1977a; Starý 1981b; Rabasse 1982; Gruber & Coutinot 1984; Pennacchio 1989; Gruber et al. 1994; Krespi et al. 1997; Fievet et al. 2008, 2009; van Baaren et al. 2009; Derocles et al. 2012, 2014a; Andrade et al. 2015); **Germany** (Starý 1973a, 1981b; Borgemeister et al. 1991; Höller et al. 1993; Adisu et al. 2002; Belokobylskij et al. 2003; Vollhardt et al. 2008; Kos et al. 2011; Tomanović et al. 2013); **Greece** (Kavallieratos et al. 2004, 2005b); **Hungary** (Polgár 1981, 1982, 1983, 1984, 1987); **India** (Raychaudhuri et al. 1990; Subhrani et al. 2006; Chakrabarti & Debnath 2009; Das & Chakrabarti 2023a); **Iran** (Darvish-Mojeni 1994; Starý et al. 2000; Rakhshani et al. 2008a, 2008b; Fallahzadeh & Saghaei 2010; Mossadegh et al. 2011; Nazari et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Taheri & Rakhshani 2013; Ameri et al. 2019; Rakhshani et al. 2019); **Iraq** (Bandyan et al. 2021); **Ireland** (Giller et al. 1995); **Italy** (Szépligeti 1904; Mackauer 1968a; Starý 1976a, 1981b; Paparatti 1989; Pennacchio 1989; Pennacchio & Höller 1990; Bergamesco et al. 1995; Tomanović et al. 2012); **Moldova** (Davidian 2017); **Montenegro** (BOLD:AAD6802 | Tomanović et al. 2026a); **Morocco** (Starý 1981b); **Netherlands** (Starý 1981b; Papp et al. 1996); **New Zealand** (Purposeful introduction – Stufkens & Farrell 1987; Farrell & Stufkens 1990; Valentine & Walker 1991; Cameron et al. 2013; Bulman et al. 2021; Ward 2026); **North Macedonia** (Kavallieratos et al. 2004, 2005b); **Norway** (Starý 1981b; Hofsvang & Høgvar 1983b); **Pakistan** (Starý et al. 1999); **Palestine** (Starý 1981b); **Paraguay** (González Torres et al. 2018); **Poland** (Pankanin-Franczyk 1983, 1986, 1995; Pankanin-Franczyk et al. 1986; Plewka & Pankanin-Franczyk 1989; Pankanin-Franczyk & Ceryngier 1995; Huflejt 1997; Pankanin-Franczyk & Sobota 1998; Kos et al. 2011; Tomanović et al. 2013; Tran & Piekarska-Boniecka 2017); **Portugal** (Costa 1988; Cecilio 1996; Cecilio & Ilharco 2002; Marcelino et al. 2021); **Russia** (Krotova 1993; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Davidian & Humala 2023; Davidian & Ruchin 2023; Shpanev 2025); **Serbia** (Starý 1981b; Tomanović et al. 1998a, 1999c, 2003c, 2008c, 2012, 2013; Tomanović & Brajković 2001; Kavallieratos et al. 2004, 2005b; Kos et al. 2011; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **Slovakia** (Starý 1977, 1989a; Al Dobai & Praslička 1999; Al Dobai et al. 1999; Praslička et al. 2003; Praslička & Huszar 2005; Starý & Lukáš 2009); **Slovenia** (Kos et al. 2011, 2012; Tomanović et al. 2013); **South Korea** (Choi & Kim 2018); **Spain** (González & Michelena 1987; Michelena Saval & González Funes 1987; Tizado & Núñez-Perez 1991; Sanchis et al. 1995; Nieves-Aldrey et al. 2003; Pons & Starý 2003; Michelena et al. 2004; Lumbierres et al. 2007, 2011; Michelena Saval & Martínez De Murguía 2012); **Sweden** (Kos et al. 2011; Rusch et al. 2013; Tomanović et al. 2013); **Switzerland** (Starý 1981b); **Türkiye** (Tanigoshi et al. 1995; Uysal et al. 2004; Bayram et al. 2018; Rakhshani et al. 2019); **Ukraine** (Berest 1980, 1985; Starý 1981b; Kaliuzhna 2013a, 2013b, 2016a, 2019a, 2019b); **United Kingdom** (Starý 1981b; Powell 1982; Vickerman 1982; Vorley & Wratten 1985; Powell et al. 1986a; Vorley 1986; Vorley & Wratten 1987; Leather et al. 1989; Pennacchio 1989; Müller et al. 1999; van Veen et al. 2008; Davidian & Rispin 2016); **USA** (Pike et al. 2000); **Uzbekistan** (Starý 1979a, 1981b; Aripov 2003).

***Remarks.*** The type specimen of this species was found neither in the de Stefani-Perez collection housed at the Sistema Museale di Ateneo, University of Palermo, Italy, nor in the Dipartimento di Scienze Agrarie, Alimentari e Forestali, University of Palermo (Enrico Bellia and Gabriella Lo Verde, pers. commun.). The record of *Aphidius rhopalosiphi* from South Korea (Choi & Kim 2018), was due to misidentification of *Aphidius gifuensis* Ashmead, 1906 (based on molecular data – Kim 2026). Therefore, the occurrence of this species needs further study.

### *Aphidius ribis* Haliday, 1834 [Fig. 19D]

*Aphidius ribis* Haliday, 1834:101. Lectotype ♀ (after Mackauer 1961b) (NHMUK). – United Kingdom.

**Syn.:** *Lysiphlebus ribaphidis* Ashmead, 1889; *Aphidius scabiosae* Marshall, 1896; *Aphidius ribis* Ashmead, 1898, *nec* Haliday, 1834.

***Hosts.*** *Aphis grossulariae* Kaltenbach (Wiackowski et al. 2001); *Aphis pomi* De Geer (Fulmek 1968); *Aphis schneideri* (Börner) (Fulmek 1968; Wiackowski & Wiackowska 1996; Wiackowski et al. 2001); *Brachycaudus cardui* (Linnaeus) (Fulmek 1968); *Brevicoryne brassicae* (Linnaeus) (Meyer 1934; Fulmek 1968); *Capitophorus* sp. (Shands et al. 1965); ***Cryptomyzus ballotae*** Hille Ris Lambers (Starý et al. 1971;

Starý 1973a, 1976a); ***Cryptomyzus galeopsidis*** (Kaltenbach) (Starý 1963b, 1966c, 1973a, 1976a, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971; Starý & Remaudière 1977; Ferrer-Suay et al. 2017); ***Cryptomyzus korschelti*** Börner (Starý & Rupais 1963; Mackauer & Starý 1967; Starý et al. 1971; Starý 1973a, 2006); ***Cryptomyzus ribis*** (Linnaeus) (Riley & Howard 1890; Ashmead 1898; Dimmock 1898; Bignell 1901; Gahan 1911a; Haviland 1919; Meyer 1927; Muesebeck 1928; Smith 1944; MacGillivray & Spicer 1953; Mackauer 1958, 1959f, 1962c; Schlinger & Hall 1960a; Starý 1963b, 1964d, 1965a, 1966c, 1973a, 1979a, 1987a, 1995b, 2006; Starý & Rupais 1963, 1964; Thuneberg 1963; Mackauer & Starý 1967; Starý et al. 1971, 1973; Liu 1977; Starý & Juchnevič 1978; Rakauskas 1981; Düzgüneş et al. 1982; Barannik 1986; Alaoğlu 1994; Wiackowski & Wiackowska 1996; Tomanović et al. 1999b, 2003c; Wiackowski et al. 2001; Kavallieratos et al. 2004; Uysal et al. 2004; Gavrilyuk & Novgorodova 2007; Derocles et al. 2012, 2014a; Kos et al. 2012; Žikić et al. 2012; Davidian & Gavrilyuk 2014; Davidian 2017; Ferrer-Suay et al. 2017; Mitrovski-Bogdanović et al. 2021); ***Cryptomyzus taoi*** Hille Ris Lambers (Paik 1976; Raychaudhuri et al. 1990); ***Cryptomyzus*** spp. (Starý 1973a, 2006; Mitrovski-Bogdanović et al. 2021); *Hyalopterus pruni* (Geoffroy) (Fulmek 1968); *Hyperomyzus lactucae* (Linnaeus) (Mackauer 1962c; Wiackowski & Wiackowska 1996; Wiackowski et al. 2001); *Hyperomyzus picridis* (Börner) (Mackauer 1962c); *Macrosiphum rosae* (Linnaeus) (Marshall 1896; Bignell 1901; Goidanich 1928); ***Lipaphis erysimi*** (Kaltenbach) (Sadat et al. 2019); *Macrosiphum* sp. (Wheeler 1923); ***Myzus cerasi*** (Fabricius) (Fulmek 1968); ***Myzus persicae*** (Sulzer) (Düzgüneş et al. 1982; Uysal et al. 2004; Naeem et al. 2005; Khan et al. 2012); ***Nasonovia aquilegiae*** (Essig) (Finlayson 1990); ***Nasonovia borealis*** Heie (Batulla & Robinson 1984); ***Nasonovia ribisnigri*** (Mosley) (Griffiths 1960; Wiackowski et al. 2001); *Periphyllus testudinaceus* Fernie (Paillot 1934); *Phorodon cannabis* Passerini (Fulmek 1968); *Schizaphis graminum* (Rondani) (Wadley 1931); *Toxopterina vandergooti* (Börner) (Wiackowski et al. 1997, 2001); *Trama troglodytes* von Heyden (Wiackowski et al. 2001); *Uroleucon erigeronense* (Thomas) (Batulla & Robinson 1984).

***Distribution.*** **Algeria** (Sadat et al. 2019); **Austria** (Mackauer & Starý 1967; Fulmek 1968); **Belgium** (Mitrovski-Bogdanović et al. 2021); **Bulgaria** (BOLD:ACB8117); **Canada** (Smith 1944; Muesebeck & Walkley 1951; MacGillivray & Spicer 1953; Muesebeck 1958a, 1967; Schlinger & Hall 1960a; Mackauer & Starý 1967; Liu 1977; Starý & Remaudière 1977; Batulla & Robinson 1984; Finlayson 1990); **China** (Gu et al. 1995); **Croatia** (Quilis-Pérez 1934); **Czech Republic** (Starý 1966c, 1973a, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Ferrer-Suay et al. 2017); **Faroe Islands** (Roman 1925; Kryger & Schmiedeknecht 1938); **Finland** (Thuneberg 1963; Hellén 1966; Mackauer & Starý 1967); **France** (Mackauer & Starý 1967; Starý et al. 1971, 1973, 1977a; Starý 1973a, 1976a; Derocles et al. 2012, 2014a); **Germany** (Szépligeti 1904; Mackauer 1962c; Mackauer & Starý 1967; Starý 1973a; Belokobylskij et al. 2003); **Hungary** (Györfi 1941; Polgár 1983); **India** (Raychaudhuri et al. 1990; Das & Chakrabarti 2023a); **Italy** (Cobelli 1905; Goidanich 1928; Fulmek 1968); **Kazakhstan** (Starý & Juchnevič 1978; Starý 1979a; Davidian 2017); **Latvia** (Starý & Rupais 1963, 1964; Starý 1965a, 1973a; Mackauer & Starý 1967); **Lithuania** (Rakauskas 1981, 1985); **Madeira Islands** (Graham 1986); **Mexico** (Coronado-Blanco et al. 2004); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **Norway** (Mjøs et al. 2024); **Pakistan** (Naeem et al. 2005; Khan et al. 2012); **Poland** (Niezabitowski 1910; Mackauer & Starý 1967; Kierych 1975; Wiackowski & Wiackowska 1996; Huflejt 1997; Wiackowski et al. 1997, 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Starý & Rupais 1963; Starý 1965a, 1973a; Barannik 1986; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Davidian & Manukyan 2024); **Serbia** (Starý 1973a; Tomanović et al. 1998a, 1999b, 2003c; Kavallieratos et al. 2004; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **Slovakia** (Starý 1989a; Ferrer-Suay et al. 2017); **Slovenia** (Kos et al. 2012); **Spain** (Quilis-Pérez 1931b); **Sweden** (Thomson 1895; Szépligeti 1904; Mackauer & Starý 1967; Mitrovski-Bogdanović et al. 2021); **Switzerland** (Ferrière 1928; Mackauer & Starý 1967); **Tajikistan** (Fulmek 1968; Starý 1979a); **Türkiye** (Düzgüneş et al. 1982; Alaoğlu 1994; Uysal et al. 2004; Davidian 2017); **Ukraine** (Meyer 1927; Kaliuzhna 2019a, 2019b); **United Kingdom** (Kirchner 1867; Marshall 1872a, 1896, 1899; Bignell 1901; Szépligeti 1904; Haviland 1919; Lyle 1933; Kloet & Hincks 1945; Griffiths 1960; Mackauer 1961b; Mackauer & Starý 1967; Starý 1973a; Davidian & Rispin 2016); **USA** (Ashmead 1889, 1898, 1900a; Riley & Howard 1890; Dimmock 1898; Szépligeti 1904; Viereck 1910; Gahan 1911a; Wadley 1931; Smith 1944;

Muesebeck & Walkley 1951; Shands et al. 1965; Mackauer & Starý 1967; Starý & Remaudière 1977); **Uzbekistan** (Starý 1979a).

***Remarks.*** *Aphidius ribis* is generally known as a Western Palaearctic species, which is also recorded in North America. Its records from South Korea (Paik 1976; Starý & Choi 2000) seem doubtful and need further examination. Furthermore, the host records from various aphids like *Brachycaudus cardui*, *Brevicoryne brassicae*, *Periphyllus testudinaceus*, *Schizaphis graminum* and *Uroleucon erigeronense* should be re-examined.

### *Aphidius rosae* Haliday, 1833 [Fig. 19E]

*Aphidius rosae* Haliday, 1833:261. Holotype ♀ (after Mackauer 1961b) (NHMUK). – United Kingdom.

**Syn.:** *Ichneumon aphidum* Linnaeus, 1758; *Ichneumon aphidator* Thunberg, 1822; *Aphidius rosarum* Nees, 1834; *Aphidius xanthostoma* Bouché, 1834; *Aphidius protaeus* Wesmael, 1835; *Aphidius cancellatus* Buckton, 1876.

***Hosts.*** *Acyrthosiphon pisum* (Harris) (Gahan 1911a; Davis 1915; Fluke 1925); *Aphis craccivora* Koch (Ataeva 1961); *Aphis fabae* Scopoli (Fulmek 1968); *Aphis nasturtii* Kaltenbach (Duncan & Couture 1957); *Aphis pomi* De Geer (Ataeva 1961; Fulmek 1968); *Aphis urticata* Gmelin (Mustata 1986); *Brachycaudus cardui* (Linnaeus) (Ataeva 1961; Wiackowski et al. 2001); *Brachycaudus helichrysi* (Kaltenbach) (Thuneberg 1960; Wiackowski et al. 2001); *Brachycaudus tragopogonis* (Kaltenbach) (Fulmek 1968); *Brevicoryne brassicae* (Linnaeus) (Luzhetzki 1960); ***Chaetosiphon tetrarhodum*** (Walker) (Mackauer 1959f; Wiackowski et al. 1997, 2001); *Drepanosiphum aceris* Koch, *Drepanosiphum platanoidis* (Schrank) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); *Hyalopterus pruni* (Geoffroy) (Ataeva 1961; Fulmek 1968); *Illinoia liriodendri* (Monell) (Smith 1944; Mackauer & Starý 1967); *Illinoia rubicola* (MacGillivray & Spicer 1953); *Lipaphis erysimi* (Kaltenbach) (Khan et al. 2012); *Macrosiphoniella ludovicianae* (Oestlund) (Marsh 1979); ***Macrosiphum alpinum*** Meier (Marshall 1896); ***Macrosiphum euphorbiae*** (Thomas) (Poos 1928; Smith 1944; MacGillivray & Spicer 1953; Muesebeck & Walkley 1951; Shands et al. 1955; Duncan & Couture 1957; Liu 1977; Davidian 2017); ***Macrosiphum funestum*** (Macchiati) (Starý 1964d, 1966c; Mackauer & Starý 1967); ***Macrosiphum gei*** (Koch) (Mackauer 1962c); ***Macrosiphum hartigi*** Hille Ris Lambers (Marshall 1896); ***Macrosiphum rosae*** (Linnaeus) (Nees von Esenbeck 1834b; Rondani 1876; Marshall 1896; Gahan 1910, 1911a; Muesebeck 1928, 1967; Meyer 1929; Quilis-Pérez 1931b; McLeod 1938; Györfi 1943, 1949; Schlinger 1960a; Thuneberg 1960; Schlinger & Hall 1960a; Starý 1961h, 1964d, 1965a, 1966c, 1966d, 1973a, 1976a, 1977, 1987a, 1995b, 2006; Mackauer 1962c; Starý & Rupais 1963, 1964; Mackauer & Starý 1967; Tremblay 1967a; Roberti 1969; Lacatusu & Panu 1969; Starý et al. 1971, 1973, 1975, 1994a, 2007; Starý & Kaddou 1971; Kierych 1975, 1980; Vassileva-Sumnalieva 1976; Marsh 1979; Raychaudhuri et al. 1979, 1982; Tomiuk & Wohrmann 1980; Agarwala & Raychaudhuri 1981; Rakauskas 1981; Hofsvang & Høgvar 1983b; Starý & Ghosh 1983; Agarwala 1983b; Tkachuk 1985; Barannik 1986; González & Michelena 1987; Michelena Saval & González Funes 1987; Costa 1988; Pennacchio 1989; Starý & Cermeli 1989; Finlayson 1990; Das & Chakrabarti 1991a; Ben Halima & Ben Hamouda 1993; Cecilio 1996; Atanassova 1997; Kolarov 1997; Weisser et al. 1997; Wiackowski et al. 1997, 2001; Suay Cano & Michelena Saval 1998; Tomanović et al. 1999b, 2003c; Sanchis et al. 2000; Chen & Shi 2001; Kavallieratos et al. 2001, 2004, 2006; Rabasse et al. 2001; Cecilio & Ilharco 2002; Uysal et al. 2004; Mehrparvar et al. 2005; Naeem et al. 2005; Rakhshani et al. 2008a; Talebi et al. 2009; Barjadze & Gratiashvili 2010; Mossadegh et al. 2011; Derocles et al. 2012, 2014a; Kos et al. 2012; Nazari et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Davidian 2017; Ferrer-Suay et al. 2017; Kök et al. 2017; Zouari et al. 2018; Mustafayeva 2020; Mitrovski-Bogdanović et al. 2021); ***Metopolophium dirhodum*** (Walker) (Smith 1944; Noury 1962); ***Metopolophium montanum*** Hille Ris Lambers (Starý et al. 1971); ***Myzaphis rosarum*** (Kaltenbach) (Khan & Shah 2017); *Myzus persicae* (Sulzer) (MacGillivray & Spicer 1953; Shands et al. 1955; Duncan & Couture 1957); *Schizaphis graminum* (Rondani) (Pergande 1902); *Sitobion avenae* (Fabricius) (Gahan 1910); *Sitobion fragariae* (Walker) (Düzgüneş et al. 1982; Völkl 1994; Fink & Völkl 1995; Weisser et al. 1997; Uysal et al. 2004); ***Sitobion rosaeiformis*** (Das) (Agarwala & Raychaudhuri 1981; Raychaudhuri et al. 1982; Agarwala 1983b; Paonam & Singh 1986b; Naeem et al. 2005); *Uroleucon ambrosiae* (Thomas) (Marsh 1979; Batulla & Robinson 1984); *Uroleucon rudbeckiae* (Fitch) (Schlinger & Hall 1960a; Muesebeck 1967; Marsh 1979); *Uroleucon sonchi* (Linnaeus) (Fulmek 1968); *Uroleucon* spp. (Telenga 1950; Mescheloff & Rosen 1990b).

***Distribution.*** **Albania** (Fahringer 1925; Mackauer & Starý 1967); **Andorra** (Sanchis et al. 1999); **Belarus** (Meyer 1929); **Austria** (Mackauer & Starý 1967); **Australia** (Ward et al. 2021b); **Azerbaijan** (Davidian 2017; Mustafayeva 2020); **Belgium** (Wesmael 1835; Kirchner 1867; Lameere 1907; Mackauer & Starý 1967; Mackauer 1968a; Lopes et al. 2016; Mitrovski-Bogdanović et al. 2021); **Brazil** (Starý et al. 2007); **Bulgaria** (Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997; Kavallieratos et al. 2004, 2013; Todorov 2014); **Canada** (McLeod 1938; MacGillivray & Spicer 1953; Duncan & Couture 1957; Mackauer & Starý 1967; Batulla & Robinson 1984); **Canary Islands** (Mackauer 1962b; Mackauer & Starý 1967; Starý 1976a; Báez et al. 2001); **China** (Lu & Ji 1992; Chen & Shi 2001); **Croatia** (Graeffe 1908; Fahringer 1925; Mitrovski-Bogdanović et al. 2021); **Czech Republic** (Starý 1966c, 1973a, 1977, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Pennacchio 1989; Finlayson 1990; Starý & Havelka 2008; Ferrer-Suay et al. 2017); **Faroe Islands** (Roman 1917; Kryger & Schmiedeknecht 1938; Mackauer & Starý 1967); **Finland** (Thuneberg 1960; Mackauer & Starý 1967); **France** (Gaulle 1908; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975, 1977a; Starý 1973a, 1976a; Pennacchio 1989; Rabasse et al. 2001; Derocles et al. 2012, 2014a); **Georgia** (Akhvlediani 1964; Starý 1965a, 1973a, 1976a; Barjadze & Gratiashvili 2010; Davidian 2017); **Germany** (Nees von Esenbeck 1834a; Kirchner 1867; Mackauer 1962c; Mackauer & Starý 1967; Starý 1973a; Tomiuk & Wohrmann 1980; Völkl 1994; Belokobylskij et al. 2003); **Greece** (Starý 1976a; Kavallieratos et al. 2001, 2004, 2006, 2013); **Hungary** (Szépligeti 1898; Györfi 1941, 1943, 1949; Mackauer & Starý 1967; Starý 1973a; Polgár 1981, 1983, 1987); **Iceland** (Petersen 1956; Mackauer & Starý 1967); **India** (Raychaudhuri et al. 1979, 1982, 1990; Agarwala & Raychaudhuri 1981; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Agarwala 1983b; Starý & Ghosh 1983; Paonam & Singh 1986b; Das & Chakrabarti 1991a, 2023a; Dey & Akhtar 2007; Khan & Shah 2017); **Iran** (Mehrparvar et al. 2005; Rakhshani et al. 2008a, 2019; Fallahzadeh & Saghaei 2010; Mossadegh et al. 2011; Alikhani et al. 2013; Barahoei et al. 2013); **Iraq** (Starý & Kaddou 1971; Starý 1976a; Al-Hussainawy et al. 2019; Rakhshani et al. 2019; Mitrovski-Bogdanović et al. 2021); **Ireland** (O'Connor et al. 1999); **Italy** (Spinola 1808; Disconzi 1865; Kirchner 1867; Rondani 1876; Mantero 1904; Graeffe 1908; Starý 1966d, 1973a, 1976a; Mackauer & Starý 1967; Tremblay 1967a; Roberti 1969; Pennacchio 1989; Bergamesco et al. 1995); **Latvia** (Starý & Rupais 1963, 1964; Starý 1965a, 1973a; Mackauer & Starý 1967); **Lithuania** (Rakauskas 1981, 1985); **Moldova** (Starý 1973a; Talitzky & Kuslitzky 1990); **Montenegro** (Tomanović et al. 2003c; Kavallieratos et al. 2004, 2013; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **Netherlands** (Snellen van Vollenhoven 1873; Smits van Burgst 1919); **Norway** (Hofsvang & Høgvar 1983b); **Pakistan** (Naeem et al. 2005; Khan et al. 2012); **Palestine** (Mescheloff & Rosen 1990b); **Poland** (Niezabitowski 1910; Mackauer & Starý 1967; Starý 1973a; Kierych 1975, 1980; Huflejt 1997; Wiackowski et al. 1997, 2001; Wiackowski & Wiackowska 2000; Tran & Piekarska-Boniecka 2017); **Portugal** (Starý 1976a; Costa 1988; Cecilio 1996; Cecilio & Ilharco 2002; Marcelino et al. 2021); **Réunion** (Starý et al. 1977a, 1994a; Madl & van Achterberg 2014); **Romania** (Lacatusu & Panu 1969; Mustata 1986); **Russia** (Starý & Rupais 1963; Starý 1965a, 1973a; Mackauer & Starý 1967; Barannik 1986; Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Starý 1973a, 1976a; Tomanović et al. 1998a, 1999b, 2003c; Žikić et al. 2000, 2012; Kavallieratos et al. 2004, 2013; Mitrovski-Bogdanović et al. 2021); **Slovakia** (Starý 1977, 1989a; Pennacchio 1989; Ferrer-Suay et al. 2017); **Slovenia** (Kos et al. 2012; Mitrovski-Bogdanović et al. 2021); **Spain** (Quilis-Pérez 1931b; Mackauer & Starý 1967; González & Michelena 1987; Michelena Saval & González Funes 1987; Pennacchio 1989; Tizado & Núñez-Perez 1991; Sanchis et al. 1995, 2000; Suay Cano & Michelena Saval 1998; Nieves-Aldrey et al. 2003; Michelena Saval & Martínez De Murguía 2012); **Sweden** (Thomson 1895; Mackauer & Starý 1967); **Switzerland** (Blösch 1906; Ferrière 1928; Mackauer & Starý 1967); **Tunisia** (Ben Halima & Ben Hamouda 1993; Zouari et al. 2018; Rakhshani et al. 2019); **Türkiye** (Düzgüneş et al. 1982; Uysal et al. 2004; Çetin Erdoğan et al. 2010; Akar & Çetin Erdoğan 2017; Davidian 2017; Kök et al. 2017; Rakhshani et al. 2019); **Ukraine** (Starý 1961h, 1962f, 1965a, 1973a, 1976a; Kaliuzhna 2013a, 2017b, 2019a, 2019b); **United Kingdom** (Curtis 1830, 1837; Smith 1853; Marshall 1872a, 1899; Fitch 1880; Parfitt 1881; Bignell 1901; Szépligeti 1904; Luff 1908; Lyle 1933; Kloet & Hincks 1945; Mackauer 1961b, 1968a; Mackauer & Starý 1967; Starý 1973a; Pennacchio 1989; Davidian & Rispin 2016); **USA** (Ashmead 1889; Szépligeti 1904; Gahan 1911a; Davis 1915; Britton & Lowry 1918; Fluke 1925; Campbell 1926; Walden 1926; Muesebeck 1928; Poos 1928;

Fluke 1929; Knowlton et al. 1938; Smith 1944; Muesebeck & Walkley 1951; Shands et al. 1955; Schlinger 1960a; Schlinger & Hall 1960a; Thuneberg 1960; Mackauer 1963a; Mackauer & Starý 1967; Liu 1977; Finlayson 1990); **Uzbekistan** (Starý 1979a; Daminova et al. 2001); **Venezuela** (Starý & Cermeli 1989); **Vietnam** (Long & van Achterberg 2014).

***Remarks.*** The oldest name (*Aphidius aphidum* (Linnaeus, 1758)) is not available because the type is lost and the original description does not allow identification; therefore, it is a *species inquirenda*. *Aphidius aphidator* (Thunberg, 1822) is just a superfluous emendation of *A. aphidum*.

### *Aphidius rosaphidis* Smith, 1944 [Fig. 19F]

*Aphidius* (*Lysaphidus*) *rosaphidis* Smith, 1944:75. Holotype ♀ (USNM), paratypes ♀♀ ♂ (USNM, NCSU). – USA.

***Hosts.*** ***Aphis*** sp. (Pike et al. 2000); ***Chaetosiphon fragaefolii*** (Cockerell) (Schaefers & Allen 1962; Mackauer & Starý 1967; Marsh 1979; Pike et al. 2000; Tomanović et al. 2007c); ***Chaetosiphon potentillae*** (Walker) (Smith 1944; MacGillivray & Spicer 1953; Marsh 1979); ***Chaetosiphon thomasi*** Hille Ris Lambers (Schaefers & Allen 1962; Mackauer & Starý 1967; Marsh 1979); ***Pleotrichophorus*** sp. (Pike et al. 2000).

***Distribution.*** **Canada** (MacGillivray & Spicer 1953; Mackauer & Starý 1967; Muesebeck 1967); **USA** (Smith 1944; Muesebeck & Walkley 1951; Schaefers & Allen 1962; Shands et al. 1965; Mackauer & Starý 1967; Pike et al. 2000; Tomanović et al. 2007c).

### *Aphidius rubi* Starý, 1962

*Aphidius rubi* Starý, 1962d:112. Holotype ♀, paratypes ♀♀ ♂ (IECA). – Czech Republic.

***Hosts.*** ***Amphorophora rubi*** (Kaltenbach) (Starý & Rupais 1964; Mackauer & Starý 1967; Müller et al. 1999); ***Aulacorthum solani*** (Kaltenbach) (Jamhour et al. 2016); ***Aulacorthum vaccinii*** Hille Ris Lambers (Jamhour et al. 2016; Mitrovski-Bogdanović et al. 2021); ***Macrosiphum funestum*** (Macchiati) (Starý 1962d, 1964d, 1966c; Mackauer & Starý 1967; Müller et al. 1999; Jamhour et al. 2016; Mitrovski-Bogdanović et al. 2021); *Uroleucon cichorii* (Koch) (Barnea 2007).

***Distribution.*** **Austria** (Jamhour et al. 2016; Mitrovski-Bogdanović et al. 2021); **Belgium** (Jamhour et al. 2016); **Croatia** (Jamhour et al. 2016; Mitrovski-Bogdanović et al. 2021); **Czech Republic** (Starý 1962d, 1966c; Mackauer & Starý 1967; Jamhour et al. 2016; Mitrovski-Bogdanović et al. 2021); **Finland** (Mackauer & Starý 1967); **France** (Jamhour et al. 2016; Mitrovski-Bogdanović et al. 2021); **Latvia** (Starý & Rupais 1964; Mackauer & Starý 1967); **Lithuania** (Starý & Rupais 1964); **Montenegro** (Jamhour et al. 2016); **Norway** (Mjøs et al. 2024); **Romania** (Barnea 2007); **Russia** (Davidian & Ruchin 2023); **Serbia**, **Spain** (Jamhour et al. 2016; Mitrovski-Bogdanović et al. 2021); **United Kingdom** (Müller et al. 1999; van Veen et al. 2008).

***Remarks.*** *Aphidius rubi* is a member of *A. urticae* s.str. group and re-described by Jamhour et al. (2016).

### *Aphidius rubifolii* Mackauer, 1968 [Fig. 20A]

*Aphidius rubifolii* Mackauer, 1968b:34. Holotype ♀, paratypes ♀♀ ♂♂ (CNC). – Canada.

***Host.*** ***Illinoia maxima*** (Mason) (Mackauer 1968b; Gilbert & Gutierrez 1973; Liu 1977; Marsh 1979).

***Distribution.*** **Canada** (Mackauer 1968b; Marsh 1979).

### *Aphidius rufus* Goureau, 1851

*Aphidius rufus* Goureau, 1851:153. Syntype ♀ (MNHN?). – France.

***Host.*** Unknown.

***Distribution.*** **France** (Szépligeti 1904; Gaulle 1908); **Italy** (Rondani 1876).

***Remarks.*** The description is insufficient to determine the taxonomic status of the species, and the type specimen is unavailable for examination, so it should be considered as *species inquirenda.*

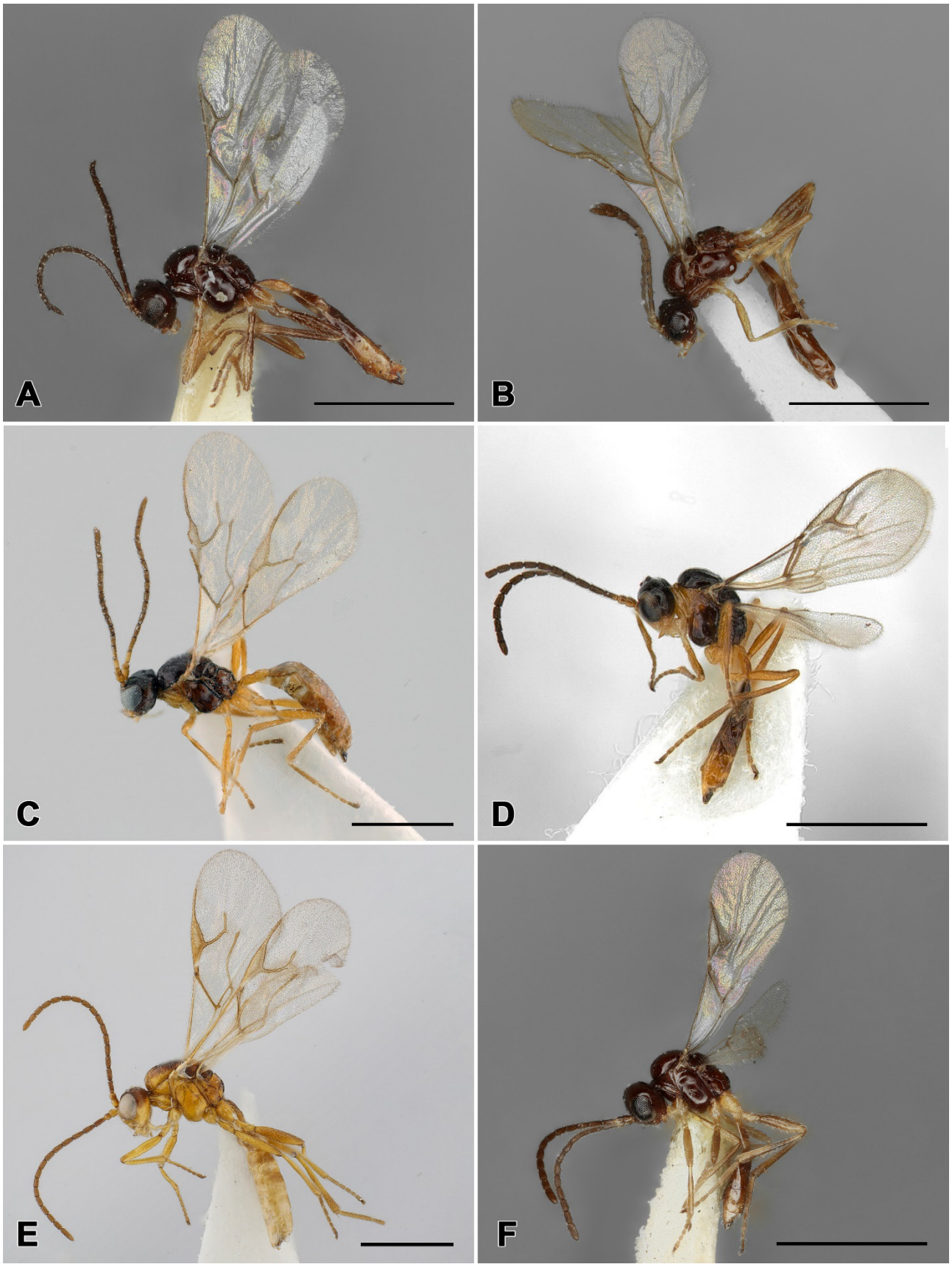



**Figure 19.** Species of the genus *Aphidius* Nees von Esenbeck, 1819. **A.** *Aphidius ramithyrus* Smith, 1944 – Holotype, USNM; **B.** *Aphidius rapae* McIntosh, 1855 – Lectotype of *Lipolexis chenopodiaphidis* Ashmead, 1889, USNM; **C.** *Aphidius rhopalosiphi* de Stefani-Perez, 1902 – Iran, DPPZ; **D.** *Aphidius ribis* Haliday, 1834 – Netherlands, RMNH; **E.** *Aphidius rosae* Haliday, 1833 – Iran, DPPZ. **F.** *Aphidius rosaphidis* Smith, 1944 – Holotype, USNM. Scale bar: 1 mm.

### *Aphidius salicis* Haliday, 1834 [Fig. 20B]

*Aphidius salicis* Haliday, 1834:102. Lectotype ♀ (after Mackauer 1961b), paralectotypes ♀♂ (NHMUK). – United Kingdom.

**Syn.**: *Aphidius restrictus* Nees, 1834; *Aphidius duodecimarticulatus* Ratzeburg, 1852; *Aphidius dauci* Marshall, 1896.

***Hosts.*** *Acyrthosiphon gossypii* Mordvilko, *Aphis craccivora* Koch (Ataeva 1961); *Aphis fabae* Scopoli (Noury 1962; Wiackowski et al. 1997, 2001); *Aphis farinosa* Gmelin (Haviland 1922; Schimitschek 1936; Starý 1966c, 1973a, 2006); *Aphis glycines* Matsumura (Chang et al. 1994); *Aphis gossypii* Glover (Bhagat 1986b); *Aphis lambersi* (Börner) (Starý 1966c, 1973a, 2006; Wiackowski et al. 2001); *Aphis* sp. (Bhagat 1984); *Capitophorus elaeagni* (del Guercio) (Chakrabarti & Debnath 2009); ***Cavariella aegopodii*** (Scopoli) (Mackauer 1962c; Mackauer & Heie 1965; Mackauer & Starý 1967; Starý et al. 1971, 1975, 1993a, 1995c, 2000, 2007; Starý 1973a, 1976a, 1977, 1979a, 1987a, 2006; Carver & Starý 1974; Liu 1977; Rabasse & Brunel 1977; Marsh 1979; Kierych 1980; Düzgüneş et al. 1982; González & Michelena 1987; Finlayson 1990; Mescheloff & Rosen 1990b; Raychaudhuri et al. 1990; Carver 1992; Suay Cano & Michelena Saval 1998; Pike et al. 2000; Sanchis et al. 2000; Kavallieratos et al. 2001, 2004; Wiackowski et al. 2001; Tomanović et al. 2003c, 2006a; Michelena et al. 2004; Uysal et al. 2004; Lumbierres et al. 2005; Rakhshani et al. 2007b, 2008a; Kos et al. 2009a, 2012; Talebi et al. 2009; Derocles et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Taheri & Rakhshani 2013; Pons et al. 2018; Mitrovski-Bogdanović et al. 2021); ***Cavariella aquatica*** (Gillette & Bragg) (Starý et al. 1971, 2000; Starý 1973a, 1979a); ***Cavariella araliae*** Takahashi (Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968, 1973; Tao & Chiu 1971; Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Cavariella archangelicae*** (Scopoli) (Starý et al. 1977a; Wiackowski et al. 2001; Kavallieratos et al. 2001, 2004, 2006); ***Cavariella aspidaphoides*** Hille Ris Lambers (Starý 1979a; Starý et al. 2000); ***Cavariella biswasi*** Ghosh, Basu & Raychaudhuri (Bhagat 1984); ***Cavariella himachali*** Ghosh (Chakrabarti & Debnath 2009); ***Cavariella konoi*** Takahashi (Starý & Remaudière 1977); ***Cavariella pastinacae*** (Linnaeus) (Marshall 1896; Bignell 1901; Mackauer & Starý 1967; Liu 1977; Marsh 1979; Pike et al. 2000; Derocles et al. 2014a); ***Cavariella salicicola*** (Matsumura) (Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968, 1973; Tao & Chiu 1971; Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Cavariella saxifragae*** Remaudière (Starý et al. 1971; Starý 1973a); ***Cavariella theobaldi*** (Gillette & Bragg) (Starý et al. 1977a; Starý 1977, 1979a; Düzgüneş et al. 1982; Michelena Saval & González Funes 1987; Starý et al. 2000; Kavallieratos et al. 2001, 2004, 2006; Uysal et al. 2004; Starý 2006; Žikić et al. 2012; Derocles et al. 2014a); ***Cavariella*** spp. (Mackauer 1962c; Starý 1963b, 1964d, 1966c, 1973a, 1975a, 1977, 1987a; Pepi 1983; Finlayson 1990; Tomanović et al. 1999b, 2003c; Kavallieratos et al. 2004; Starý 2006; Žikić et al. 2012; Ferrer-Suay et al. 2017; Mitrovski-Bogdanović et al. 2021); *Chaitophorus saliciti* (Schrank) (Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997); *Chaitophorus salijaponicus* Essig & Kuwana (Lumbierres et al. 2005); *Chromaphis juglandicola* (Kaltenbach) (Ataeva 1961); *Diuraphis noxia* (Mordvilko) (Heddle et al. 2020); *Dysaphis crataegi* (Kaltenbach) (Wiackowski et al. 2001); ***Hayhurstia atriplicis*** (Linnaeus) (Quilis-Pérez 1934; Fulmek 1968); ***Hyadaphis foeniculi*** (Passerini) (Tremblay 1967a; Starý 1976a; Marsh 1979; Michelena Saval & González Funes 1987; Pennacchio 1989; Michelena et al. 2004; Kavallieratos et al. 2006; Rakhshani et al. 2008a; Talebi et al. 2009); *Metopolophium dirhodum* (Walker) (Khaladi et al. 2025); ***Semiaphis dauci*** (Fabricius) (Mackauer 1961b; Starý 1963b, 1966c, 1973a, 1987a, 2006; Mackauer & Starý 1967; Wiackowski et al. 2001); ***Semiaphis heraclei*** (Takahashi) (Bhagat 1986b); *Sitobion fragariae* (Walker) (Khaladi et al. 2025).

***Distribution.*** **Andorra** (Sanchis et al. 1999); **Argentina** (Pepi 1983); **Austria** (Schimitschek 1936; Mackauer & Starý 1967); **Australia** (Mackauer & Starý 1967; Carver & Starý 1974; Carver 1992; Heddle et al. 2020; Ward et al. 2021b); **Brazil** (Tavares 1996; Starý et al. 2007); **Bulgaria** (Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997; Todorov 2007; Todorov & Ivanova 2016); **Canada** (MacGillivray & Spicer 1953; Mackauer & Starý 1967; Muesebeck 1967; Liu 1977; Starý & Remaudière 1977); **Chile** (Starý et al. 1993a; Starý 1995c); **China** (Starý & Schlinger 1967; Liu 1975; Starý 1975a; Chou 1981; Yang & Wu 1981; Chen 1982; Lu & Ji 1992; Gu et al. 1995; Chen & Shi 2001; He et al. 2004; Chen et al. 2009); **Croatia** (Mitrovski-Bogdanović et al. 2021); **Czech Republic** (Quilis-Pérez 1934; Starý 1966c, 1973a, 1977, 1987a,

1989a, 2006; Mackauer & Starý 1967; Pennacchio 1989; Starý & Havelka 2008); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967); **Finland** (BOLD:AAF7225); **France** (Dours 1873; Gaulle 1908; Mackauer & Starý 1967; Starý et al. 1971, 1975, 1977a; Starý 1973a, 1976a; Rabasse & Brunel 1977; Derocles et al. 2012, 2014a; Ferrer-Suay et al. 2017); **Georgia** (Starý 1973a, 1976a; Davidian 2017); **Germany** (Nees von Esenbeck 1834a; Kirchner 1867; Marshall 1896; Szépligeti 1904; Mackauer 1962c, 1964b; Mackauer & Starý 1967; Starý 1973a; Boness & Starý 1988; Belokobylskij et al. 2003); **Greece** (Kavallieratos et al. 2001, 2004, 2006); **Hungary** (Szalay-Marszo & Solymosy 1962; Mackauer & Starý 1967); **Iceland** (Ruthe 1859; Lindroth 1931; Mackauer & Starý 1967); **India** (Bhagat 1984, 1986b; Raychaudhuri et al. 1990; Das & Chakrabarti 2023a); **Iran** (Starý 1979a; Starý et al. 2000; Rakhshani et al. 2007b, 2008a, 2019; Talebi et al. 2009; Fallahzadeh & Saghaei 2010; Alikhani et al. 2013; Barahoei et al. 2013); **Italy** (Tremblay 1967a; Starý 1976a; Pennacchio 1989; Bergamesco et al. 1995); **Japan** (Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968, 1973; Starý 1975a; Finlayson 1990); **Kyrgyzstan** (Petrović et al. 2021a); **Moldova** (Starý 1973a; Talitzky & Kuslitzky 1990; Davidian 2017); **Montenegro** (Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **Netherlands** (Senllen van Vollenhoven 1873); **New Zealand** (Accidental introduction - Carver & Starý 1974; Valentine & Walker 1991; Bulman et al. 2021; Ward 2026); **Norway** (Mjøs et al. 2024); **Palestine** (Mescheloff & Rosen 1990b); **Poland** (Kirchner 1867; Niezabitowski 1910; Mackauer & Starý 1967; Kierych 1975, 1980; Huflejt 1997; Wiackowski et al. 1997, 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian 2017, 2019b; Davidian & Manukyan 2024); **Serbia** (Starý 1973a; Tomanović et al. 1998a, 1999b, 2003c, 2006a; Kavallieratos et al. 2004; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **Slovakia** (Starý 1977, 1989a; Ferrer-Suay et al. 2017); **Slovenia** (Kos et al. 2008, 2009a, 2012; Mitrovski-Bogdanović et al. 2021); **South Korea** (Starý & Schlinger 1967; Starý 1975a; Chang et al. 1994; Starý & Choi 2000; Kim et al. 2020; Kim 2026); **Spain** (Quilis-Pérez 1931b; González & Michelena 1987; Michelena Saval & González Funes 1987; Tizado & Núñez-Perez 1991; Sanchis et al. 1995, 2000; Suay Cano & Michelena Saval 1998; Nieves-Aldrey et al. 2003; Lumbierres et al. 2005; Michelena et al. 2004; Michelena Saval & Martínez De Murguía 2012; Pons et al. 2018); **Sweden** (Thomson 1895; Szépligeti 1904; Mackauer & Starý 1967); **Tajikistan** (Starý 1979a); **Türkiye** (Düzgüneş et al. 1982; Uysal et al. 2004; Çetin Erdoğan et al. 2010; Rakhshani et al. 2019); **United Kingdom** (Curtis 1837; Marshall 1872a, 1896, 1899; Bignell 1901; Szépligeti 1904; Haviland 1922; Lyle 1933; Kloet & Hincks 1945; Mackauer 1961b; Mackauer & Starý 1967; van Veen et al. 2008; Davidian & Rispin 2016); **USA** (Mackauer & Starý 1967; Muesebeck 1967; Liu 1977; Finlayson 1990; Pike et al. 2000); **Uzbekistan** (Starý 1979a; Daminova et al. 2001; Aripov 2003).

### *Aphidius santolinae* (Michelena & Sanchis, 1995)

*Lysaphidus santolinae* Michelena & Sanchis, 1995:24. Holotype ♀, paratypes ♀♀ ♂♂ (ICBiBE). – Spain.

***Hosts.*** ***Coloradoa bournieri*** Remaudière & Leclant, ***Coloradoa moralesi*** Remaudière & Leclant (Michelena Saval & Sanchis Segovia 1995); ***Coloradoa*** sp. (Sanchis et al. 2000).

***Distribution.*** **Spain** (Michelena Saval & Sanchis Segovia 1995; Sanchis et al. 2000).

### *Aphidius schimitscheki* (Starý, 1960) [Fig. 20C]

*Lysaphidus schimitscheki* Starý, 1960d:463. Holotype ♀ (ZIUG), paratypes ♀♀ ♂ (IECA). – Germany.

***Hosts.*** *Aphis gossypii* Glover (Raychaudhuri et al. 1990; Naeem et al. 2005); ***Elatobium abietinum*** (Walker) (Starý 1960d, 1963b, 1973a, 1977, 1987a, 2006; Mackauer 1962c; Mackauer & Starý 1967; Marsh 1979; Derocles et al. 2012).

***Distribution.*** **Canada** (Mackauer & Starý 1967); **Czech Republic** (Starý 1977, 1987a, 1989a, 2006); **Finland** (BOLD:AAF7225); **France** (Derocles et al. 2012); **Germany** (Starý 1960d, 1973a; Mackauer 1962c; Schimitschek 1962; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1983, 1987); **India** (Raychaudhuri et al. 1990; Das & Chakrabarti 2023a); **Italy** (Tomanović et al. 2023c); **Kazakhstan** (Davidian 2017); **Norway** (Mjøs et al. 2024); **Pakistan** (Naeem et al. 2005); **Russia** (Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Mitrovski-Bogdanović et al. 2021); **Slovakia** (Starý 1977); **United Kingdom** (Mackauer 1962c; Mackauer & Starý 1967; Starý 1973a); **USA** (von Scheller 1963; Mackauer & Starý 1967).

### *Aphidius segmentatus* Pike & Starý, 2000 [Fig. 20D]

*Aphidius segmentatus* Pike & Starý [in Pike et al.], 2000:697. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (IECA, WSUJ). – USA.

***Hosts.*** ***Hyperomyzus lactucae*** (Linnaeus), ***Hyperomyzus nigricornis*** (Knowlton), ***Uroleucon erigeronense*** (Thomas) (Pike et al. 2000).

***Distribution.*** **USA** (Pike et al. 2000).

### *Aphidius setiger* (Mackauer, 1961) [Fig. 20E]

*Euaphidius setiger* Mackauer, 1961c:273. Holotype ♀, Paratype ♂ (CNC). – France.

**Syn.:** *Aphidius aceri* Ivanov, 1925, *nec* Haliday, 1833.

***Hosts.*** *Aphis fabae* Scopoli (Wiackowski et al. 1997, 2001); *Diuraphis noxia* (Mordvilko) (Miller & Haile 1988); ***Drepanosiphum oregonense*** Granovsky (Kavallieratos et al. 2016); *Metopolophium dirhodum* (Walker) (Miller & Haile 1988); *Myzocallis carpini* (Koch) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Periphyllus acericola*** (Walker) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Periphyllus aceris*** (Linnaeus) (Mackauer 1961c; Starý 1976a; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Periphyllus bulgaricus*** Tashev (Starý et al. 1971; Starý 1973a, 1976a; Suay Cano & Michelena Saval 1998; Kavallieratos et al. 2001, 2004); ***Periphyllus californiensis*** (Shinji) (Pike et al. 2000); ***Periphyllus coracinus*** (Koch) (Starý 1972c, 1973a, 2006); ***Periphyllus hirticornis*** (Walker) (Starý 1972c, 1973a, 1977, 1987a, 2006; Baker & Broad 2009); ***Periphyllus lyropictus*** (Kessler) (Thuneberg 1963; Starý & Rupais 1964; Mackauer & Starý 1967; Starý 1972c, 1973a, 1977, 1987a, 2006; Kierych 1975; Marsh 1979; Pike et al. 1996, 2000; Ferrer-Suay et al. 2017); ***Periphyllus testudinaceus*** (Fernie) (Starý 1966c, 1976a; Mackauer & Starý 1967; Marsh 1979; Pennacchio 1989; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Kavallieratos et al. 2004, 2016; Rakhshani et al. 2008a; Baker & Broad 2009; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); ***Periphyllus*** spp. (Starý 1965a, 1977, 1979a, 1995b, 2006; Mackauer & Starý 1967; Kolarov 1997; Tomanović et al. 1999b; Starý et al. 2000; Nazari et al. 2012; Kavallieratos et al. 2016; Ferrer-Suay et al. 2017; Mitrovski-Bogdanović et al. 2021); *Rhopalosiphum padi* (Linnaeus) (Miller & Haile 1988); *Schizaphis graminum* (Rondani) (Miller & Haile 1988).

***Distribution.*** **Algeria** (Mohdeb et al. 2021); **Austria** (Mackauer & Starý 1967; Mackauer 1968a); **Belarus** (Davidian 2017); **Belgium** (Mitrovski-Bogdanović et al. 2021); **Bulgaria** (Atanassova 1997; Kolarov 1997; Todorov 2007); **Canada** (Mackauer & Starý 1967; Mackauer 1968a); **Czech Republic** (Starý 1966c, 1972c, 1973a, 1977, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Pennacchio 1989; Ferrer-Suay et al. 2017); **Ethiopia** (Miller & Haile 1988); **Finland** (Thuneberg 1963; Hellén 1966; Mackauer & Starý 1967; Mackauer 1968c); **France** (Mackauer 1961c; Mackauer & Starý 1967; Starý et al. 1971; Starý 1973a, 1976a); **Georgia** (Starý 1965a, 1973a, 1976a; Pennacchio 1989; Davidian 2017); **Germany** (Mackauer & Starý 1967; Mackauer 1968a; Starý 1973a; Belokobylskij et al. 2003); **Greece** (Kavallieratos et al. 2001, 2004); **Hungary** (Polgár 1983); **India** (Rishi & Bhagat 1980; Starý & Ghosh 1983; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Iran** (Starý 1979a; Starý et al. 2000; Rakhshani et al. 2008a, 2019; Fallahzadeh & Saghaei 2010; Nazari et al. 2012); **Italy** (Mackauer & Starý 1967; Mackauer 1968a; Starý 1976a; Bergamesco et al. 1995); **Latvia** (Starý & Rupais 1964; Mackauer & Starý 1967); **Lithuania** (Starý & Rupais 1964; Starý 1973a); **Moldova** (Starý 1973a; Talitzky & Kuslitzky 1990; Davidian 2017); **Netherlands** (Mackauer & Starý 1967; Mackauer 1968a); **Norway** (Mjøs et al. 2024); **Poland** (Kierych 1975; Huflejt 1997; Wiackowski et al. 1997, 2001; Wiackowski & Wiackowska 2000; Tran & Piekarska-Boniecka 2017); **Russia** (Starý 1965a; Mackauer & Starý 1967; Davidian 2017, 2019b; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a, 1999b; Kavallieratos et al. 2004, 2016; Žikić et al. 2012; Ilić-Milošević et al. 2015; Mitrovski-Bogdanović et al. 2021); **Slovakia** (Starý 1977); **Spain** (Suay Cano & Michelena Saval 1998); **Switzerland** (Ilić-Milošević et al. 2015); **Türkiye** (Starý 1976a); **Ukraine** (Ivanov 1927); **United Kingdom** (Baker & Broad 2009; Ilić-Milošević et al. 2015); **USA** (Pike et al. 1996, 2000).

***Remarks.*** The oldest name, *Aphidius aceri* Ivanov, 1925, is not available because of homonymy with *Aphidius aceris* Haliday, 1833.

### *Aphidius seyrigi* Granger, 1949

*Aphidius seyrigi* Granger, 1949:410. Syntypes ♀♂ (MNHN). – Madagascar.

***Host.*** Unknown.

***Distribution.*** **Madagascar** (Granger 1949; Benoit 1957; Mackauer & Starý 1967; Starý 2005; Madl & van Achterberg 2014); **Réunion** (Benoit 1957; Mackauer & Starý 1967; Madl & van Achterberg 2014).

### *Aphidius sichuanensis* Chen & Shi, 2001

*Aphidius sichuanensis* Chen & Shi, 2001:204. Holotype ♀, paratypes ♀ ♂ (FAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chen & Shi 2001; Zhao et al. 2013).

### *Aphidius similis* Starý & Carver, 1980

*Aphidius similis* Starý & Carver, 1980:339. Holotype ♀ (ANIC), paratypes ♀♀ ♂♂ (ANIC, IECA, NMV). – Australia.

***Hosts.*** ***Aphis gossypii*** Glover, ***Aphis spiraecola*** Patch, ***Brachycaudus helichrysi*** (Kaltenbach) (Agarwala et al. 1980; Raychaudhuri et al. 1982); ***Diuraphis noxia*** (Mordvilko) (Heddle et al. 2020); ***Myzus persicae*** (Sulzer) (Agarwala et al. 1980; Starý & Carver 1980; Raychaudhuri et al. 1982; Carver 1992; Subhrani et al. 2006); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Starý & Carver 1980); ***Rhopalosiphum padi*** (Linnaeus) (Starý & Carver 1980; Carver 1992; Milne 1995); ***Sitobion miscanthi*** (Takahashi) (Starý & Carver 1980).

***Distribution.*** **Australia** (Starý & Carver 1980; Carver 1992; Milne 1995; Bowie et al. 1999; Heddle et al. 2020; Ward et al. 2021b); **India** (Agarwala et al. 1980, 1981a; Raychaudhuri et al. 1982; Subhrani et al. 2006; Dey & Akhtar 2007; Das & Chakrabarti 2023a); **New Zealand** (Accidental introduction – Valentine & Walker 1991; Bulman et al. 2021; Ward 2026).

### *Aphidius smithi* Sharma & Subba Rao, 1959 [Fig. 20F]

*Aphidius smithi* Sharma & Subba Rao, 1959:183. Holotype ♀ (NPCI). – India.

***Hosts.*** ***Acyrthosiphon gossypii*** Mordvilko (Starý & González 1978; Starý 1979a); ***Acyrthosiphon kondoi*** Shinji (González et al. 1978; Starý 1993b, 1995c; Starý et al. 2000; Rakhshani et al. 2006a); ***Acyrthosiphon pisum*** (Harris) (Mackauer & Finlayson 1967; Mackauer & Starý 1967; Mackauer 1968e, 1969, 1976a; Rao et al. 1969; Starý 1970a, 1970e, 1974e, 1979a, 1993b, 1995c, 2006; Mackauer & Campbell 1972; Campbell & Mackauer 1973; Angalet & Fuester 1977; Marsh 1977, 1979; Liu 1977; González et al. 1978; Starý & González 1978; Thiboldeaux et al. 1987; Mescheloff & Rosen 1990b; Starý et al. 1993a, 1999, 2000, 2007; Ahmad & Singh 1995b, 1995c; Pike et al. 1996, 2000; Chen & Shi 2001; Kavallieratos et al. 2001, 2004, 2006; Rakhshani et al. 2006a, 2008a, 2012b; Rafi et al. 2010; Khan et al. 2012; Nazari et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013); ***Acyrthosiphon*** spp. (Mackauer 1962g; Bhagat 1984; Starý et al. 1999); *Amphorophora ampullata bengalensis* Hille Ris Lamb. & Basu (Chakrabarti & Debnath 2009); ***Aphis craccivora*** Koch (Heidari Latibari et al. 2022); *Aphis jacobaeae* Schrank (Laamari et al. 2011); *Aulacorthum solani* (Kaltenbach) (Starý et al. 1999); *Myzus persicae* (Sulzer) (Marsh 1979); *Nearctaphis bakeri* (Cowen) (Barahoei et al. 2013); *Sitobion avenae* (Fabricius) (Rakhshani et al. 2008a); *Sitobion fragariae* (Walker) (Hamid & Shah 1971; Hamid & Shah 1972; Starý & Ghosh 1983; Starý et al. 1999).

***Distribution.*** **Afghanistan** (González et al. 1978; Petrović et al. 2019); **Algeria** (Laamari et al. 2011; Rakhshani et al. 2019); **Argentina** (Introduced – Starý & Delfino 1987); **Australia** (Introduced – Ward et al. 2021b); **Belgium** (Alhmedi et al. 2009; Lopes et al. 2016); **Brazil** (Introduced - Starý et al. 2007; Petrović et al. 2019); **Canada** (Introduced – Mackauer & Bisdee 1965; Mackauer & Starý 1967; Mackauer & Finlayson 1967; Mackauer 1968e, 1969; Mackauer & Campbell 1972; Campbell & Mackauer 1973; Starý 1974e; Marsh 1979; Mackauer & Kambhampati 1986); **Chile** (Introduced – Starý 1993b, 1995c; Starý et al. 1993a, 2014c); **China** (Chen & Shi 2001); **Czech Republic** (Introduced – Starý 1970e, 1974e, 1989a, 2006); **Greece** (Kavallieratos et al. 2001, 2004, 2006); **India** (Sharma & Subba Rao 1959; Mackauer & Starý 1967; Rao et al. 1969; Marsh 1979; Starý & Ghosh 1983; Bhagat 1984; Raychaudhuri et al. 1990; Ahmad

& Singh 1995b, 1995c; Dey & Akhtar 2007; Rafi et al. 2010; Rakhshani et al. 2012a; Ahmad & Wani 2014; Petrović et al. 2019; Das & Chakrabarti 2023a); **Iran** (González et al. 1978; Starý 1979a; Starý et al. 2000; Rakhshani et al. 2006a, 2008a, 2012b, 2019; Fallahzadeh & Saghaei 2010; Barahoei et al. 2012, 2013; Alikhani et al. 2013; Nazari et al. 2012; Ghotbi Ravandi et al. 2017; Ameri et al. 2019; Abdoli et al. 2026); **Iraq** (Al-Azawi 1970; Rakhshani et al. 2019); **Mexico** (Starý & Remaudière 1988; Robinson 1992; Coronado-Blanco et al. 2004); **Pakistan** (Hamid & Shah 1971, 1972; Marsh 1979; Starý & Ghosh 1983; Starý et al. 1999; Khan et al. 2012); **Palestine** (González et al. 1978; Mescheloff & Rosen 1990b); **Peru** (Starý et al. 2014c); **Slovakia** (Starý 1989a); **Spain** (Petrović et al. 2019); **Tajikistan** (Starý 1979a); **Türkiye** (Akar & Çetin Erdoğan 2017; Rakhshani et al. 2019); **USA** (Introduced – Beardsley 1961; Davis & Krauss 1962; Mackauer & Finlayson 1967; Mackauer & Starý 1967; Mackauer 1969; Mackauer & Campbell 1972; Angalet & Fuester 1977; Liu 1977; Marsh 1977, 1979; Thiboldeaux et al. 1987; Pike et al. 1996, 2000; Petrović et al. 2019); **Uzbekistan** (Petrović et al. 2019).

### *Aphidius sonchi* Marshall, 1896 [Fig. 21A]

*Aphidius sonchi* Marshall, 1896:585. Lectotype ♀ (after Mackauer 1968a) (NHMUK). – United Kingdom.

***Hosts.*** *Acyrthosiphon cyparissiae* (Koch) (Ferrière & Voukassovitch 1928; Voukassovitch 1928; Telenga 1950); *Aphis frangulae* Kaltenbach (Heinze & Profft 1940); *Aphis nasturtii* Kaltenbach (Heinze & Profft 1940); *Aphis punicae* Passerini (Hassan 1957); *Aulacorthum solani* (Kaltenbach) (Heinze & Profft 1940); *Hyalopterus pruni* (Geoffroy) (Fulmek 1968; Starý 1976a); ***Hyperomyzus carduellinus*** (Theobald) (Takada & Yamauchi 1979; Pennacchio 1989); ***Hyperomyzus lactucae*** (Linnaeus) (Starý 1963b, 1964d, 1966c; Mackauer & Starý 1967; Starý et al. 1971, 1973; Halme 1977; Starý 1976a, 1987a, 2006; Liu & Hughes 1984a, 1984b; Liu et al. 1984; Mitchell 1984; Aeschlimann & Vitou 1985; Liu 1985, 1988; Liu & Carver 1985; González & Michelena 1987; Michelena Saval & González Funes 1987; Pennacchio 1989; Carver 1992; Sandow 1993; Stufkens & Farrell 1994; Wiackowski & Wiackowska 1996, 2000; Tomanović et al. 1999b, 2003c; Chen & Shi 2001; Wiackowski et al. 2001; Kavallieratos et al. 2004; Nebreda et al. 2005; Derocles et al. 2012, 2014a; Kos et al. 2012; Laamari et al. 2012; Žikić et al. 2012; Ayadi et al. 2017; Pons et al. 2018; Mitrovski-Bogdanović et al. 2021); ***Hyperomyzus lampsanae*** (Börner) (Starý et al. 1977a); ***Hyperomyzus picridis*** (Börner) (Starý et al. 1971; Starý 1973a, 1976a; Mitrovski-Bogdanović et al. 2021); ***Hyperomyzus*** spp. (Starý 1966d, 1979a; Starý & Juchnevič 1978; Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); *Myzus persicae* (Sulzer) (Heinze & Profft 1940); *Rhopalosiphum maidis* (Fitch) (Hassan 1957; Risbec 1960; Starý 1976a); *Uroleucon sonchi* (Linnaeus) (Carver 1999).

***Distribution.*** **Algeria** (Laamari et al. 2012; Rakhshani et al. 2019); **Andorra** (Sanchis et al. 1999); **Australia** (Carver 1992, 1999; Sandow 1993; Ward et al. 2021b); **Belgium** (Mitrovski-Bogdanović et al. 2021); **Canada** (BOLD:AFQ4780); **China** (Lu & Ji 1992; Chen & Shi 2001); **Czech Republic** (Starý 1966c, 1973a, 1987a, 1989a, 2006; Mackauer & Starý 1967; Pennacchio 1989); **Egypt** (Hassan 1957; Risbec 1960; Mackauer & Starý 1967; Starý 1976a; Rakhshani et al. 2019); **Faroe Islands** (Roman 1925; Kryger & Schmiedeknecht 1938); **Finland** (Halme 1977); **France** (Starý et al. 1971, 1973, 1977a; Starý 1973a, 1976a; Aeschlimann & Vitou 1985; Derocles et al. 2012, 2014a); **Germany** (Heinze & Profft 1940; Mackauer & Starý 1967); **Greece** (Aeschlimann & Vitou 1985); **Hungary** (Gammel 1930; Polgár 1983); **India** (Raychaudhuri et al. 1990; Das & Chakrabarti 2023a); **Iraq** (Aeschlimann & Vitou 1985); **Ireland** (BOLD:AFQ4780); **Italy** (Starý 1966d, 1973a, 1976a; Mackauer & Starý 1967; Bergamesco et al. 1995); **Japan** (Takada & Yamauchi 1979; Pennacchio 1989); **Kazakhstan** (Starý & Juchnevič 1978; Starý 1979a); **Lithuania** (Rakauskas 1985); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012); **Netherlands** (Papp et al. 1996); **New Zealand** (Accidental introduction – Stufkens & Farrell 1994; Cameron et al. 2013; Ward 2026); **Palestine** (Bodenheimer & Swirski 1957; Starý 1976a); **Poland** (Niezabitowski 1910; Mackauer & Starý 1967; Kierych 1975; Wiackowski & Wiackowska 1996, 2000; Huflejt 1997; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian 2017, 2018b, 2019b; Davidian & Humala 2023; Davidian & Ruchin 2023); **Serbia** (Ferrière & Voukassovitch 1928; Mackauer & Starý 1967; Tomanović et al. 1998a, 1999b, 2003c; Kavallieratos et al. 2004; Žikić et al. 2000, 2012; Mitrovski-Bogdanović et al. 2021); **Slovenia** (Kos et al.

2012; Mitrovski-Bogdanović et al. 2021); **South Korea** (Kim et al. 2020; Kim 2026); **Spain** (González & Michelena 1987; Michelena Saval & González Funes 1987; Tizado & Núñez-Perez 1991; Sanchis et al. 1995; Nieves-Aldrey et al. 2003; Nebreda et al. 2005; Michelena Saval & Martínez De Murguía 2012; Pons et al. 2018); **Tunisia** (Ayadi et al. 2017; Rakhshani et al. 2019); **Türkiye** (Aeschlimann & Vitou 1985); **United Kingdom** (Marshall 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Starý 1973a; Davidian & Rispin 2016).

### *Aphidius staryi* Das & Chakrabarti, 1990

*Aphidius staryi* Das & Chakrabarti, 1990a:402. Holotype ♀, paratypes ♀♀ ♂♂ (ZSI). – India.

***Host.*** ***Myzus cornutus*** Medda & Chakrabarti (Das & Chakrabarti 1990a).

***Distribution.*** **India** (Das & Chakrabarti 1990a, 2023a; Dey & Akhtar 2007).

### *Aphidius staticobii* Tomanović & Petrović, 2012

*Aphidius staticobii* Tomanović & Petrović [in Kos et al.], 2012:40. Holotype ♀ (FBUB), paratypes ♀♀ ♂♂ (IPPUL, FBUB, IECA). – Slovenia.

***Host.*** ***Staticobium limonii*** Contarini (Kos et al. 2012).

***Distribution.*** **France**, **Slovenia** (Kos et al. 2012).

### *Aphidius stigmaticus* Rakhshani & Tomanović, 2011

*Aphidius stigmaticus* Rakhshani & Tomanović [in Rakhshani et al.], 2011:2566. Holotype ♀ (FBUB), paratypes ♀♀ ♂♂ (FBUB, DPPZ). – Iran.

***Host.*** ***Macrosiphoniella tanacetaria*** (Kaltenbach) (Rakhshani et al. 2011); ***Macrosiphoniella*** sp. (Davidian 2017).

***Distribution.*** **Iran** (Rakhshani et al. 2011, 2019); **Russia** (Davidian 2017, 2019b).

***Remarks.*** The record of *Aphidius tanacetarius* Mackauer in Iran (Radjabi-Mazhar et al. 2008), was due to a misidentification of the specimen and refers to *Aphidius stigmaticus* Rakhshani & Tomanović, 2011

### *Aphidius subantarcticus* Starý & Vogel, 1985

*Aphidius subantarcticus* Starý & Vogel, 1985:26. Holotype ♀, paratypes ♂♂ (IECA). – Falkland Islands.

***Host.*** ***Jacksonia papillata*** Theobald (Starý & Vogel 1985).

***Distribution.*** **Falkland Islands** (Starý & Vogel 1985).

***Remarks.*** According to the original description (Starý & Vogel 1985), some paratypes are deposited in the Collection of the University of Marburg, Germany.

### *Aphidius sussi* Pennacchio & Tremblay, 1989

*Aphidius sussi* Pennacchio & Tremblay, 1989:167. Holotype ♀, paratypes ♀♀ ♂♂ (DAUN). – Italy.

***Hosts.*** ***Delphiniobium junackianum*** (Karsch) (Kavallieratos & Tomanović 2001; Kavallieratos et al. 2004, 2006; Pennacchio 1989; Pennacchio & Tremblay 1989; Tomanović & Brajković 2000; Tomanović et al. 2003c, 2007a; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); ***Delphiniobium yezoense*** Miyazaki (Davidian & Gavrilyuk 2014; Davidian 2017); ***Delphiniobium*** spp. (Kos et al. 2012; Mitrovski-Bogdanović et al. 2021).

***Distribution.*** **Belgium** (Mitrovski-Bogdanović et al. 2021); **Czech Republic** (Havelka et al. 2014b); **Italy** (Pennacchio 1989; Pennacchio & Tremblay 1989; Bergamesco et al. 1995); **Montenegro** (Tomanović & Brajković 2000; Kavallieratos & Tomanović 2001; Tomanović et al. 2003c, 2007a; Kavallieratos et al. 2004; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **North Macedonia** (Kavallieratos et al. 2006); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2019b); **Serbia** (Tomanović et al. 1998a, 2003c, 2007a; Tomanović & Brajković 2000; Kavallieratos & Tomanović 2001; Kavallieratos et al. 2004, 2006; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); **Slovenia** (Kos et al. 2012; Mitrovski-Bogdanović et al. 2021).

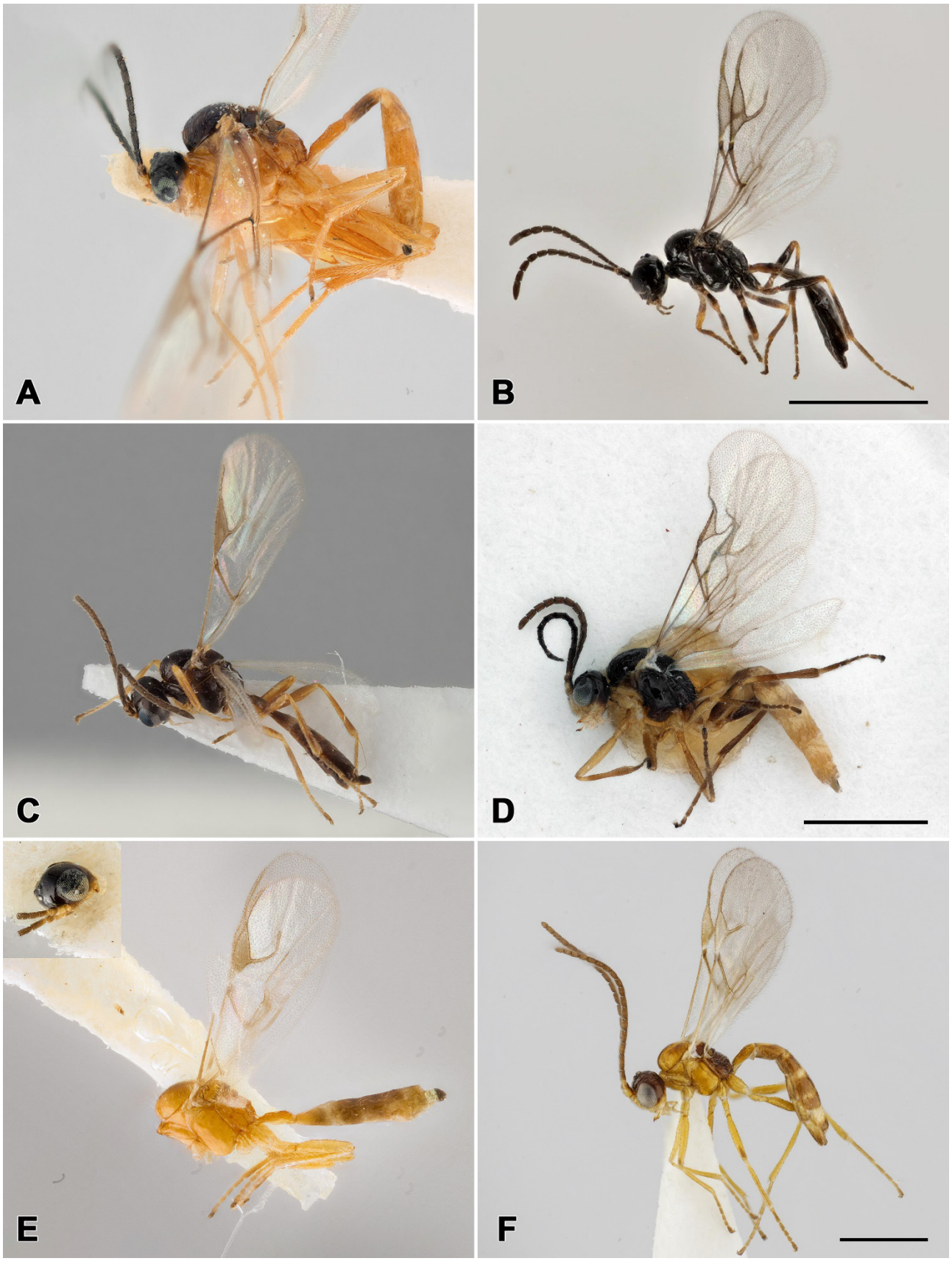



**Figure 20.** Species of the genus *Aphidius* Nees von Esenbeck, 1819. **A.** *Aphidius rubifolii* Mackauer, 1968 – Holotype, CNC; **B.** *Aphidius salicis* Haliday, 1834 – Netherlands, RMNH; **C.** *Aphidius schimitscheki* (Starý, 1960) – Finland, ZMHF; **D.** *Aphidius segmentatus* Pike & Starý, 2000 – Holotype, USNM; **E.** *Aphidius setiger* (Mackauer, 1961) – Holotype, CNC; **F.** *Aphidius smithi* Sharma & Subba Rao, 1959 – Iran, DPPZ. Scale bar: 1 mm.

### *Aphidius silvaticus* Starý, 1962

*Aphidius silvaticus* Starý, 1962d:114. Holotype ♀, paratypes ♀♀ ♂ (IECA). – Czech Republic.

***Hosts.*** ***Amphorophora ampullata*** Buckton (Starý 1962d; Mackauer & Heie 1965; Jamhour et al. 2016); ***Amphorophora idaei*** (Börner) (Jamhour et al. 2016); ***Amphorophora rubi*** (Kaltenbach) (Jamhour et al. 2016; Mitrovski-Bogdanović et al. 2021); ***Amphorophora*** spp. (Mitrovski-Bogdanović et al. 2021); ***Macrosiphum dryopteridis*** (Holman), ***Macrosiphum prenanthidis*** Börner (Starý 1962d); ***Periphyllus*** sp. (Mitrovski-Bogdanović et al. 2021).

***Distribution.*** **Austria**, **Belgium** (Jamhour et al. 2016); **Croatia** (Jamhour et al. 2016; Mitrovski-Bogdanović et al. 2021) **Czech Republic** (Starý 1962d; Jamhour et al. 2016); **Denmark** (Mackauer & Heie 1965); **Finland** (Jamhour et al. 2016; Mitrovski-Bogdanović et al. 2021); **Germany** (Mitrovski-Bogdanović et al. 2021); **Lituania, Montenegro** (Mitrovski-Bogdanović et al. 2021); **Norway** (Mjøs et al. 2024); **Russia** (Davidian & Ruchin 2023); **Serbia** (Jamhour et al. 2016; Mitrovski-Bogdanović et al. 2021).

***Remarks.*** *Aphidius silvaticus* is a member of *Aphidius urticae* s.str. group and was re-described by Jamhour et al. (2016).

### *Aphidius tanacetarius* Mackauer, 1962 [Fig. 21B]

*Aphidius tanacetarius* Mackauer, 1962c:645. Holotype ♀, paratypes ♀♀ ♂ (CNC). – Germany.

**Syn.:** *Aphidius tanaceti* Curtis, 1837 [*nomen nudum*]; *Aphidius tanaceticola* Starý, 1963.

***Hosts.*** *Aphis rumicis* Linnaeus (Barnea & Mustata 2007); ***Metopeurum fuscoviride*** Stroyan (Mackauer 1962c; Starý 1963a, 1964d, 1966c, 1973a, 1977, 1987a, 1995b, 2006; Mackauer & Starý 1967; Starý et al. 1971; Kierych 1980; Tomanović et al. 2003c; Kavallieratos et al. 2004; Barnea 2007; Barnea & Mustata 2007; Žikić et al. 2012; Davidian 2017; Mitrovski-Bogdanović et al. 2021); ***Microsiphum millefolii*** Wahlgren (Mackauer & Starý 1967; Starý 1973a).

***Distribution.*** **Belarus** (Davidian 2017); **Belgium** (Mitrovski-Bogdanović et al. 2021); **Czech Republic** (Starý 1963a, 1966c, 1973a, 1977, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967); **France** (Starý et al. 1971, 1977a; Starý 1973a); **Germany** (Mackauer 1962c; Mackauer & Starý 1967; Starý 1973a; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **Moldova** (Talitzky & Kuslitzky 1990); **Norway** (Mjøs et al. 2024); **Poland** (Kierych 1980; Huflejt 1997); **Romania** (Barnea 2007; Barnea & Mustata 2007); **Russia** (Starý 1973a; Davidian 2017, 2019b; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a, 2003c; Žikić et al. 2000, 2012; Kavallieratos et al. 2004; Mitrovski-Bogdanović et al. 2021); **Slovakia** (Starý 1977, 1989a); **Ukraine** (Kaliuzhna 2013b, 2019b); **United Kingdom** (Curtis 1837; Smith 1853).

### *Aphidius tarsalis* van Achterberg, 2006

*Aphidius tarsalis* van Achterberg, 2006:20. Holotype ♀ (ZMUC), paratypes ♀♀ ♂♂ (ZMUC, RMNH). – Greenland.

***Host.*** Unknown.

***Distribution.*** **Canada** (BOLD:AFS3452); **Greenland** (van Achterberg 2006); **Norway** (BOLD:AFS3452).

### *Aphidius tonkinensis* Tomanović & van Achterberg, 2026

*Aphidius tonkinensis* Tomanović & van Achterberg [in Tomanović et al.], 2026b:7. Holotype ♀, paratypes ♀♀ ♂♂ (RMNH). – Vietnam.

***Host.*** Unknown.

***Distribution.*** **Vietnam** (Tomanović et al. 2026b).

### *Aphidius transcaspicus* Telenga, 1958 [Fig. 21C]

*Aphidius transcaspicus* Telenga, 1958:55. Holotype ♀, paratypes ♀ ♂ (SIZK). – Uzbekistan.

**Syn.**: *Aphidius magdae* Mescheloff & Rosen, 1990.

***Hosts.*** *Acyrthosiphon gossypii* Mordvilko (Ataeva 1963); *Amphorophora rubi* (Kaltenbach) (Fulmek 1968); *Aphis aurantii* Boyer de Fonscolombe (Takada 1998); *Aphis craccivora* Koch (Ataeva 1961; Starý 1973a;

Tomanović et al. 2014); ***Aphis fabae*** Scopoli (Starý 1973a; Tomanović et al. 2014); *Aphis gossypii* Glover (Takada 2002; Tomanović et al. 2014); *Aphis nasturtii* Kaltenbach (Starý & Kaddou 1971); *Aphis* sp. (Bhagat & Ahmad 1995; Takada 1998); *Brachycaudus amygdalinus* (Schouteden) (Mahmoud et al. 1981; Mescheloff & Rosen 1990b); *Brachycaudus cardui* (Linnaeus) (Ataeva 1961; Fulmek 1968); *Brachycaudus helichrysi* (Kaltenbach) (Čkrkić et al. 2024); *Ephedraphis ephedrae* (Nevsky) (Ataeva 1961); ***Hyalopterus amygdali*** (Blanchard) (Starý 1965b, 1966d; Kavallieratos & Lykouressis 1999b; Kavallieratos et al. 2001, 2004, 2006, 2008b; Aslan et al. 2004; Uysal et al. 2004; Rakhshani et al. 2008a; Jafari Ahmadabadi et al. 2011; Mossadegh et al. 2011; Jafari Ahmadabadi & Modarres Awal 2012; Rakhshani 2012; Tomanović et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013); ***Hyalopterus pruni*** (Geoffroy) (Benoit 1955; Starý 1964c, 1965a, 1965b, 1966a, 1966b, 1966c, 1966d, 1967b, 1969b, 1973a, 2006; Mackauer & Starý 1967; Tremblay 1967a; Roberti 1969; Al-Azawi 1970; Starý & Kaddou 1971; Starý & Remaudière 1973; Liu 1975; Mahmoud et al. 1981; Erkin 1983; Mescheloff & Rosen 1990b; Takada 1998; Kavallieratos & Lykouressis 1999b; Starý et al. 1999, 2000; Kavallieratos et al. 2001, 2004, 2006, 2008b; Ölmez & Ulusoy 2003; Aslan et al. 2004; Michelena et al. 2004; Uysal et al. 2004; Lozier et al. 2008; Rakhshani et al. 2008a; Chen et al. 2009; Jafari Ahmadabadi et al. 2011; Laamari et al. 2011, 2012; Jafari Ahmadabadi & Modarres Awal 2012; Nazari et al. 2012; Rakhshani 2012; Rakhshani et al. 2012b; Tomanović et al. 2012, 2014; Alikhani et al. 2013; Barahoei et al. 2013; Taheri & Rakhshani 2013; Ayadi et al. 2017; Ghelamallah et al. 2018; Sadat et al. 2019); ***Hyalopterus*** spp. (Tomanović et al. 2014; Ferrer-Suay et al. 2017; Zouari et al. 2018; Aparicio et al. 2019; Mitrovski-Bogdanović et al. 2021); ***Hyperomyzus carduellinus*** (Theobald) (Čkrkić et al. 2024); ***Illinoia liriodendri*** (Monell) (Meseguer et al. 2024); ***Macrosiphum euphorbiae*** (Thomas) (Čkrkić et al. 2024); ***Melanaphis donacis*** (Passerini) (Starý 1966d, 1973a; Mackauer & Starý 1967; Starý & Kaddou 1971; Mescheloff & Rosen 1990b; Barahoei et al. 2014); ***Melanaphis*** spp. (Tomanović et al. 2014; Mitrovski-Bogdanović et al. 2021); ***Myzus persicae*** (Sulzer) (Tomanović et al. 2014; Ghelamallah et al. 2018; Aparicio et al. 2019); *Phorodon humuli* (Schrank) (Starý et al. 2000); ***Rhopalosiphum maidis*** (Fitch) (Kasi Viswanathan 1972; Hwang et al. 2018; López-Monzón et al. 2019; Čkrkić et al. 2024); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Starý et al. 2000); ***Rhopalosiphum padi*** (Linnaeus) (Tomanović et al. 2014); ***Schizaphis rotundiventris*** (Signoret) (Takada 1998).

***Distribution.*** **Algeria** (Laamari et al. 2011, 2012; Tomanović et al. 2014; Ghelamallah et al. 2018; Rakhshani et al. 2019; Sadat et al. 2019); **Bulgaria** (Todorov 2007); **Burundi** (Čkrkić et al. 2024); **China** (Liu 1975; Chen et al. 2009); **Cyprus** (Lozier et al. 2008; Lozier & Mills 2009); **Czech Republic** (Starý 1966c, 1973a, 2006; Starý & Havelka 2008; Tomanović et al. 2012; Ferrer-Suay et al. 2017); **Egypt** (Lozier et al. 2008; Lozier & Mills 2009; Rakhshani et al. 2019); **France** (Tomanović et al. 2012, 2014); **Georgia** (Starý 1973a); **Greece** (Kavallieratos et al. 2001, 2004, 2006, 2008b; Lozier et al. 2008, 2009; Lozier & Mills 2009; Latham & Mills 2012; Tomanović et al. 2012, 2014; Mitrovski-Bogdanović et al. 2021); **Hungary** (Polgár 1983); **India** (Kasi Viswanathan 1972; Ghosh & Agarwala 1982; Bhagat & Ahmad 1995; Dey & Akhtar 2007; Rakhshani et al. 2012a; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Iran** (Starý et al. 2000; Lozier et al. 2008; Rakhshani et al. 2008a, 2012b, 2019; Lozier & Mills 2009; Jafari Ahmadabadi et al. 2011; Mossadegh et al. 2011; Jafari Ahmadabadi & Modarres Awal 2012; Nazari et al. 2012; Rakhshani 2012, Tomanović et al. 2012, 2014; Alikhani et al. 2013; Barahoei et al. 2013; Taheri & Rakhshani 2013); **Iraq** (Al-Rawy et al. 1969; Starý 1969b, 1969c; Al-Azawi 1970; Starý & Kaddou 1971; Mahmoud et al. 1981; Tomanović et al. 2012; Rakhshani et al. 2019); **Italy** (Starý 1964c, 1966d, 1973a; Mackauer & Starý 1967; Tremblay 1967a; Roberti 1969; Lozier et al. 2008; Lozier & Mills 2009; Tomanović et al. 2012); **Japan** (Takada 1998, 2002); **Kenya** (Čkrkić et al. 2024); **Lebanon** (Bartlett et al. 1978); **Madeira Islands** (Cecilio et al. 2009); **Mexico** (López-Monzón et al. 2019); **Morocco** (Lozier et al. 2008; Lozier & Mills 2009; Rakhshani et al. 2019); **Pakistan** (Starý et al. 1999; Lozier et al. 2008; Lozier & Mills 2009; Tomanović et al. 2012; Khalil et al. 2019); **Palestine** (Bodenheimer & Swirski 1957; Mackauer & Starý 1967; Mescheloff & Rosen 1990b; Lozier et al. 2008; Lozier & Mills 2009; Tomanović et al. 2012; Davidian 2017); **Poland** (Tran & Piekarska-Boniecka 2017); **Russia** (Davidian 2007, 2017, 2019b); **South Korea** (Davidian 2017; Hwang et al. 2018; Kim et al. 2020; Kim 2026); **South Africa** (Čkrkić et al. 2024); **Spain** (Mackauer & Starý 1967; Starý & Remaudière 1973; Michelena et al. 2004; Lozier et al. 2008, 2009; Lozier & Mills 2009; Michelena Saval & Martínez De Murguía 2012; Tomanović et al. 2012; Aparicio et al. 2019); **Tajikistan** (Fulmek 1968); **Tunisia** (Lozier et al. 2008; Lozier & Mills 2009; Ben Halima et al. 2013; Ayadi et al. 2017; Zouari et al. 2018; Rakhshani et al. 2019); **Türkiye** (Erkin 1983; Ölmez & Ulusoy 2003; Aslan et al. 2004;

Uysal et al. 2004; Çetin Erdoğan et al. 2008, 2010; Lozier et al. 2008; Guncan et al. 2010; Lozier & Mills 2009; Tomanović et al. 2012; Rakhshani et al. 2019); **Turkmenistan** (Tomanović et al. 2012); **USA** (BOLD: ACE7585); **Uzbekistan** (Starý 1965a; Daminova et al. 2001; Aripov 2003; Tomanović et al. 2012).

### *Aphidius tuberculatus* Samanta & Raychaudhuri, 1990

*Aphidius tuberculatus* Samanta & Raychaudhuri [in Raychaudhuri et al.], 1990:37. Holotype ♀, paratype ♀ (CUCE). – India.

***Host.*** ***Periphyllus*** sp. (Raychaudhuri et al. 1990).

***Distribution.*** **India** (Raychaudhuri et al. 1990; Das & Chakrabarti 2023a).

### *Aphidius uroleuci* Mescheloff & Rosen, 1990

*Aphidius uroleuci* Mescheloff & Rosen, 1990b:80. Holotype ♀, paratypes ♀♀ ♂♂ (AROV). – Palestine.

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

***Distribution.*** **Bulgaria** (Todorov 2014); **Palestine** (Mescheloff & Rosen 1990b).

### *Aphidius urticae* Haliday, 1834 [Fig. 21D]

*Aphidius urticae* Haliday, 1834:100. Holotype ♀ (after Mackauer 1961b) (NHMUK). – United Kingdom.

**Syn.:** *Aphidius euphorbiae* Marshall, 1896; *Aphidius longulus* Marshall, 1896; *Aphidius lonicerae* Marshall, 1896; *Aphidius silenes* Marshall, 1896; *Aphidius goidanichi* Quilis, 1932; *Aphidius ivanovae* Telenga, 1958; *Aphidius aulacorthi* Starý, 1963.

***Hosts.*** ***Acyrthosiphon caraganae*** (Cholodkovsky) (Meyer 1927; Starý 1972b, 1972d, 1973a, 1974e; Wiackowski et al. 2001); ***Acyrthosiphon cyparissiae*** (Koch) (Starý 1972b, 1972d, 1973a, 1974e, 1977, 2006); ***Acyrthosiphon cyparissiae turkestanicum*** Nevsky (Starý 1979a); ***Acyrthosiphon daphnidis*** Ilharco (Tomanović et al. 2003c, 2007a; Kavallieratos et al. 2004; Žikić et al. 2012); ***Acyrthosiphon euphorbiae*** Börner (Starý 1976a); ***Acyrthosiphon gossypii*** Mordvilko (Barahoei et al. 2013); ***Acyrthosiphon kondoi*** Shinji (González et al. 1978); ***Acyrthosiphon loti*** (Theobald) (Starý et al. 1971; Starý 1972b, 1973a, 1974e); ***Acyrthosiphon malvae*** (Mosley) (Starý 1963a, 1966c, 1972b, 1972d, 1973a, 1974e, 1987a, 2006; Starý et al. 1971; Kierych 1975; Liu 1977; Tomanović et al. 2006a; Žikić et al. 2012; Hubert & van Achterberg 2023); ***Acyrthosiphon nigripes*** Hille Ris Lambers (Starý 1972b, 1973a, 1974e); ***Acyrthosiphon pisum*** (Harris) (Marshall 1896; Starý et al. 1971, 1975; Starý 1972b, 1972d, 1972f, 1973a, 1974e, 1976a; Kierych 1975; González et al. 1978; Cameron et al. 1984; Mescheloff & Rosen 1990b; Kolarov 1997; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tomanović et al. 2003c; Kavallieratos et al. 2004; Rakhshani et al. 2008a; Khan et al. 2012; Kos et al. 2012; Žikić et al. 2012); ***Acyrthosiphon primulae*** (Theobald) (Starý 1973a, 1974e); ***Acyrthosiphon*** sp. (Starý 1965a, 1973a, 2006; Starý & González 1978; Das & Chakrabarti 1991a; Ferrer-Suay et al. 2017); ***Amphorophora ampullata*** Buckton (Mackauer 1962c; Starý 1962c, 1964d, 1966c, 1972b, 1972d, 1973a, 1974e, 1977, 2006; Mackauer & Starý 1967; Kierych 1975; Paonam & Singh 1986a; Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Amphorophora amurensis*** (Mordvilko) (Takada 1968; Starý 1975a); ***Amphorophora gei*** (Börner) (Mackauer 1962c); ***Amphorophora rubi*** (Kaltenbach) (Starý & Rupais 1964; Starý 1972b, 1973a, 1974e, 1979a, 1987a, 2006; Rakauskas 1981; Müller et al. 1999; Wiackowski et al. 2001; Pons et al. 2018); ***Amphorophora*** sp. (Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012); *Aphis aurantii* Boyer de Fonscolombe (Tremblay et al. 1980); *Aphis confusa* Walker (Barnea & Mustata 2007); *Aphis euphorbiae* Kaltenbach (Bignell 1901); *Aphis fabae* Scopoli (Wiackowski et al. 2001); *Aphis fabae evonymi* Fabricius (Malaquin & Moitie 1914; Fulmek 1968); *Aphis hieracii* Schrank (Fulmek 1968); *Aphis idaei* van der Goot, *Aphis ruborum* (Börner) (Wiackowski et al. 2001); *Aphis spiraephaga* Müller (Wiackowski et al. 1997); *Aphis ulmariae* Schrank (Fulmek 1968); ***Aulacorthum knautiae*** Heie (Mackauer & Heie 1965); ***Aulacorthum majanthemi*** Müller (Starý 1973a, 1974e, 2006); ***Aulacorthum solani*** (Kaltenbach) (Fulmek 1968; Starý 1973a, 1974e; Robert & Rabasse 1977; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2004, 2005b, 2006; Rabasse et al. 2001; Tomanović et al. 2003c, 2012; Barnea 2007; Žikić et al. 2012); ***Aulacorthum*** spp. (Starý 1963a, 1966c, 1977); *Brachycaudus helichrysi* (Kaltenbach) (Beirne 1942); *Brachycolus cucubali* (Passerini) (Starý et al. 1971; Starý 1972b, 1973a, 1974e); *Ericolophium holsti* (Takahashi)

(Agarwala et al. 1981a); *Hyadaphis foeniculi* (Passerini) (Marshall 1896; Fulmek 1968); ***Illinoia brevitarsis*** (Gillette & Palmer), ***Illinoia spiraea*** (MacGillivray), ***Illinoia*** (***Masonaphis***) sp. (Liu 1977); ***Impatientinum asiaticum*** Nevsky (Starý 2006; Starý et al. 2014a); ***Macrosiphum bupleuri*** Kadyrbekov (Davidian & Gavrilyuk 2014; Davidian 2017); ***Macrosiphum cholodkovskyi*** (Mordvilko) (Starý 1973a, 1974e); ***Macrosiphum corylicola*** Shinji (Paik 1976); ***Macrosiphum daphnidis*** Börner (Starý & Rupais 1964; Starý 1966c, 1972b, 1972d, 1973a, 1974e, 2006; Mackauer & Starý 1967; Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012); ***Macrosiphum doronicicola*** Leclant (Starý 1973a, 1974e, 1976a); ***Macrosiphum dryopteridis*** (Holman) (Starý 1962c, 1964d, 1966c; Mackauer & Starý 1967; Ferrer-Suay et al. 2017); ***Macrosiphum euphorbiae*** (Thomas) (Starý 1976a, 1987a; Trumble & Oatman 1984; Tomanović et al. 2003c; Kavallieratos et al. 2004, 2008a; Žikić et al. 2012); ***Macrosiphum funestum*** (Macchiati) (Starý 1962c, 1972b, 1972d, 1973a, 1974e, 1987a, 2006; Starý et al. 1971; Müller et al. 1999; Wiackowski et al. 2001; Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Macrosiphum gei*** (Koch) (Starý 1964d, 1966c, 1972b, 1973a, 1974e, 1977, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971; Ferrer-Suay et al. 2017); ***Macrosiphum melampyri*** Mordvilko (Starý et al. 1977a); ***Macrosiphum oredonense*** Remaudière (Mackauer & Starý 1967; Starý et al. 1971; Starý 1972b, 1972d, 1973a, 1974e, 2006; Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012); ***Macrosiphum prenanthidis*** Börner (Starý 1962c, 1964d, 1966c, 1972b, 1972d, 1973a, 1974e, 2006; Mackauer & Starý 1967; Starý et al. 1971; Tomanović et al. 2003c; Kavallieratos et al. 2004; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Macrosiphum rubiarctici*** Heikenheimo (Starý 1972b, 1972d, 1973a, 1974e); ***Macrosiphum stellariae*** Theobald (Starý 1964d, 1972b, 1972d, 1973a, 1974e, 2006; Mackauer & Starý 1967); ***Macrosiphum tinctum*** (Walker) (Starý 1974e, 2006; Starý et al. 1977a); ***Macrosiphum valerianiae*** (Clarke) (Liu 1977); ***Macrosiphum*** spp. (Mackauer & Starý 1967; Tomanović et al. 2003c; Kavallieratos et al. 2004, 2008a; Žikić et al. 2012; Davidian 2017; Ferrer-Suay et al. 2017); ***Metopolophium dirhodum*** (Walker) (Dean 1974; Jones & Dean 1975; Jones 1980; Polgár 1984; Höller et al. 1993); ***Microlophium carnosum*** (Buckton) (Goury & Guignon 1905; Mackauer 1962c; Starý 1962c, 1972b, 1973a, 1974e, 1976a, 1983f, 1987a, 2006; Mackauer & Starý 1967; Tremblay 1967a; Starý et al. 1971; Kierych 1975, 1980; Cameron et al. 1984; Pennacchio 1989; Müller et al. 1999; Tomanović et al. 1999b, 2003c; Kavallieratos et al. 2004; Rakhshani et al. 2008a; Talebi et al. 2009; Derocles et al. 2012; Kos et al. 2012; Žikić et al. 2012; Ferrer-Suay et al. 2017; Pons et al. 2018; Mitrovski-Bogdanović et al. 2021); ***Microlophium*** sp. (Davidian 2019c); ***Myzus persicae*** (Sulzer) (Paonam & Singh 1986a); ***Myzus varians*** Davidson (Arzone & Alma 1986); ***Neoacyrthosiphon holsti*** (Takahashi) (Raychaudhuri et al. 1982); *Prociphilus xylostei* (De Geer) (Fulmek 1968); ***Rhopalomyzus lonicerae*** (Siebold) (Fulmek 1968; Starý 1973a, 1974e, 2006; Tomanović et al. 2012); ***Schizaphis scirpi*** (Passerini) (Starý 1973a, 1977, 2006; Tomanović et al. 2003c, 2012; Kavallieratos et al. 2004; Žikić et al. 2012); ***Schizaphis*** sp. (Ferrer-Suay et al. 2017); ***Sitobion avenae*** (Fabricius) (Starý 1972b, 1973a, 1976a; Dean 1974; Starý et al. 1975; Polgár 1984); ***Sitobion fragariae*** (Walker) (Starý 1972b, 1976a; Starý et al. 1975); ***Sitobion miscanthi*** (Takahashi) (Subhrani et al. 2010); ***Sitobion*** sp. (Starý 1973a); *Tetraneura ulmi* (Linnaeus) (Marshall 1896); *Uroleucon cichorii* (Koch) (Barnea 2007); *Uroleucon jaceae* (Linnaeus) (Heinze & Profft 1940; Fulmek 1968); *Uroleucon sonchi* (Linnaeus) (Ferrière & Voukassovitch 1928; Voukassovitch 1928; Fulmek 1968); ***Wahlgreniella nervata arbuti*** (Davidson) (Starý et al. 1977a); ***Wahlgreniella ossiannilssoni*** Hille Ris Lambers (Starý et al. 1971; Starý 1972b, 1973a, 1974e).

***Distribution.*** **Afghanistan** (González et al. 1978); **Andorra** (Sanchis et al. 1999); **Austria** (Mackauer & Starý 1967); **Belgium** (Alhmedi et al. 2006, 2009; Lopes et al. 2016); **Bulgaria** (Atanassova 1997; Kolarov 1997; Todorov 2007); **Canada** (Liu 1977); **China** (Fahringer 1935; Mackauer & Starý 1967; Chen & Shi 2001); **Czech Republic** (Starý 1962c, 1963a, 1966c, 1972b, 1972f, 1973a, 1974e, 1977, 1983f, 1987a, 1989a, 2006; Mackauer & Starý 1967; González et al. 1978; Pennacchio 1989; Starý & Havelka 2008; Tomanović et al. 2012; Ferrer-Suay et al. 2017; Mitrovski-Bogdanović et al. 2021); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967); **Finland** (Starý 1973a; Koponen & Vikberg 1984b); **France** (Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975, 1977a; Starý 1973a, 1974e, 1976a; Robert & Rabasse 1977; Rabasse et al. 2001; Derocles et al. 2012); **Georgia** (Starý 1973a, 1976a; Davidian 2017); **Germany** (Mackauer 1962c; Mackauer & Starý 1967; Starý 1973a; Höller et al. 1993; Belokobylskij et al. 2003); **Greece** (González et al. 1978; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001,

2004, 2005b, 2006); **Hungary** (Mackauer & Starý 1967; Polgár 1981, 1982, 1983, 1984, 1987); **India** (Agarwala et al. 1981a, 1981b; Raychaudhuri et al. 1982, 1990; Paonam & Singh 1986a; Das & Chakrabarti 1991a, 2023a; Dey & Akhtar 2007); **Iran** (Starý 1974e, 1979a; González et al. 1978; Starý & González 1978; Starý et al. 2000; Rakhshani et al. 2008a, 2019; Fallahzadeh & Saghaei 2010; Barahoei et al. 2013; Abdoli et al. 2026); **Ireland** (Beirne 1942; Mackauer & Starý 1967; Hubert & van Achterberg 2023); **Italy** (Graeffe 1908; Quilis-Pérez 1932; Mackauer & Starý 1967; Tremblay 1967a; Starý 1973a, 1974e, 1976a; Tremblay et al. 1980; Arzone & Alma 1986; Pennacchio 1989; Bergamesco et al. 1995; Tomanović et al. 2023c); **Japan** (Takada 1968; Starý 1975a); **Kyrgyzstan** (Petrović et al. 2021a); **Latvia** (Starý & Rupais 1964); **Lebanon** (BOLD:ACH8732); **Lithuania** (Starý & Rupais 1964; Rakauskas 1981, 1985); **Madeira Islands** (Graham 1986); **Moldova** (Starý 1972f, 1973a, 1974e; Talitzky & Kuslitzky 1990); **Montenegro** (Kavallieratos et al. 2004, 2008a, 2013; Tomanović et al. 2003c, 2006a, 2007a; Žikić et al. 2012); **Morocco** (González et al. 1978; Rakhshani et al. 2019); **Netherlands** (Papp et al. 1996); **New Zealand** (Cameron et al. 1980); **Norway** (Riedel & Hansen 2014; Mjøs et al. 2024); **Pakistan** (Khan et al. 2012); **Palestine** (González et al. 1978; Mescheloff & Rosen 1990b); **Poland** (Niezabitowski 1910; Mackauer & Starý 1967; Kierych 1975, 1980; Huflejt 1997; Wiackowski et al. 1997, 2001; Wiackowski & Wiackowska 2000; Tran & Piekarska-Boniecka 2017); **Romania** (Barnea 2007; Barnea & Mustata 2007); **Portugal** (Marcelino et al. 2021); **Russia** (Meyer 1927; Starý 1973a; Davidian & Gavrilyuk 2014; Davidian 2017, 2019b, 2019c; Mitrovski-Bogdanović et al. 2021; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Ferrière & Voukassovitch 1928; Starý 1973a, 1974e; Tomanović et al. 1998a, 1999b, 2003c, 2012; Žikić et al. 2000, 2012; Kavallieratos et al. 2004, 2008a, 2013; Mitrovski-Bogdanović et al. 2021); **Slovakia** (Starý 1977, 1989a; Ferrer-Suay et al. 2017); **Slovenia** (Graeffe 1908; Kos et al. 2012); **South Korea** (Paik 1976; Takada 1976b; Starý & Choi 2000; Kim 2026); **Spain** (Quilis-Pérez 1931b; Mackauer & Starý 1967; Starý 1973a, 1976a; Michelena Saval & González Funes 1987; Tizado & Núñez-Perez 1991; Sanchis et al. 1995; Nieves-Aldrey et al. 2003; Pons et al. 2018); **Sweden** (Thomson 1895; Szépligeti 1904; Mackauer & Starý 1967); **Türkiye** (Starý 1976a; Tomanović et al. 2008b; Akar & Çetin Erdoğan 2017; Demirhan & Çetin Erdoğan 2023); **Turkmenistan** (Starý 1965a, 1979a); **Ukraine** (Berest 1987; Kaliuzhna 2013a, 2016a, 2019a, 2019b); **United Kingdom** (Curtis 1837; Kirchner 1867; Marshall 1872a, 1896, 1899; Bignell 1901; Lyle 1933; Kloet & Hincks 1945; Mackauer 1961b; Mackauer & Starý 1967; Jones 1972, 1980; Dean 1974, 1975; Jones & Dean 1975; Cameron et al. 1984; Pennacchio 1989; Müller et al. 1999; van Veen et al. 2008; Davidian & Rispin 2016); **USA** (Liu 1977; Trumble & Oatman 1984); **Uzbekistan** (Starý & González 1978; Starý 1979a; Daminova et al. 2001; Aripov 2003); **Vietnam** (Tomanović et al. 2026b).

***Remarks.*** Because of synonymy, the host-association data (mainly on the aphid the genera *Amphorophora* and *Macrosiphum*) and, to some extent, the distributional data for this species include records that could belong to two other species, *Aphidius silvaticus* Starý, 1962, and *A. rubi* Starý, 1962 (Jamhour et al. 2016; Mitrovski-Bogdanović et al. 2021).

### *Aphidius uzbekistanicus* Luzhetzki, 1960 [Fig. 21E]

*Aphidius uzbekistanicus* Luzhetzki, 1960:122. Holotype ♀ (lost), paratypes ♂♂ (IECA). – Uzbekistan.

**Syn.:** *Aphidius beltrani* Quilis, 1931; *Aphidius indivisus* Quilis, 1931; *Aphidius macropterus* Quilis, 1931; *Aphidius pailloti* Quilis, 1931; *Aphidius impressus* Mackauer, 1965 [Fig. 14F].

***Hosts.*** *Acyrthosiphon pisum* (Harris) (Mescheloff & Rosen 1990b); *Aphis fabae* Scopoli (Barnea 2007); *Aphis rumicis* Linnaeus (Hwang & Lee 2021); ***Diuraphis noxia*** (Mordvilko) (Zareh et al. 1995; Starý et al. 1999, 2000; Starý 2006; Tomanović et al. 2013); *Impatientinum asiaticum dalhousiensis* Verma (Bhagat 1984); ***Melanaphis donacis*** (Passerini) (Starý 1976a); ***Metopolophium dirhodum*** (Walker) (Quilis-Pérez 1931a; Starý 1973a, 1976a, 1981b, 1993b, 1995c, 2006; Starý et al. 1973, 2007; Dean et al. 1981; Powell 1982; Powell & Zhang 1983; Polgár 1984; Plewka & Pankanin-Franczyk 1989; Mescheloff & Rosen 1990b; Özder & Toros 1999; Tomanović et al. 1999a, 1999b, 1999c; Kavallieratos et al. 2001, 2004, 2005b, 2006; Aslan et al. 2004; Uysal et al. 2004; Rakhshani et al. 2008a, 2008b; Barahoei et al. 2013; dos Santos et al. 2022); ***Metopolophium festucae*** (Theobald) (Starý et al. 1973; Starý 1981b); ***Metopolophium festucae cerealium*** Stroyan (Starý 1993b, 1995c; Starý et al. 1994b); *Myzus mumecola* (Matsumura) (Paonam & Singh 1986a); *Myzus persicae* (Sulzer) (Singh et al. 1995; Starý 1995c; Andorno et al. 2007); ***Rhopalosiphum***

***maidis*** (Fitch) (Agarwala et al. 1980; Raychaudhuri et al. 1982; Starý 1976a; Starý & Ghosh 1983; Ibrahim 1990a; Ahmad & Singh 1994b, 1995b; El-Serafy 1999; Özder & Toros 1999; Starý et al. 2000; Uysal et al. 2004; Gadallah et al. 2017); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Das & Chakrabarti 2023a); ***Rhopalosiphum padi*** (Linnaeus) (Starý 1972b, 1973a, 1979a, 1981b; Powell 1982; Ibrahim 1990a; El-Serafy 1999; Tomanović et al. 1999a, 2008c, 2013; Starý et al. 2000; Sertkaya & Yigit 2002; Aslan et al. 2004; Uysal et al. 2004; Rakhshani et al. 2008a, 2008b; Derocles et al. 2012; Kos et al. 2012; Nazari et al. 2012; Gadallah et al. 2017; Bandyan et al. 2021; Kök & Tomanović 2022; Mitrovski-Bogdanović et al. 2021); ***Schizaphis graminum*** (Rondani) (Starý 1972b, 1973a, 1979a, 1981b; Berest 1980, 1985; Gruber & Coutinot 1984; Gruber et al. 1994; Starý et al. 1999, 2000, 2007; Tomanović et al. 1999b, 1999c, 2003c, 2008c; Chen & Shi 2001; Ibrahim 1990a; El-Serafy 1999; Kavallieratos et al. 2004, 2005b; Uysal et al. 2004; Wei et al. 2005; Rakhshani et al. 2008a, 2008b; Alikhani et al. 2013; Barahoei et al. 2013; dos Santos et al. 2022); ***Schizaphis pyri*** Shaposhnikov (Starý et al. 1973; Starý 1976a); *Shinjia orientalis* (Mordvilko) (Paonam & Singh 1986a); *Sipha maydis* Passerini (Starý 1965a; Starý et al. 2000; Chen & Shi 2001); ***Sitobion alopecuri*** (Takahashi) (Saha et al. 1982); ***Sitobion avenae*** (Fabricius) (Quilis-Pérez 1931a, 1931b; Starý 1972b, 1973a, 1976a, 1976c, 1977, 1978b, 1979a, 1981b, 1987a, 1993b, 1995b, 1995c, 1999b; Starý et al. 1973, 1975, 1993a, 1999, 2000, 2007; Kierych 1975; Dean et al. 1981; Powell 1982; Pankanin-Franczyk 1983; Powell & Zhang 1983; Yano et al. 1983; Berest 1985; Krespi et al. 1986; Michelena Saval & González Funes 1987; Singh & Tripathi 1987; Kuo-Sell & Eggers 1987; Rabasse & Ibrahim 1987; Le Ralec 1988; Pennacchio 1989; Singh & Srivastava 1990; Mescheloff & Rosen 1990b; Scholz & Höller 1992; Darvish-Mojeni & Bayat-Asadi 1995; Pankanin-Franczyk & Ceryngier 1995; Le Ralec et al. 1996; Micha & Wyss 1996; Atanassova 1997; Boenisch et al. 1997; Takada 1998; El-Serafy 1999; Özder & Toros 1999; Tomanović et al. 1999a, 1999b, 1999c, 2003c, 2008c, 2013; Kavallieratos et al. 2001, 2004, 2005b, 2006; Sertkaya & Yigit 2002; Ölmez & Ulusoy 2003; Michelena et al. 2004; Uysal et al. 2004; Andorno et al. 2007; Rakhshani et al. 2008a, 2008b, 2012b; Derocles et al. 2012, 2014a; Kos et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Ferrer-Suay et al. 2017; Gadallah et al. 2017; Mitrovski-Bogdanović et al. 2021; dos Santos et al. 2022); ***Sitobion fragariae*** (Walker) (Mackauer 1965a, 1968a; Mackauer & Starý 1967; Starý 1973a, 1976a, 1981b; Starý et al. 1975; Pennacchio 1989; Mescheloff & Rosen 1990b; Tomanović et al. 1999a, 1999b, 1999c, 2003c; Kavallieratos et al. 2001, 2004, 2005b, 2006; Laamari et al. 2011, 2012; Khaladi et al. 2025); ***Sitobion ibarae*** (Matsumura) (Takada 1998); ***Sitobion indicum*** Basu (Saha et al. 1982); ***Sitobion miscanthi*** (Takahashi) (Saha et al. 1982; Das & Chakrabarti 1989a; Ahmad & Singh 1995b, 1995c, 1997; Chakrabarti & Chakrabarti 1995); ***Sitobion rosaeiformis*** (Das) (Khan & Shah 2017); ***Sitobion*** spp. (Raychaudhuri et al. 1982; Shuja-Uddin 1975b; Starý 1973a; Starý & Bhagat 1978; Takada 1998; Tomanović et al. 1999c).

***Distribution.*** **Algeria** (Laamari et al. 2011, 2012; Rakhshani et al. 2019; Khaladi et al. 2025); **Andorra** (Sanchis et al. 1999); **Argentina** (Starý & Delfino 1987; Andorno et al. 2007; Tomanović et al. 2025); **Belarus** (BOLD:AAJ1250); **Belgium** (Latteur 1973; Starý 1981b; Lopes et al. 2016; Mitrovski-Bogdanović et al. 2021); **Brazil** (Sampaio et al. 2005; Starý et al. 2007; dos Santos et al. 2022); **Bulgaria** (Starý 1976a, 1981b; Atanassova 1997); **Canada** (BOLD:AAJ1250); **Chile** (Suzuki & Vargas 1980; Gerding & Figueroa 1982; Starý 1993b, 1995c; Starý et al. 1993a, 1994b; Derocles et al. 2012; Todorov & Ivanova 2016); **China** (Zheng et al. 1987; Lu & Ji 1992; Gu et al. 1995; Chen & Shi 2001); **Czech Republic** (Starý 1973a, 1976a, 1976c, 1977, 1978b, 1981b, 1987a, 1989a, 1995b, 1999b, 2006; Pennacchio 1989; Starý & Havelka 2008; Kos et al. 2011; Tomanović et al. 2013; Ferrer-Suay et al. 2017); **Denmark** (Langer 2001); **Egypt** (Ibrahim 1990a; El-Serafy 1999; Gadallah et al. 2017; Rakhshani et al. 2019); **Finland** (Starý 1973a, 1981b; Koponen & Vikberg 1984b); **France** (Quilis-Pérez 1931a; Mackauer & Starý 1967; Starý 1973a, 1976a, 1981b; Starý et al. 1973, 1975, 1977a; Rabasse & Dedryver 1983; Gruber & Coutinot 1984; Fougeroux et al. 1988; Dedryver et al. 1991; Gruber et al. 1994; Derocles et al. 2012, 2014a); **Georgia** (Davidian 2017); **Germany** (Mackauer 1965a, 1968a; Mackauer & Starý 1967; Starý 1973a, 1981b; Kuo-Sell & Eggers 1987; Boness & Starý 1988; Borgemeister & Poehling 1988, 1990; Kuo-Sell et al. 1989; Adisu et al. 2002; Belokobylskij et al. 2003; Vollhardt et al. 2008; Kos et al. 2011; Mitrovski-Bogdanović et al. 2013); **Greece** (Kavallieratos et al. 2001, 2004, 2005b, 2006); **Hungary** (Polgár 1981, 1982, 1983, 1984, 1987); **India** (Shuja-Uddin 1975b; Starý & Bhagat 1978; Agarwala et al. 1980, 1981a; Ghosh & Agarwala 1982; Raychaudhuri et al. 1982, 1990; Saha et al. 1982; Bhagat 1984; Paonam & Singh 1986a; Singh & Tripathi 1987; Das &

Chakrabarti 1989a, 2023a; Singh & Srivastava 1990; Ahmad & Singh 1994b, 1995b, 1995c, 1996a, 1997; Chakrabarti & Chakrabarti 1995; Singh et al. 1995; Dey & Akhtar 2007; Rakhshani et al. 2012a; Ahmad & Wani 2014); **Iran** (Starý 1979a, 1981b; Starý et al. 2000; Rakhshani et al. 2008a, 2008b, 2012b, 2019; Fallahzadeh & Saghaei 2010; Kos et al. 2011; Nazari et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Tomanović et al. 2013; Ghotbi Ravandi et al. 2017; Ameri et al. 2019); **Iraq** (Bandyan et al. 2021); **Italy** (Starý 1976a, 1981b; Pennacchio 1989; Bergamesco et al. 1995; Tomanović et al. 2023c); **Japan** (Yano et al. 1983; Takada 1998); **Latvia** (Davidian 2017); **Montenegro** (Tomanović et al. 2003c; Kavallieratos et al. 2004; Mitrovski-Bogdanović et al. 2021); **Moldova** (Davidian 2017); **Morocco** (Starý 1981b; Rakhshani et al. 2019); **Nepal** (Tamrakar & Singh 2000); **Netherlands** (Starý 1981b; Papp et al. 1996); **Norway** (Starý 1981b; Mjøs et al. 2024); **Pakistan** (Starý et al. 1999; Kos et al. 2011; Tomanović et al. 2013); **Palestine** (Starý 1981b; Mescheloff & Rosen 1990b); **Paraguay** (González Torres et al. 2018); **Poland** (Kierych 1975; Pankanin-Franczyk 1979, 1983, 1986, 1995; Starý 1981b; Pankanin-Franczyk et al. 1986; Plewka & Pankanin-Franczyk 1989; Pankanin-Franczyk & Ceryngier 1995; Huflejt 1997; Pankanin-Franczyk & Sobota 1998; Kos et al. 2011; Barczak et al. 2014; Tran & Piekarska-Boniecka 2017); **Portugal** (De Gouveia & Araujo 1988); **Romania** (Barnea 2007); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Davidian & Humala 2023; Davidian & Ruchin 2023; Shpanev 2025); **Serbia** (Starý 1973a, 1976a, 1981b; Tomanović et al. 1998a, 1999c, 2003c, 2008c, 2013; Žikić et al. 2000; Tomanović & Brajković 2001; Kavallieratos et al. 2004, 2005b; Kos et al. 2011; Mitrovski-Bogdanović et al. 2021); **Slovakia** (Starý 1977, 1989a; Al Dobai et al. 1999; Praslička et al. 2003; Praslička & Huszar 2005; Starý & Lukáš 2009); **Slovenia** (Kos et al. 2011, 2012); **South Korea** (Davidian 2017; Choi & Kim 2018; Kim et al. 2020; Hwang & Lee 2021; Kim 2026); **Spain** (Quilis-Pérez 1931a, 1931b; Ceballos 1956; Mackauer & Starý 1967; Starý 1973a, 1976a, 1981b; Michelena Saval & González Funes 1987; Tizado & Núñez-Perez 1991; Sanchis et al. 1995; Nieves-Aldrey et al. 2003; Pons & Starý 2003; Michelena et al. 2004; Lumbierres et al. 2007; Michelena Saval & Martínez De Murguía 2012); **Sweden** (Kos et al. 2011); **Tajikistan** (Starý 1979a); **Türkiye** (Starý 1981b; Özder & Toros 1999; Sertkaya & Yigit 2002; Ölmez & Ulusoy 2003; Aslan et al. 2004; Uysal et al. 2004; Yigit et al. 2007; Çetin Erdoğan et al. 2008; Rakhshani et al. 2019; Kök & Tomanović 2022); **Ukraine** (Starý 1973a, 1976a, 1981b; Berest 1980, 1985, 1987; Kaliuzhna 2019b); **United Kingdom** (Starý 1973a, 1981b; Jones 1980; Dean et al. 1981; Powell 1982, 1983; Chambers et al. 1986; Powell et al. 1986b; Pennacchio 1989; Perez-Rodriguez et al. 2015; Davidian & Rispin 2016); **USA** (Halbert et al. 1996); **Uzbekistan** (Starý 1965a, 1979a, 1981b; Mackauer 1968a; Daminova et al. 2001; Aripov 2003).

***Remarks.*** The four older names (*Aphidius beltrani* Quilis, 1931, *A. indivisus* Quilis, 1931, *A. macropterus* Quilis, 1931, and *A. pailloti* Quilis, 1931) are not available because no type specimens could be studied, and the species are considered to be *species inquirenda*.

### *Aphidius vaccinii* Liu, 1977 [Fig. 21F]

*Aphidius vaccinii* Liu, 1977:64. Holotype ♀, paratypes ♀ ♂ (CASC). – Canada.

***Host. Illinoia*** (***Masonaphis***) sp. (Liu 1977).

***Distribution.*** **Canada** (Liu 1977).

### *Aphidius viaticus* (Sedlag, 1969)

*Lysaphidus viaticus* Sedlag, 1969:127. Holotype ♀ (USC), paratypes ♀♀ ♂♂ (USNM, SFUB, IECA, SMF). – Germany.

***Hosts. Macrosiphoniella jankei*** Börner (Davidian 2017); ***Pleotrichophorus duponti*** Hille Ris Lambers (Starý et al. 1971; Starý 1976a; Kavallieratos et al. 2004; Tomanović et al. 2007a; Žikić et al. 2012); ***Pleotrichophorus filaginis*** (Schouteden) (Mitrovski-Bogdanović et al. 2021); ***Pleotrichophorus glandulosus*** (Kaltenbach) (Sedlag 1969; Kavallieratos et al. 2004; Tomanović et al. 2007c; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021); ***Pleotrichophorus*** sp. (Derocles et al. 2012).

***Distribution.*** **Finland** (BOLD:AAG1421); **France** (Starý et al. 1971, 1977a; Starý 1976a; Derocles et al. 2012); **Germany** (Sedlag 1969; Belokobylskij et al. 2003; Tomanović et al. 2007c); **Montenegro** (Kavallieratos et al. 2004; Tomanović et al. 2007a; Žikić et al. 2012); **Russia** (Davidian 2019b); **Serbia** (Tomanović et al. 1998a, 2007c; Kavallieratos et al. 2004; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2021).

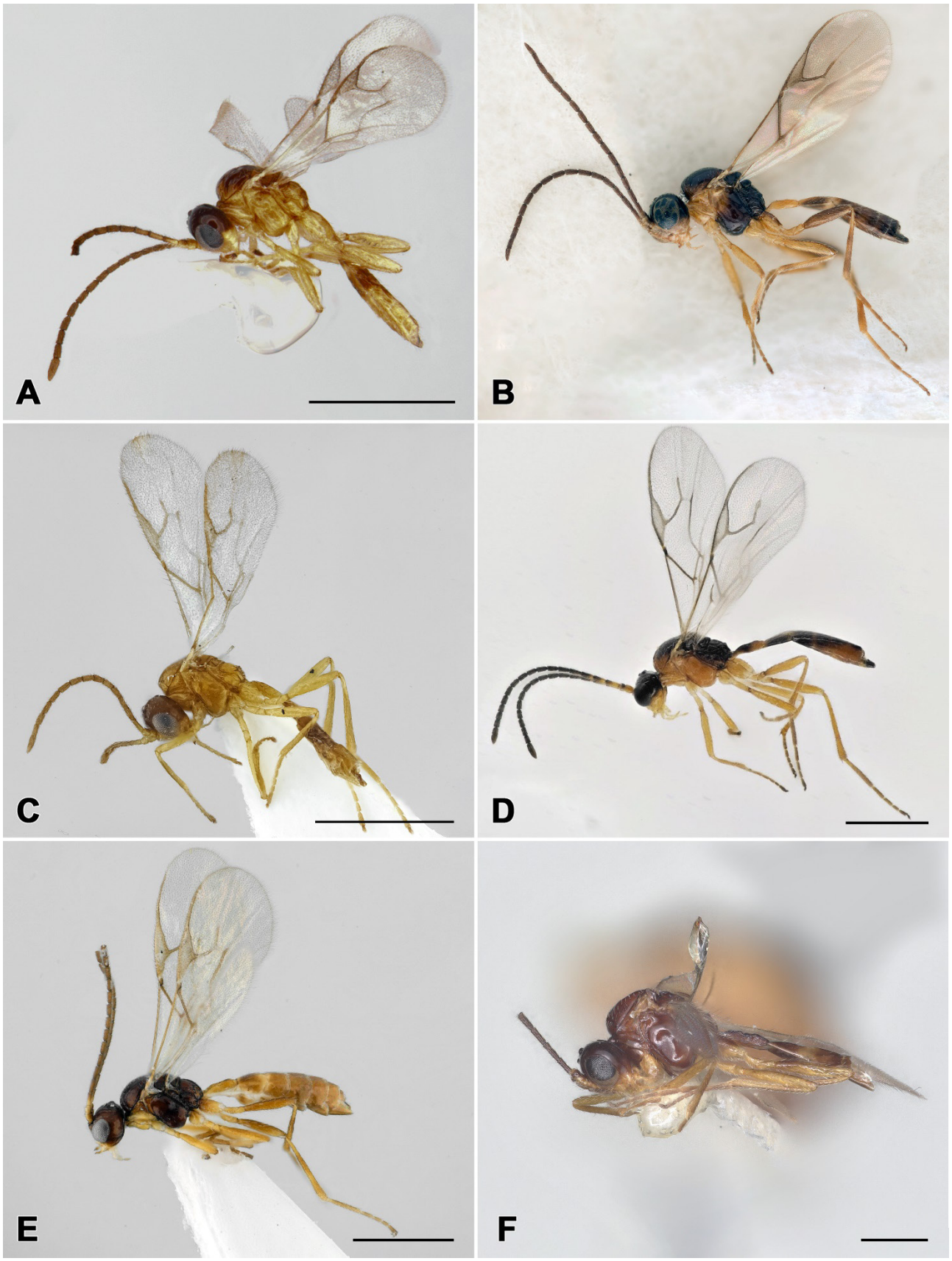



**Figure 21.** Species of the genus *Aphidius* Nees von Esenbeck, 1819. **A.** *Aphidius sonchi* Marshall, 1896 – Korea, KSNU; **B.** *Aphidius tanacetarius* Mackauer, 1962 – Holotype, CNC; **C.** *Aphidius transcaspicus* Telenga, 1958 – Iran, DPPZ. **D.** *Aphidius urticae* Haliday, 1834 – Netherlands, RMNH; **E.** *Aphidius uzbekistanicus* Luzhetzki, 1960 – Iran, DPPZ; **F.** *Aphidius vaccinii* Liu, 1977 – Holotype, CASC. Scale bar: 1 mm.

### Genus *Diaeretellus* Starý, 1960 [7 species]

*Diaeretellus* Starý, 1960:243. Type species: *Diaeretellus ephippium* (Haliday, 1833).

#### *Diaeretellus ephippium* (Haliday, 1833) [Figs 22A–B]

*Aphidius ephippium* Haliday, 1833:105. Holotype ♀ (after Mackauer 1961b) (NHMUK). – Ireland.

***Hosts.*** ***Cryptaphis poae*** (Hardy) (Starý et al. 1973; Tomanović et al. 2012); ***Decorosiphon corynothrix*** Börner (Starý 1963b; Mackauer & Starý 1967; Tomanović et al. 2012).

***Distribution.*** **Belgium** (Crèvecoeur 1934; Lopes et al. 2016); **Czech Republic** (Starý 1959d, 1966c, 1987a, 1989a, 2006; Mackauer & Starý 1967; Tomanović et al. 2012); **Denmark** (Mackauer & Starý 1967; Mackauer 1968a); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971; Koponen & Vikberg 1984b); **France** (Starý et al. 1973); **Germany** (Mackauer & Starý 1967; Mackauer 1968a; Boness & Starý 1988; Belokobylskij & Taeger 2001; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **Ireland** (Anderson et al. 2006); **Netherlands** (Mackauer & Starý 1967; Mackauer 1968a); **Norway** (Mjøs et al. 2024); **Poland** (Huflejt 1997); **Russia** (Mackauer 1968c; Davidian 2017, 2019b; Davidian & Humala 2023; Davidian & Manukyan 2024); **Sweden** (Thomson 1895; Szépligeti 1904; Mackauer & Starý 1967); **Ukraine** (Kaliuzhna 2019a, 2019b); **United Kingdom** (Curtis 1837; Kirchner 1867; Marshall 1872a, 1896, 1899; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1961b; Mackauer & Starý 1967; Tomanović et al. 2012; Davidian & Rispin 2016).

#### *Diaeretellus heinzei* (Mackauer, 1959) [Fig. 22C]

*Aphidius heinzei* Mackauer, 1959d:83. Holotype ♀, paratypes ♀♀ ♂♂ (CNC). – Germany.

***Host.*** ***Decorosiphon corynothrix*** Börner (Mackauer 1959d; Starý 1963b; Mackauer & Starý 1967; Tomanović et al. 2012).

***Distribution.*** **Bulgaria** (Todorov 2003); **Czech Republic** (Starý 1966c, 1989a, 2006; Mackauer & Starý 1967; Tomanović et al. 2012); **Finland** (BOLD:ACF7565); **Germany** (Mackauer 1959d; Mackauer & Starý 1967; Belokobylskij et al. 2003; Tomanović et al. 2012); **Hungary** (Polgár 1983; Kovács 2001); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Davidian & Humala 2023); **Spain** (Michelena Saval & Martínez De Murguía 2012).

#### *Diaeretellus macrocarpus* Mackauer, 1961 [Fig. 22D]

*Diaeretellus macrocarpus* Mackauer, 1961c:275. Holotype ♀, paratypes ♀ ♂♂ (CNC). – Germany.

***Hosts.*** ***Allaphis cyperi*** (Walker) (Mackauer & Starý 1967; Starý et al. 1977a); ***Allaphis producta*** (Gillette) (Mackauer & Starý 1967); ***Allaphis verrucosa*** (Gillette) (Tomanović et al. 2007a, 2012); ***Iziphya ingegardae*** Hille Ris Lambers (Mackauer 1961c; Mackauer & Starý 1967; Tomanović et al. 2007a); ***Saltusaphis*** spp. (Mackauer & Starý 1967; Kavallieratos et al. 2004); ***Subsaltusaphis flava*** (Hille Ris Lambers), ***Subsaltusaphis picta*** (Hille Ris Lambers) (Mackauer & Starý 1967); ***Subsaltusaphis*** sp. (Mackauer 1961c; Tomanović et al. 2007a; Žikić et al. 2012); ***Thripsaphis*** sp. (Mackauer 1961c; Tomanović et al. 2007a, 2012).

***Distribution.*** **Austria** (Mackauer & Starý 1967); **Bulgaria** (Todorov 2014); **Czech Republic** (Starý 1966c, 1989a, 2006; Mackauer & Starý 1967; Tomanović et al. 2012; Davidian 2017); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Starý et al. 1977a); **Germany** (Mackauer 1961c; Mackauer & Starý 1967; Belokobylskij et al. 2003; Tomanović et al. 2007a, 2012); **Hungary** (Polgár 1983); **Montenegro** (Kavallieratos et al. 2004; Tomanović et al. 2007a, 2012; Žikić et al. 2012); **Russia** (Mackauer 1968c; Davidian 2017, 2019b; Davidian & Humala 2023; Davidian & Manukyan 2024); **Sweden** (Mackauer 1961c; Mackauer & Starý 1967; Tomanović et al. 2007a, 2012); **United Kingdom** (Davidian & Rispin 2016); **Uzbekistan** (Davidian 2017).

#### *Diaeretellus nymphaealis* Tomanović, Čkrkić & Petrović, 2022 [Fig. 22E]

*Diaeretellus nymphaealis* Tomanović, Čkrkić & Petrović [in Čkrkić et al.], 2022:424. Holotype ♀, paratypes ♀♀ ♂♂ (FBUB). – USA.

***Host.*** ***Rhopalosiphum nymphaeae*** (Linnaeus) (Čkrkić et al. 2022).

***Distribution.*** **USA** (Čkrkić et al. 2022).

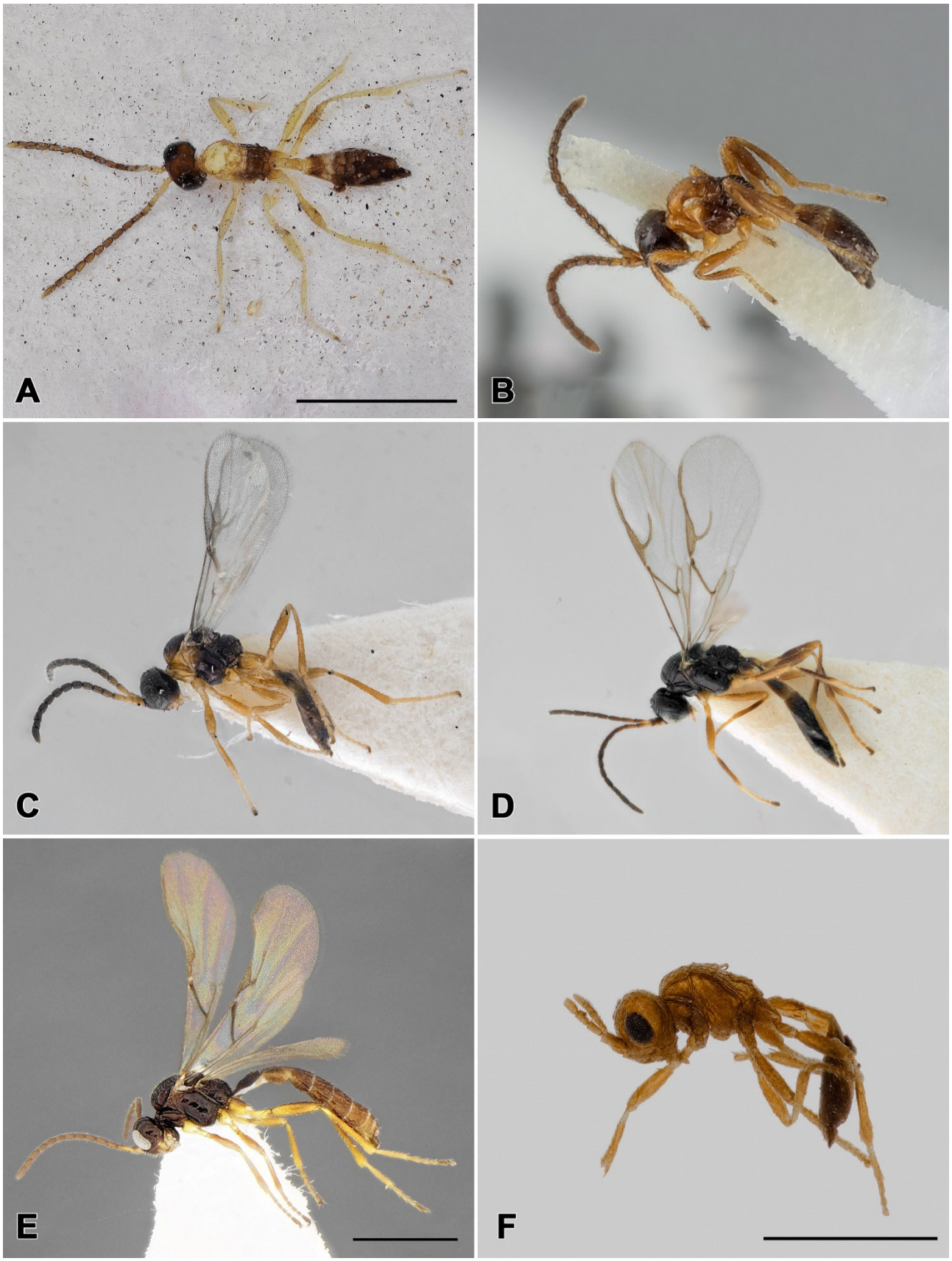



**Figure 22.** Species of the genus *Diaeretellus* Starý, 1960. **A.** *Diaeretellus ephippium* (Haliday, 1833) – Holotype, NHMUK; **B.** *Diaeretellus ephippium* (Haliday, 1833) – Finland, ZMHF; **C.** *Diaeretellus heinzei* (Mackauer, 1959) – Holotype, CNC; **D.** *Diaeretellus macrocarpus* Mackauer, 1961 – Holotype, CNC; **E.** *Diaeretellus* aff. *nymphaealis* Tomanović, Čkrkić & Petrović, 2022, USA, UWIM; **F.** *Diaeretellus svalbardicum* Chaubet & Tomanović, 2013 [micropterous] – Paratype, FBUB. Scale bar: 1 mm.

### *Diaeretellus palustris* Starý, 1971

*Diaeretellus palustris* Starý, 1971c:310. Holotype ♀, paratypes ♀ ♂ (IECA). – Germany.

***Hosts.*** *Aphis fabae* Scopoli (Barnea 2007); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Starý 1966a, 1971c; Starý & Remaudière 1977; Pike et al. 2000).

***Distribution.*** **Germany** (Starý 1971c; Belokobylskij et al. 2003; Tomanović et al. 2012); **India** (Raychaudhuri et al. 1990; Das & Chakrabarti 2023a); **Romania** (Barnea 2007); **Russia** (Davidian 2017, 2019b); **USA** (Starý & Remaudière 1977; Pike et al. 2000).

***Remarks.*** The record of this species from Serbia (Tomanović et al. 1998a) was due to a misidentification of the specimen.

### *Diaeretellus svalbardicum* Chaubet & Tomanović, 2013 [Fig. 22F]

*Diaeretellus svalbardicum* Chaubet & Tomanović, 2013:35. Holotype ♀ (IARA), paratypes ♀♂ (IARA, FBUB). – Norway.

***Host.*** ***Acyrthosiphon svalbardicum*** Heikenheimo (Chaubet et al. 2013).

***Distribution.*** **Norway** (Chaubet et al. 2013).

### *Diaeretellus tremulae* Davidian, 2024

*Diaeretellus tremulae* Davidian [in Davidian & Manukyan], 2024:249. Holotype ♀, paratypes ♀♀ ♂♂ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian & Manukyan 2024).

## Genus *Eoaphidius* Samanta & Raychaudhuri, 1990 [1 species]

*Eoaphidius* Samanta & Raychaudhuri, 1990:44. Type species: *Eoaphidius longicaudatus* Samanta & Raychaudhuri, 1990.

### *Eoaphidius longicaudatus* Samanta & Raychaudhuri, 1990

*Eoaphidius longicaudatus* Samanta & Raychaudhuri [in Raychaudhuri et al.], 1990:44. Holotype ♀, paratype ♀ (CUCE). – India.

***Host.*** ***Greenidea ficicola*** Takahashi (Raychaudhuri et al. 1990; Starý et al. 2010a).

***Distribution.*** **India** (Raychaudhuri et al. 1990; Starý et al. 2010a; Das & Chakrabarti 2023a).

## Genus *Holocnomus* Quilis, 1940 [1 species]

*Holocnomus* Quilis, 1940:50. Type species: *Holocnomus braconiformis* Quilis, 1940.

### *Holocnomus braconiformis* Quilis, 1940 [Fossil]

*Holocnomus braconiformis* Quilis, 1940:50. Holotype ♀ (Lost). – France.

***Host.*** Unknown.

***Distribution.*** **France** (Quilis-Pérez 1940; Starý 1970a, 1973b).

## Genus *Indaphidius* Starý, 1979 [1 species]

*Indaphidius* Starý, 1979b:34. Type species: *Indaphidius curvicaudatus* Starý, 1979.

### *Indaphidius curvicaudatus* Starý, 1979 [Fig. 23A]

*Indaphidius curvicaudatus* Starý, 1979b:34. Holotype ♀ (CUCE), paratypes ♀♀ (IECA, CUCE). – India.

***Hosts.*** ***Greenidea ficicola*** Takahashi (Raychaudhuri et al. 1990); *Macrosiphum rosae* (Linnaeus) (Raychaudhuri et al. 1979; Starý 1979b; Starý & Ghosh 1983); ***Mollitrichosiphum montanum*** (van der Goot) (Agarwala 1983b); ***Mollitrichosiphum nandii*** Basu (Raychaudhuri et al. 1979); ***Mollitrichosiphum*** sp. (Starý 1979b; Starý & Ghosh 1983; Starý et al. 2010a); ***Sitobion rosaeiformis*** (Das) (Agarwala 1983b).

***Distribution.*** **India** (Raychaudhuri et al. 1979, 1990; Starý 1979b; Agarwala et al. 1981a; Agarwala 1983b;

Starý & Ghosh 1983; Dey & Akhtar 2007; Starý et al. 2010a; Rakhshani et al. 2012a; Das & Chakrabarti 2023a); **Thailand** (Starý et al. 2010c).

### Genus *Kashmiria* Starý & Bhagat, 1978 [1 species]

*Kashmiria* Starý & Bhagat, 1978:391. Type species: *Kashmiria aphidis* Starý & Bhagat, 1978.

### *Kashmiria aphidis* Starý & Bhagat, 1978 [Fig. 23B]

*Kashmiria aphidis* Starý & Bhagat, 1978:391. Holotype ♀ (ZSI), paratype ♀ (IECA). – India.

***Hosts.*** ***Myzus*** sp. (Starý & Bhagat 1978); ***Prociphilus himalayensis*** Remaudière & Remaudière (Starý et al. 1999; Chakrabarti et al. 2002); ***Prociphilus*** sp. (Bhagat 1982a; Das & Chakrabarti 1990a); ***Rhopalomyzus*** sp. (Starý et al. 1999).

***Distribution.*** **India** (Starý & Bhagat 1978; Agarwala et al. 1981a; Bhagat 1982a; Starý & Ghosh 1983; Das & Chakrabarti 1988b, 1990, 2023a; Dey & Akhtar 2007; Ahmad & Wani 2014); **Pakistan** (Starý et al. 1999).

### Genus *Oligoaphidius* Quilis, 1940 [1 species]

*Oligoaphidius* Quilis, 1940:52. Type species: *Oligoaphidius sannoniensis* Quilis, 1940.

### *Oligoaphidius sannoniensis* Quilis, 1940 [Fossil]

*Oligoaphidius sannoniensis* Quilis, 1940:52. Holotype ♀ (MNHN). – France.

***Host.*** Unknown.

***Distribution.*** **France** (Quilis-Pérez 1940; Starý 1970a, 1973b).

### Genus *Paralipsis* Förster, 1863 [7 species]

*Paralipsis* Förster, 1863:248. Type species: *Aphidius enervis* Nees, 1834.

**Syn.:** *Myrmecobosca* Maneval, 1940:9. Type species: *Myrmecobosca mandibularis* Maneval, 1940.

### *Paralipsis brachycaudi* Tomanović & Starý, 2019

*Paralipsis brachycaudi* Tomanović & Starý [in Mitrović et al.], 2019:61. Holotype ♀ (IECA), paratypes ♀♀ (FBUB, IECA). – Czech Republic.

***Hosts.*** ***Brachycaudus ballotae*** (Passerini), ***Tetraneura ulmi*** (Linnaeus) (Mitrović et al. 2019).

***Distribution.*** **Czech Republic**, **Germany** (Mitrović et al. 2019).

### *Paralipsis eikoae* (Yasumatsu, 1951) [Fig. 23C]

*Myrmecobosca eikoae* Yasumatsu, 1951:171. Holotype ♀ (KUEC). – Japan.

***Host.*** ***Sappaphis piri*** Matsumura (Yasumatsu 1960; Takada 1976a; Takada & Hashimoto 1983, 1985; Akino & Yamaoka 1998).

***Distribution.*** **Japan** (Yasumatsu 1951; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968, 1976a; Starý 1975a; Takada & Hashimoto 1985; van Achterberg & Ortiz de Zugasti Carrón 2016); **Russia** (Davidian 2007, 2017, 2019b).

### *Paralipsis enervis* (Nees, 1834) [Fig. 23D]

*Aphidius enervis* Nees, 1834:26. Holotype ♂ (Lost). – Germany.

**Syn.:** *Myrmecobosca mandibularis* Maneval, 1940; *Myrmecobosca linnei* Hincks, 1949.

***Hosts.*** ***Anoecia corni*** (Fabricius) (Starý 1981b; Völkl et al. 1996); ***Anoecia*** sp. (Pontin 1960; Starý 1961d, 1964d, 1966c, 1976c, 2006; Mackauer & Starý 1967); ***Anuraphis catonii*** Hille Ris Lambers (Starý 1987a, 2006); ***Anuraphis farfarae*** (Koch) (Starý 2006); ***Anuraphis subterranea*** (Walker) (Pontin 1960; Starý 1961d, 1969a; Mackauer & Starý 1967); ***Aphis roepkei*** (Hille Ris Lambers) (Mackauer & Starý 1967; Starý 2006); ***Aphis rumicis*** Linnaeus (Mitrović et al. 2019); ***Aphis sambuci*** Linnaeus (Reinhard 1856); ***Aphis*** sp.

(Mackauer & Starý 1967); ***Brachycaudus ballotae*** (Passerini) (Starý 1961d, 1964d, 1966c, 1969a, 1987a, 2006); ***Brachycaudus cardui*** (Linnaeus) (Mackauer & Starý 1967; Starý 1961d, 1966a, 1966c, 1969a, 1987a, 2006; van Achterberg & Ortiz de Zugasti Carrón 2016); ***Brachycaudus jakobi*** Stroyan (van Achterberg & Ortiz de Zugasti Carrón 2016); ***Brachycaudus mordvilkoi*** Hille Ris Lambers (Starý 1966c; Mackauer & Starý 1967; Starý 1969a, 2006); ***Brachycaudus*** spp. (Starý 1961d, 1964d, 1969a, 2006; Mackauer & Starý 1967); ***Dysaphis crataegi*** (Kaltenbach) (Starý 1961d, 1964d, 1966c, 1969a, 1987a, 2006; Mackauer & Starý 1967); ***Dysaphis lappae*** (Koch) (Starý 1969a; Mitrović et al. 2019); ***Dysaphis pyri*** (Boyer de Fonscolombe) (González & Michelena 1987; Mitrović et al. 2019); ***Dysaphis reaumuri*** (Mordvilko) (Mitrović et al. 2019); ***Forda formicaria*** von Heyden (Hincks 1958; Pontin 1960; Starý 1961d; Mackauer & Starý 1967; Kavallieratos et al. 2004; Žikić et al. 2012); ***Forda marginata*** Koch (Starý 1961d; Mitrović et al. 2019); ***Geoica utricularia*** (Passerini) (Kavallieratos et al. 2004; Žikić et al. 2012); ***Protaphis terricola*** (Rondani) (Davidian & Gavrilyuk 2014); ***Tetraneura ulmi*** (Linnaeus) (Hincks 1949; Pontin 1960; Starý 1961d, 1976c; Mackauer & Starý 1967).

***Distribution.*** **Andorra** (Sanchis et al. 1999); **Austria** (BOLD:ADX2791); **Bulgaria** (Todorov 2014); **Czech Republic** (Starý 1958, 1961d, 1966c, 1981b, 1987a, 1989a, 2006; Mackauer & Starý 1967); **Finland** (Mackauer 1968c); **France** (Maneval 1940; Mackauer & Starý 1967; Derocles et al. 2014a; Mitrović et al. 2019); **Georgia** (Starý 1976a); **Germany** (Nees von Esenbeck 1834a; Kirchner 1867; Marshall 1896; Szépligeti 1904; Starý 1958, 1961d, 1981b; Mackauer & Starý 1967; Belshaw & Quicke 2002; Belokobylskij et al. 2003); **Hungary** (Polgár 1983; Mitrović et al. 2019); **Kazakhstan** (Starý 1979a; Davidian 2017; Mitrović et al. 2019); **Lithuania** (Mitrović et al. 2019); **Moldova** (Talitzky & Kuslitzky 1990); **Netherlands** (Six 1860); **North Macedonia** (Kavallieratos et al. 2004); **Norway** (Staverløkk & Ødegaard 2016); **Poland** (Huflejt 1997); **Portugal** (Cecilio 1995); **Romania** (Lacatusu & Panu 1969); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Davidian & Ruchin 2023); **Serbia** (Tomanović et al. 1998a; Žikić et al. 2000, 2012; Kavallieratos et al. 2004); **Slovakia** (Starý 1961d, 1989a; Starý & Lukáš 2009); **Spain** (Starý 1976a; González & Michelena 1987; Tizado & Núñez-Perez 1991; Mitrović et al. 2019); **Sweden** (Hincks 1949; Mackauer & Starý 1967; Fulmek 1968); **Ukraine** (Kaliuzhna 2013a, 2014; Davidian 2017; Kaliuzhna 2017b, 2019a, 2019b); **United Kingdom** (Hincks 1958; Pontin 1960; Mackauer & Starý 1967; Starý 1981b; Mitrović et al. 2019).

### *Paralipsis plana* van Achterberg, 2016

*Paralipsis planus* van Achterberg [in van Achterberg & Ortiz de Zugasti Carrón], 2016:31. Holotype ♀ (RMNH). – Netherlands.

***Host.*** Unknown.

***Distribution.*** **Netherlands** (van Achterberg & Ortiz de Zugasti Carrón 2016).

***Remarks.*** Originally described as *Paralipsis planus* van Achterberg, 2016. *Paralipsis* is feminine, and *planus* is adjectival; the spelling is corrected to *Paralipsis plana* under ICZN Articles 31.2 and 34.2 (suppl. I).

### *Paralipsis rugosa* Tomanović & Starý, 2019

*Paralipsis rugosa* Tomanović & Starý, [in Mitrović et al.], 2019:62. Holotype ♀ (IECA). – Moldova.

***Host.*** Unknown.

***Distribution.*** **Moldova** (Mitrović et al. 2019).

### *Paralipsis tibiator* van Achterberg & Ortiz de Zugasti, 2016 [Fig. 23E]

*Paralipsis tibiator* van Achterberg & Ortiz de Zugasti, 2016:35. Holotype ♀, paratypes ♀♀ (RMNH). – Spain.

***Host.*** Unknown.

***Distribution.*** **Spain** (van Achterberg & Ortiz de Zugasti Carrón 2016).

### *Paralipsis triangulata* Kim & Yoon, 2026 [Fig. 23F]

*Paralipsis triangulata* Kim & Yoon [in Kim et al.], 2026b:1194. Holotype ♀, paratypes ♀♀ (NIBR). – South Korea.

***Host.*** Unknown.

***Distribution.*** **South Korea** (Kim et al. 2026b).

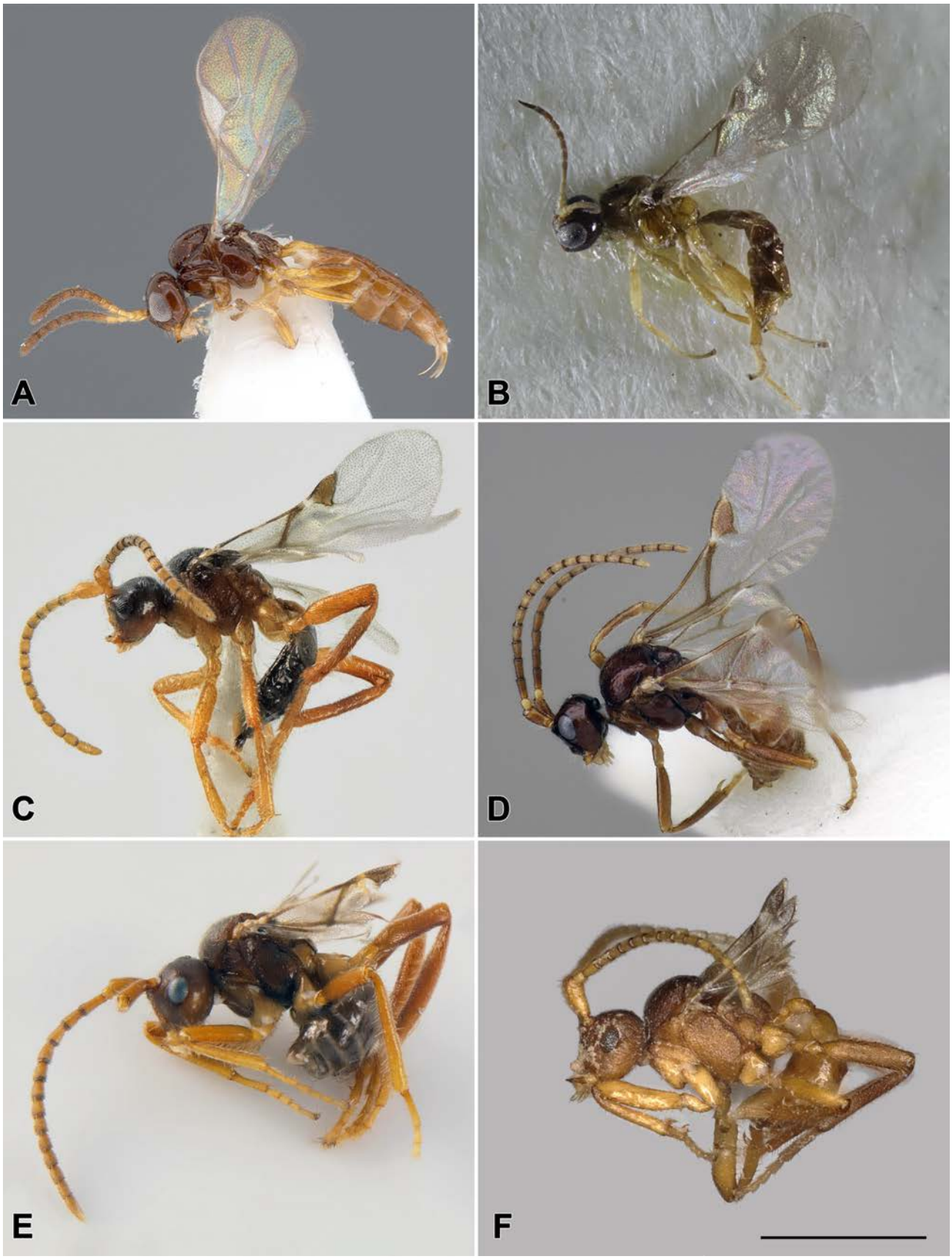



**Figure 23.** Species of the genera *Indaphidius* Starý, 1979, *Kashmiria* Starý & Bhagat, 1978, and *Paralipsis* Förster, 1863. **A.** *Indaphidius curvicaudatus* Starý, 1979 – CUMZ, Thailand; **B.** *Kashmiria aphidis* Starý & Bhagat, 1978 – India, IECA; **C.** *Paralipsis eikoae* (Yasumatsu, 1951) – Japan, RMNH; **D.** *Paralipsis enervis* (Nees, 1834) – Germany, RMNH; **E.** *Paralipsis tibiator* van Achterberg & Ortiz de Zugasti, 2016 – Holotype, RMNH; **F.** *Paralipsis triangulata* Kim & Yoon, 2026 – Holotype, NIBR. Scale bar: 1 mm.

**Genus *Praeaphidius* Starý, 1973** [1 species]

*Praeaphidius* Starý, 1973b:8. Type species: *Aphidius microphthalmus* Brues, 1933.

***Praeaphidius microphthalmus* (Brues, 1933)** [Fossil]

*Aphidius macrophthalmus* Brues, 1933:108. Holotype ♀ (KAM: Lost). – Baltic amber.

***Host.*** Unknown.

***Distribution.*** Eocene (Ortega-Blanco et al. 2009); Oligocene (Mackauer 1968a; Starý 1970a, 1973b).

***Remarks.*** The type specimen may be deposited at the Harvard Museum, where C.T. Brues was based.

**Genus *Promonoctonia* Starý, 1973** [1 species]

*Promonoctonia* Starý, 1973b:10. Type species: *Aphidius quievreuxi* Quilis, 1940.

***Promonoctonia quievreuxi* (Quilis, 1940)** [Fossil]

*Aphidius quievreuxi* Quilis, 1940:47. Holotype ♀ (MNHN). – France.

***Host.*** Unknown.

***Distribution.*** **France** – Oligocene (Starý 1970a, 1973b; Ortega-Blanco et al. 2009).

**Genus *Protodiaeretiella* Starý, 1973** [1 species]

*Protodiaeretiella* Starý, 1973b:14. Type species: *Diaeretus berdlandi* Quilis, 1940.

***Protodiaeretiella berdlandi* (Quilis, 1940)** [Fossil]

*Diaeretus berdlandi* Quilis, 1940:54. Holotype ♀ (Lost). – France.

***Host.*** Unknown.

***Distribution.*** **France** – Oligocene (Quilis-Pérez 1940; Starý 1970a, 1973b).

**Genus *Pseudaclitus* Starý, 1974** [1 species]

*Pseudaclitus* Starý, 1974d:178. Type species: *Pseudaclitus dysaphidis* Starý, 1974.

***Pseudaclitus dysaphidis* Starý, 1974**

*Pseudaclitus dysaphidis* Starý, 1974d:178. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Tajikistan.

***Hosts.*** ***Dysaphis pavlovskyana*** Narzikulov, ***Dysaphis rumecicola*** (Hori) (Starý 1974d, 1979a).

***Distribution.*** **Tajikistan** (Starý 1974d, 1979a).

**Genus *Pseudaphidius* Starý, 1973** [10 species]

*Pseudaphidius* Starý, 1973d:15. Type species: *Aphidius oligocenus* Quilis, 1940.

***Pseudaphidius cenozoicum* (Quilis, 1940)** [Fossil]

*Aphidius cenozoicum* Quilis, 1940:41. Holotype ♀ (MNHN). – France.

***Host.*** Unknown.

***Distribution.*** **France** – Oligocene (Quilis-Pérez 1940; Mackauer 1968a; Starý 1970a, 1973b).

***Pseudaphidius fosiliferus* (Quilis, 1940)** [Fossil]

*Aphidius fosiliferus* Quilis, 1940:46. Holotype ♀ (Lost). – France.

***Host.*** Unknown.

***Distribution.*** **France** – Oligocene (Quilis-Pérez 1940; Mackauer 1968a; Starý 1970a, 1973b).

***Pseudaphidius lysiphleboides* (Quilis, 1940)** [Fossil]

*Aphidius lysiphleboides* Quilis, 1940:44. Holotype ♀ (Lost). – France.

***Host.*** Unknown.

***Distribution.*** **France** – Oligocene (Quilis-Pérez 1940; Mackauer 1968a; Starý 1970a, 1973b).

***Pseudaphidius nigrofacies* (Quilis, 1940)** [Fossil]

*Aphidius nigrofacies* Quilis, 1940:43. Holotype ♀ (Lost). – France.

***Host.*** Unknown.

***Distribution.*** **France** – Oligocene (Quilis-Pérez 1940; Mackauer 1968a; Starý 1970a, 1973b).

***Pseudaphidius oligoarundinis* (Quilis, 1940)** [Fossil]

*Aphidius oligoarundinis* Quilis, 1940:45. Holotype ♀ (Lost). – France.

***Host.*** Unknown.

***Distribution.*** **France** – Oligocene (Quilis-Pérez 1940; Mackauer 1968a; Starý 1970a, 1973b).

***Pseudaphidius oligocenus* (Quilis, 1940)** [Fossil]

*Aphidius oligocenus* Quilis, 1940:38. Holotype ♀ (MNHN). – France.

***Host.*** Unknown.

***Distribution.*** **France** – Oligocene (Quilis-Pérez 1940; Mackauer 1968a; Starý 1970a, 1973b).

***Pseudaphidius premedicaginis* (Quilis, 1940)** [Fossil]

*Aphidius premedicaginis* Quilis, 1940:42. Holotype ♀ (MNHN). – France.

***Host.*** Unknown.

***Distribution.*** **France** – Oligocene (Quilis-Pérez 1940; Mackauer 1968a; Starý 1970a, 1973b).

***Pseudaphidius pseudogranarius* (Quilis, 1940)** [Fossil]

*Aphidius pseudogranarius* Quilis, 1940:43. Holotype ♀ (MNHN). – France.

***Host.*** Unknown.

***Distribution.*** **France** – Oligocene (Quilis-Pérez 1940; Mackauer 1968a; Starý 1970a, 1973b).

***Pseudaphidius saliniferus* (Quilis, 1940)** [Fossil]

*Aphidius saliniferus* Quilis, 1940:46. Holotype ♀ (MNHN). – France.

***Host.*** Unknown.

***Distribution.*** **France** – Oligocene (Quilis-Pérez 1940; Mackauer 1968a; Starý 1970a, 1973b).

***Pseudaphidius torneli* (Quilis, 1940)** [Fossil]

*Aphidius torneli* Quilis, 1940:46. Holotype ♀ (Lost). – France.

***Host.*** Unknown.

***Distribution.*** **France** – Oligocene (Quilis-Pérez 1940; Mackauer 1968a; Starý 1970a, 1973b).

**Genus *Tanytrichophorus* Mackauer, 1961** [2 species]

*Tanytrichophorus* Mackauer, 1961:271. Type species: *Tanytrichophorus petiolaris* Mackauer, 1961.

***Tanytrichophorus koreanus* Davidian, 2026** [Fig. 24A]

*Tanytrichophorus koreanus* Davidian [in Davidian et al.], 2026:3. Holotype ♂ (ZISP). – South Korea.

***Host.*** Unknown.

***Distribution.*** **South Korea** (Davidian et al. 2026).

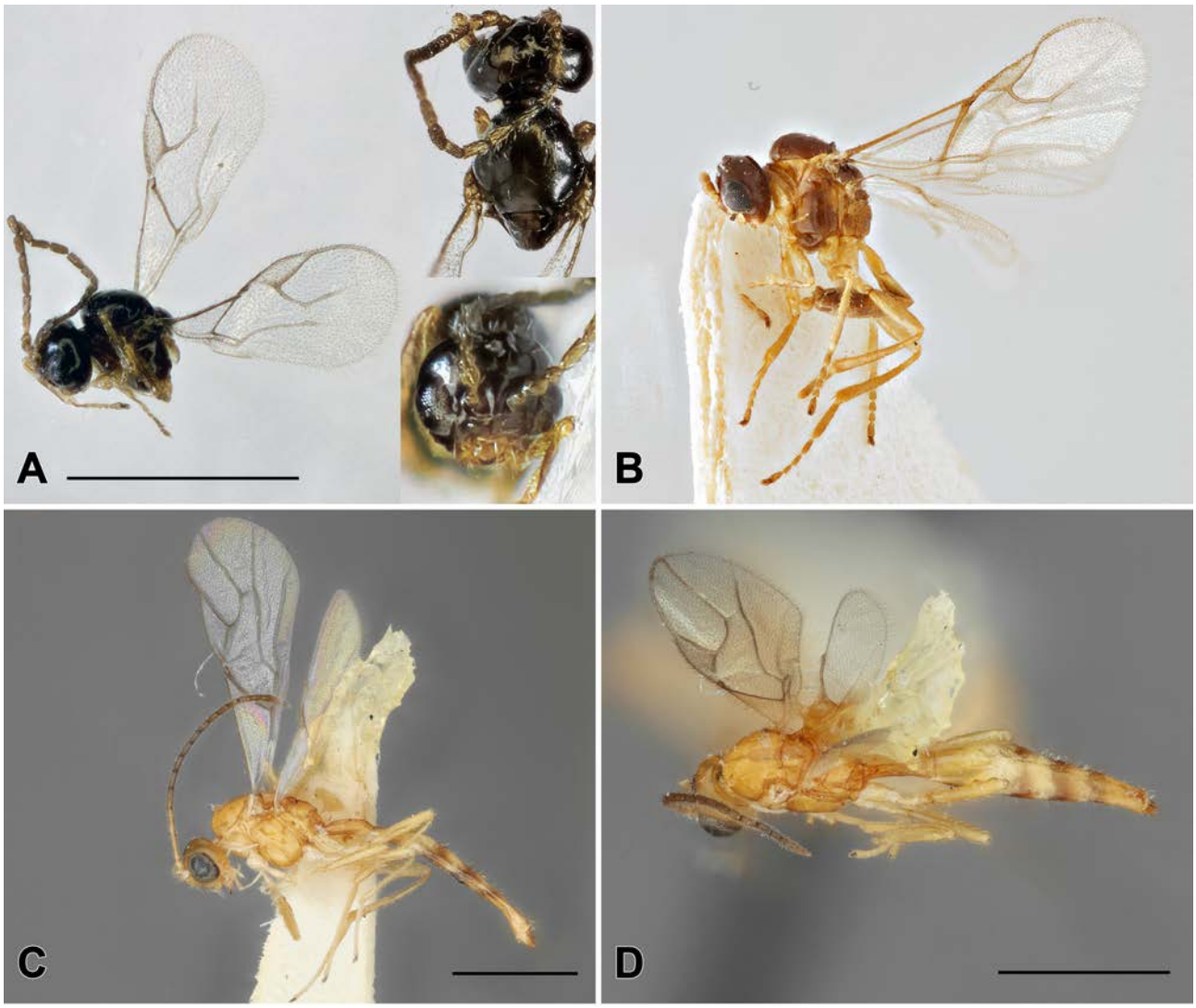



**Figure 24.** Species of the rare genera *Tanytrichophorus* Mackauer, 1961, and *Archaphidus* Starý & Schlinger, 1967. **A.** *Tanytrichophorus koreanus* Davidian, 2026 – Holotype (ZISP); **B.** *Tanytrichophorus petiolaris* Mackauer, 1961 – Holotype, CNC; **C–D.** *Archaphidus greenideae* Starý & Schlinger, 1967 – Holotype, USNM. Scale bar: 1 mm.

### *Tanytrichophorus petiolaris* Mackauer, 1961 [Fig. 24B]

*Tanytrichophorus petiolaris* Mackauer, 1961c:272. Holotype ♂, paratypes ♂♂ (CNC). – Iran.

***Host. Brachycaudus persicae*** Passerini (Mackauer 1961c; Mackauer & Starý 1967; Starý 1979a; Starý et al. 2000; Rakhshani et al. 2019).

***Distribution.*** **Iran** (Mackauer 1961c; Mackauer & Starý 1967; Starý 1979a; Starý et al. 2000; Fallahzadeh & Saghaei 2010; Rakhshani et al. 2019).

### Genus *Vanhartenia* Starý, 1974 [1 species]

*Vanhartenia* Starý, 1974:27. Type species: *Vanhartenia paoliellae* Starý & van Harten, 1974.

### *Vanhartenia paoliellae* Starý & van Harten, 1974

*Vanhartenia paoliellae* Starý & van Harten, 1974:27. Holotype ♀, paratypes ♀ ♂ (IECA). – Angola.

***Host. Paoliella browni*** Quednau (Starý & van Harten 1974; Starý et al. 1977).

***Distribution.*** **Angola** (Starý & van Harten 1974; Starý et al. 1977).

### Subtribe ARCHAPHIDINA Mackauer, 1968 [1 genus, 1 species]

Archaphidina Mackauer, 1968a:30. Type genus: *Archaphidus* Starý & Schlinger, 1967

### Genus *Archaphidus* Starý & Schlinger, 1967 [1 species]

*Archaphidus* Starý & Schlinger, 1967:30. Type species: *Archaphidus greenideae* Starý & Schlinger, 1967.

#### *Archaphidus greenideae* Starý & Schlinger, 1967 [Figs 24C–D]

*Archaphidus greenideae* Starý & Schlinger, 1967:30. Holotype ♀ (USNM). – Taiwan.

***Hosts.*** ***Eutrichosiphum dubium*** (van der Goot), ***Eutrichosiphum pseudopasaniae*** Szelegiewicz (Paonam & Singh 1986d); ***Greenidea ficicola*** Takahashi (Mackauer & Starý 1967; Starý & Schlinger 1967; Liu 1975; Starý 1975a; Chou 1981; Ahmad & Singh 1995a, 1995b; Chen et al. 2009; Starý et al. 2010a); ***Greenidea psidii*** van der Goot (Liu 1975; Chou 1981; Starý & van Harten 1983; Singh et al. 1999; Chen et al. 2009; Starý et al. 2010a); ***Holotrichosiphon dubium*** (van der Goot) (Paonam & Singh 1986d).

***Distribution.*** **Bangladesh** (Starý & Ghosh 1983; Starý & van Harten 1983); **China** (Mackauer & Starý 1967; Liu 1975; Starý 1975a; Chou 1981; Yang & Wu 1981; Chen & Shi 2001; Chen et al. 2009); **India** (Paonam & Singh 1986d; Ahmad & Singh 1995a, 1995b; Singh et al. 1999; Das & Chakrabarti 2023a); **Thailand** (Starý et al. 2008, 2010c).

### Subtribe LYSIPHLEBINA Mackauer, 1961 [3 genera, 36 species]

*Lysiphlebina* Mackauer, 1961:800. Type genus: *Lysiphlebus* Förster, 1863.

### Genus *Adialytus* Förster, 1863 [7 species]

*Adialytus* Förster, 1863:249. Type species: *Adialytus tenuis* Förster, 1863.

#### *Adialytus ambiguus* (Haliday, 1834) [Fig. 25B]

*Aphidius ambiguus* Haliday, 1834:104. Holotype ♀ (after Mackauer 1961b) (NHMUK). – Ireland.

**Syn.:** *Aphidius diminuens* Nees von Esenbeck, 1834; *Aphidius exiguus* Haliday, 1834; *Lysiphelbus arvicola* Starý, 1961; *Lysiphelbus mackaueri* Starý, 1961; *Lysiphelbus crocinus* Mackauer, 1962 [Fig. 25A].

***Hosts.*** *Aphis fabae* Scopoli (Alaserhat & Canbay 2017); ***Atheroides serrulatus*** Haliday (Mackauer 1962c; Mackauer & Starý 1967); ***Chaetosiphella berlesei*** (Del Guercio) (Mackauer 1962e; Mackauer & Starý 1967); *Myzus persicae* (Sulzer) (Alaserhat & Canbay 2017); ***Sipha elegans*** Del Guercio (Mackauer & Starý 1967; Kierych 1980; Pike et al. 1996, 2000; Mackauer & Völkl 2002; Kavallieratos et al. 2004; Uysal et al. 2004; Gavrilyuk & Novgorodova 2007; Rakhshani et al. 2008b; Tomanović et al. 2008c; Rakhshani et al. 2012c; Žikić et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Davidian & Gavrilyuk 2014; Davidian 2017); ***Sipha flava*** (Forbes) (Nazari et al. 2012; Rakhshani et al. 2012c); ***Sipha glyceriae*** (Kaltenbach) (Starý et al. 1977a); ***Sipha maydis*** Passerini (Mackauer 1962c, 1962e; Starý 1962b, 1965a, 1966c, 1966d, 1976a, 1976c, 1979a, 1981b, 1987a; Mackauer & Starý 1967; Tremblay 1967a; Starý et al. 1971, 2000; Shuja-Uddin 1978a; González & Michelena 1987; Mescheloff & Rosen 1990a; Atanassova 1997; Kolarov 1997; Tomanović et al. 1998a, 1999b, 1999c, 2008c; Sanchis et al. 2000; Mahmood et al. 2002; Kavallieratos et al. 2004, 2005b; Michelena et al. 2004; Petermann et al. 2010; Nazari et al. 2012; Rakhshani et al. 2012b, 2012c; Žikić et al. 2012; Barahoei et al. 2013; Davidian & Gavrilyuk 2014; Stanković et al. 2015; Davidian 2017); ***Sipha*** spp. (Mackauer 1962e; Starý 1964d, 1965a, 1977, 2006; Tomanović et al. 1999c; Starý et al. 1999; Kavallieratos et al. 2004, 2005b; Žikić et al. 2012; Stanković et al. 2015).

***Distribution.*** **Austria** (Mackauer & Starý 1967); **Bulgaria** (Starý 1962b, 1976a, 1981b; Mackauer & Starý 1967); **Canada** (Mackauer & Starý 1967); **Canary Islands** (Mackauer 1962b; Starý 1976a); **China** (Davidian 2019b); **Czech Republic** (Starý 1961b, 1961f, 1966c, 1977, 1981b, 1987a, 2006; Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c); **France** (Mackauer 1962e; Mackauer & Starý 1967; Starý et al. 1977a; Starý 1981b; Stanković et al. 2015); **Georgia** (Akhvlediani 1964); **Germany** (Mackauer 1962c, 1962e; Mackauer & Starý 1967; Mackauer & Völkl 2002); **Greece** (Starý 1976a; Stanković et al. 2015);

**India** (Subba Rao & Sharma 1960; Ramaseshiah & Menon 1971; Shuja-Uddin 1978a; Raychaudhuri et al. 1990; Singh et al. 1999; Das & Chakrabarti 1989a, 2023a); **Iran** (Starý 1979a, 1981b; Starý et al. 2000; Rakhshani et al. 2008b, 2012c, 2019; Fallahzadeh & Saghaei 2010; Nazari et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Stanković et al. 2015); **Ireland** (van Achterberg 1997); **Italy** (Starý 1966d, 1981b; Tremblay 1967a); **Japan**, **Kazakhstan** (Davidian 2019b); **Lithuania** (BOLD:AAH7446); **Malta** (Stanković et al. 2013; Rakhshani et al. 2015b); **Moldova** (Starý 1981b); **Montenegro** (Kavallieratos et al. 2004; Žikić et al. 2012; Stanković et al. 2015); **Pakistan** (Davidian 2019b); **Palestine** (Starý 1976a; Mescheloff & Rosen 1990a); **Poland** (Kierych 1975, 1980); **Russia** (Starý 1965a; Mackauer & Starý 1967; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian 2017, 2019b, 2020b; Davidian & Ruchin 2023); **Serbia** (Tomanović et al. 1998a, 1999c; Kavallieratos et al. 2004; Žikić et al. 2012; Stanković et al. 2015); **South Korea** (Kim 2026); **Spain** (Quilis-Pérez 1931b; Mackauer 1962e; Mackauer & Starý 1967; Starý 1976a); **Sweden** (Mackauer 1962e; Mackauer & Starý 1967); **Syria** (Abo Kaf & Alrostom 2020); **Tajikistan** (Starý 1961b, 1965a, 1979a); **Türkiye** (Starý 1976a; Uysal et al. 2004; Rakhshani et al. 2019; Alaserhat & Canbay 2017); **Ukraine** (BOLD:AAH7446); **USA** (Pike et al. 1996, 2000); **United Kingdom** (Mackauer 1961b).

***Remarks.*** *Adialytus ambiguus* is a specific parasitoid of *Sipha* species. Records of association with *Aphis* species may refer to *Lysiphlebus confusus* Tremblay & Eady, 1978, other *Lysiphlebus* species, or a misidentification. So, the distribution of this species can be more restricted than indicated by the listed countries.

### *Adialytus balticus* Starý, 1979 [Fig. 25C]

*Adialytus balticus* Starý, 1979:313. Holotype ♂, paratypes ♀ ♂♂ (IECA). – Lithuania.

***Host.*** ***Dysaphis anthrisci*** Börner (Starý & Rakauskas 1979).

***Distribution.*** **Finland** (LEFIJ36068-23); **Lithuania** (Starý & Rakauskas 1979); **Russia** (Davidian 2017, 2019b).

### *Adialytus fuscicornis* (Ashmead, 1891) [Fig. 25D]

*Lipolexis fuscicornis* Ashmead, 1891:7. Holotype ♀ (USNM). – Canada.

***Hosts.*** ***Aphis forbesi*** Weed (Smith 1944; Mackauer 1960e; Mackauer & Starý 1967; Marsh 1979); ***Aphis gossypii*** Glover (Pike et al. 2000); ***Protaphis middletonii*** (Thomas) (Mackauer & Starý 1967; Marsh 1979; Pike et al. 2000); *Forda marginata* Koch (Pike et al. 2000).

***Distribution.*** **Canada** (Ashmead 1891; Gahan 1911a; Muesebeck & Walkley 1951; Mackauer 1960e; Mackauer & Starý 1967); **USA** (Smith 1944; Muesebeck & Walkley 1951; Mackauer 1960e; Mackauer & Starý 1967; Pike et al. 1996, 2000).

### *Adialytus kaszabi* Takada, 1979

*Adialytus kaszabi* Takada, 1979a:197. Holotype ♀ (HNHM). – Mongolia.

***Host.*** Unknown.

***Distribution.*** **Mongolia** (Takada 1979a); **Russia** (Davidian & Gavrilyuk 2014).

### *Adialytus salicaphis* (Fitch, 1855) [Fig. 25E]

*Trioxys salicaphis* Fitch, 1855:841. Lectotype ♀ (after Mackauer 1968a) (USNM). – USA.

**Syn.:** *Trioxys populaphis* Fitch, 1855; *Adialytus tenuis* Förster, 1863; *Lipolexis salicaphidis* Ashmead, 1889; *Aphidius laticephalus* Telenga, 1953.

***Hosts.*** *Aphis craccivora* Koch (Chang & Youn 1983a; Starý & Choi 2000); *Aphis fabae* Scopoli (Barnea 2007); *Aphis farinosa* Gmelin (Wiackowski et al. 2001); *Aphis illinoisensis* Shimer (Riley & Howard 1890); *Aphis spiraecola* Patch (Batulla & Robinson 1984); *Aphis* sp. (Riley & Howard 1890); *Cavariella* sp. (Žikić et al. 2013); ***Chaitophorus capreae*** (Mosley) (Starý 1965a, 1979a; Mackauer & Starý 1967; Starý et al. 1971; Baker & Broad 2009; Kos et al. 2012); ***Chaitophorus euphraticus*** Hodjat (Starý et al. 2000; Rakhshani et al. 2007b, 2012c; Talebi et al. 2009); ***Chaitophorus horii beuthani*** (Börner) (Starý 2006); ***Chaitophorus kapuri*** Hille Ris Lambers (Bhagat 1986a); ***Chaitophorus leucomelas*** Koch (Starý 1965a,

1976a, 1979a, 2006; Mackauer & Starý 1967; Starý et al. 1971, 1973; Suay Cano et al. 1992; Sanchis et al. 2000; Kavallieratos et al. 2001, 2004; Ölmez & Ulusoy 2003; Uysal et al. 2004; Lumbierres et al. 2005; Mancini & Garonna 2005; Tomanović et al. 2006a; Rakhshani et al. 2007a, 2012c; Baker & Broad 2009; Kos et al. 2012; Žikić et al. 2012, 2013; Barahoei et al. 2013; Taheri & Rakhshani 2013; Davidian 2017; Pons et al. 2018); ***Chaitophorus matsumurai*** Hille Ris Lambers (Starý & Schlinger 1967; Starý & Choi 2000); ***Chaitophorus melanosiphon*** Pintera (Starý et al. 1999); ***Chaitophorus nassonowi*** Mordvilko (Starý et al. 1977a); ***Chaitophorus pakistanicus*** Hille Ris Lambers (Starý et al. 1999; Alikhani et al. 2013); ***Chaitophorus populeti*** (Panzer) (Mackauer & Starý 1967; Starý et al. 1971; Starý & Juchnevič 1978; Starý 1979a, 2006; Kierych 1980; Pike et al. 1996, 2000; Starý & Choi 2000; Wiackowski & Wiackowska 2000; Chen & Shi 2001; Kavallieratos et al. 2001, 2004; Wiackowski et al. 2001; Lumbierres et al. 2005; Tomanović et al. 2006a; Rakhshani et al. 2007b, 2012c; Žikić et al. 2012, 2013; Stanković et al. 2015; Davidian 2017; Pons et al. 2018); ***Chaitophorus populialbae*** (Boyer de Fonscolombe) (Starý 1965a, 1979a; Mackauer & Starý 1967; Starý et al. 1971, 2000; Kavallieratos et al. 2001, 2004; Tomanović et al. 2006a; Rakhshani et al. 2007b, 2012c; Barahoei et al. 2013; Pons et al. 2018); ***Chaitophorus populicola*** Thomas (Gahan 1911a; Smith 1944; Mackauer 1960e; Starý 1965a; Mackauer & Starý 1967; Starý & Remaudière 1977; Batulla & Robinson 1984; Pike et al. 1996, 2000); ***Chaitophorus populifolii*** (Essig) (Pike et al. 2000); ***Chaitophorus remaudieri*** Pintera (Starý et al. 2000; Rakhshani et al. 2007b, 2012c; Talebi et al. 2009; Nazari et al. 2012); ***Chaitophorus salicti*** (Schrank) (Mackauer & Starý 1967; Starý et al. 1971; Starý 1973a, 1979a; Stanković et al. 2015; Mustafayeva 2020); ***Chaitophorus salijaponicus*** Essig & Kuwana (Starý 1965a, 1975a, 1976a, 2006; Mackauer & Starý 1967; Takada 1968; Finlayson 1990; Starý et al. 2000; Ölmez & Ulusoy 2003; Uysal et al. 2004; Rakhshani et al. 2007b, 2012b, 2012c; Nazari et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Stanković et al. 2015; Pons et al. 2018); ***Chaitophorus saliniger*** Shinji (Starý 1975a; Starý & Choi 2000); ***Chaitophorus tremulae*** Koch (Starý 1976a; Žikić et al. 2013; Davidian 2017); ***Chaitophorus truncatus*** (Hausmann) (Starý et al. 1977a; Rakhshani et al. 2007b; Talebi et al. 2009); ***Chaitophorus utahensis*** (Knowlton) (Pike et al. 1996, 2000); ***Chaitophorus viminalis*** Monell (Smith 1944; Mackauer 1960e; Schlinger & Hall 1960a; Mackauer & Starý 1967; Finlayson 1990; Pike et al. 2000; Starý 2006); ***Chaitophorus vitellinae*** (Schrank) (Starý & Juchnevič 1978; Starý 1979a, 2006; Tomanović et al. 1998a, 2006a; Kavallieratos et al. 2004; Lumbierres et al. 2005; Rakhshani et al. 2007b, 2012c; Talebi et al. 2009; Kos et al. 2012; Žikić et al. 2012; Barahoei et al. 2013; Alikhani et al. 2013; Stanković et al. 2015); ***Chaitophorus*** spp. (Mackauer 1960e; Starý 1962b, 1964d, 1966c, 1966d, 1976a, 1979a, 1983d, 1987a; Starý & Kaddou 1971; Shuja-Uddin 1978a; Kolarov 1997; Tomanović et al. 1998a; Starý et al. 2000; Barahoei et al. 2012, 2013; Rakhshani et al. 2012b, 2012c; Žikić et al. 2012, 2013; Davidian 2017); *Cryptomyzus ribis* (Linnaeus) (Wiackowski et al. 2001); ***Periphyllus*** sp. (Pike et al. 2000); *Uroleucon ambrosiae* (Thomas) (Batulla & Robinson 1984).

***Distribution.*** **Andorra** (Sanchis et al. 1999); **Armenia** (Davidian 2017); **Austria** (Mackauer & Starý 1967); **Azerbaijan** (Mustafayeva 2020); **Bulgaria** (Starý 1962b, 1976a; Mackauer & Starý 1967; Atanassova 1997; Kolarov 1997; Kavallieratos et al. 2004; Tomanović et al. 2006a; Todorov 2007, 2014; Todorov & Ivanova 2016); **Canada** (Judd 1953; Mackauer 1960e; Mackauer & Starý 1967; Batulla & Robinson 1984; Finlayson 1990); **China** (You et al. 1990; Lu & Ji 1992; Gu et al. 1995); **Croatia** (Kavallieratos et al. 2004; Tomanović et al. 2006a); **Czech Republic** (Starý 1966c, 1987a, 1989a, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Stanković et al. 2015); **Denmark** (Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Starý et al. 1971, 1973, 1977a; Derocles et al. 2012; Stanković et al. 2015); **Georgia** (Starý 1976a); **Germany** (Kirchner 1867; Mackauer & Starý 1967; Boness & Starý 1988; Belokobylskij & Taeger 2001; Belokobylskij et al. 2003); **Greece** (Kavallieratos et al. 2001, 2004; Tomanović et al. 2006a); **Hungary** (Polgár 1981, 1983); **India** (Shuja-Uddin 1978a; Agarwala et al. 1981a; Starý & Ghosh 1983; Bhagat 1986a; Dey & Akhtar 2007; Ahmad & Wani 2014); **Iran** (Starý 1979a; Starý et al. 2000; Rakhshani et al. 2007b, 2012a, 2012b, 2019; Fallahzadeh & Saghaei 2010; Barahoei et al. 2012, 2013; Nazari et al. 2012; Alikhani et al. 2013; Taheri & Rakhshani 2013; Stanković et al. 2015); **Iraq** (Starý & Kaddou 1971; Starý 1976a); **Italy** (Starý 1966d, 1976a; Bergamesco et al. 1995; Mancini & Garonna 2005); **Japan** (Takada 1968; Starý 1975a; Finlayson 1990); **Kazakhstan** (Starý 1965a, 1979a; Starý & Juchnevič 1978; Davidian 2017); **Mexico** (Starý 1983d; Starý & Remaudière 1988); **Moldova** (Talitzky &

Kuslitzky 1990; Davidian 2017); **Montenegro** (Kavallieratos et al. 2004; Tomanović et al. 2006a; Žikić et al. 2012); **Netherlands** (Mackauer & Starý 1967); **Norway** (Riedel & Hansen 2014; Mjøs et al. 2024); **Pakistan** (Starý et al. 1999); **Poland** (Kierych 1980; Huflejt 1997; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); **Romania** (Barnea 2007); **Russia** (Starý 1965a; Mackauer & Starý 1967; Mackauer 1968c; Davidian 2007, 2017, 2019b; Davidian & Gavrilyuk 2014; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a, 2006a; Kavallieratos et al. 2004; Žikić et al. 2012, 2013; Stanković et al. 2015); **Slovakia** (Starý 1989a); **Slovenia** (Kos et al. 2012; Stanković et al. 2015); **South Korea** (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a; Chang & Youn 1983a; Starý & Choi 2000; Kim 2026); **Spain** (Tizado & Núñez-Perez 1991; Sanchis et al. 2000; Lumbierres et al. 2005; Stanković et al. 2015; Michelena Saval & Martínez De Murguía 2012; Pons et al. 2018); **Syria** (Abo Kaf & Alrostom 2020); **Tajikistan** (Starý 1965a, 1979a); **Türkiye** (Ölmez & Ulusoy 2003; Uysal et al. 2004; Çetin Erdoğan et al. 2008; Davidian 2017, 2019b); **Ukraine** (Kaliuzhna 2013a, 2014, 2019a, 2019b, 2020); **United Kingdom** (Baker & Broad 2009); **USA** (Smith 1890; Riley & Howard 1890; Ashmead 1889, 1890, 1900a; Webster 1895; Viereck 1910; Szépligeti 1904; Gahan 1911a; Knowlton & Harmston 1939; Smith 1944; Muesebeck & Walkley 1951; Mackauer 1960e; Schlinger & Hall 1960a; Mackauer & Starý 1967; Starý & Remaudière 1977; Finlayson 1990; Pike et al. 1996, 2000; Whitfield & Lewis 2001); **Uzbekistan** (Starý 1965a, 1979a; Mackauer 1968a; Daminova et al. 2001; Aripov 2003).

### *Adialytus thelaxis* (Starý, 1961) [Fig. 25F]

*Lysiphlebus thelaxis* Starý, 1961b:100. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Czech Republic.

***Hosts. Thelaxes dryophila*** (Schrank) (Starý 1965a, 1966c, 1976a, 2006; Mackauer & Starý 1967; Starý et al. 1971; Kierych 1980; Pons et al. 2006, 2018; Davidian 2017); ***Thelaxes suberi*** (Del Guercio) (Starý 1969c, 1969d, 1976a, 1979a; Starý & Kaddou 1971; Starý et al. 1975, 2000; Michelena Saval & Oltra Moscardo 1987; Mescheloff & Rosen 1990a; Babaee et al. 2000; Lumbierres et al. 2005; Nazari et al. 2012; Rakhshani et al. 2012c; Pons et al. 2018); ***Thelaxes*** sp. (Starý 1961b, 1964d, 1976a; Kavallieratos et al. 2004, 2016; Pons et al. 2006; Žikić et al. 2012; Stanković et al. 2015).

***Distribution.*** **Andorra** (Sanchis et al. 1999); **Bulgaria** (Todorov 2007); **Czech Republic** (Starý 1961b, 1961f, 1966c, 1989a, 2006; Mackauer & Starý 1967); **Denmark** (Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Starý et al. 1971, 1975, 1977a; Starý 1976a); **Germany** (Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1983, 1987); **Iran** (Mackauer & Starý 1967; Starý 1979a; Babaee et al. 2000; Starý et al. 2000; Fallahzadeh & Saghaei 2010; Nazari et al. 2012; Rakhshani et al. 2012c, 2019; Stanković et al. 2015); **Iraq** (Starý 1969c, 1969d, 1976a; Starý & Kaddou 1971; Rakhshani et al. 2019); **Italy** (Starý 1966d, 1976a; Mackauer & Starý 1967; Tremblay 1967a; Bergamesco et al. 1995); **Lebanon** (BOLD:ACQ5855); **Moldova** (Talitzky & Kuslitzky 1990; Davidian 2017); **Montenegro** (Kavallieratos et al. 2004, 2016; Žikić et al. 2012; Stanković et al. 2015); **Palestine** (Mescheloff & Rosen 1990a); **Poland** (Kierych 1980; Huflejt 1997); **Russia** (Starý 1965a; Mackauer & Starý 1967; Davidian 2017, 2019b; Davidian & Ruchin 2023); **Slovakia** (Starý 1961f, 1989a); **Serbia** (Kavallieratos et al. 2004, 2016; Žikić et al. 2012; Stanković et al. 2015); **Spain** (Michelena Saval & Oltra Moscardo 1987; Tizado & Núñez-Perez 1991; Lumbierres et al. 2005; Pons et al. 2006, 2018; Michelena Saval & Martínez De Murguía 2012); **Syria** (Abo Kaf & Alrostom 2020); **Türkiye** (Starý 1976a; Rakhshani et al. 2019); **United Kingdom** (BOLD:ACQ5855).

### *Adialytus veronicaecola* (Starý, 1978)

*Lysiphlebus veronicaecola* Starý [in Starý & Juchnevič], 1978:529. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Kazakhstan.

***Hosts. Aphis craccivora*** Koch, ***Aphis gossypii*** Glover (Rakhshani et al. 2012c); ***Aphis*** spp. (Starý & Juchnevič 1978; Starý 1979a; Rakhshani et al. 2012c).

***Distribution.*** **Bulgaria** (Todorov 2006b); **Iran** (Rakhshani et al. 2012c, 2019); **Kazakhstan** (Starý & Juchnevič 1978; Starý 1979a; Davidian 2017); **Russia** (Davidian 2017, 2019b); **Türkiye** (Çetin Erdoğan & Akar 2018; Rakhshani et al. 2019).

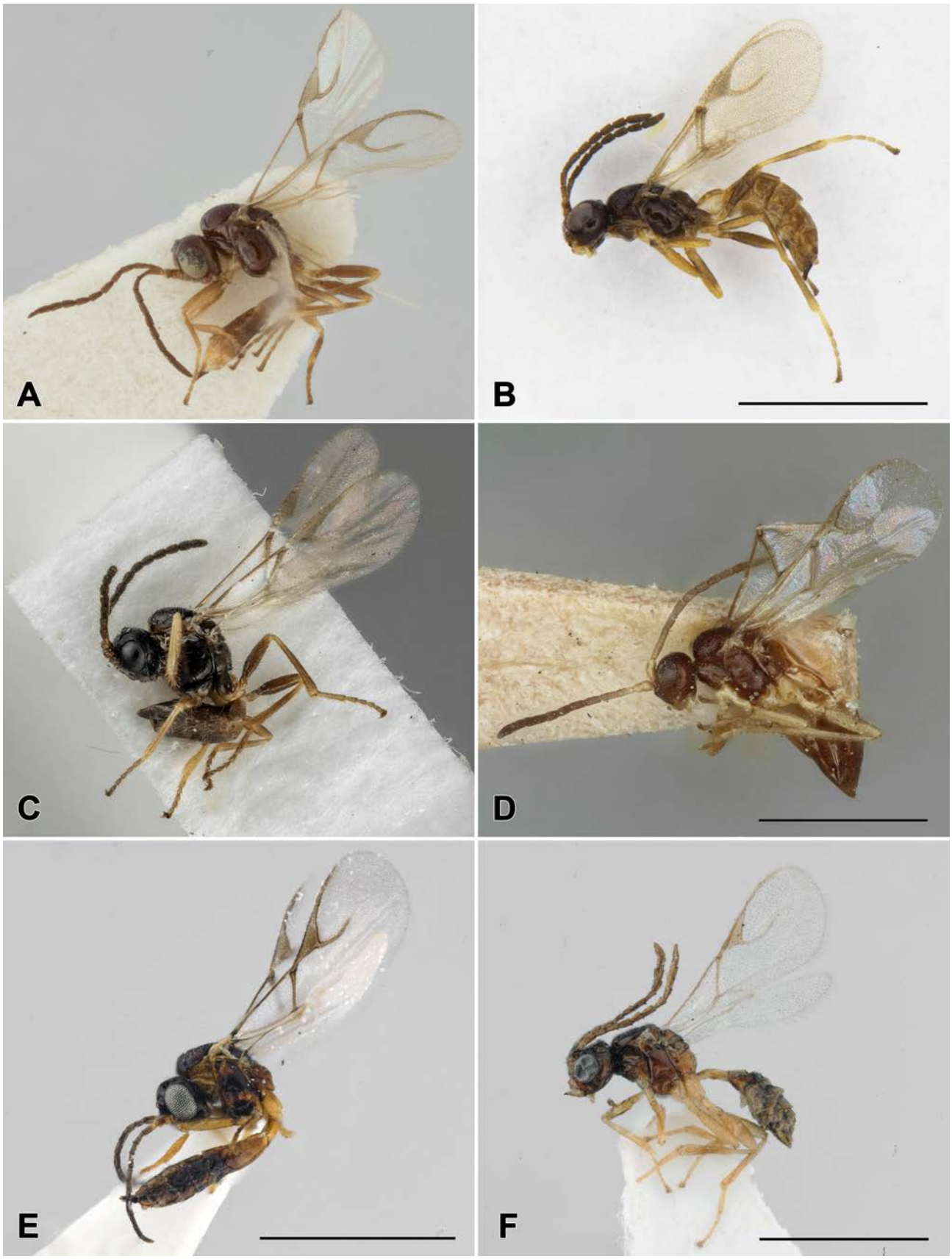



**Figure 25.** Species of the genus *Adialytus* Förster, 1863. **A.** *Adialytus ambiguus* (Haliday, 1834) – Holotype of *Adialytus crocinus* (Mackauer, 1962), CNC; **B.** *Adialytus ambiguus* (Haliday, 1834) – Russia, ZISP. **C.** *Adialytus balticus* Starý, 1979 – Finland, ZMHF; **D.** *Adialytus fuscicornis* (Ashmead, 1891) – Holotype, USNM. **E.** *Adialytus salicaphis* (Fitch, 1855) – Iran, DPPZ; **F.** *Adialytus thelaxis* (Starý, 1961) – Iran, DPPZ. Scale bar: 1 mm.

### Genus *Lysiphlebia* Starý & Schlinger, 1967 [6 species]

*Lysiphlebia* Starý & Schlinger, 1967:69. Type species: *Lysiphlebia japonica* (Ashmead, 1906).

#### *Lysiphlebia chrysanthemum* Dong & Wang, 1993

*Lysiphlebia chrysanthemum* Dong & Wang, 1993:662. Holotype ♀, paratypes ♀♀ ♂♂ (KIZ). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Dong & Wang 1993; Chen & Shi 2001).

#### *Lysiphlebia japonica* (Ashmead, 1906) [Figs 26A–B]

*Lysiphlebus japonicus* Ashmead, 1906:190. Lectotype ♀ (after Watanabe 1957), paralectotypes ♀♂ (USNM). – Japan.

**Syn.:** *Lysiphlebia sacchari* Chen, 1980.

***Hosts.*** ***Aphis aurantii*** Boyer de Fonscolombe (Gahan 1926; Sonan 1944; Mackauer & Starý 1967; Takada 1968; Liu 1975; Starý 1975a; Yamauchi & Takada 1978; Chou 1981; Chen & Shi 2001; Liu & Tsai 2002; Chen et al. 2009); ***Aphis citricidus*** (Kirkaldy) (Kato 1970; Starý 1975a; Takanashi 1990, 1998; Tsai & Wang 2002); ***Aphis clerodendri*** Matsumura (Yamauchi & Takada 1978); ***Aphis craccivora*** Koch (Takada 1968; Tao & Chiu 1971; Liu 1975; Starý 1975a; Chou 1981; Tian et al. 1981; Chang & Youn 1983a; Zheng et al. 1985; Chen & Shi 2001; Gan et al. 2003b, 2003c; Wei et al. 2005; Chen et al. 2009); ***Aphis cytisorum*** Hartig (Chiu & Liu 1969; Chen & Shi 2001); ***Aphis fabae*** Scopoli (Chen & Shi 2001); ***Aphis fukii*** Shinji (Takada 1968); ***Aphis glycines*** Matsumura (Chang et al. 1994; Gao 1994; Takada et al. 2011); ***Aphis gossypii*** Glover (Watanabe 1957; Mackauer & Starý 1967; Starý 1967a, 1974c, 1975a; Takada 1968, 1976b, 2002; Chiu & Liu 1969; Tao & Chiu 1971; Liu 1975; Yamauchi & Takada 1978; Chou 1981; Wang & Liu 1989; Finlayson 1990; Zhang 1992; Hou et al. 1997; Chen & Shi 2001; Ohta 2003; Chen et al. 2009; Zhang et al. 2015; Davidian 2017); ***Aphis ichigo*** Shinji (Takada 1968; Starý 1975a); ***Aphis ichigocola*** Shinji (Yamauchi & Takada 1978); ***Aphis kurosawai*** Takahashi (Takada 1968; Starý 1975a; Chen & Shi 2001); ***Aphis nerii*** Boyer de Fonscolombe (Takada & Sugimoto 1994); ***Aphis newtoni*** Theobald (Starý et al. 2002a); ***Aphis odinae*** (van der Goot) (Starý & Schlinger 1967; Takada 1968, 1973; Chiu & Liu 1969; Tao & Chiu 1971; Starý 1974c; Liu 1975; Yamauchi & Takada 1978; Chou 1981; Finlayson 1990; Chen & Shi 2001; Chen et al. 2009); ***Aphis pomi*** De Geer (Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Aphis rumicis*** Linnaeus (Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Aphis sambuci*** Linnaeus (Starý & Schlinger 1967; Starý 1975a); ***Aphis sedi*** Kaltenbach (Starý et al. 2002a); ***Aphis spiraecola*** Patch (Starý 1967a, 1974c, 1975a; Starý & Schlinger 1967; Takada 1968; Chiu & Liu 1969; Tao & Chiu 1971; Liu 1975; Chou 1981; Finlayson 1990; Chen & Shi 2001; Chen et al. 2009); ***Aphis*** spp. (Starý & Schlinger 1967; Starý 1975a; Yamauchi & Takada 1978; Starý et al. 2002a); ***Brachycaudus helichrysi*** (Kaltenbach) (Starý & Schlinger 1967; Starý 1974c, 1975a); ***Cervaphis quercus*** Takahashi (Starý et al. 2002a); *Cinara* sp. (Starý et al. 2002a); ***Coloradoa artemisicola*** Takahashi (Wei et al. 2005); ***Greenidea ficicola*** Takahashi (Takada 1968); ***Macrosiphoniella sanborni*** (Gillette) (Starý et al. 2002a); ***Macrosiphoniella*** sp. (Starý 1974c; Starý et al. 2002a); ***Megoura crassicauda*** Mordvilko (Starý et al. 2002a); ***Melanaphis bambusae*** (Fullaway) (Takada 1968; Starý 1975a); ***Melanaphis japonica*** (Takahashi) (Takada 1968); ***Melanaphis sacchari*** (Zehntner) (Sonan 1944; Starý & Schlinger 1967; Chiu & Liu 1969; Tao & Chiu 1971; Starý 1974c, 1975a; Liu 1975; Chou 1981; Zheng et al. 1985; Ahmad & Singh 1995b; Chen & Shi 2001; Wei et al. 2005; Chen et al. 2009; Das & Chakrabarti 2023a); ***Myzus persicae*** (Sulzer) (Starý 1967a, 1974c, 1975a; Watanabe & Takada 1967, 1968, 1976b, 2002; Takada & Takenaka 1982; Zheng et al. 1985; Kaneko et al. 1992; Chen et al. 2009); ***Myzus*** sp. (Starý et al. 2002a); ***Parachaitophorus spiraea*** (Takahashi) (Starý & Schlinger 1967; Starý 1974c, 1975a); ***Rhopalosiphoninus ichigo*** (Shinji) (Takada 1968); ***Rhopalosiphum maidis*** (Fitch) (Starý 1974c; Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Rhopalosiphum padi*** (Linnaeus) (Starý 1974c); ***Schizaphis graminum*** (Rondani) (Zheng et al. 1985); ***Schizaphis piricola*** (Matsumura) (Starý 1974c); ***Sitobion avenae*** (Fabricius) (Chao & Chen 1947); ***Tetraneura*** sp. (Starý & Schlinger 1967; Starý 1974c, 1975a); ***Titanosiphon neoartemisiae*** (Takahashi) (Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009).

***Distribution.*** **Bangladesh** (BOLD:ADJ8129); **China** (Gahan 1926; Sonan 1944; Chao & Chen 1947; Mackauer & Starý 1967; Starý & Schlinger 1967; Chiu & Liu 1969; Starý 1974c, 1975a; Liu 1975; Chen 1980b; Chou 1981; Tian et al. 1981; Murakami et al. 1984; Dong & Wang 1985, 1993; Zheng et al. 1985; Wang & Liu 1989; Gao & Yu 1991; Lu & Ji 1992; Zhang 1992; Gao 1994; Gu et al. 1995; Chen & Shi 2001, 2002; Gan et al. 2002; Chen et al. 2009; Han et al. 2014); **Japan** (Ashmead 1906; Gahan 1926; Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1967a, 1974c, 1975a; Watanabe & Takada 1967; Takada 1968, 1973, 1976b, 2002; Kato 1970; Yamauchi & Takada 1978; Takada & Takenaka 1982; Murakami et al. 1984; Finlayson 1990; Takada & Sugimoto 1994; Konishi & Maetô 2000; Ohta 2003; Kaneko 2004; Takada et al. 2011; Davidian 2017); **North Korea** (Starý 1974c, 1975a; Paik 1975; Chang & Youn 1983a; Chang et al. 1994; Starý & Choi 2000; Starý et al. 2002a; Davidian 2017); **Russia** (Davidian 2007, 2017, 2019b); **South Korea** (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1974c, 1975a; Paik 1975; Takada 1976b; Chang & Youn 1983a; Chang et al. 1994; Starý & Choi 2000; Starý et al. 2002a; Kim 2026).

### *Lysiphlebia jiangchuanensis* Wang & Dong, 1996

*Lysiphlebia jiangchuanensis* Wang & Dong [in Dong & Wang], 1996:200. Holotype ♀, paratypes ♂♂ (KIZ). – China.

***Host.*** ***Aphis taraxacicola*** (Börner) (Dong & Wang 1996; Wei et al. 2005).

***Distribution.*** **China** (Dong & Wang 1996; Chen & Shi 2001).

### *Lysiphlebia mirzai* Shuja-Uddin, 1975 [Fig. 26C]

*Lysiphlebia mirzai* Shuja-Uddin, 1975a:415. Holotype ♀, paratypes ♀♀♂♂ (ZMAU). – India.

***Hosts.*** ***Aphis citricidus*** (Kirkaldy) (Tsai & Wang 2002); ***Aphis gossypii*** Glover (Starý & Zelený 1983; Zheng et al. 1985); ***Brachycaudus helichrysi*** (Kaltenbach) (Singh et al. 1995); ***Hyalopterus pruni*** (Geoffroy) (Singh & Tripathi 1987; Singh & Srivastava 1990; Tripathi & Singh 1995); ***Melanaphis sacchari*** (Zehntner) (Shuja-Uddin 1975a; Tripathi & Singh 1995, 1997; Pandey & Singh 1997; Ahmad & Singh 2003; Das & Chakrabarti 2023a); ***Rhopalosiphum maidis*** (Fitch) (Singh & Srivastava 1990; Ahmad & Singh 1994b; Tripathi & Singh 1995, 1997; Ahmad & Singh 1995b); ***Rhopalosiphum padi*** (Linnaeus) (Tripathi & Singh 1995, 1997); ***Schizaphis graminum*** (Rondani) (Tripathi & Singh 1995, 1997); ***Sitobion miscanthi*** (Takahashi) (Tripathi & Singh 1995).

***Distribution.*** **India** (Shuja-Uddin 1975a; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Starý & Ghosh 1983; Singh & Tripathi 1987; Ahmad & Singh 1994b, 1995b; Singh et al. 1995; Singh & Biswas 1997; Dey & Akhtar 2007; Rakhshani et al. 2012a; Tripathi & Singh 1995); **Vietnam** (Starý & Zelený 1983; Long & van Achterberg 2014; Tomanović et al. 2026b).

***Remarks.*** An unidentified species of *Lysiphlebia* has been registered from New Zealand (Muir 2025).

### *Lysiphlebia rugosa* Starý & Schlinger, 1967 [Fig. 26D]

*Lysiphlebia rugosa* Starý & Schlinger, 1967:72. Holotype ♀ (USNM), paratypes ♂♂ (IECA). – China.

***Hosts.*** ***Aphis glycines*** Matsumura (Chen & Shi 2001); ***Aphis*** sp. (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a); ***Brachycaudus helichrysi*** (Kaltenbach) (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a; Saha et al. 1982; Chen & Shi 2001).

***Distribution.*** **China** (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a; Chen & Shi 2001); **India** (Saha et al. 1982; Dey & Akhtar 2007; Das & Chakrabarti 2023a); **South Korea** (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a; Paik 1975; Starý & Choi 2000).

### *Lysiphlebia youyangensis* Wang & Dong, 1993

*Lysiphlebia youyangensis* Wang & Dong, 1993:663. Holotype ♀, paratypes ♀♀ ♂♂ (KIZ). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Dong & Wang 1993; Chen & Shi 2001).

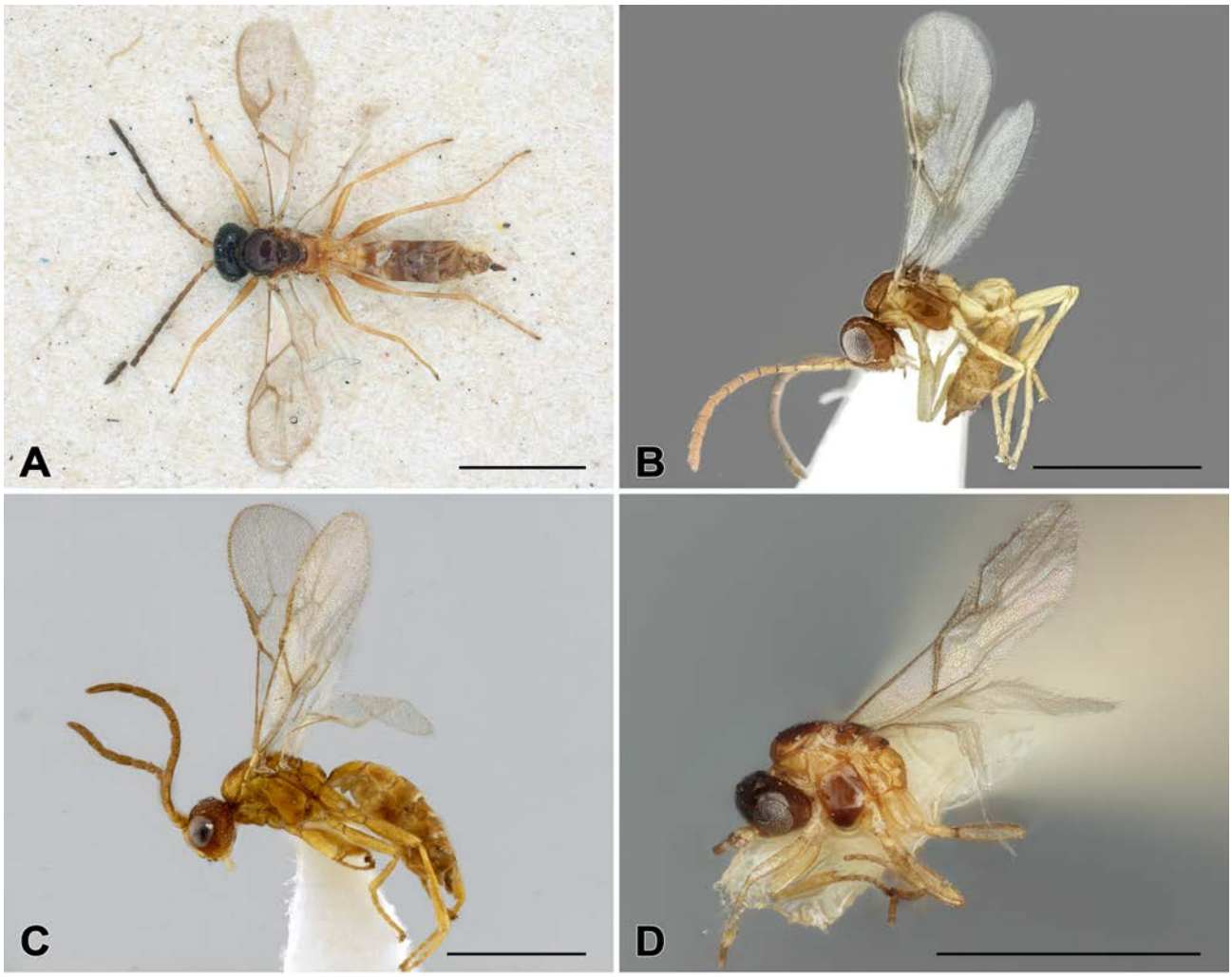



**Figure 26.** Species of the genus *Lysiphlebia* Starý & Schlinger, 1967. **A.** *Lysiphlebia japonica* (Ashmead, 1906) – Lectotype, USNM; **B.** *Lysiphlebia japonica* (Ashmead, 1906) – South Korea, FAES; **C.** *Lysiphlebia mirzai* Shuja-Uddin, 1975 – India, DPPZ; **D.** *Lysiphlebia rugosa* Starý & Schlinger, 1967 – Holotype, USNM. Scale bar: 1 mm.

## Genus *Lysiphlebus* Förster, 1863 [23 species]

*Lysiphlebus* Förster, 1863:248. Type species: *Aphidius* (*Lysiphlebus*) *dissolutus* Nees, 1811.

**Syn.** *Aphidaria* Provancher, 1888. Type species: *Aphidaria basilaris* Provancher, 1888; *Lysiphlebus* – subgenus *Platycyphus* Mackauer, 1960:590. Type species: *Lysiphlebus* (*Platycyphus*) *macrocornis* Mackauer, 1960.

### *Lysiphlebus alpinus* Starý, 1971 [Fig. 27B]

*Lysiphlebus alpinus* Starý, 1971a:299. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Austria.

***Hosts.*** ***Aphis podagrariae*** Schrank, ***Cavariella pastinacae*** (Linnaeus) (Tomanović et al. 2018); ***Semiaphis dauci*** (Fabricius) (Petrović et al. 2009; Žikić et al. 2012; Tomanović et al. 2018); ***Semiaphis*** spp. (Starý 1971a; Žikić et al. 2012; Tomanović et al. 2018).

***Distribution.*** **Austria** (Starý 1971a; Tomanović et al. 2018); **France** (Starý et al. 1971; Tomanović et al. 2018); **Russia** (Davidian 2017, 2019b); **Serbia** (Petrović et al. 2009; Žikić et al. 2012; Tomanović et al. 2018).

### *Lysiphlebus balcanicus* Starý, 1998 [Fig. 27D]

*Lysiphlebus balcanicus* Starý [in Starý et al.], 1998:175. Holotype ♀ (FBUB), paratypes ♀♀ (FBUB, IECA). – Serbia.

***Host.*** ***Aphis psammophila*** Szelegiewicz (Starý et al. 1998; Tomanović et al. 1998a, 2007a, 2018; Tomanović & Brajković 2000; Kavallieratos & Tomanović 2001; Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis*** sp. (Davidian 2017).

***Distribution.*** **Andorra** (Sanchis et al. 1999); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2016c, 2017, 2019b); **Serbia** (Starý et al. 1998; Tomanović et al. 1998a, 2007a, 2018; Tomanović & Brajković 2000; Kavallieratos & Tomanović 2001; Kavallieratos et al. 2004; Žikić et al. 2012).

### *Lysiphlebus brachycaudi* Starý & Tomanović, 2018 [Fig. 27E]

*Lysiphlebus brachycaudi* Starý & Tomanović [in Tomanović et al.], 2018:191. Holotype ♀, paratypes ♀♀ (FBUB). – Serbia.

***Host.*** ***Brachycaudus cardui*** (Linnaeus) (Tomanović et al. 2018).

***Distribution.*** **Serbia** (Tomanović et al. 2018).

### *Lysiphlebus cardui* (Marshall, 1896)

*Aphidius cardui* Marshall [In André], 1896:593. Lectotype ♀ (after Mackauer 1961b), paralectotypes ♀♀ ♂ (NHMUK). – United Kingdom.

***Hosts.*** *Acyrthosiphon cyparissiae* (Koch) (Ferrière & Voukassovitch 1928); ***Aphis althaeae*** (Nevsky) (Kos et al. 2012; Tomanović et al. 2018); ***Aphis brohmeri*** Börner (Starý 1999a, 2006; Ferrer-Suay et al. 2017); ***Aphis craccivora*** Koch (Kolarov 1997; Starý 1999a; Davidian 2017); ***Aphis fabae*** Scopoli (Fulmek 1968; Barczak 1988, 1990; Starý 1987a, 1995b, 1999a, 2006; Völkl 1992; Barczak et al. 1999; Tomanović et al. 1999b; Sanchis et al. 2000; Derocles et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Starý et al. 2014a; Davidian 2017; Ferrer-Suay et al. 2017; Tomanović et al. 2018); ***Aphis fabae cirsiiacanthoidis*** Scopoli (Starý 1986a, 1986b, 1987a, 1987b, 1991, 1999a; Barczak 1990; Liepert & Dettner 1993; Völkl & Mackauer 1993; Völkl 1994; Liepert & Dettner 1996; Weisser & Völkl 1997; Kavallieratos et al. 2004; Žikić et al. 2012; Alikhani et al. 2013; Tomanović et al. 2018); ***Aphis fabae evonymi*** Fabricius (Vidal 1997a); ***Aphis farinosa*** Gmelin (Starý 1999a, 2006; Davidian 2017; Ferrer-Suay et al. 2017); ***Aphis genistae*** Scopoli (Quilis-Pérez 1931b); ***Aphis gossypii*** Glover (Laamari et al. 2012); ***Aphis grossulariae*** Kaltenbach (Gautier et al. 1926; Meyer 1927; Fulmek 1968; Starý 2006); ***Aphis hieracii*** Schrank (Starý 1999a); ***Aphis idaei*** van der Goot (Starý 1999a); ***Aphis intybi*** Koch (Starý 1999a, 2006); ***Aphis jacobaeae*** Schrank (Marshall 1896; Bignell 1901; Fulmek 1968); ***Aphis nasturtii*** Kaltenbach (Starý 2006; Starý et al. 2014a); ***Aphis pomi*** De Geer (Starý 1999a; Kök et al. 2020); ***Aphis rumicis*** Linnaeus (Fulmek 1968; Starý 1999a; Derocles et al. 2012); ***Aphis sambuci*** Linnaeus (Starý 2006); ***Aphis spiraephaga*** Müller (Starý 1995a, 1999a, 2006); ***Aphis urticata*** Gmelin (Starý 2006; Tomanović et al. 2018); ***Aphis viburni*** Scopoli (Davidian 2017); ***Aphis*** spp. (Kos et al. 2012; Žikić et al. 2012; Tomanović et al. 2018); ***Aulacorthum solani*** (Kaltenbach) (Fulmek 1968); ***Brachycaudus cardui*** (Linnaeus) (Marshall 1896; Bignell 1901; Meyer 1927; Fulmek 1968; Kolarov 1997; Schar & Vorburger 2013); ***Brachycaudus klugkisti*** (Börner) (Tomanović et al. 2018); ***Brachycaudus tragopogonis*** (Kaltenbach) (Fulmek 1968); ***Brachycaudus*** sp. (Tomanović et al. 2018); *Cavariella archangelicae* (Scopoli) (Fulmek 1968); *Cavariella pastinacae* (Linnaeus) (Marshall 1896; Bignell 1901); *Dysaphis* sp. (Davidian 2017); *Hyalopterus pruni* (Geoffroy), ***Myzus persicae*** (Sulzer) (Fulmek 1968); *Phorodon humuli* (Schrank) (Ferrer-Suay et al. 2017); ***Staticobium*** aff. ***latifoliae*** (Bozhko) (Davidian 2017); *Uroleucon cirsii* (Linnaeus) (Marshall 1896; Bignell 1901).

***Distribution.*** **Algeria** (Laamari et al. 2012; Rakhshani et al. 2019); **Armenia** (Davidian 2017); **Austria** (Starý 1999a; Tomanović et al. 2018); **Belgium** (Tomanović et al. 2018); **Bulgaria** (Grigorov 1962; Kolarov 1997); **Burundi** (Starý 1999a); **Czech Republic** (Fulmek 1968; Starý 1986a, 1986b, 1987a, 1989a, 1991, 1995b, 1999a, 2006; Starý & Havelka 2008; Havelka et al. 2014a; Ferrer-Suay et al. 2017; Tomanović et al. 2018); **Finland** (Thuneberg 1960); **France** (Gautier & Bonnamour 1925; Gautier et al. 1926; Fulmek 1968; Völkl 1989; Starý 1999a; Derocles et al. 2012); **Georgia** (Starý 1999a); **Germany** (Völkl 1992; Vidal 1997a; Weisser & Völkl 1997; Sanchis et al. 2000; Hübner 2001); **Iran** (Alikhani et al. 2013; Rakhshani et al. 2019); **Italy** (Fulmek 1968; Starý 1999a); **Kyrgyzstan** (Petrović et al. 2021a); **Montenegro** (Žikić et al. 2012; Kavallieratos et al. 2013; Tomanović et al. 2018); **Norway** (Westrum et al. 2010; Mjøs et al. 2024); **Poland** (Barczak 1988, 1990; Huflejt 1997; Barczak et al. 1999, 2005; Tran & Piekarska-Boniecka 2017); **Romania** (Fulmek 1968); **Russia** (Starý 1999a; Davidian & Gavrilyuk 2014; Davidian 2017; Tomanović et al. 2018; Davidian & Manukyan 2024); **Serbia** (Ferrière & Voukassovitch 1928; Tomanović et al. 1998a, 1999b, 2018; Žikić et al. 2000, 2012; Kavallieratos et al. 2004, 2013); **Slovakia** (Starý 1989a, 1999a);

**Slovenia** (Kos et al. 2012; Tomanović et al. 2018); **Spain** (Quilis-Pérez 1931b; Tizado & Núñez-Perez 1991; Tizado Morales et al. 1992); **Sweden** (Tomanović et al. 2018); **Switzerland** (Schar & Vorburger 2013); **Türkiye** (Davidian 2017; Kök et al. 2020); **Turkmenistan** (Davidian 2017); **Ukraine** (Meyer 1927; Kaliuzhna 2013a, 2019a, 2019b); **United Kingdom** (Marshall 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1961b; Fulmek 1968); **Uzbekistan** (Starý 1999a).

### *Lysiphlebus confusus* Tremblay & Eady, 1978 [Fig. 27F]

*Lysaphidus confusus* Tremblay & Eady, 1978:181. Holotype ♀ (uncertain), paratypes ♀♀ (NHMUK, DAUN). – Italy.

**Syn.:** *Aphidius ambiguus* auct; *Lysiphlebus hirtus* Starý 1985; *Lysiphlebus marismortui* Mescheloff & Rosen, 1990.

***Hosts.*** *Acyrthosiphon caraganae* (Cholodkovsky) (Davidian 2017); *Acyrthosiphon pisum* (Harris) (Starý 1979a); *Acyrthosiphon rubi* (Narzikulov) (Chakrabarti & Debnath 2009); *Acyrthosiphon* sp. (Starý et al. 2000); ***Aphis affinis*** Del Guercio (Starý 1979a; Taheri & Rakhshani 2013); ***Aphis althaeae*** (Nevsky) (Starý 1979a; Tomanović et al. 2018); ***Aphis arbuti*** Ferrari (Starý et al. 1971; Starý 1974b, 1976a); ***Aphis armata*** Hausmann (Starý et al. 1971; Starý 1974b, 1976a); ***Aphis aurantii*** Boyer de Fonscolombe (Starý 1964c, 1966d, 1967a, 1968b, 1974b, 1976a; Mackauer & Starý 1967; Rosen 1967, 1969; Avidov & Harpaz 1969; Tremblay et al. 1980, 1985; Tremblay 1984; Michelena Saval & Oltra Moscardo 1987; Ben Halima et al. 1994; Michelena et al. 1994; Aghajanzadeh et al. 1995; Michelena Saval & Sanchis Segovia 1997b; Starý et al. 2000; Chen & Shi 2001; Uysal et al. 2004; Ben Halima & Ben Hamouda 2005; Zouari et al. 2018); ***Aphis brachysiphon*** Narzikulov (Starý 1965a, 1979a; Mackauer & Starý 1967); ***Aphis clematidis*** Koch (Starý 1976a); ***Aphis confusa*** Walker (Barnea & Mustata 2007); ***Aphis craccivora*** Koch (Starý 1965a, 1967a, 1976a, 1979a; Mackauer & Starý 1967; Tremblay 1967a; Al-Azawi 1970; Starý & Kaddou 1971; Paik 1975, 1976; Abou-Fakhr 1982; Chang & Youn 1983a; Tremblay et al. 1985; Mescheloff & Rosen 1990a; Abou-Fakhr & Kawar 1998; Starý & Choi 2000; Starý et al. 2000; Chen & Shi 2001; Kavallieratos et al. 2001, 2004, 2005b; Uysal et al. 2004; Rakhshani et al. 2005a, 2006a; Güz & Kılınçer 2005; Talebi et al. 2009; Nazari et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Satar et al. 2014, 2021; Chaouche & Laamari 2015; Davidian 2017; Mustafayeva 2020); ***Aphis crepidis*** (Börner) (Tomanović et al. 2018); ***Aphis cytisorum*** Hartig (Starý 1966b, 1966d, 1974b, 1976a, 1979a; Kavallieratos et al. 2001, 2004; Tomanović et al. 2018); ***Aphis euphorbiae*** Kaltenbach (Güz & Kılınçer 2005); ***Aphis fabae*** Scopoli (Starý 1961b, 1961h, 1963b, 1964d, 1965a, 1966b, 1966c, 1966d, 1967b, 1969c, 1974b, 1976a, 1999a, 2006; Mackauer & Starý 1967; Tremblay 1967a; Roberti 1969; Al-Azawi 1970; Starý & Kaddou 1971; Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay et al. 1985; Mustata 1986; Mescheloff & Rosen 1990a; Ben Halima & Ben Hamouda 1993, 2005; Ben Halima et al. 1994; Abou-Fakhr & Kawar 1998; Tomanović et al. 1999b, 2018; Kavallieratos et al. 2001, 2004; Ölmez & Ulusoy 2003; Aslan et al. 2004; Prelipcean et al. 2004; Uysal et al. 2004; Gavrilyuk & Novgorodova 2007; Talebi et al. 2009; Laamari et al. 2011, 2012; Kos et al. 2012; Nazari et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Starý et al. 2014a; Davidian 2017; Ferrer-Suay et al. 2017; Zouari et al. 2018; Hemidi & Laamari 2020; Kaliuzhna 2020; Mustafayeva 2020; Satar et al. 2021); ***Aphis fabae cirsiiacanthoidis*** Scopoli (Starý 1966d; Kavallieratos et al. 2001, 2004; Aslan et al. 2004; Tomanović et al. 2018); ***Aphis farinosa*** Gmelin (Mackauer 1960a, 1962c; Starý 1961b, 1963b, 1964d, 1965a, 1966b, 1966c, 1966d, 1967b, 1974b, 1976a, 1977, 1979a, 1987a, 1999a, 2006; Starý & Rupais 1964; Mackauer & Starý 1967; Starý et al. 1971, 2000; Kierych 1980; Starý & Němec 1985; Michelena et al. 1998; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Kavallieratos et al. 2004; Uysal et al. 2004; Tomanović et al. 2006a, 2018; Gavrilyuk & Novgorodova 2007; Rakhshani et al. 2007b; Talebi et al. 2009; Derocles et al. 2012; Nazari et al. 2012; Žikić et al. 2012; Davidian 2017; Mustafayeva 2020); ***Aphis farinosa yanagicola*** Matsumura (Takada 1968); ***Aphis gentianae*** (Börner) (Starý 1961h, 1965a, 1974b, 1976a; Mackauer & Starý 1967); ***Aphis gossypii*** Glover (Starý 1969c, 1976a; Al-Azawi 1970; Starý & Kaddou 1971; Tremblay et al. 1980; Mescheloff & Rosen 1990a; Ben Halima & Ben Hamouda 1993, 2005; Ben Halima et al. 1994; Kavallieratos & Lykouressis 1999a; Chen & Shi 2001; Kavallieratos et al. 2001, 2002a, 2002b, 2004, 2005b, 2010; Ölmez & Ulusoy 2003; Uysal et al. 2004; Wei et al. 2005; Laamari et al. 2011; Nazari et al. 2012; Satar et al. 2014, 2021; Zouari et al. 2018; Mustafayeva 2020); ***Aphis grossulariae*** Kaltenbach (Thuneberg 1963; Mackauer & Starý 1967; Starý 1979a; Rakauskas 1981; Barannik 1986; Davidian 2017); ***Aphis hederae*** Kaltenbach (Abou-Fakhr 1982; Tremblay et al. 1985;

Mescheloff & Rosen 1990a; Abou-Fakhr & Kawar 1998; Kavallieratos et al. 2001, 2004; Pons et al. 2018; Tomanović et al. 2018); ***Aphis hieracii*** Schrank (Kierych 1980); ***Aphis idaei*** van der Goot (Starý 1999a; Kavallieratos et al. 2001, 2004; Barahoei et al. 2013; Taheri & Rakhshani 2013); ***Aphis intybi*** Koch (Starý 1979a; Bhagat 1984; Barahoei et al. 2013; Taheri & Rakhshani 2013); ***Aphis medicaginis*** Koch (Starý 1976a); ***Aphis nasturtii*** Kaltenbach (Al-Azawi 1970; Starý 1976a, 1979a; Mescheloff & Rosen 1990a; Aguirre Segura & Tizado Morales 1993; Kavallieratos et al. 2010; Laamari et al. 2012; Satar et al. 2021); ***Aphis nerii*** Boyer de Fonscolombe (Starý 1966d, 1974b, 1976a; Al-Azawi 1970; Ben Halima et al. 1994; Ben Halima & Ben Hamouda 2005; Zouari et al. 2018); ***Aphis parietariae*** Theobald (Mackauer 1960a; Mineo et al. 1997); ***Aphis passeriniana*** (Del Guercio) (Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis picridis*** (Börner) (Starý 1974b); ***Aphis podagrariae*** Schrank (Starý 1961b, 1963b, 1966c, 1967b, 1974b, 1999a; Mackauer & Starý 1967); ***Aphis polygonata*** (Nevsky) (Starý 1979a); ***Aphis pomi*** De Geer (Tomanović et al. 2018); ***Aphis potentillae*** Nevsky (Laamari et al. 2011, 2012); ***Aphis praeterita*** Walker (Mackauer 1962c; Mackauer & Starý 1967); ***Aphis punicae*** Passerini (Starý 1966d, 1974b, 1976a; Aslan et al. 2004; Uysal et al. 2004); ***Aphis ruborum*** (Börner) (Mackauer 1960a; Starý 1966b, 1966d, 1973a, 1974b, 1976a; Mackauer & Starý 1967; Roberti 1969; Starý et al. 1971; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Mescheloff & Rosen 1990a; Kavallieratos et al. 2001, 2002b, 2004; Aslan et al. 2004; Uysal et al. 2004; Havelka et al. 2012; Žikić et al. 2012; Pons et al. 2018; Tomanović et al. 2018; Zouari et al. 2018); ***Aphis rumicis*** Linnaeus (Barnea & Mustata 2007; Derocles et al. 2012); ***Aphis salviae*** Walker (Barnea & Mustata 2007); ***Aphis sanguisorbae*** Schrank (Starý 1976a); ***Aphis sanguisorbicola*** Takahashi (Davidian 2017); ***Aphis schneideri*** (Börner) (Mackauer 1962c; Mackauer & Starý 1967; Starý et al. 1971; Starý 1974b; Kierych 1975; Rakauskas 1981; Barannik 1986; Wiackowski & Wiackowska 1996; Wiackowski et al. 2001; Kavallieratos et al. 2004; Kos et al. 2012; Žikić et al. 2012; Davidian 2017; Tomanović et al. 2018); ***Aphis solanella*** Theobald (Starý 1974b, 1976a; Abou-Fakhr 1982; Tremblay et al. 1985; González & Michelena 1987; Abou-Fakhr & Kawar 1998; Kavallieratos et al. 2001, 2004, 2010); ***Aphis spiraecola*** Patch (Pons et al. 2018; Tomanović et al. 2018; Zouari et al. 2018); ***Aphis spiraephila*** Patch (Starý 1979a); ***Aphis umbrella*** (Börner) (Mackauer & Starý 1967; Abou-Fakhr 1982; Tremblay et al. 1985; Abou-Fakhr & Kawar 1998; Mescheloff & Rosen 1990a; Kavallieratos et al. 2001, 2004; Kök et al. 2020); ***Aphis ulmariae*** Schrank (Tomanović et al. 2018); ***Aphis urticata*** Gmelin (Starý 1961b, 1964d, 1965a, 1966c, 1967b, 1974b, 1976a, 1983f; Mackauer & Starý 1967; Tomanović et al. 1999b; Kavallieratos et al. 2001, 2004; Güz & Kılınçer 2005; Žikić et al. 2012; Davidian 2017); ***Aphis vaccinii*** (Börner) (Mackauer 1960a, 1962c; Mackauer & Starý 1967); ***Aphis vallei*** Hille Ris Lambers & Stroyan (Starý 1976a; Güz & Kılınçer 2005); ***Aphis veratri*** (Gavrilyuk & Novgorodova 2007); ***Aphis verbasci*** Schrank (Saha et al. 1982; Mustata 1986; Mescheloff & Rosen 1990a; Starý et al. 2000; Talebi et al. 2009; Rakhshani et al. 2012b; Barahoei et al. 2013); ***Aphis viburni*** Scopoli (Barannik 1986); ***Aphis*** spp. (Starý 1963b, 1965a, 1966d, 1967b, 1974b, 1976a, 1979a, 2006; Thuneberg 1963; Starý & Schlinger 1967; Takada 1968; Roberti 1969; Al-Azawi 1970; Kierych 1975; Rakauskas 1981; Bhagat 1984; Mustata 1986; Wiackowski & Wiackowska 1996; Starý & Choi 2000; Wiackowski et al. 2001; Prelipcean et al. 2004; Barnea & Mustata 2007; Davidian 2017); ***Brachycaudus amygdalinus*** (Schouteden) (Abou-Fakhr 1982; Tremblay et al. 1985; González & Michelena 1987; Mescheloff & Rosen 1990a; Abou-Fakhr & Kawar 1998; Starý et al. 2000; Kavallieratos et al. 2001, 2004; Michelena et al. 2004; Uysal et al. 2004); ***Brachycaudus cardui*** (Linnaeus) (Starý 1965a, 1966d, 1974b, 1976a; Mackauer & Starý 1967; Sanchis et al. 2000; Tomanović et al. 2023c); ***Brachycaudus helichrysi*** (Kaltenbach) (Aslan et al. 2004; Uysal et al. 2004; Nazari et al. 2012; Satar et al. 2014; Davidian 2017); ***Brachycaudus mimeuri*** Remaudière (Starý et al. 1971; Starý 1974b); ***Brachycaudus mordvilkoi*** Hille Ris Lambers (Starý 1974b); ***Brachycaudus persicae*** Passerini (Starý 1976a); ***Brachycaudus populi*** (Del Guercio) (Starý 1985; Tomanović et al. 2018); ***Brachycaudus prunicola*** (Kaltenbach) (Starý 1974b, 1979a); ***Brachycaudus tragopogonis*** (Kaltenbach) (Starý 1976a, 1979a); ***Brachyunguis atraphaxidis*** (Nevsky) (Starý 1979a); ***Brachyunguis harmalae*** Das (Starý 1979a); ***Brachyunguis skafi*** Remaudière & Talhouk (Starý et al. 2000); ***Brachyunguis*** sp. (Starý 1979a); ***Brevicoryne brassicae*** (Linnaeus) (Fulmek 1968; Mustata 1986); ***Callipterinella calliptera*** (Hartig) (Michelena et al. 1998); ***Capitophorus hippophaes*** (Walker) (Starý 1976a); *Chaitophorus salijaponicus niger* Mordvilko (Bhagat 1984, 1985); *Chromaphis juglandicola* (Kaltenbach) (Starý 1966d, 1974b, 1976a);

***Cryptomyzus ribis*** (Linnaeus) (Davidian 2017; Tomanović et al. 2018); ***Dysaphis apiifolia*** (Theobald) (Kavallieratos et al. 2004); ***Dysaphis crataegi*** (Kaltenbach) (Güz & Kılınçer 2005); ***Dysaphis devecta*** (Walker) (Starý 1965a, 1969a); ***Dysaphis foeniculus*** (Theobald) (Güz & Kılınçer 2005); ***Dysaphis pyri*** (Boyer de Fonscolombe) (Mifsud & Starý 2011, 2012); ***Dysaphis ranunculi*** (Kaltenbach) (Fulmek 1968); ***Dysaphis*** spp. (Starý 1965a, 1974b, 1979a); ***Ephedraphis ephedrae*** (Nevsky) (Starý 1979a; Starý et al. 2000); ***Hyadaphis foeniculi*** (Passerini) (Tremblay et al. 1985); ***Hydaphias hofmanni*** Börner (Starý 1974b); ***Hydaphias*** spp. (Starý 1961b, 1963b, 1974b); *Hyalopterus pruni* (Geoffroy) (Tomanović et al. 2018); *Hyperomyzus lactucae* (Linnaeus) (Barahoei et al. 2013); ***Laingia psammae*** Theobald (Starý 2006); ***Longicaudus trirhodus*** (Walker) (Davidian 2017); ***Macrosiphoniella pulvera*** (Walker) (Starý et al. 1971; Starý 1974b, 1976a); ***Macrosiphoniella tanacetaria*** (Kaltenbach) (Gavrilyuk & Novgorodova 2007); ***Macrosiphoniella tapuskae*** (Hottes & Frison) (Starý 1979a; Starý et al. 2000; Rakhshani et al. 2011); ***Macrosiphum euphorbiae*** (Thomas) (Davidian 2017); ***Macrosiphum*** sp. (Starý 1979a); ***Melanaphis donacis*** (Passerini) (Mackauer & Starý 1967; Starý 1976a); ***Melanaphis*** sp. (Das & Chakrabarti 1989a; Mescheloff & Rosen 1990a); ***Metopeurum fuscoviride*** Stroyan (Barnea & Mustata 2007); ***Myzus dycei*** Carver (Saha et al. 1982; Starý & Ghosh 1983); ***Myzus persicae*** (Sulzer) (Chang & Youn 1986; Ben Halima et al. 1994; Abou-Fakhr & Kawar 1998; Kavallieratos et al. 2001, 2004, 2010; Wei et al. 2005); ***Protaphis*** sp. (Starý 1979a); ***Rhopalosiphum maidis*** (Fitch) (Michelena et al. 2004); ***Rhopalosiphum padi*** (Linnaeus) (Fulmek 1968; Michelena et al. 2004; Stanković et al. 2013; Satar et al. 2021); ***Schizaphis graminum*** (Rondani) (Singh et al. 1999); ***Semiaphis anthrisci*** (Davidian 2017); ***Semiaphis dauci*** (Fabricius) (Starý 1979a; Kavallieratos et al. 2004; Žikić et al. 2012); *Shivaphis celticola* (Nevsky) (Ataeva 1961); *Sipha elegans* Del Guercio (Gavrilyuk & Novgorodova 2007); *Sipha maydis* Passerini (Bhagat 1984, 1986b; Davidian 2017); ***Sitobion avenae*** (Fabricius) (Davidian 2017; Ferrer-Suay et al. 2017); ***Sitobion miscanthi*** (Takahashi) (Bhagat 1986b; Raychaudhuri et al. 1990; Davidian 2017 – as *Sitobion* aff. *miscanthi*); ***Staticobium*** sp. (Starý 1979a); *Tinocallis saltans* Nevsky (Ataeva 1961); ***Uroleucon*** sp. (Barahoei et al. 2012, 2013); ***Xerobion cinae*** (Nevsky) (Starý 1976a).

***Distribution.*** **Algeria** (Starý 1976a; Laamari et al. 2011, 2012; Chehma & Laamari 2014; Chaouche & Laamari 2015; Rakhshani et al. 2019); **Andorra** (Sanchis et al. 1999); **Armenia** (Davidian 2017); **Australia** (Ward et al. 2021b); **Austria** (Mackauer & Starý 1967); **Azerbaijan** (Starý 1965a, 1976a; Mustafayeva 2020); **Belgium** (Verheggen et al. 2009; Lopes et al. 2016; Tomanović et al. 2018); **Bulgaria** (Fulmek 1968; Starý 1976a; Atanassova 1997; Kolarov 1997; Kavallieratos et al. 2004; Todorov 2007, 2014); **Canary Islands** (Mackauer & Starý 1967; Báez et al. 2001); **China** (Dong & Wang 1993; Gu et al. 1995; Chen & Shi 2001); **Croatia** (Tomanović et al. 2018); **Czech Republic** (Starý 1961b, 1966c, 1974b, 1977, 1983f, 1987a, 1989a, 1999a, 2006; Mackauer & Starý 1967; Starý & Němec 1985; Starý & Havelka 2008; Havelka et al. 2014a; Ferrer-Suay et al. 2017); **Egypt** (Mackauer & Starý 1967; Starý 1976a; El-Gantiry et al. 2014; El-Ghiet et al. 2014; Rakhshani et al. 2019); **Finland** (Thuneberg 1963; Hellén 1966; Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971; Koponen & Vikberg 1984b; Tomanović et al. 2018); **France** (Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975; Starý 1974b, 1976a, 1999a; Derocles et al. 2012, 2014a; Havelka et al. 2012); **Georgia** (Starý 1965a, 1968b, 1976a; Davidian 2017); **Germany** (Nees von Esenbeck 1834a; Kirchner 1867; Marshall 1896; Szépligeti 1904; Mackauer 1960a, 1962c; Mackauer & Starý 1967; Starý 1974b, 1999a; Belokobylskij et al. 2003; Petermann et al. 2010); **Greece** (Starý 1976a; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2002a, 2002b, 2004, 2005b, 2010, 2013; Havelka et al. 2012); **Hungary** (Polgár 1981, 1983, 1987); **India** (Saha et al. 1982; Starý & Ghosh 1983; Bhagat 1984, 1985, 1986b; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Iran** (Mackauer & Starý 1967; Starý 1979a; Aghajanzadeh et al. 1995; Starý et al. 2000; Rakhshani et al. 2005a, 2006a, 2007a, 2008b, 2012b, 2019; Fallahzadeh & Saghaei 2010; Barahoei et al. 2012, 2013; Nazari et al. 2012; Alikhani et al. 2013; Taheri & Rakhshani 2013); **Iraq** (Starý 1969c, 1976a, 1979a; Al-Azawi 1970; Starý & Kaddou 1971; Rakhshani et al. 2019); **Italy** (Starý 1964c, 1966d, 1967a, 1974b; Mackauer & Starý 1967; Tremblay 1967a, 1984; Roberti 1969; Tremblay & Eady 1978; Tremblay et al. 1980; Bergamesco et al. 1995; Mineo et al. 1997; Starý 1999a; Havelka et al. 2012; Tomanović et al. 2023c); **Japan** (Takada 1968; Starý 1975a); **Kazakhstan** (Starý & Juchnevič 1978; Starý

1979a; Davidian 2017); **Kyrgyzstan** (Davidian 2017; Petrović et al. 2021a); **Latvia** (Starý & Rupais 1964; Mackauer & Starý 1967; Starý 1999a); **Lebanon** (Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay 1984; Tremblay et al. 1985; Abou-Fakhr & Kawar 1998; Rakhshani et al. 2019); **Lithuania** (Starý & Rupais 1964; Rakauskas 1981, 1985; Starý 1999a); **Malta** (Mifsud & Starý 2011, 2012; Rakhshani et al. 2015b); **Moldova** (Talitzky & Kuslitzky 1990; Davidian 2017); **Monaco** (Starý 1976a); **Montenegro** (Kavallieratos et al. 2004, 2013; Havelka et al. 2012; Žikić et al. 2012); **Netherlands** (Mackauer & Starý 1967); **Norway** (Hofsvang & Høgvar 1983b; Westrum et al. 2010); **Palestine** (Mackauer 1960a; Rosen 1966, 1967, 1969; Mackauer & Starý 1967; Starý 1967a, 1976a, 1999a; Avidov & Harpaz 1969; Mescheloff & Rosen 1990a; Havelka et al. 2012); **Poland** (Wiackowski & Wiackowska 1996, 2000; Huflejt 1997; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Portugal** (Cecilio 1995; Havelka et al. 2012); **Romania** (Mustata 1986; Prelipcean et al. 2004; Barnea & Mustata 2007); **Russia** (Starý 1961h, 1974b; Mackauer & Starý 1967; Barannik & Mirzashaekhov 1981; Barannik 1986; Krotova 1993; Davidian 2007, 2017, 2019b; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024; Shpanev 2025); **Serbia** (Starý 1974b, 1999a; Tomanović et al. 1998a, 1999b, 2006a; Kavallieratos et al. 2004, 2013; Žikić et al. 2012); **Slovakia** (Starý 1977, 1989a, 1999a); **Slovenia** (Starý 1999a; Kos et al. 2012); **South Korea** (Paik 1975; Starý 1975a; Paik 1976; Chang & Youn 1983a; Starý & Choi 2000; Kim 2026); **Spain** (Starý 1976a, 1999a; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Tizado & Núñez-Perez 1991; Tizado Morales et al. 1992; Aguirre Segura & Tizado Morales 1993; Michelena et al. 1994, 1998, 2004; Sanchis et al. 1995, 2000; Michelena Saval & Sanchis Segovia 1997b; Nieves-Aldrey et al. 2003; Lumbierres et al. 2007; Havelka et al. 2012; Pons et al. 2018); **Sweden** (Mackauer & Starý 1967; Starý 1999a); **Switzerland** (Mackauer & Starý 1967; Starý 1985); **Tajikistan** (Fulmek 1968; Starý 1965a, 1967a, 1979a); **Tunisia** (Ben Halima & Ben Hamouda 1993, 2005; Ben Halima et al. 1994; Zouari et al. 2018); **Türkiye** (Starý 1976a; Atakan & Ozgur 1996; Ölmez & Ulusoy 2003; Aslan et al. 2004; Uysal et al. 2004; Güz & Kılınçer 2005; Havelka et al. 2012; Satar et al. 2014; Akar & Çetin Erdoğan 2017; Rakhshani et al. 2019; Kök et al. 2020); **Ukraine** (Kaliuzhna 2013a, 2017b, 2019a, 2019b; Kaliuzhna & Zubenko 2013); **United Arab Emirates** (Starý et al. 2014b; Rakhshani et al. 2019); **United Kingdom** (Curtis 1837; Kirchner 1867; Marshall 1872a, 1896, 1899; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1960a; Mackauer & Starý 1967; Starý 1974b; Davidian & Rispin 2016); **Uzbekistan** (Starý 1967a, 1979a, 1999a; Daminova et al. 2001; Aripov 2003; Daminova 2007).

***Remarks.*** The precise deposition of the holotype and paratypes is not entirely clear and needs further exploration within the collections. According to the original paper (Tremblay & Eady 1978), the paratypes include a series of specimens from the Bignell collection, along with additional specimens deposited in DAUN. Records of associations with *Sipha* species (Bhagat 1984, 1986b; Gavrilyuk & Novgorodova 2007; Davidian 2017), may refer to *Adialytus ambiguus* (Haliday, 1834).

#### *Lysiphlebus delhiensis* Subba Rao & Sharma, 1960

*Aphidius* (*Lysiphlebus*) *delhiensis* Subba Rao & Sharma, 1960:82. Holotype ♀, paratypes ♀♀♂♂ (NPCI). – India.

***Hosts. Melanaphis sacchari*** (Zehntner) (Subba Rao & Sharma 1960; Mackauer & Starý 1967; Ahmad & Singh 1995b, 2003; Biswas & Singh, 1995; Singh & Srivastava 1995; Srivastava & Singh 1995a, 1995b; Biswas & Singh, 1997; Biswas et al. 1997; Singh et al. 1999); ***Melanaphis sacchari indosacchari*** David (Varma et al. 1978; Starý & Ghosh 1983); ***Rhopalosiphum maidis*** (Fitch) (Singh & Tripathi 1987; Raychaudhuri et al. 1990; Singh & Srivastava 1990; Mishra & Singh 1990a, 1990b, 1991a, 1991b, 1993a, 1993b, 1993c; Ahmad & Singh 1994b, 1995b).

***Distribution.*** **India** (Subba Rao & Sharma 1960; Mackauer & Starý 1967; Rishi 1976; Agarwala et al. 1981a, 1983b; Ghosh & Agarwala 1982; Starý & Ghosh 1983; Singh & Tripathi 1987, 1988; Das & Chakrabarti 1989a; Mishra & Singh 1991a, 1991b; Ahmad & Singh 1994b; Singh & Biswas 1997).

***Remarks.*** Although *Lysiphlebus delhiensis* (Subba Rao & Sharma, 1960) has not been officially synonymized with *L. confusus*, based on the evidence presented in its original description, there is no distinction between the two species (see also Starý & Ghosh 1983).

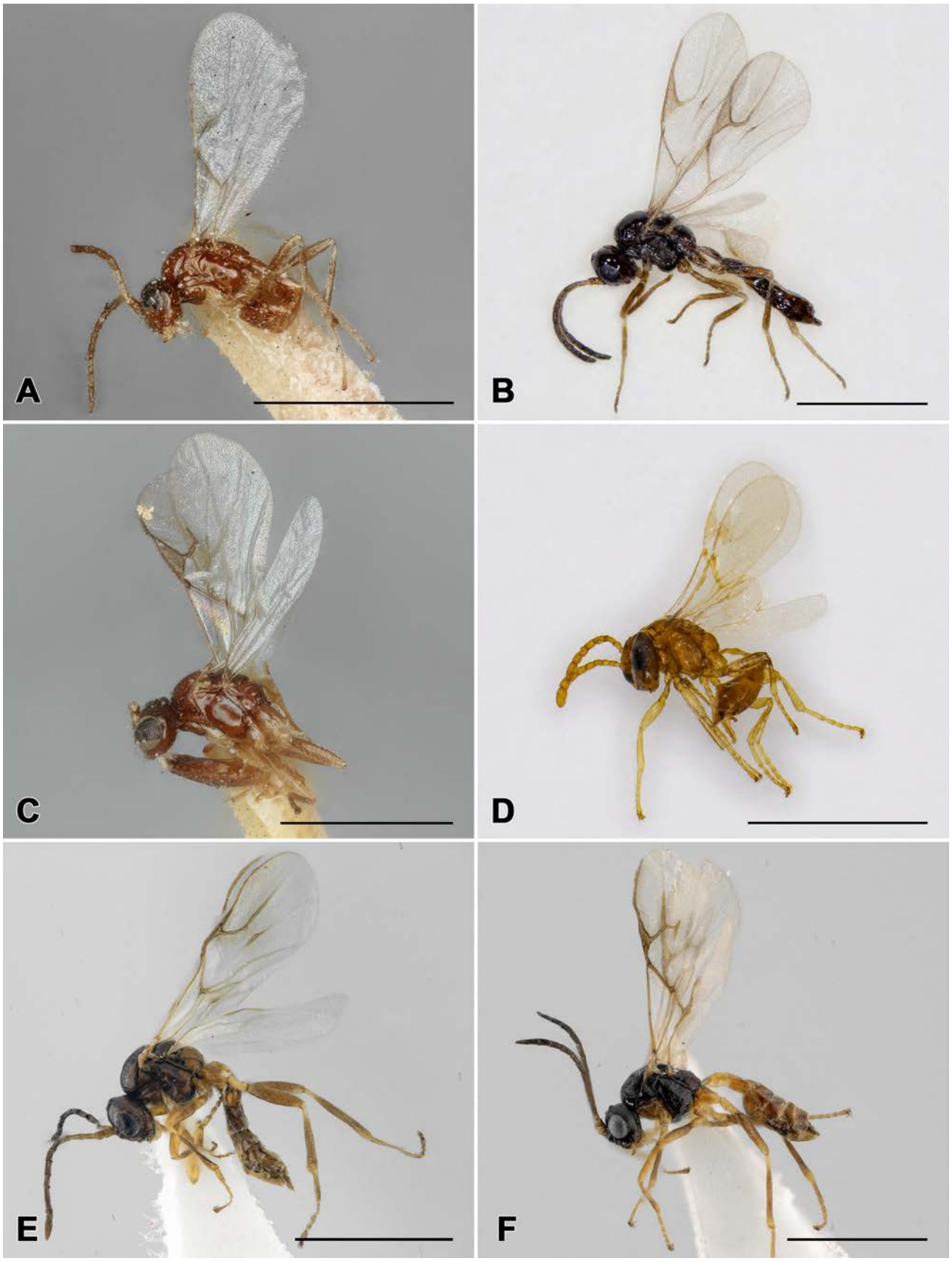



**Figure 27.** Species of the genus *Lysiphlebus* Förster, 1863. **A.** *Lysiphlebus abutilaphidis* Ashmead, 1889 – Lectotype (= *Lysiphlebus testaceipes* (Cresson, 1880)), USNM; **B.** *Lysiphlebus alpinus* Starý, 1971 – Holotype, IECA; **C.** *Lysiphlebus baccharaphidis* Ashmead, 1889 – Lectotype (= *L. testaceipes*), USNM; **D.** *Lysiphlebus balcanicus* Starý, 1998 - Paratype, FBUB; **E.** *Lysiphlebus brachycaudi* Starý & Tomanović, 2018 – Czech Republic, DPPZ; **F.** *Lysiphlebus confusus* Tremblay & Eady, 1978 – Iran, DPPZ. Scale bar: 1 mm.

### *Lysiphlebus desertorum* Starý, 1965 [Fig. 28C]

*Lysiphlebus desertorum* Starý, 1965a:213. Holotype 1♀, paratypes ♀♀ (IECA). – Uzbekistan.

**Syn.:** *Lysiphlebus hispanus* Starý, 1973 [Fig. 29E].

***Hosts.*** *Aphis craccivora* Koch (Barahoei et al. 2013); *Aphis fabae* Scopoli (Zouari et al. 2018); ***Aphis intybi*** Koch (Davidian 2017); ***Protaphis terricola*** (Rondani) (Barahoei et al. 2013); ***Protaphis*** spp. (Talebi et al. 2009; Nazari et al. 2012; Tomanović et al. 2018); ***Xerobion cinae*** (Nevsky) (Starý 1979a; Starý et al. 2000; Barahoei et al. 2013); ***Xerobion*** sp. (Starý & Remaudière 1973).

***Distribution.*** **China** (Chen & Shi 2001; Davidian 2017); **Hungary** (Polgár 1983); **Iran** (Starý 1979a; Starý et al. 2000; Talebi et al. 2009; Fallahzadeh & Saghaei 2010; Nazari et al. 2012; Rakhshani et al. 2012b, 2019; Barahoei et al. 2013; Tomanović et al. 2018); **Italy** (Starý 1976a; Bergamesco et al. 1995); **Kazakhstan** (Davidian 2017); **Kyrgyzstan** (Davidian 2017); **Moldova** (Talitzky & Kuslitzky 1990); **Pakistan** (BOLD:ADU6180); **Russia** (Davidian 2017, 2019b); **Spain** (Starý & Remaudière 1973; Starý 1976a; Tizado & Núñez-Perez 1991); **Tajikistan** (Davidian 2017); **Tunisia** (Zouari et al. 2018); **Turkmenistan** (Davidian 2017); **Uzbekistan** (Starý 1965a, 1979a; Aripov 2003; Davidian 2017; Tomanović et al. 2018).

***Remarks.*** Records of *L. desertorum* from China (Chen & Shi 2001), likely refer to *Lysiphlebus orientalis* (see Starý et al. 2010b) or another species.

### *Lysiphlebus dissolutus* (Nees, 1811) [Fig. 28D]

*Bracon dissolutus* Nees von Esenbeck, 1811:29. Syntype ♂ (lost). – Germany.

*Aphidius* (*Aphidius*) *dissolutus* Haliday, 1834:105. Lectotype ♀ (NHMUK). – United Kingdom.

**Syn.:** *Lysiphlebus macrocornis* Mackauer, 1960.

***Hosts.*** ***Anoecia corni*** (Fabricius) (Starý 1961d, 1981b; Tomanović et al. 2018); ***Anoecia vagans*** (Koch) (Noury 1962; Mackauer & Starý 1967); ***Anoecia*** sp. (Mackauer & Starý 1967); *Aphis armata* Hausmann (Jacob 1947); *Aphis fabae* Scopoli, *Aphis rumicis* Linnaeus (Fulmek 1968); *Brachycaudus helichrysi* (Kaltenbach) (Noury 1962; Mackauer & Starý 1967).

***Distribution.*** **Austria** (Mackauer & Starý 1967; Fulmek 1968); **Bulgaria** (Starý 1962b; Mackauer & Starý 1967; Atanassova 1997; Kolarov 1997; Kavallieratos et al. 2004); **Czech Republic** (Starý 1961b, 1966c, 1989a, 2006; Mackauer & Starý 1967); **Denmark** (Mackauer & Starý 1967); **Finland** (Mackauer 1968c; Hellén 1971; Davidian 2016c, 2017); **France** (Noury 1962; Mackauer & Starý 1967; Starý 1981b); **Georgia** (Davidian 2016c, 2017); **Germany** (Nees von Esenbeck 1834a; Kirchner 1867; Szépligeti 1904; Mackauer 1960a; Starý 1961d, 1981b; Mackauer & Starý 1967; Belokobylskij & Taeger 2001; Belokobylskij et al. 2003; Tomanović et al. 2018); **Hungary** (Starý 1961d; Mackauer & Starý 1967; Polgár 1983); **Italy** (Fulmek 1968; Bergamesco et al. 1995); **Kazakhstan** (Starý 1979a; Davidian 2017); **Moldova** (Talitzky & Kuslitzky 1990); **Poland** (Tran & Piekarska-Boniecka 2017); **Russia** (Mackauer 1968c; Davidian & Gavrilyuk 2014; Davidian 2016c, 2017, 2019b; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Ferrière & Voukassovitch 1928; Tomanović et al. 1998a, 1999b; Žikić et al. 2012); **Sweden** (Thomson 1895; Mackauer 1960a; Starý 1961d; Mackauer & Starý 1967); **Ukraine** (Davidian 2016c, 2017; Kaliuzhna 2019a, 2019b); **United Kingdom** (Haliday 1834; Curtis 1837; Parfitt 1881; Marshall 1872a, 1896, 1899; Lyle 1933; Kloet & Hincks 1945; Jacob 1947; Mackauer 1960a; Starý 1961d; Mackauer & Starý 1967; Davidian 2016c; Davidian & Rispin 2016).

***Remarks.*** According to Mackauer (1961b), paratypes (♂♂, neoparatypes - the specimens of *Lysiphlebus macrocornis* Mackauer, 1960) are deposited in the Zoologische Staatssammlung, München, as well as in the collection of M. Mackauer, of which the latter series may be transferred to other institutes.

### *Lysiphlebus distinctus* Mackauer, 1960 [Fig. 28E]

*Lysiphlebus distinctus* Mackauer, 1960e:236. Holotype ♀, paratypes ♀♀ ♂♂ (USNM). – USA.

***Hosts.*** ***Microsiphoniella acophorum*** (Smith & Knowlton) (Muesebeck 1967; Mackauer & Starý 1967; Marsh 1979); ***Microsiphoniella oregonensis*** (Wilson) (Mackauer 1960e; Mackauer & Starý 1967; Marsh 1979).

***Distribution.*** **USA** (Mackauer 1960e; Mackauer & Starý 1967; Muesebeck 1967).

### *Lysiphlebus fabarum* (Marshall, 1896) [Fig. 28F]

*Aphidius fabarum* Marshall, 1896:599. Lectotype ♀ (after Mackauer 1961b) (NHMUK). – United Kingdom.

**Syn.:** *Misaphidius aphidiperda* Rondani, 1877; *Aphidius monilicornis* Thomson, 1895; *Aphidius aurantii* Pierantoni, 1907; *Aphidius polygoni* Ivanov, 1927; *Aphidius gomezi* Quilis, 1930; *Aphidius janinii* Quilis, 1930; *Lysiphlebus inermis* Quilis, 1931; *Lysiphlebus innovatus* Quilis, 1931; *Lysiphlebus moroderi* Quilis, 1931; *Lysiphlebus melandriicola* Starý, 1961 [Fig. 30A]; *Lysiphlebus ivanovi* Mackauer, 1967.

***Hosts.*** ***Acyrthosiphon caraganae*** (Davidian 2017); ***Acyrthosiphon cyparissiae*** (Koch) (Ferrière & Voukassovitch 1928; Mackauer & Starý 1967); ***Acyrthosiphon gossypii*** Mordvilko (Mackauer & Starý 1967; Starý 1979a); ***Acyrthosiphon ignotum*** Mordvilko (Wiackowski et al. 1997, 2001); ***Acyrthosiphon ilka*** Mordvilko (Starý 1979a; Starý et al. 2000); ***Acyrthosiphon kondoi*** Shinji (Starý et al. 2002b); ***Acyrthosiphon lactucae*** (Passerini) (Starý et al. 2000); ***Acyrthosiphon pisum*** (Harris) (Starý 1974c; Zeren & Düzgüneş 1983; Uysal et al. 2004); ***Acyrthosiphon rubi*** Narzikulov (Bhagat 1984); ***Amphorophora catharinae*** (Nevsky) (Starý 1974c, 1979a); ***Anoecia corni*** (Fabricius) (Tomanović et al. 2003b, 2009a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); ***Anuraphis subterranea*** (Walker) (Tomanović et al. 2018); ***Aphis acetosae*** Linnaeus (Starý 1974c, 1976a; Starý et al. 1971, 2000; Wiackowski et al. 2001; Barahoei et al. 2013; Rakhshani et al. 2013; Hemidi & Laamari 2020); ***Aphis affinis*** Del Guercio (Starý & Kaddou 1971; Starý 1974c, 1976a, 1979a; Starý & Sekkat 1987; Starý et al. 2000; Costa & Starý 1988; Kavallieratos et al. 2001, 2004; Tomanović et al. 2003b, 2009a, 2012, 2018; Uysal et al. 2004; Talebi et al. 2009; Nazari et al. 2012; Rakhshani et al. 2012b, 2013; Žikić et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013); ***Aphis althaeae*** (Nevsky) (Mackauer & Starý 1967; Starý 1979a; Starý et al. 2000; Ölmez & Ulusoy 2003; Tomanović et al. 2003b, 2009a, 2018; Kavallieratos et al. 2004; Uysal et al. 2004; Kos et al. 2012; Rakhshani et al. 2012b, 2013; Žikić et al. 2012); ***Aphis arbuti*** Ferrari (Starý et al. 1971, 1975; Starý 1974c, 1976a, 1999a; Costa & Starý 1988); ***Aphis armata*** Hausmann (Starý et al. 1977a; Starý 1999a); ***Aphis astragali*** Ossiannilsson (Laamari et al. 2011, 2012); ***Aphis aurantii*** Boyer de Fonscolombe (Pierantoni 1907; Mackauer & Starý 1967; Rosen 1967, 1969; Starý 1967a, 1974c, 1976a; Avidov & Harpaz 1969; Tremblay et al. 1980, 1985; Tremblay 1983b, 1984; Hussein & Kawar 1984; González & Michelena 1987; Radhakrishnan & Muraleedharan 1992; Michelena et al. 1994, 2004; Yumruktepe & Uygun 1994; Aghajanzadeh et al. 1995; Kavallieratos & Lykouressis 1999a; Starý et al. 2000; Kavallieratos et al. 2001, 2004, 2005b; Tomanović et al. 2003b, 2009a; Uysal et al. 2004; Boukhris-Bouhachem 2011; Rakhshani et al. 2013); ***Aphis ballotae*** Passerini (Starý 1974c, 1987a, 1999a, 2006; Tomanović et al. 2003b, 2009a, 2018; Kavallieratos et al. 2004; Žikić et al. 2012; Gagui et al. 2023); ***Aphis brachysiphon*** Narzykulov (Ataeva 1961; Mackauer & Starý 1967); ***Aphis brohmeri*** Börner (Mackauer 1962h; Mackauer & Starý 1967; Starý 1974c, 2006); ***Aphis brotericola*** Mier Durante (Aggoun et al. 2024); ***Aphis brunnea*** Ferrari (Chaouche & Laamari 2015; Aggoun et al. 2024); ***Aphis celastrii*** Matsumura (Tomanović et al. 2003b, 2009a); ***Aphis chloris*** Koch (Rondani 1877; Mackauer 1962h; Starý 1966d, 1974c, 1976a, 2006; Mackauer & Starý 1967; Starý et al. 1971; Kierych 1980; Mescheloff & Rosen 1990a; Žikić et al. 2012); ***Aphis citricidus*** (Kirkaldy) (Hermoso de Mendoza et al. 2008); ***Aphis clematidis*** Koch (Starý 1966d, 1974c, 1976a); ***Aphis confusa*** Walker (Pontin 1960; Mackauer & Starý 1967; Starý et al. 1973; Starý 1974c, 1999a, 2006; Tomanović et al. 2003b; Kavallieratos et al. 2004; Barnea & Mustata 2007; Kos et al. 2012; Žikić et al. 2012); ***Aphis coronillae*** Ferrari (Pontin 1960; Mackauer & Starý 1967; Starý 1999a, 2006); ***Aphis craccae*** Linnaeus (Wiackowski et al. 2001); ***Aphis craccivora*** Koch (Telenga 1950; Luzhetzki 1960; Mackauer 1960a, 1962c; Ataeva 1961; Starý 1961b, 1961h, 1963b, 1964d, 1965a, 1966c, 1966d, 1967a, 1967b, 1969c, 1974c, 1976a, 1977, 1979a, 1999a; Mackauer & Starý 1967; Tremblay 1967a, 1980; Roberti 1969; Hozák 1970; Starý & Kaddou 1971; Starý et al. 1971, 1973, 1975, 2000, 2002b; Monajemi & Esmaili 1981; Abou-Fakhr 1982; Düzgüneş et al. 1982; Haeselbarth 1983; Zeren & Düzgüneş 1983; Bhagat 1984; Tremblay et al. 1985; González & Michelena 1987; Starý & Sekkat 1987; Michelena Saval & Oltra Moscardo 1987; Costa 1988; Costa & Starý 1988; Finlayson 1990; Mescheloff & Rosen 1990a; Kolarov 1997; Abou-Fakhr & Kawar 1998; Tomanović et al. 1999b, 2003b, 2009a, 2018; Rezk et al. 2000; Carver & Franzmann 2001; Chen & Shi 2001; Kavallieratos et al. 2001, 2004, 2005b, 2010, 2016; Cecilio & Ilharco 2002; Ölmez & Ulusoy 2003; Aslan et al. 2004; Uysal et al. 2004; Güz & Kılınçer 2005; Rakhshani et al. 2005a, 2006a, 2012b, 2013; Abdel-Samad & Ahmed 2009; Talebi et al. 2009; Mossadegh et al. 2011; Barahoei et al. 2011, 2012, 2013; Laamari et al. 2011, 2012; Kos et al. 2012; Mifsud & Starý 2012; Nazari et al. 2012; Žikić et al. 2012,

2014; Alikhani et al. 2013; Taheri & Rakhshani 2013; Satar et al. 2014; Davidian 2017; Bayram et al. 2018; Pons et al. 2018; Zouari et al. 2018; Hemidi & Laamari 2020; Mustafayeva 2020; El-Fakharany et al. 2026); ***Aphis crepidis*** (Börner) (Starý 1999a; Tomanović et al. 2003b, 2009a, 2018; Kavallieratos et al. 2004; Žikić et al. 2012; Kök et al. 2020); ***Aphis cytisorum*** Hartig (Starý 1961b, 1966b, 1974c, 1976a, 1987a, 1999a; Mackauer & Starý 1967; Starý et al. 1971; Costa & Starý 1988; Aguirre Segura & Tizado Morales 1993; Kos et al. 2012; Pons et al. 2018; Tomanović et al. 2018; Akrich et al. 2025); ***Aphis cytisorum sarothamni*** Franssen (Starý 1966d, 1976a; Starý et al. 1973; Costa & Starý 1988); ***Aphis epilobiaria*** Theobald (Mescheloff & Rosen 1990a); ***Aphis epilobii*** Kaltenbach (Nazari et al. 2012; Rakhshani et al. 2013); ***Aphis eryngiiglomerata*** Bozhko (Starý 1967b; Kierych 1980; Gavrilyuk & Novgorodova 2007); ***Aphis euphorbiae*** Kaltenbach (Starý 1961b, 1963b, 1964d, 1966c, 1967b, 1974c; Mackauer 1962h; Mackauer & Starý 1967; Mifsud & Starý 2012; Rakhshani et al. 2013; Tomanović et al. 2018); ***Aphis euphorbicola*** Rezwani & Lampel (Rakhshani et al. 2012b, 2013; Barahoei et al. 2013); ***Aphis fabae*** Scopoli (Mackauer 1960a, 1962c; Starý 1961b, 1961h, 1962b, 1963b, 1964d, 1965a, 1966c, 1967b, 1969c, 1972f, 1974c, 1976a, 1977, 1979a, 1983f, 1987a, 1991, 1999a, 2006; Hodek et al. 1962; Starý & Rupais 1964; Mackauer & Starý 1967; Tremblay 1967a, 1980; Davatchi & Shojai 1968; Roberti 1969; Al-Azawi 1970; Starý & Kaddou 1971; Starý et al. 1971, 1975, 1996, 2000, 2014a; Kierych 1975, 1980; Starý & Juchnevič 1978; Abou-Fakhr 1982; Düzgüneş et al. 1982; Baixeras Almela & Michelena Saval 1983; Zeren & Düzgüneş 1983; Tremblay et al. 1985; Mustata 1986; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Starý & Sekkat 1987; Barczak 1988, 1990, 1991b; Costa 1988; Costa & Starý 1988; Mescheloff & Rosen 1990a; Völkl 1992; Yumruktepe & Uygun 1994; Cecilio 1996; Wiackowski et al. 1997; Abou-Fakhr & Kawar 1998; Suay Cano & Michelena Saval 1998; Völkl & Stechmann 1998; Barczak et al. 1999; Tomanović et al. 1999b, 2003b, 2009a, 2018; Kavallieratos et al. 2001, 2004, 2005b, 2010; Cecilio & Ilharco 2002; Ölmez & Ulusoy 2003; Aslan et al. 2004; Michelena et al. 2004; Prelipcean et al. 2004; Uysal et al. 2004; Güz & Kılınçer 2005; Lumbierres et al. 2005; Talebi et al. 2009; Barahoei et al. 2011, 2012, 2013; Laamari et al. 2011, 2012; Kos et al. 2012; Nazari et al. 2012; Rakhshani et al. 2012b, 2013; Žikić et al. 2012, 2014; Alikhani et al. 2013; Taheri & Rakhshani 2013; Chaouche & Laamari 2015; Albittar et al. 2016; Davidian 2017; Ferrer-Suay et al. 2017; Kök et al. 2017; Bayram et al. 2018; Ghelamallah et al. 2018; Pons et al. 2018; Zouari et al. 2018; Hemidi & Laamari 2020; Mustafayeva 2020; Alaserhat et al. 2021; Bandyan et al. 2021; Satar et al. 2021; Ismail et al. 2023); ***Aphis fabae cirsiiacanthoidis*** Scopoli (Quilis-Pérez 1931b; Kierych 1980; Starý 1986a, 1986b, 1987a, 1987b, 1999a; Völkl 1989; Barczak 1990; Liepert & Dettner 1993; Völkl & Mackauer 1993; Liepert & Dettner 1996; Weisser & Völkl 1997; Kavallieratos et al. 2001, 2004; Tomanović et al. 2003b, 2009a, 2018; Aslan et al. 2004; Uysal et al. 2004; Kos et al. 2009a; Derocles et al. 2012; Žikić et al. 2012, 2014; Alikhani et al. 2013; Rakhshani et al. 2013; Schar & Vorburger 2013); ***Aphis fabae evonymi*** Fabricius (Meyer 1927; Starý 1961b, 1963b, 1964d, 1966c, 1967b; Vidal 1997a; Mustafayeva 2020); ***Aphis fabae mordvilkoi*** Börner & Janisch (Vidal 1997a); ***Aphis farinosa*** Gmelin (Mackauer & Starý 1967; Starý 1976a, 2006; Michelena et al. 1998; Tomanović et al. 1999b, 2003b, 2006a, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012; Davidian 2017); ***Aphis forbesi*** Weed (Mackauer 1962h; Mackauer & Starý 1967; Starý 1979a; Rabasse et al. 2001); ***Aphis frangulae*** Kaltenbach (Mackauer 1960a; Mackauer & Starý 1967; Starý 1976a; Tomanović et al. 2003b, 2009a, 2018; Kavallieratos et al. 2004; Žikić et al. 2012; Pons et al. 2018); ***Aphis fumanae*** Remaudière & Leclant (Starý et al. 1971; Starý 1974c, 1976a); ***Aphis galiiscabri*** Schrank (Güz & Kılınçer 2005); ***Aphis gentianae*** (Börner) (Tomanović et al. 2003b; Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis gerardianae*** Mordvilko (Rakhshani et al. 2012b, 2013); ***Aphis glycines*** Matsumura (Wei et al. 2005; Tomanović et al. 2018); ***Aphis gossypii*** Glover (Luzhetski 1960; Mackauer 1960a; Starý 1961h, 1962b, 1965a, 1967a, 1974c, 1976a, 1979a, 1999a; Mackauer & Starý 1967; Tremblay 1967a; Avidov & Harpaz 1969; Roberti 1969; Al-Azawi 1970; Starý et al. 1971, 1975, 2000; Tremblay et al. 1980, 1985; Abou-Fakhr 1982; Düzgüneş et al. 1982; Zeren & Düzgüneş 1983; Starý & Sekkat 1987; Costa 1988; Costa & Starý 1988; Mescheloff & Rosen 1990a; Lyashova 1992; Yumruktepe & Uygun 1994; Abou-Fakhr & Kawar 1998; Kavallieratos & Lykouressis 1999a; Tomanović et al. 1999b, 2003b, 2009a, 2018; Kavallieratos et al. 2001, 2002a, 2002b, 2004, 2005b, 2010, 2016; Rabasse et al. 2001; Cecilio & Ilharco 2002; Takada 2002; Ölmez & Ulusoy 2003; Uysal et al. 2004; Afshari et al. 2008; Talebi et al. 2009; Barahoei et al. 2011, 2012, 2013; Boukhris-Bouhachem 2011; Laamari et al. 2011, 2012; Mossadegh et al. 2011; Kos et al. 2012; Nazari et al. 2012; Rakhshani et al. 2012b, 2013; Žikić et al. 2012; Taheri & Rakhshani 2013; Satar et al. 2014; Davidian 2017; El-Sharkawy et al. 2017; Kök et al. 2017;

Ghelamallah et al. 2018; Zouari et al. 2018; Behi et al. 2019; Hemidi & Laamari 2020; Mustafayeva 2020; Akrich et al. 2025; El-Fakharany et al. 2026); ***Aphis gossypii capsellae*** Kaltenbach (Kierych 1980); ***Aphis grossulariae*** Kaltenbach (Gautier et al. 1926; Meyer 1927; Mackauer & Starý 1967; Starý 1979a, 2006; Wiackowski & Wiackowska 1996, 2000; Wiackowski et al. 2001); ***Aphis hederae*** Kaltenbach (Mackauer 1960a, 1962c; Mackauer & Starý 1967; Starý et al. 1971; Starý 1974c, 1976a, 1999a, 2006; Abou-Fakhr 1982; Tremblay et al. 1985; González & Michelena 1987; Mescheloff & Rosen 1990a; Abou-Fakhr & Kawar 1998; Cecilio & Ilharco 2002; Lumbierres et al. 2005; Barjadze & Gratiashvili 2010; Kos et al. 2012; Derocles et al. 2012; Pons et al. 2018; Tomanović et al. 2018); ***Aphis helianthemi*** Ferrari (Starý et al. 1971; Starý 1974c); ***Aphis hieracii*** Schrank (Mackauer & Starý 1967; Starý 1987a, 1999a, 2006; Tomanović et al. 2008a); ***Aphis hillerislambersi*** Nieto Nafría & Mier Durante (González & Michelena 1987); ***Aphis idaei*** van der Goot (Starý 1961h; Mackauer & Starý 1967; Starý 1976a, 1999a, 2006; Kavallieratos et al. 2001, 2004; Tomanović et al. 2003b, 2009a; Talebi et al. 2009; Žikić et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Rakhshani et al. 2013); ***Aphis ilicis*** Kaltenbach (Tomanović et al. 2018); ***Aphis intybi*** Koch (Starý 1961b, 1963b, 1964d, 1966c, 1967b, 1974c, 1976a, 1979a, 1987a, 1999a, 2006; Starý et al. 1975, 2000; Kierych 1980; Düzgüneş et al. 1982; Bhagat 1986a; Aslan et al. 2004; Kavallieratos et al. 2004; Uysal et al. 2004; Güz & Kılınçer 2005; Talebi et al. 2009; Tomanović et al. 2009a, 2018; Kos et al. 2012; Rakhshani et al. 2012b; Žikić et al. 2012; Taheri & Rakhshani 2013; Ferrer-Suay et al. 2017); ***Aphis jacobaeae*** Schrank (Marshall 1896; Bignell 1901; Mackauer 1960a; Mackauer & Starý 1967; Fulmek 1968); ***Aphis janischi*** (Börner) (Starý 2006); ***Aphis klimeschi*** (Börner) (Starý 1974c, 1999a); ***Aphis kurosawai*** Takahashi (Chakrabarti & Debnath 2009); ***Aphis lambersi*** (Börner) (Starý 1961b, 1961d, 1964d, 1966c, 1967b, 1974c, 1976a, 1999a, 2006; Mackauer 1962h; Mackauer & Starý 1967; Starý et al. 1975; Kierych 1980); ***Aphis medicaginis*** Koch (Mackauer 1960a, 1962h; Starý 1974c, 1976a, 1999a; Chen & Shi 2001); ***Aphis nasturtii*** Kaltenbach (Mackauer 1960a; Mackauer & Starý 1967; Starý et al. 1971, 2000; Starý 1974c, 1976a, 1979a, 1999a, 2006; Suay Cano & Michelena Saval 1998; Wiackowski et al. 2001; Tomanović et al. 2003b, 2009a, 2018; Kavallieratos et al. 2004, 2010, 2016; Kos et al. 2012; Laamari et al. 2012; Nazari et al. 2012; Žikić et al. 2012; Barahoei et al. 2013; Rakhshani et al. 2013); ***Aphis nepetae*** Kaltenbach (Mackauer 1960a, 1962c; Mackauer & Starý 1967); ***Aphis nerii*** Boyer de Fonscolombe (Starý 1976a; Starý et al. 1977a, 2000; Aslan et al. 2004; Uysal et al. 2004; Talebi et al. 2009; Barahoei et al. 2013; Mifsud et al. 2013; Rakhshani et al. 2013); ***Aphis newtoni*** Theobald (Starý 1963b, 1964d, 1966c, 1967b, 1974c, 1979a, 1987a, 1999a, 2006; Mackauer & Starý 1967; Starý & Juchnevič 1978; Tomanović et al. 2003b, 2009a; Kavallieratos et al. 2004; Derocles et al. 2012; Žikić et al. 2012); ***Aphis oenotherae*** Oestlund (Carver & Franzmann 2001; Tomanović et al. 2003b, 2004b, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis origani*** Passerini (Starý 1974c, 1979a, 1987a, 1999a, 2006; Tomanović et al. 1999b, 2003b, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012; Barahoei et al. 2013; Rakhshani et al. 2013); ***Aphis parietariae*** Theobald (Tremblay 1967a; Starý 1976a, 1999a; González & Michelena 1987; Tomanović et al. 2018); ***Aphis picridicola*** Holman (Starý 1974c); ***Aphis pilosellae*** (Börner) (Mackauer & Starý 1967); ***Aphis plantaginis*** Goeze (Mackauer 1960a, 1962c; Starý 1961b, 1963b, 1964d, 1966c, 1967b, 1974c, 1987a, 1999a, 2006; Mackauer & Starý 1967; Barahoei et al. 2013; Rakhshani et al. 2013); ***Aphis podagrariae*** Schrank (Mackauer & Starý 1967; Starý 1974c); ***Aphis polygonata*** (Nevsky) (Starý 1961b, 1966c, 1967b, 1974c, 1999a, 2006; Mackauer & Starý 1967; Güz & Kılınçer 2005; Kos et al. 2012; Tomanović et al. 2018); ***Aphis pomi*** De Geer (Mackauer 1960a, 1962h; Starý 1966c, 1967b, 1975c, 1976a, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1975, 2000; Düzgüneş et al. 1982; Radjabi 1989; Wiackowski et al. 2001; Tomanović et al. 2003b, 2009a, 2018; Kavallieratos et al. 2004, 2008b; Uysal et al. 2004; Rakhshani 2012; Žikić et al. 2012; Kök et al. 2020); ***Aphis proffti*** (Börner) (Starý et al. 1973; Starý 1999a); ***Aphis punicae*** Passerini (Starý 1976a, 1979a, 1999a; González & Michelena 1987; Mescheloff & Rosen 1990a; Michelena et al. 1994, 2004; Cecilio & Ilharco 2002; Farrokhzadeh et al. 2014; Talebi et al. 2009; Laamari et al. 2012; Nazari et al. 2012; Barahoei et al. 2013; Rakhshani et al. 2013; Taheri & Rakhshani 2013; Kavallieratos et al. 2016; Hemidi & Laamari 2020); ***Aphis roepkei*** (Hille Ris Lambers) (Starý 1961b, 1963b, 1964d, 1966c, 1967b, 1974c, 1999a, 2006; Mackauer & Starý 1967); ***Aphis ruborum*** (Börner) (Starý 1966b, 1966d, 1974c, 1976a, 1979a, 1999a; Mackauer & Starý 1967; Roberti 1969; Starý & Kaddou 1971; Starý et al. 1971, 1973, 1975, 1996, 2000; Düzgüneş et al. 1982; Michelena Saval & Oltra Moscardo 1987; González & Michelena 1987; Müller et al. 1999; Kavallieratos et al. 2001,

2002b, 2004; Tomanović et al. 2003b, 2009a; Uysal et al. 2004; Güz & Kılınçer 2005; Havelka et al. 2012; Žikić et al. 2012; Rakhshani et al. 2013); ***Aphis rumicis*** Linnaeus (Marshall 1896; Bignell 1901; Watanabe 1949; Mackauer 1960a, 1962h; Starý 1961b, 1963b, 1964d, 1966c, 1967b, 1974c, 1976a, 1979a, 1987a, 1999a, 2006; Mackauer & Starý 1967; Starý et al. 1971, 1975, 2000; González & Michelena 1987; Wiackowski et al. 2001; Güz & Kılınçer 2005; Barnea & Mustata 2007; Talebi et al. 2009; Derocles et al. 2012; Nazari et al. 2012; Rakhshani et al. 2013; Kök et al. 2020); ***Aphis salviae*** Walker (Starý 1961b, 1963b, 1964d, 1966c, 1967b, 1974c, 1976a, 1979a, 2006; Mackauer & Starý 1967; Starý et al. 1971, 2000; Tomanović et al. 2003b, 2009a; Kavallieratos et al. 2004; Güz & Kılınçer 2005; Barnea & Mustata 2007; Žikić et al. 2012); ***Aphis sambuci*** Linnaeus (Starý 1974c, 1987a, 2006; Barczak et al. 1999; Wiackowski et al. 2001); ***Aphis sanguisorbae*** Schrank (Starý 1961b, 1961d, 1963b, 1964d, 1966c, 1967b, 1974c, 1976a, 2006; Mackauer & Starý 1967; Starý et al. 1971, 1973; Tomanović et al. 2003b, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis schneideri*** (Börner) (Mackauer 1962h; Mackauer & Starý 1967; Starý 1974c, 1977, 1987a, 2006; Wiackowski & Wiackowska 1996; Wiackowski et al. 2001); ***Aphis sedi*** Kaltenbach (Starý 1966b, 1999a; Wiackowski et al. 2001); ***Aphis serpylli* Koch** (Tomanović et al. 1999b, 2003b, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis solanella*** Theobald (Mackauer & Starý 1967; Starý & Kaddou 1971; Starý 1974c, 1976a, 1999a; Düzgüneş et al. 1982; Zeren & Düzgüneş 1983; Bhagat 1984; González & Michelena 1987; Costa & Starý 1988; Cecilio 1996; Starý et al. 1996; Kavallieratos et al. 2001, 2004, 2010; Tomanović et al. 2003b, 2009a; Uysal et al. 2004; Güz & Kılınçer 2005; Talebi et al. 2009; Nazari et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Rakhshani et al. 2013; Zouari et al. 2018; Kök et al. 2020); ***Aphis spiraecola*** Patch (Starý 1967a, 1974c, 1976a, 1999a; Starý et al. 1971, 1975, 2000; Tremblay et al. 1980; Costa & Starý 1988; Cecilio 1996; Kavallieratos et al. 2001, 2004; Tomanović et al. 2003b, 2009a; Laamari et al. 2012; Rakhshani 2012; Rakhshani et al. 2013; Zouari et al. 2018; Behi et al. 2019; Kök et al. 2020); ***Aphis spiraephaga*** Müller (Starý 1999a, 2006); ***Aphis stachydis*** Mordvilko (Starý 1966c, 1974c, 2006); ***Aphis striata*** Rafinesque [*n. dub.*] (Starý et al. 1971); ***Aphis symphyti*** Schrank (Starý 2006); ***Aphis taraxacicola*** (Börner) (Starý 1961b, 1961d, 1963b, 1964d, 1967b, 1974c, 1979a, 1987a, 1999a, 2006; Mackauer & Starý 1967; Starý et al. 1971, 2000; Kierych 1980; Tomanović et al. 1999b, 2003b, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis thomasi*** (Börner) (Starý 1966c, 1974c, 1999a, 2006; Mackauer & Starý 1967); ***Aphis tirucallis*** Hille Ris Lambers (Starý et al. 1971; Starý 1974c, 1976a; Ölmez & Ulusoy 2003); ***Aphis tripolii*** Liang (Mackauer 1960a, 1962c; Mackauer & Starý 1967); ***Aphis ulicis*** Walker (Mackauer & Starý 1967); ***Aphis ulmariae*** Schrank (Györfi 1943; Fulmek 1968); ***Aphis umbrella*** (Börner) (Mackauer 1962h; Starý 1965a, 1966d, 1974c, 1976a, 1979a; Mackauer & Starý 1967; Roberti 1969; Abou-Fakhr 1982; Tremblay et al. 1985; Costa 1988; Costa & Starý 1988; Mescheloff & Rosen 1990a; Abou-Fakhr & Kawar 1998; Tomanović et al. 1999b, 2003b, 2009a, 2018; Starý et al. 2000; Kavallieratos et al. 2001, 2004; Cecilio & Ilharco 2002; Talebi et al. 2009; Nazari et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Rakhshani et al. 2013; Kök et al. 2017; Pons et al. 2018); ***Aphis urticata*** Gmelin (Quilis-Pérez 1934; Mackauer 1960a, 1962h; Starý 1961b, 1963b, 1964d, 1966b, 1966c, 1966d, 1967b, 1974c, 1976a, 1979a, 1983f, 1987a, 1999a, 2006; Mackauer & Starý 1967; Starý et al. 1971, 1973, 2000; Mustata 1986; Tomanović et al. 1999b, 2009a, 2018; Sanchis et al. 2000; Kavallieratos et al. 2001, 2004; Güz & Kılınçer 2005; Derocles et al. 2012; Kos et al. 2012; Žikić et al. 2012; Rakhshani et al. 2013; Ferrer-Suay et al. 2017); ***Aphis verbasci*** Schrank (Starý 1961b, 1963b, 1964d, 1967b, 1974c, 1976a, 1987a, 1999a, 2006; Mackauer 1962h; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975; Kierych 1980; Mustata 1986; Cecilio 1996; Tomanović et al. 1999b, 2003b, 2009a, 2018; Kavallieratos et al. 2004; Güz & Kılınçer 2005; Žikić et al. 2012); ***Aphis viburni*** Scopoli (Tomanović et al. 2003b, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012; Pons et al. 2018); ***Aphis vitalbae*** Ferrari (Starý et al. 1971, 1973, 1975; Starý 1974c, 1976a, 1999a; Kos et al. 2012); ***Aphis viticis*** Ferrari (Starý 1976a; Tremblay 1967a); ***Aphis*** spp. (Niezabitowski 1910; Starý 1961b, 1961d, 1962b, 1964d, 1965a, 1966c, 1966d, 1967b, 1979a, 1995b, 2006; Mackauer 1962h; Roberti 1969; Starý & Kaddou 1971; Starý et al. 1971, 2000, 2002b; Starý & Juchnevič 1978; Bhagat 1984; Costa 1988; Costa & Starý 1988; Cecilio 1996; Kolarov 1997; Tomanović et al. 1999b, 2003b; Kavallieratos et al. 2004; Güz & Kılınçer 2005; Kos et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Mifsud et al. 2013; Davidian 2017); ***Aulacorthum solani*** (Kaltenbach) (Mackauer & Starý 1967; Fulmek 1968; Lyashova 1992); ***Brachycaudus amygdalinus*** (Schouteden) (Mackauer & Starý 1967; Nazari et al. 2012; Rakhshani 2012); ***Brachycaudus ballotae***

(Passerini) (Mustata 1986); ***Brachycaudus cardui*** (Linnaeus) (Marshall 1896; Bignell 1901; Meyer 1927; Mackauer 1960a, 1962c; Starý 1961b, 1962b, 1963b, 1964d, 1965a, 1966a, 1966c, 1967b, 1969a, 1974c, 1976a, 1977, 1986a, 1986b, 1987a; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975; Kierych 1980; Rakauskas 1981; Düzgüneş et al. 1982; Baixeras Almela & Michelena Saval 1983; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Elmali & Toros 1994; Wiackowski & Wiackowska 1996; Kolarov 1997; Wiackowski et al. 1997, 2001; Tomanović et al. 1998b, 2009a, 2018, 2023c; Starý et al. 2000; Kavallieratos et al. 2001, 2004, 2008b; Aslan et al. 2004; Uysal et al. 2004; Kos et al. 2009a, 2012; Talebi et al. 2009; Laamari et al. 2011; Nazari et al. 2012; Rakhshani et al. 2012b, 2013; Žikić et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Schar & Vorburger 2013; Taheri & Rakhshani 2013; Ferrer-Suay et al. 2017; Bayram et al. 2018); ***Brachycaudus helichrysi*** (Kaltenbach) (Tremblay 1967a; Starý 1976a; Tomanović et al. 1998b, 1999b, 2003b, 2009a, 2018; Starý et al. 2000; Kavallieratos et al. 2001, 2004, 2008b, 2010; Aslan et al. 2004; Uysal et al. 2004; Jafari Ahmadabadi et al. 2011; Laamari et al. 2011, 2012; Jafari Ahmadabadi & Modarres Awal 2012; Nazari et al. 2012; Rakhshani 2012; Žikić et al. 2012; Barahoei et al. 2013; Rakhshani et al. 2013; Taheri & Rakhshani 2013); ***Brachycaudus lateralis*** (Walker) (Starý et al. 1971; Starý 1974c); ***Brachycaudus lychnidis*** (Linnaeus) (Mackauer 1960a, 1962c; Starý 1961b, 1964d, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1977a; Kavallieratos et al. 2001, 2004; Tomanović et al. 2003b, 2009a, 2018); ***Brachycaudus mordvilkoi*** Hille Ris Lambers (Starý 1974c); ***Brachycaudus persicae*** Passerini (Mackauer & Starý 1967; Rakhshani 2012; Aggoun et al. 2024); ***Brachycaudus prunicola*** (Kaltenbach) (Mackauer 1960a, 1962c; Mackauer & Starý 1967; Starý 1974c, 1976a; Costa 1988; Costa & Starý 1988; Starý et al. 1973, 1996; Davidian 2017); ***Brachycaudus rumexicolens*** (Patch) (Starý 1961b, 1963b, 1964d, 1966c, 1967b, 1969a, 1974c, 1976a, 1987a; Mackauer & Starý 1967); ***Brachycaudus schwartzi*** (Börner) (Mackauer 1960a; Starý et al. 1971; Starý 1974c, 1976a; Tomanović et al. 1998b, 1999b, 2003b, 2009a; Kavallieratos et al. 2004, 2008b; Cecilio & Ilharco 2002; Žikić et al. 2012); ***Brachycaudus tragopogonis*** (Kaltenbach) (Mackauer 1960a; Starý 1961b, 1963b, 1964d, 1966c, 1967b, 1969a, 1974c, 1976a; Düzgüneş et al. 1982; Uysal et al. 2004; Barahoei et al. 2012, 2013; Alikhani et al. 2013; Rakhshani et al. 2012b, 2013); ***Brachycaudus tragopogonis setosus*** (Hille Ris Lambers) (Starý et al. 2000); ***Brachycaudus*** spp. (Starý 1961b, 1961d, 1964d, 1966c, 1969a, 1995b; Ferrer-Suay et al. 2017); ***Brachyunguis atraphaxidis*** (Nevsky) (Starý & Juchnevič 1978; Starý 1979a); ***Brachyunguis harmalae*** Das (Mackauer & Starý 1967; Starý & Juchnevič 1978; Starý 1979a; Talebi et al. 2009; Rakhshani et al. 2012b, 2013); ***Brachyunguis tamaricis*** (Lichtenstein) (Starý et al. 1973; Starý 1976a; Kavallieratos et al. 2016; Tomanović et al. 2018); ***Brachyunguis tamaricophilus*** (Nevsky) (Starý 1976a); ***Brachyunguis zygophylli*** (Nevsky) (Barahoei et al. 2011, 2012, 2013; Rakhshani et al. 2013); *Brevicoryne brassicae* (Linnaeus) (Ghelamallah et al. 2018); ***Capitophorus carduina*** (Walker) (Starý 1976a; Wiackowski et al. 2001); ***Capitophorus elaeagni*** (Del Guercio) (Starý 1976a; Düzgüneş et al. 1982; Wiackowski et al. 2001; Uysal et al. 2004); ***Capitophorus hypophaes*** (Walker) (Aggoun et al. 2024); ***Capitophorus inulae*** (Passerini) (Tremblay 1967a; Starý 1976a; Hemidi & Laamari 2020); ***Cavariella aegopodii*** (Scopoli) (Mackauer & Starý 1967; Abou-Fakhr 1982; Starý et al. 1975; Starý 1976a; Tremblay et al. 1985; Uysal et al. 2004); ***Cavariella aquatica*** (Gillette & Bragg) (Starý et al. 1977a); ***Cavariella archangelicae*** (Scopoli) (Fulmek 1968); ***Cavariella pastinacae*** (Linnaeus) (Marshall 1896; Bignell 1901); ***Cavariella*** sp. (Starý & Rupais 1964; Starý 1974c); ***Chaitophorus salijaponicus*** Essig & Kuwana (Wiackowski et al. 2001); ***Chomaphis*** sp. (Starý 1961b, 1964d); ***Coloradoa*** sp. (Starý 1979a; Starý et al. 2000); ***Cryptomyzus galeopsidis*** (Kaltenbach) (Wiackowski et al. 2001); ***Cryptomyzus ribis*** (Linnaeus) (Wiackowski & Wiackowska 1996; Wiackowski et al. 2001); ***Drepanosiphum platanoidis*** (Schrank) (Wiackowski et al. 2001); ***Dysaphis apiifolia*** (Theobald) (Kavallieratos et al. 2004; Tomanović et al. 2009a); ***Dysaphis apiifolia petroselini*** (Börner) (Michelena et al. 2004); ***Dysaphis crataegi*** (Kaltenbach) (Starý 1965a, 1974c, 1979a; Güz & Kılınçer 2005); ***Dysaphis foeniculus*** (Theobald) (Bayram et al. 2018); ***Dysaphis lappae*** (Koch) (Starý 1965a, 1969a, 1974c, 1979a, 1987a, 2006; Mackauer & Starý 1967); ***Dysaphis lappae cynarae*** (Theobald) (Starý 1976a; Aggoun et al. 2024); ***Dysaphis plantaginea*** (Passerini) (Starý 1974c, 1976a; 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; Tomanović et al. 2018; Hemidi & Laamari 2020); ***Dysaphis radicola*** (Mordvilko) (Talebi et al. 2009; Rakhshani et al. 2013); ***Dysaphis rumecicola emicis*** (Mescheloff & Rosen 1990a); ***Dysaphis*** spp. (Starý 1966c, 1979a, 2006; Starý & Juchnevič 1978; Starý et al. 2000; Cecilio & Ilharco

2002; Davidian 2017); ***Ephedraphis ephedrae*** (Nevsky) (Starý 1965a, 1974c; Mackauer & Starý 1967); ***Hayhurstia atriplicis*** (Linnaeus) (Quilis-Pérez 1934; Mackauer & Starý 1967; Fulmek 1968; Starý 1979a; 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) (Meyer 1927; Mackauer 1960a; Mackauer & Starý 1967; Starý 1976a; Erkin 1983; Cecilio 1996; Wiackowski & Wiackowska 1996; Tomanović et al. 1998b, 2003b, 2009a, 2012; Wiackowski et al. 2001; Cecilio & Ilharco 2002; Kavallieratos et al. 2004, 2008b; Uysal et al. 2004; Jafari Ahmadabadi et al. 2011; Jafari Ahmadabadi & Modarres Awal 2012; Laamari et al. 2012; Žikić et al. 2012); ***Hyperomyzus lactucae*** (Linnaeus) (Quilis-Pérez 1934; Starý 1961b, 1963b, 1964d, 1967b, 1974c, 1979a, 1987a, 2006; Mackauer & Starý 1967; Aeschlimann & Vitou 1985; Wiackowski & Wiackowska 1996; Wiackowski et al. 2001); ***Hyperomyzus picridis*** (Börner) (Tomanović et al. 1999b, 2003b, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012); ***Liosomaphis berberidis*** (Kaltenbach) (Wiackowski et al. 2001); ***Lipaphis erysimi*** (Kaltenbach) (Starý 1964d; Talebi et al. 2009; Rakhshani et al. 2013); ***Lipaphis fritzmuelleri*** Börner (Talebi et al. 2009); ***Lipaphis lepidii*** (Nevsky) (Starý 1979a; Starý et al. 2000; Talebi et al. 2009; Rakhshani et al. 2013); ***Macchiatiella rhamni*** (Boyer de Fonscolombe) (Starý 1976a); ***Macrosiphoniella artemisiae*** (Boyer de Fonscolombe) (Tomanović et al. 1999b); ***Macrosiphoniella papillata*** Holman (Barahoei et al. 2013; Rakhshani et al. 2013); ***Macrosiphoniella pulvera*** (Walker) (Ataeva 1961; Mackauer & Starý 1967); ***Macrosiphoniella sanborni*** (Gillette) (Mackauer & Starý 1967; Starý 1976a; Starý et al. 2000); ***Macrosiphoniella subterranea*** (Koch) (Wiackowski et al. 1997, 2001); ***Macrosiphum euphorbiae*** (Thomas) (Aggoun et al. 2024); ***Macrosiphum rosae*** (Linnaeus) (Mackauer & Starý 1967; Taheri & Rakhshani 2013); ***Melanaphis donacis*** (Passerini) (Mackauer & Starý 1967; Starý 1976a); ***Melanaphis sacchari*** (Zehntner) (Starý 1999a; Barahoei et al. 2011; Rakhshani et al. 2013); ***Metopolophium dirhodum*** (Walker) (Barahoei et al. 2013; Rakhshani et al. 2013); ***Metopeurum fuscoviride*** Stroyan (Barnea & Mustata 2007); ***Microsiphum millefolii*** Wahlgren (Starý 1974c; Starý et al. 1971); ***Microsiphum nudum*** Holman (Starý 1966c, 1974c; Mackauer & Starý 1967); ***Monellia caryella*** (Fitch) (Starý 1999a); ***Myzus beybienkoi*** (Narzikulov) (Talebi et al. 2009; Rakhshani et al. 2013); ***Myzus cerasi*** (Fabricius) (Starý 1974c, 1976a; Starý et al. 1971; Kavallieratos et al. 2001, 2004; Tomanović et al. 2003b, 2009a); ***Myzus ligustri*** (Mosley) (Wiackowski et al. 1997, 2001); ***Myzus mumecola*** (Matsumura) (Starý et al. 2002b); ***Myzus persicae*** (Sulzer) (Mackauer & Starý 1967; Starý 1974c, 1976a, 1987a, 2006; Karaat & Goven 1986; Mescheloff & Rosen 1990a; Tomanović et al. 1998b, 2003b, 2009a; Kavallieratos et al. 2001, 2004, 2005b, 2010; Ölmez & Ulusoy 2003; Uysal et al. 2004; Güz & Kılınçer 2005; Talebi et al. 2009; Boukhris-Bouhachem 2011; Laamari et al. 2011, 2012; Kos et al. 2012; Žikić et al. 2012; Barahoei et al. 2013; Rakhshani et al. 2013; Albittar et al. 2016; Bayram et al. 2018; Alaserhat et al. 2021; Bandyan et al. 2021; Satar et al. 2021; Plećaš et al. 2023); ***Neophyllaphis*** sp. (Starý 1999a); ***Ovatus crataegarius*** (Walker), ***Ovatus insitus*** (Walker) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Paczoskia major*** Börner (Starý 1961b, 1963b, 1964d, 1966c, 1967b, 1974c; Mackauer & Starý 1967); ***Pemphigus immunis*** Buckton (Starý 1965a; Mustafayeva 2020); ***Pemphigus*** sp. (Starý 1961b, 1963b, 1966c, 1967b, 1974c, 1976a); *Periphyllus aceris* (Linnaeus) (Wiackowski et al. 2001); ***Phorodon humuli*** (Schrank) (Starý et al. 2000; Kavallieratos et al. 2004, 2008b; Tomanović et al. 1998b, 2003b, 2009a; Žikić et al. 2012); ***Protaphis alexandrae*** (Nevsky) (Rakhshani et al. 2012b, 2013); ***Protaphis anthemidis*** (Börner) (Wiackowski et al. 1997, 2001; Talebi et al. 2009; Nazari et al. 2012; Rakhshani et al. 2013); ***Protaphis carlinae*** (Börner) (Starý 1961b, 1961d, 1963b, 1964d, 1966c, 1967b, 1974c, 2006; Tomanović et al. 2003b, 2007a; Kavallieratos et al. 2004; Žikić et al. 2012); ***Protaphis elongata*** (Nevsky) (Talebi et al. 2009; Rakhshani et al. 2013); ***Protaphis pseudocardui*** (Theobald) (Aggoun et al. 2024); ***Protaphis terricola*** (Rondani) (Starý et al. 1971; Starý 1974c, 1976a; Uysal et al. 2004; Güz & Kılınçer 2005; Barahoei et al. 2013; Rakhshani et al. 2013); ***Protaphis*** spp. (Starý 1966d, 1979a; Starý et al. 1971, 1975; Mescheloff & Rosen 1990a; Barahoei et al. 2013); ***Pterocallis alni*** (De Geer) (Tomanović et al. 2018); ***Rhopalosiphum maidis*** (Fitch) (Mackauer 1960a; Mackauer & Starý 1967; Starý 1976a, 1981b; Düzgüneş et al. 1982; Özder & Toros 1999; Kavallieratos et al. 2001, 2004, 2005b; Tomanović et al. 2003b, 2009a; Uysal et al. 2004; Hemidi & Laamari 2020); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Benoit 1955; Starý 1961b, 1963b, 1964d, 1966a, 1966c, 1967b, 1974c, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 2000; Tomanović et al. 2012); ***Rhopalosiphoninus latysiphon*** (Davidson) (Aggoun et al. 2024); ***Rhopalosiphum padi*** (Linnaeus)

(Mackauer 1960a; Mackauer & Starý 1967; Polgár 1984; Wiackowski et al. 2001; Rakhshani et al. 2008b, 2013; Nazari et al. 2012; Taheri & Rakhshani 2013; Gadallah et al. 2017; Satar et al. 2021); ***Saltusaphis scirpus*** Theobald (Starý et al. 2000; Tomanović et al. 2012); ***Saltusaphis*** sp. (Starý 1979a; Starý et al. 2000); ***Schizaphis rufula*** (Walker) (Starý et al. 1973, 1975; Starý 1976a); ***Semiaphis anthrisci*** (Kaltenbach) (Noury 1962; Mackauer & Starý 1967); ***Semiaphis dauci*** (Fabricius) (Tomanović et al. 2003b, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012); ***Sipha maydis*** Passerini (Fulmek 1968); ***Sitobion avenae*** (Fabricius) (Starý 1961b, 1963b, 1964d, 1966c, 1967b, 1974c, 1976a, 1976c, 1981b, 2006; Mackauer & Starý 1967; Elmali & Toros 1994; Özder & Toros 1999; Tomanović et al. 2003b, 2009a, 2018; Kavallieratos et al. 2004; Uysal et al. 2004; Žikić et al. 2012); ***Sitobion fragariae*** (Walker) (Quilis-Pérez 1931a; Mackauer 1960a); ***Toxopterina vandergooti*** (Börner) (Starý 1961d, 1963b, 1964d, 1966c, 1967b, 1974c, 2006; Mackauer & Starý 1967); *Trama troglodytes* von Heyden (Kierych 1980; Wiackowski et al. 2001); ***Uroleucon cirsii*** (Linnaeus) (Marshall 1896; Bignell 1901; Mackauer 1960a; Mackauer & Starý 1967); ***Uroleucon compositae*** (Theobald) (Laamari et al. 2011; Aggoun et al. 2024); ***Uroleucon hypochoeridis*** (Fabricius) (Mackauer 1962h); ***Uroleucon jaceae*** (Linnaeus) (Mustata 1986; Kavallieratos et al. 2001, 2004; Tomanović et al. 2003b; Aslan et al. 2004; Uysal et al. 2004; Güz & Kılınçer 2005); ***Uroleucon picridis*** (Fabricius) (Aggoun et al. 2024); ***Uroleucon sonchi*** (Linnaeus) (Mackauer 1960a; Mackauer & Starý 1967; Fulmek 1968).

***Distribution.*** **Afghanistan** (Starý 1979a); **Algeria** (Mackauer & Starý 1967; Starý 1976a, 1999a; Guenaoui et al. 1994; Laamari et al. 2011, 2012; Chehma & Laamari 2014; Chaouche & Laamari 2015; Aroun et al. 2016; Ghelamallah et al. 2018; Rakhshani et al. 2019; Hemidi & Laamari 2020; Gagui et al. 2023; Akrich et al. 2025); **Andorra** (Sanchis et al. 1999); **Australia** (Carver & Franzmann 2001); **Austria** (Mackauer & Starý 1967; Starý 1999a; Tomanović et al. 2018); **Azerbaijan** (Starý 1965a, 1974c, 1976a; Mustafayeva 2020); **Belgium** (Alhmedi et al. 2009; Verheggen et al. 2009; Lopes et al. 2016; Tomanović et al. 2018; Ismail et al. 2023); **Bulgaria** (Grigorov 1962; Starý 1962b, 1967a, 1974c, 1976a, 1999a; Mackauer & Starý 1967; Atanassova 1997; Kolarov 1997; Kavallieratos et al. 2004, 2013; Todorov 2007; Tomanović et al. 2009a, 2018; Todorov 2014); **Burundi** (Starý 1999a); **Canary Islands** (Guerrero & Koponen 2000; Báez et al. 2001); **China** (Watanabe 1949; Lu & Ji 1992; Dong & Wang 1993; Chen & Shi 2001; He et al. 2004; Tursun et al. 2006; Xi et al. 2011; Xu et al. 2011; Tomanović et al. 2018); **Croatia** (Kavallieratos et al. 2004; Tomanović et al. 2018); **Czech Republic** (Quilis-Pérez 1934; Starý 1961d, 1966c, 1967a, 1972f, 1974c, 1975c, 1976a, 1976c, 1977, 1981b, 1983f, 1986a, 1987a, 1989a, 1991, 1995b, 1999a, 2006; Hodek et al. 1962; Mackauer & Starý 1967; Hozák 1970; Starý & Havelka 2008; Tomanović et al. 2008a, 2012, 2018; Sandrock et al. 2010; Havelka et al. 2012, 2014a; Ferrer-Suay et al. 2017); **Denmark** (Mackauer & Starý 1967); **Egypt** (Mackauer & Starý 1967; Starý 1974c, 1976a; Selim et al. 1987; Rezk et al. 2000; Abdel-Samad & Ahmed 2006, 2009; El-Gantiry et al. 2014; El-Sharkawy et al. 2017; Gadallah et al. 2017; Rakhshani et al. 2019; El-Fakharany et al. 2026); **Finland** (Thuneberg 1960, 1963; Mackauer & Starý 1967; Fulmek 1968; Mackauer 1968c); **France** (Gautier & Bonnamour 1925; Gautier et al. 1926; Mackauer 1960a; Mackauer & Starý 1967; Starý 1967a, 1974c, 1976a; Starý et al. 1971, 1973, 1975, 1977a, 1999a; Aeschlimann & Vitou 1985; Völkl 1989; Rabasse et al. 2001; Sandrock et al. 2010; Derocles et al. 2012, 2014a; Havelka et al. 2012); **Georgia** (Akhvlediani 1964; Starý 1965a, 1967a, 1974c, 1976a, 1999a; Barjadze & Gratiashvili 2010; Havelka et al. 2012; Davidian 2017); **Germany** (Nees von Esenbeck 1834a; Kirchner 1867; Szépligeti 1904; Mackauer 1960a, 1962c; Starý 1961d, 1967a, 1974c, 1981b, 1999a; Mackauer & Starý 1967; Boness & Starý 1988; Sorg 1990; Völkl 1992; Weisser & Völkl 1997; Vidal 1997a; Völkl & Stechmann 1998; Hübner 2001; Belokobylskij et al. 2003; Vollhardt et al. 2008); **Greece** (Starý 1976a; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2002a, 2002b, 2004, 2005b, 2008b, 2010, 2013, 2016; Tomanović et al. 2009a, 2012, 2018; Havelka et al. 2012); **Hungary** (Györfi 1943; Starý 1974c; Polgár 1981, 1983, 1984); **India** (Bhagat 1984, 1986a; Radhakrishnan & Muraleedharan 1992; Das & Chakrabarti 2023a); **Iran** (Mackauer & Starý 1967; Starý 1979a, 1999a; Monajemi & Esmaili 1981; Finlayson 1990; Aghajanzadeh et al. 1995; Starý et al. 2000; Rakhshani et al. 2005a, 2006a, 2008b, 2013, 2019; Afshari et al. 2008; Fallahzadeh & Saghaei 2010; Barahoei et al. 2011, 2012, 2013; Jafari Ahmadabadi et al. 2011; Mossadegh et al. 2011; Rasekh et al. 2011; Havelka et al. 2012; Jafari Ahmadabadi & Modarres Awal 2012; Nazari et al. 2012; Rakhshani 2012; Tomanović et al. 2012; Alikhani et al. 2013; Khayrandish et al. 2013; Taheri & Rakhshani 2013; Farrokhzadeh et al. 2014; Ghotbi Ravandi et al. 2017; Ameri et al. 2019; Abdoli et al. 2026); **Iraq** (Starý 1969c, 1974c, 1976a; Al-Azawi 1970; Starý

& Kaddou 1971; Rakhshani et al. 2019; Bandyan et al. 2021); **Italy** (Marshall 1896; Szépligeti 1904; Pierantoni 1907; Mackauer 1960a; Tremblay 1964, 1967a, 1980, 1983b, 1984; Starý 1966d, 1967a, 1974c, 1976a, 1999a; Mackauer & Starý 1967; Roberti 1969; Tremblay et al. 1978, 1980; Marullo 1985; Ferrari & Nicoli 1994; Bergamesco et al. 1995; Havelka et al. 2012; Tomanović et al. 2023c); **Japan** (Takada 2002); **Kazakhstan** (Starý 1974c, 1979a; Starý & Juchnevič 1978; Davidian 2017); **Kyrgyzstan** (Davidian 2017); **Latvia** (Starý & Rupais 1964); **Lebanon** (Mackauer & Starý 1967; Starý 1976a; Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay 1984; Tremblay et al. 1985; Abou-Fakhr & Kawar 1998; Rakhshani et al. 2019); **Lithuania** (Starý & Rupais 1964; Rakauskas 1981, 1985); **Madeira Islands** (Starý et al. 1996; Cecilio et al. 2004; Cecilio et al. 2009); **Malta** (Mifsud & Starý 2009, 2011; Mifsud et al. 2013; Rakhshani et al. 2015b; Tomanović et al. 2018); **Moldova** (Starý 1974c, 1999a; Talitzky & Kuslitzky 1990); **Monaco** (Starý 1976a); **Mongolia** (Mackauer & Starý 1967; Starý 1979a; Takada 1979a; Davidian 2017); **Montenegro** (Kavallieratos et al. 2004, 2008b, 2013, 2016; Tomanović et al. 2009a, 2018; Havelka et al. 2012; Žikić et al. 2012); **Morocco** (Mimeur 1934; Mackauer 1960a; Mackauer & Starý 1967; Starý 1976a, 1981b, 1999a; Starý & Sekkat 1987; Rakhshani et al. 2019); **Netherlands** (Smits van Burgst 1919; Mackauer & Starý 1967); **North Korea** (Starý et al. 2002b); **Norway** (Mjøs et al. 2024); **Pakistan** (Starý & Ghosh 1983); **Palestine** (Rosen 1966; Mackauer & Starý 1967; Rosen 1967, 1969; Avidov & Harpaz 1969; Starý 1976a, 1999a; Mescheloff & Rosen 1990a; Davidian 2017); **Poland** (Niezabitowski 1910; Mackauer & Starý 1967; Kierych 1975, 1980; Barczak 1988, 1990, 1991b; Wiackowski & Wiackowska 1996; Wiackowski et al. 1997, 2001; Huflejt 1997; Barczak et al. 1999, 2005, 2014; Wiackowski & Wiackowska 2000; Tran & Piekarska-Boniecka 2017); **Portugal** (Starý 1976a, 1999a; Costa 1988; Costa & Starý 1988; Cecilio 1996; Cecilio & Ilharco 2002; Borges et al. 2005; Havelka et al. 2012); **Romania** (Starý 1974c; Mustata 1986; Feraru & Mustata 2004; Prelipcean et al. 2004; Barnea & Mustata 2007); **Russia** (Starý 1961h, 1965a, 1974c, 1999a; Mackauer & Starý 1967; Mackauer 1968c; Davidian 2007, 2017, 2019b; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian & Ruchin 2023); **Saudi Arabia** (Asiry 2015); **Serbia** (Ferrière & Voukassovitch 1928; Mackauer & Starý 1967; Starý 1974c; Tomanović et al. 1998a, 1999b, 2004b, 2006a, 2007a, 2009a, 2012, 2018; Žikić et al. 2000, 2012; Tomanović & Brajković 2001; Kavallieratos et al. 2004, 2008b, 2010, 2013, 2016; Havelka et al. 2012; Plećaš et al. 2023); **Slovakia** (Starý 1977, 1989a; Starý & Lukáš 2009; Ferrer-Suay et al. 2017); **Slovenia** (Starý 1999a; Kos et al. 2008, 2009a, 2012; Tomanović et al. 2018); **South Korea** (Kim 2026); **Spain** (Quilis-Pérez 1931a, 1931b; Ceballos 1956; Mackauer 1960a, 1968a; Mackauer & Starý 1967; Starý 1974c, 1976a; Baixeras Almela & Michelena Saval 1983; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Tizado & Núñez-Perez 1991; Tizado Morales et al. 1992; Aguirre Segura & Tizado Morales 1993; Michelena et al. 1994, 1998, 2004; Sanchis et al. 1995, 2000; Suay Cano & Michelena Saval 1998; Nieves-Aldrey et al. 2003; Lumbierres et al. 2005; Hermoso de Mendoza et al. 2008; Pons et al. 2011, 2013, 2018; Havelka et al. 2012; Michelena Saval & Martínez De Murguía 2012); **Sweden** (Mackauer & Starý 1967); **Switzerland** (Mackauer & Starý 1967; Sandrock et al. 2010; Schar & Vorburger 2013; Parreño et al. 2017; Tomanović et al. 2018); **Syria** (Starý 1976a; Rakhshani et al. 2019); **Tajikistan** (Ataeva 1961; Starý 1965a, 1967a, 1974c, 1979a, 1999a; Davidian 2017); **Tunisia** (Boukhris-Bouhachem 2011; Zouari et al. 2018; Behi et al. 2019; Rakhshani et al. 2019); **Türkiye** (Starý 1976a, 1981b; Erkin 1983; Karaat & Goven 1986; Kiran 1994; Atakan & Ozgur 1996; Yasarakinci & Hincal 2000; Ölmez & Ulusoy 2003; Aslan et al. 2004; Uysal et al. 2004; Güz & Kılınçer 2005; Çetin Erdoğan et al. 2008; Havelka et al. 2012; Satar et al. 2014, 2021; Akar & Çetin Erdoğan 2017; Davidian 2017; Kök et al. 2017; Bayram et al. 2018; Rakhshani et al. 2019; Kök et al. 2020; Alaserhat et al. 2021); **Ukraine** (Ivanov 1927; Meyer 1927; Telenga 1950; Starý 1961h, 1965a, 1974c, 1976a, 1999a; Kaliuzhna 2013a; Kaliuzhna & Zubenko 2013; Kaliuzhna 2017b, 2019a, 2019b); **United Arab Emirates** (Starý et al. 2014b; Rakhshani et al. 2019); **United Kingdom** (Marshall 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Pontin 1960; Mackauer 1960a; Mackauer & Starý 1967; Starý 1974c; Belshaw & Quicke 2002; Müller et al. 1999; van Veen et al. 2008; Havelka et al. 2012); **USA** (BOLD:AAH7398); **Uzbekistan** (Luzhetzki 1960; Starý 1965a, 1974c, 1979a, 1999a; Daminova et al. 2001; Aripov 2003; Daminova 2007).

***Remarks.*** Associations of *L. fabarum* with *Uroleucon* aphids need confirmation. The older names *Misaphidius aphidiperda* Rondani, 1877 and *Aphidius monilicornis* Thomson, 1895, are not available because their interpretation is problematic since no types have been available for study.

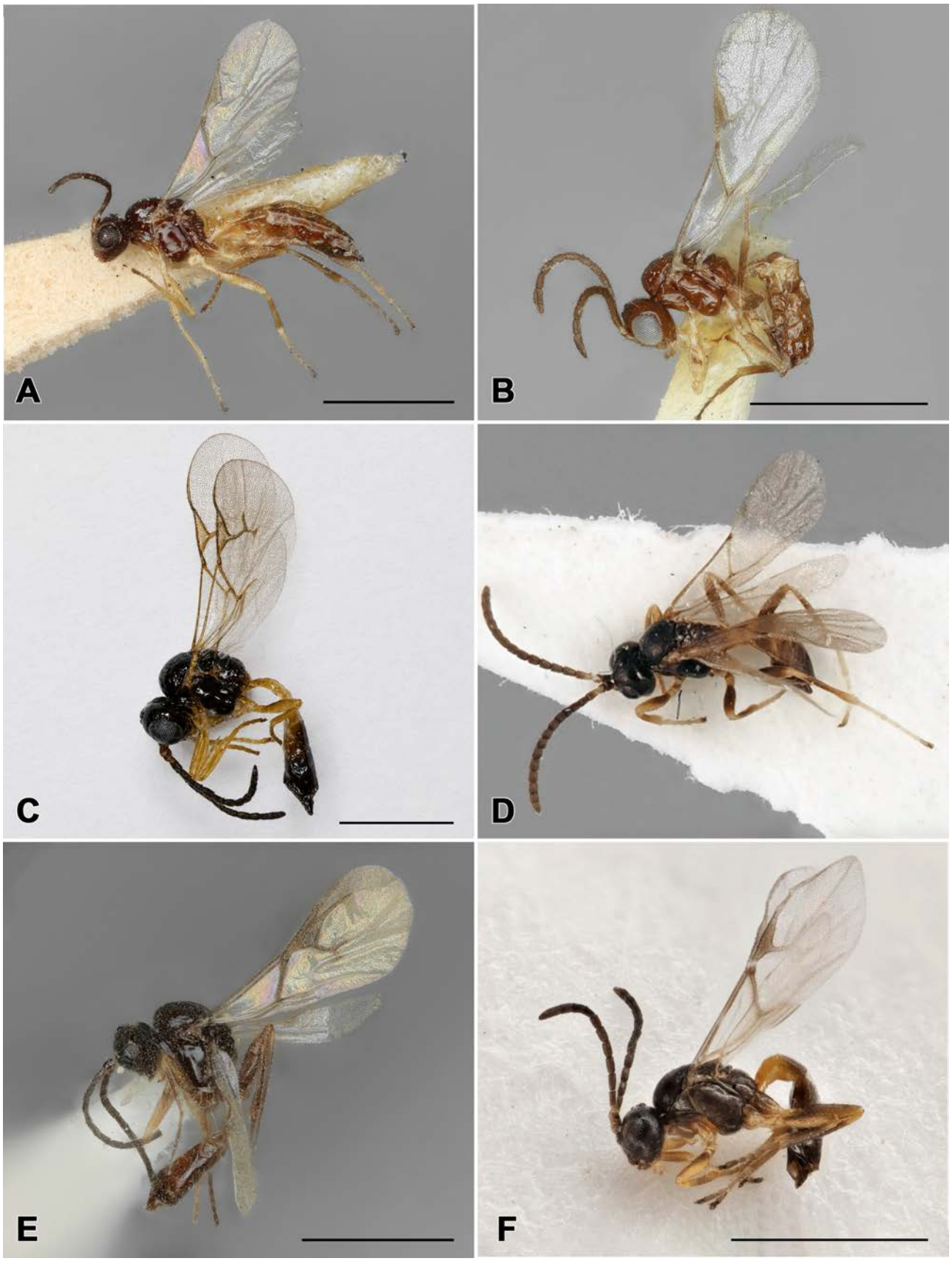



**Figure 28.** Species of the genus *Lysiphlebus* Förster, 1863. **A.** *Lysiphlebus coquilletti* Ashmead, 1889 – Lectotype (= *L. testaceipes*), USNM; **B.** *Lysiphlebus cucurbitaphidis* Ashmead, 1889 – Lectotype (= *L. testaceipes*), USNM. **C.** *Lysiphlebus desertorum* Starý, 1965 – Holotype, IECA; **D.** *Lysiphlebus dissolutus* (Nees, 1811) – Finland, ZMHF; **E.** *Lysiphlebus distinctus* Mackauer, 1960 – Holotype, USNM; **F.** *Lysiphlebus fabarum* (Marshall, 1896) – Netherlands, RMNH. Scale bar: 1 mm.

### *Lysiphlebus flavidus* Gahan, 1911 [Fig. 29A]

*Lysiphlebus flavidus* Gahan, 1911a:186. Lectotype ♀ (after Mackauer 1968a) (USNM). – USA.

***Hosts.*** ***Aphis debilicornis*** (Gillette & Palmer) (Smith 1944; Marsh 1979); ***Aphthargelia symphoricarpi*** (Thomas) (Gahan 1911a; Mackauer 1960e; Mackauer & Starý 1967; Marsh 1979); ***Cedoaphis incognita*** Hottes & Frison (Pike et al. 1996, 2000).

***Distribution.*** **USA** (Gahan 1911a; Smith 1944; Muesebeck & Walkley 1951; Mackauer 1960e; Mackauer & Starý 1967; Pike et al. 1996, 2000).

### *Lysiphlebus fritzmuelleri* Mackauer, 1960 [Fig. 29B]

*Lysiphlebus fritzmuelleri* Mackauer, 1960a:604. Holotype ♀, paratypes ♀♀ (SMF). – Germany.

***Hosts.*** ***Aphis craccae*** Linnaeus (Mackauer 1960a, 1962c; Starý 1961b, 1964d, 1965a, 1966c, 1967b, 1977, 1987a, 2006; Mackauer & Starý 1967; Starý & Němec 1985; Kavallieratos et al. 2004; Žikić et al. 2012; Davidian 2017; Ferrer-Suay et al. 2017); ***Aphis craccivora*** Koch (Davidian 2017); ***Aphis fabae*** Scopoli (Barnea 2007); ***Aphis*** sp. (Kavallieratos et al. 2004; Žikić et al. 2012); ***Dysaphis apiifolia*** (Theobald) (Wiackowski et al. 2001).

***Distribution.*** **Austria** (Tomanović et al. 2018); **Bulgaria** (Todorov 2008); **Czech Republic** (Starý 1961b, 1966c, 1977, 1987a, 1989a, 2006; Mackauer & Starý 1967; Starý & Němec 1985; Starý & Havelka 2008; Tomanović et al. 2018); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971; Tomanović et al. 2018); **Georgia** (Davidian 2017); **Germany** (Mackauer 1960a, 1962c; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Mackauer & Starý 1967; Polgár 1981, 1983, 1987); **Kazakhstan** (Asylova 1982); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Kavallieratos et al. 2004; Žikić et al. 2012; Tomanović et al. 2018); **Poland** (Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Romania** (Barnea 2007); **Russia** (Starý 1965a; Mackauer & Starý 1967; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Davidian & Ruchin 2023); **Serbia** (Tomanović et al. 1998a, 2018; Žikić et al. 2000, 2012; Tomanović & Brajković 2001; Kavallieratos et al. 2004); **Slovakia** (Starý 1977, 1989a; Starý & Lukáš 2009); **Sweden** (Mackauer 1962c; Mackauer & Starý 1967); **Türkiye** (Akar & Çetin Erdoğan 2017); **Turkmenistan** (Davidian 2017); **Ukraine** (Kaliuzhna & Zubenko 2013; Kaliuzhna 2019b).

### *Lysiphlebus hirticornis* Mackauer, 1960 [Fig. 29D]

*Lysiphlebus hirticornis* Mackauer, 1960a:606. Holotype ♀ (CNC), paratypes ♀♀ ♂♂ (CNC, SMF, USNM). – Germany.

**Syn.:** *Lysiphlebus safavii* Starý, 1985.

***Hosts.*** ***Aphis fabae*** Scopoli (Starý 1985); ***Metopeurum fuscoviride*** Stroyan (Mackauer 1960a; Starý 1961b, 1962c, 1964d, 1966c, 1979a, 1987a, 2006; Mackauer & Heie 1965; Mackauer & Starý 1967; Starý et al. 1971; Starý & Juchnevič 1978; Kierych 1980; Weisser 2000; Mackauer & Völkl 2002; Kavallieratos et al. 2004; Mackauer & Völkl 2005; Barnea 2007; Barnea & Mustata 2007; Todorov 2008; Nyabuga et al. 2009, 2011, 2012a, 2012b; Žikić et al. 2012; Davidian 2017); ***Metopeurum matricariae*** Bozhko (Starý & Juchnevič 1978; Starý 1979a).

***Distribution.*** **Belgium** (Tomanović et al. 2018); **Bulgaria** (Todorov 2008); **Czech Republic** (Starý 1961b, 1966c, 1987a, 1989a, 2006; Mackauer & Starý 1967; Tomanović et al. 2018); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Tomanović et al. 2018); **France** (Starý et al. 1971, 1977a); **Germany** (Mackauer 1960a, 1962c, 1985; Mackauer & Starý 1967; Hübner 2001; Mackauer & Völkl 2002; Belokobylskij et al. 2003; Nyabuga et al. 2010, 2011, 2012b; Tomanović et al. 2018); **Hungary** (Polgár 1983); **Kazakhstan** (Starý & Juchnevič 1978; Starý 1979a); **Moldova** (Talitzky & Kuslitzky 1990); **Mongolia** (Starý 1979a; Davidian 2017); **Netherlands** (Mackauer 1968a); **Norway** (Mjøs et al. 2024); **Poland** (Kierych 1980; Huflejt 1997; Tran & Piekarska-Boniecka 2017); **Romania** (Barnea 2007); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a, 2018; Kavallieratos et al. 2004; Žikić et al. 2012); **Slovakia** (Starý 1989a); **Spain** (Tizado & Núñez-Perez 1991); **Sweden** (Mackauer & Starý 1967); **Tajikistan** (Davidian 2017); **Ukraine** (Kaliuzhna 2013b, 2019a, 2019b).

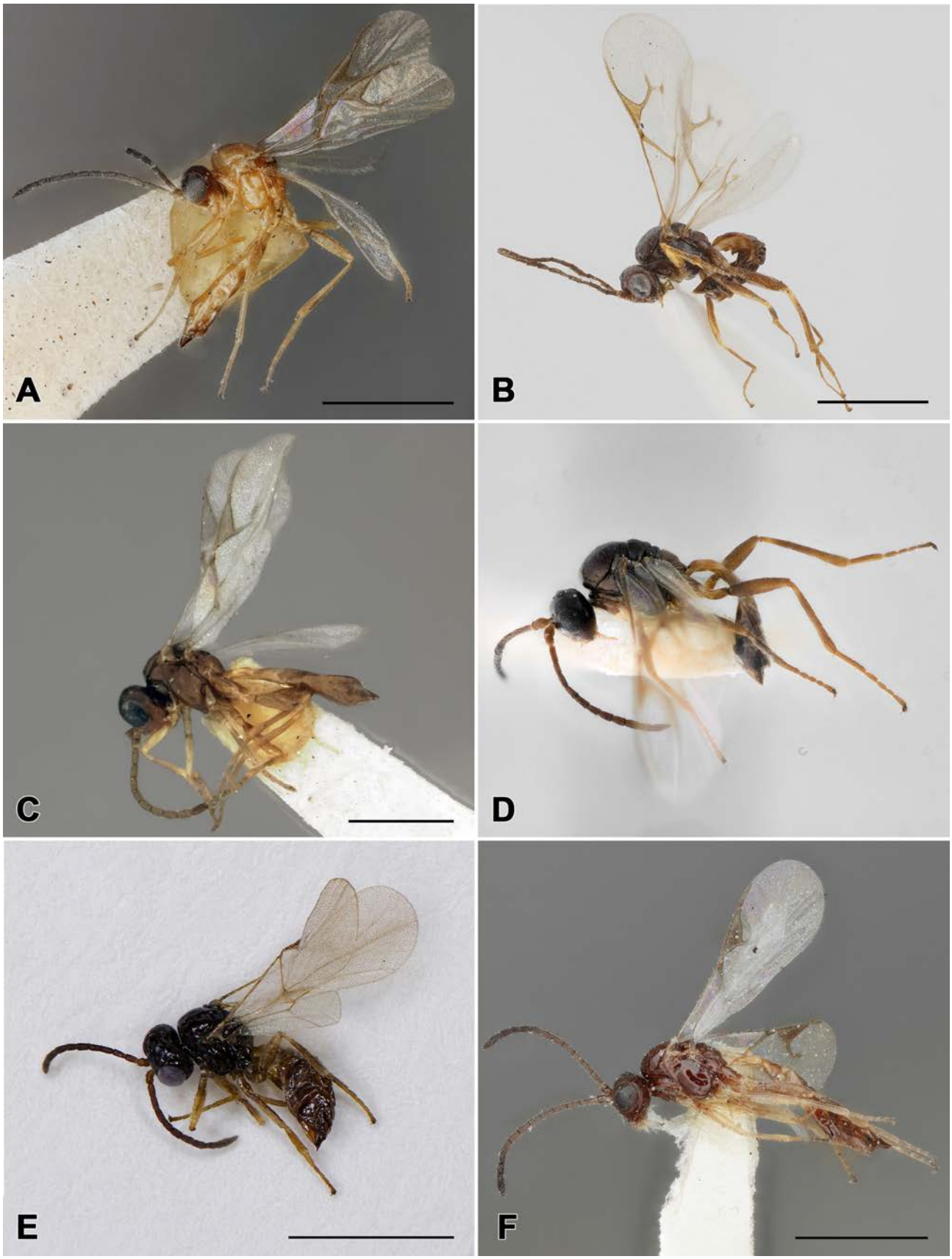



**Figure 29.** Species of the genus *Lysiphlebus* Förster, 1863. **A.** *Lysiphlebus flavidus* Gahan, 1911 – Lectotype, USNM; **B.** *Lysiphlebus fritzmuelleri* Mackauer, 1960 – Serbia, DPPZ. **C.** *Lysiphlebus gossypii* Ashmead, 1889 – Lectotype (= *L. testaceipes*), USNM; **D.** *Lysiphlebus hirticornis* Mackauer, 1960 – Holotype, CNC; **E.** *Lysiphlebus hispanus* Starý, 1973 – Holotype (= *L. desertorum*), IECA; **F.** *Lysiphlebus knowltoni* (Smith, 1944) – Holotype, USNM. Scale bar: 1 mm.

### *Lysiphlebus kerzhneri* Davidian, 2013

*Lysiphlebus kerzhneri* Davidian, 2013:32. Holotype ♀ (ZISP). – Mongolia.

***Host.*** Unknown.

***Distribution.*** **Mongolia** (Davidian 2013, 2016c, 2017).

### *Lysiphlebus kipyatkovi* Davidian, 2013

*Lysiphlebus kipyatkovi* Davidian, 2013:33. Holotype ♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2013).

### *Lysiphlebus koraiensis* Starý, 2002

*Lysiphlebus koraiensis* Starý [in Starý et al.], 2002b:206. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – North Korea.

***Hosts.*** ***Aphis craccivora*** Koch, ***Megoura crassicauda*** Mordvilko (Starý et al. 2002b).

***Distribution.*** **North Korea** (Starý et al. 2002b).

### *Lysiphlebus knowltoni* (Smith, 1944) [Fig. 29F]

*Aphidius knowltoni* Smith, 1944:80. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, UAES, NCSU). – USA.

***Hosts.*** ***Artemisaphis artemisicola*** (Williams) (Smith 1944; Mackauer 1960e; Mackauer & Starý 1967; Marsh 1979); ***Microsiphoniella acophorum*** (Smith & Knowlton) (Smith 1944; Marsh 1979); ***Myzus cerasi*** (Fabricius) (Gilmore 1960).

***Distribution.*** **USA** (Smith 1944; Muesebeck & Walkley 1951; Gilmore 1960; Mackauer 1960e).

### *Lysiphlebus meridionalis* Ashmead, 1894

*Lysiphlebus meridionalis* Ashmead [in Riley et al.], 1894:137. Syntype ♀ (uncertain). – St. Vincent.

***Host.*** Unknown.

***Distribution.*** **Grenada** (Ashmead 1900b); **St. Vincent** (Riley et al. 1894; Szépligeti 1904; Mackauer 1960e).

***Remarks.*** *Species inquirenda*.

### *Lysiphlebus orientalis* Starý & Rakhshani, 2010 [Fig. 30C]

*Lysiphlebus orientalis* Starý & Rakhshani [in Starý et al.], 2010b:182. Holotype ♀ (USNM), paratypes ♀♀ ♂ (IZAS, FBUB, DPPZ). – China.

***Hosts.*** ***Aphis craccivora*** Koch (Petrović et al. 2013; Kavallieratos et al. 2016; Tomanović et al. 2018); ***Aphis fabae*** Scopoli (Petrović et al. 2013; Tomanović et al. 2018); ***Aphis fabae cirsiiacanthoidis*** Scopoli (Petrović et al. 2013); ***Aphis glycines*** Matsumura (Starý et al. 2010b; Petrović et al. 2013; Tomanović et al. 2018); ***Aphis gossypii*** Glover, ***Aphis hederae*** Kaltenbach (Petrović et al. 2013; Tomanović et al. 2018); ***Aphis nasturtii*** Kaltenbach (Tomanović et al. 2018); ***Aphis schneideri*** (Börner), ***Aphis*** spp. (Petrović et al. 2013; Tomanović et al. 2018).

***Distribution.*** **China** (Starý et al. 2010b; Tomanović et al. 2018); **Russia** (Davidian 2017, 2019b; Davidian & Manukyan 2024); **Serbia** (Petrović et al. 2013; Kavallieratos et al. 2016; Tomanović et al. 2018); **South Korea** (Choi & Kim 2018).

***Remarks.*** According to the short diagnosis and fig. 3 (in Choi & Kim 2018), the record of *L. orientalis* from South Korea refers to *Lysiphlebia japonica.*

### *Lysiphlebus shaanxiensis* Chou & Xiang, 1982

*Lysiphlebus shaanxiensis* Chou & Xiang, 1982:43. Holotype ♀, paratypes ♀♀ ♂♂ (NWAFU). – China

***Hosts.*** ***Aphis craccivora*** Koch (Zheng et al. 1985); ***Aphis cytisorum*** Hartig (Chou & Xiang 1982; Wei et

al. 2005); ***Aphis farinosa*** Gmelin (Zheng et al. 1985); ***Aphis gossypii*** Glover (Chou & Xiang 1982; Zheng et al. 1985; Wei et al. 2005); ***Aphis medicaginis*** Koch (Chou & Xiang 1982).

***Distribution.*** **China** (Chou & Xiang 1982; Zheng et al. 1985; Chen & Shi 2001).

### *Lysiphlebus testaceipes* (Cresson, 1880) [Fig. 30E]

*Trioxys testaceipes* Cresson, 1880:208. Lectotype ♀ (after Cresson 1916) (USNM). – USA.

**Syn.:** *Praon viburnaphis* Fitch, 1855; *Trioxys fuscatus* Cresson, 1865; *Aphidius citraphis* Ashmead, 1880; *Adialytus maidaphidis* Garman, 1885; *Aphidaria basilaris* Provancher, 1888; *Aphidius flavicoxa* Ashmead, 1888; *Lysiphlebus abutilaphidis* Ashmead, 1889 [Fig. 27A]; *Lysiphlebus baccharaphidis* Ashmead, 1889 [Fig. 27C]; *Lysiphlebus citraphis* Ashmead, 1889; *Lysiphlebus coquilletti* Ashmead, 1889 [Fig. 28A]; *Lysiphlebus cucurbitaphidis* Ashmead, 1889 [Fig. 28B]; *Lysiphlebus eragrostaphidis* Ashmead, 1889; *Lysiphlebus gossypii* Ashmead, 1889 [Fig. 29C]; *Lysiphlebus minutus* Ashmead, 1889 [Fig. 30B]; *Lysiphlebus myzi* Ashmead, 1889; *Lysiphlebus persicaphidis* Ashmead, 1889 [Fig. 30D]; *Lysiphlebus piceiventris* Ashmead, 1889; *Lysiphlebus tritici* Ashmead, 1889; *Aphidius persiaphis* Cook, 1891; *Aphidius chrysoaphidis* Smith, 1944.

***Hosts.*** ***Acyrthosiphon bidenticola*** Smith (Starý 1974c); ***Acyrthosiphon caraganae*** (Cholodkovsky) (Davidian 2017); ***Acyrthosiphon gossypii*** Mordvilko (Chaouche & Laamari 2015); ***Acyrthosiphon lactucae*** (Passerini) (Pike et al. 1996, 2000); ***Acyrthosiphon macrosiphum*** (Wilson) (Pike et al. 2000); ***Acyrthosiphon pisum*** (Harris) (Pike et al. 2000; Sadat et al. 2019); ***Anoecia corni*** (Fabricius) (Pike et al. 2000; Pons et al. 2018); ***Aphis acaenovinae*** (Starý & Carver 1980; Carver & Franzmann 2001); ***Aphis althaeae*** (Nevsky) (Tomanović et al. 2018); ***Aphis arbuti*** Ferrari (Starý et al. 1988a, 1988b; Tomanović et al. 2018); ***Aphis asclepiadis*** Fitch (Mackauer 1960e); ***Aphis astragali*** Ossiannilsson (Laamari et al. 2012); ***Aphis aurantii*** Boyer de Fonscolombe (Essig 1911; Wolcott 1922, 1936, 1948, 1955; Miller 1928; Smith 1944; Muesebeck & Walkley 1951; Mackauer 1960e; Johnson & Russell 1962; Mackauer & Starý 1967; Starý 1967a, 1968e, 1974c, 1981a, 1995c; Starý et al. 1975, 1985a, 1987, 1988a, 1988b, 1996, 2014c; Tremblay et al. 1980; Ippolito & Parenzan 1982; Tremblay & Barbagallo 1983; Tremblay 1983b, 1984; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Costa & Starý 1988; Starý & Cermeli 1989; Suay Cano et al. 1992; Aguirre Segura & Tizado Morales 1993; Melia 1993; Michelena et al. 1994; Michelena Saval & Sanchis Segovia 1997b; Suay Cano & Michelena Saval 1998; Kavallieratos & Lykouressis 1999a; Tomanović 2000; Carver & Franzmann 2001; Kavallieratos et al. 2001, 2004, 2005b, 2016; Miller et al. 2002; Tomanović et al. 2009a, 2018; Boukhris-Bouhachem 2011; Yoldaş et al. 2011; Žikić et al. 2012; Pons et al. 2018; Bulman et al. 2021; Labdaoui et al. 2026); ***Aphis ballotae*** Passerini (Žikić et al. 2015; Gagui et al. 2023); ***Aphis boydstoni*** Pike (Pike et al. 2004); ***Aphis brunnea*** Ferrari (Chaouche & Laamari 2015); ***Aphis canae*** Williams (Pike et al. 2000); ***Aphis ceanothi*** Clarke (Pike et al. 2000, 2004); ***Aphis cercocarpi*** Gillette & Palmer (Pike et al. 1996, 2000); ***Aphis chloris*** Koch (Costa & Starý 1988; Starý et al. 1988a, 1988b); ***Aphis chrysothamni*** Wilson (Smith 1944; Mackauer 1960e; Mackauer & Starý 1967; Hollingbery et al. 2012); ***Aphis citricidus*** (Kirkaldy) (Starý & Cermeli 1989; Bujadoux & Caruana 1995; Yokomi & Tang 1996; Ravelo & Fernández-Triana 1997; Michaud 1999; Michaud & Browning 1999; Miller et al. 2002; Hermoso de Mendoza et al. 2008; Cocco et al. 2009; Zamora-Mejías et al. 2010, 2011; Starý et al. 2014c; Miller 2019); ***Aphis clematidis*** Koch (Tomanović et al. 2018); ***Aphis confusa*** Walker (Starý et al. 1988a, 1988b); ***Aphis coreopsidis*** (Thomas) (Starý 1974c, 1981a, 1983d; Starý & Remaudière 1982; Starý et al. 1988b, 2007, 2014c; Starý & Cermeli 1989; Zamora-Mejías et al. 2010); ***Aphis cornifoliae*** Fitch (Essig 1926; Mackauer & Starý 1967); ***Aphis craccae*** Linnaeus (Starý et al. 1988a, 1988b); ***Aphis craccivora*** Koch (Essig 1926; Swezey & Bryan 1928; Smith 1944; Muesebeck & Walkley 1951; Mackauer 1960e; Schlinger & Hall 1960a; Beardsley 1961; Mackauer & Starý 1967; Starý 1967a, 1974c, 1976a, 1981a, 1995c; Ramaseshiah et al. 1969; Tremblay et al. 1980; Bennett 1985; Starý et al. 1987, 1988a, 1988b, 1993a, 2004; Starý & Cermeli 1989; Suay Cano & Michelena Saval 1998; Kavallieratos & Lykouressis 1999a; Pike et al. 2000; Carver & Franzmann 2001; Kavallieratos et al. 2001, 2004, 2005b, 2010, 2016; Miller et al. 2002; Michelena et al. 2004; Pons et al. 2004, 2018; Lumbierres et al. 2005; Rakhshani et al. 2005a; Tomanović et al. 2009a, 2018; Laamari et al. 2011, 2012; Yoldaş et al. 2011; Chaouche & Laamari 2015; Žikić et al. 2015; Davidian 2017; Miller 2019; Sadat et al. 2019; Kök et al. 2020; Bulman et al. 2021; Akrich et al. 2025); ***Aphis cuscutae*** Davis (Essig 1926; Mackauer & Starý 1967); ***Aphis cytisorum*** Hartig (Smith 1944); ***Aphis euphorbiae*** Kaltenbach (Laamari et al. 2011,

2012); ***Aphis fabae*** Scopoli (Ogilvie 1928; Mackauer 1960e; Mackauer & Starý 1967; Muesebeck 1967; Starý 1974c, 1976a, 1977, 1989b, 1995c; Starý & Remaudière 1977, 1982; Starý et al. 1985a, 1988a, 1988b, 1993a, 1996, 2004; Carroll & Hoyt 1986; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Costa & Starý 1988; Suay Cano et al. 1992; Michelena et al. 1994; Cecilio 1996; Weber et al. 1996; Suay Cano & Michelena Saval 1998; Pike et al. 2000; Kavallieratos et al. 2001, 2004; Cecilio & Ilharco 2002; Pons et al. 2004, 2018; Lumbierres et al. 2005; Nebreda et al. 2005; Delfino & Buffa 2008; Tomanović et al. 2009a, 2018; Laamari et al. 2011, 2012; Kos et al. 2012; Žikić et al. 2015; Davidian 2017; Kök et al. 2017; Ghelamallah et al. 2018; Sadat et al. 2019; Kök et al. 2020; Woolley et al. 2022; Gagui et al. 2023); ***Aphis fabae cirsiiacanthoidis*** Scopoli (Völkl 1989; Völkl & Mackauer 1993; Tomanović et al. 2018); ***Aphis fabae mordvilkoi*** Börner & Janisch (Batulla & Robinson 1984; Kök et al. 2020); ***Aphis farinosa*** Gmelin (Smith 1944; Mackauer 1960e; Mackauer & Starý 1967; Batulla & Robinson 1984); ***Aphis filifoliae*** (Gillette & Palmer) (Pike et al. 2000); ***Aphis forbesi*** Weed (Mackauer & Starý 1967; Rabasse et al. 2001; Araujo et al. 2013); ***Aphis frangulae*** Kaltenbach (Costa & Starý 1988; Suay Cano et al. 1992); ***Aphis galiiscabri*** Schrank (Tomanović et al. 2018); ***Aphis glycines*** Matsumura (Pike et al. 2007; Costamagna et al. 2008; Noma & Brewer 2008); ***Aphis gossypii*** Glover (Ashmead 1889; Riley & Howard 1890; Pergande 1894; Essig 1911; Wilson 1923; Essig 1926; Miller 1928; Muesebeck 1928; Ogilvie 1928; Illingworth 1929; Folsom & Bondy 1930; Goff & Tissot 1932; Loftin & Christenson 1933; Marcovitch 1935; Walker 1936; Wolcott 1936, 1948; Swezey 1937; Holdaway & Suechiro 1940; Bianchi 1941; Smith 1944; Waterston 1944; Bruner et al. 1945; MacGillivray & Spicer 1953; Newcomer 1958; Mackauer 1960e; Schlinger & Hall 1960a; Sekhar 1960; Beardsley 1961; Mackauer & Starý 1967; Starý 1967a, 1974c, 1981a, 1983d, 1995c; Rogers et al. 1972; Starý & Remaudière 1982; Batulla & Robinson 1984; Trumble & Oatman 1984; Starý et al. 1985a, 1988a, 1988b, 1993a, 1996, 2014c; Carroll & Hoyt 1986; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Costa & Starý 1988; Starý & Cermeli 1989; Finlayson 1990; Hardee et al. 1990; Shijko et al. 1991; Steinberg et al. 1993; Weathersbee & Hardee 1993; Michelena et al. 1994; Le Ralec et al. 1996; Pike et al. 1996, 2000; Michelena Saval & Sanchis Segovia 1997b; Araujo & Moraes 1998; Kavallieratos & Lykouressis 1999a; Sanchis et al. 2000; Kavallieratos et al. 2001, 2002a, 2004, 2005b, 2010, 2016; Rabasse et al. 2001; Rodrigues & Bueno 2001; Imenes et al. 2002; Messing & Klungness 2002; Pons et al. 2004, 2018; Boschi et al. 2005; Lumbierres et al. 2005; Delfino & Buffa 2008; Ceballos et al. 2009; Tomanović et al. 2009a, 2018; Macedo et al. 2010; Zamora-Mejías et al. 2010; Ben Halima 2011; Boukhris-Bouhachem 2011; Laamari et al. 2011, 2012; Yoldaş et al. 2011; Derocles et al. 2012; Hermoso de Mendoza et al. 2012; Chaouche & Laamari 2015; Žikić et al. 2015; Ayadi et al. 2017; Davidian 2017; Bayram et al. 2018; Ghelamallah et al. 2018; Zouari et al. 2018; Behi et al. 2019; Miller 2019; Sadat et al. 2019; Kök et al. 2020; Labdaoui et al. 2026); ***Aphis gregalis*** Knowlton (Smith 1944; Mackauer 1960e; Mackauer & Starý 1967); ***Aphis hederae*** Kaltenbach (Mackauer 1960e; Muesebeck 1967; Schlinger & Hall 1960a; Mackauer & Starý 1967; Ippolito & Parenzan 1982; Starý 1983d, 1995c; Starý et al. 1985a, 1988a, 1988b, 2004, 2007; Michelena Saval & Oltra Moscardo 1987; Finlayson 1990; Suay Cano et al. 1992; Pike et al. 2000; Cecilio & Ilharco 2002; Pons et al. 2004, 2018; Lumbierres et al. 2005; Tomanović et al. 2018; Sadat et al. 2019); ***Aphis hermistonii*** Wilson (Pike et al. 2000); ***Aphis illinoisensis*** Shimer (Starý 1974c, 1981a; Starý & Remaudière 1982; Starý et al. 1988b, 2014c; Starý & Cermeli 1989; Laamari & Cœur d'Acier 2010; Zamora-Mejías et al. 2010; Havelka et al. 2011; Laamari et al. 2012; Tomanović et al. 2018; Zouari et al. 2018; Sadat et al. 2019); ***Aphis intybi*** Koch (Starý 1976a; Starý et al. 1988a); ***Aphis lugentis*** Williams (Smith 1944; Starý & Remaudière 1982; Pike et al. 1996, 2000); ***Aphis lupini*** Gillette & Palmer (Pike et al. 2000); ***Aphis lupoi*** Barbagallo & Stroyan (Pons et al. 2018); ***Aphis maculatae*** Oestlund (Starý & Remaudière 1977; Batulla & Robinson 1984); ***Aphis marthae*** Essig (Starý et al. 1993a; Starý 1995c); ***Aphis medicaginis*** Koch (Sanderson 1906; Swezey 1926a; Swezey & Bryan 1928; Smith 1944; Mackauer 1960e; Schlinger & Hall 1960a; Beardsley 1961); ***Aphis nasturtii*** Kaltenbach (MacGillivray & Spicer 1953; Shands et al. 1955; Mackauer & Starý 1967; González & Michelena 1987; Starý et al. 1988b; Suay Cano & Michelena Saval 1998); ***Aphis neogillettei*** Palmer (Smith 1944; Mackauer 1960e; Mackauer & Starý 1967; Batulla & Robinson 1984; Starý & Remaudière 1977; Pike et al. 1996, 2000); ***Aphis nepetae*** Kaltenbach (Starý et al. 1988b); ***Aphis nerii*** Boyer de Fonscolombe (Smith 1944; Mackauer 1960e; Schlinger & Hall 1960a; Mackauer & Starý 1967; Starý 1974c, 1976a, 1981a, 1983d, 1995c; Baixeras Almela & Michelena Saval 1983; Starý et al. 1985a, 1987, 1988a, 1988b, 2007, 2014c;

González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Costa & Starý 1988; Starý & Cermeli 1989; Suay Cano et al. 1992; Cecilio 1996; Pike et al. 1996, 2000; Carver & Franzmann 2001; Kavallieratos et al. 2001, 2004; Cecilio & Ilharco 2002; Miller et al. 2002; Pons et al. 2004; Vaz et al. 2004; Lumbierres et al. 2005; Delfino & Buffa 2008; Tomanović et al. 2009a, 2018; Zamora-Mejías et al. 2010; Laamari et al. 2011, 2012; Žikić et al. 2012; Colvin & Yeargan 2013; Mifsud et al. 2013; Aleosfoor & Mossadegh 2015; Chaouche & Laamari 2015; Ayadi et al. 2017; Kök et al. 2017; Pons et al. 2018; Sadat et al. 2019; Kök et al. 2020); ***Aphis nigratibialis*** Robinson (Pike et al. 2000); ***Aphis oenotherae*** Oestlund (Smith 1944; Mackauer 1960e; Mackauer & Starý 1967; Pike et al. 2000; Pons et al. 2018); ***Aphis oestlundi*** Gillette (Smith 1944; Mackauer 1960e; Mackauer & Starý 1967); ***Aphis parietariae*** Theobald (Costa & Starý 1988; Starý et al. 1988a, 1988b; Mineo et al. 1997; Tomanović et al. 2018); ***Aphis passeriniana*** (Del Guercio) (Pons et al. 2018); ***Aphis patagonica*** Blanchard (Starý 1995c); ***Aphis phaceliae*** Gillette & Palmer (Smith 1944; Mackauer 1960e; Mackauer & Starý 1967); ***Aphis picridis*** (Börner) (Starý et al. 1988a, 1988b); ***Aphis polygonata*** (Nevsky) (Starý et al. 1988a, 1988b; Pons et al. 2018); ***Aphis pomi*** De Geer (Sanderson 1900; Mackauer & Starý 1967; Michelena et al. 1994; Pike et al. 2000; Laamari et al. 2011, 2012; Mdellel & Ben Halima 2015; Zouari et al. 2018; Gagui et al. 2023, 2025); ***Aphis potentillae*** Nevsky (Laamari et al. 2012; Ayadi et al. 2017); ***Aphis punicae*** Passerini (González & Michelena 1987; Costa & Starý 1988; Starý et al. 1988a, 1988b; Starý 1989b; Suay Cano et al. 1992; Michelena et al. 1994, 2004; Suay Cano & Michelena Saval 1998; Cecilio & Ilharco 2002; Laamari et al. 2012; Kavallieratos et al. 2016; Ayadi et al. 2017; Kök et al. 2017; Tomanović et al. 2018; Kök et al. 2020; Gagui et al. 2023); ***Aphis ramona*** Swain (Mackauer & Starý 1967); ***Aphis ruborum*** (Börner) (Starý et al. 1988a, 1988b, 1993a; Starý 1995c; Kavallieratos et al. 2001, 2004; Pons et al. 2004, 2018; Tomanović et al. 2009a; Havelka et al. 2012); ***Aphis rumicis*** Linnaeus (Smith 1944; MacGillivray & Spicer 1953; Mackauer 1960e; Schlinger & Hall 1960a; Mackauer & Starý 1967; Starý 1976a; Starý et al. 1988a, 1988b, 2004; Pike et al. 1996, 2000); ***Aphis salicariae*** Koch (Pike et al. 2000); ***Aphis salviae*** Walker (Žikić et al. 2015); ***Aphis sambuci*** Linnaeus (Starý 1983d; Starý et al. 1988a; Pike et al. 1996, 2000; Žikić et al. 2015; Kavallieratos et al. 2016; Tomanović et al. 2018); ***Aphis sedi*** Kaltenbach (Costa & Starý 1988; Starý et al. 1988b); ***Aphis serpylli*** **Koch** (Pons et al. 2018); ***Aphis solitaria*** (Baker) (Starý & Remaudière 1982); ***Aphis solanella*** Theobald (Starý et al. 1988a, 1988b, 1996, 2007; Ayadi et al. 2017; Pons et al. 2018); ***Aphis spiraecola*** Patch (Beyer 1924; Miller 1928; Mackauer 1960e; Muesebeck 1967; Mackauer & Starý 1967; Starý 1967a, 1968e, 1974c, 1976a, 1981a, 1983d, 1995c; Starý et al. 1975, 1988a, 1988b, 1993a, 2004, 2007, 2014c; Tremblay et al. 1980; Costa & Starý 1988; Michelena et al. 1994; Pike et al. 1996, 2000; Michelena Saval & Sanchis Segovia 1997b; Pons et al. 2004, 2018; Delfino & Buffa 2008; Zamora-Mejías et al. 2010; Ruiz Torres 2011; Žikić et al. 2015; Labdaoui & Guenaoui 2018; Tomanović et al. 2018; Zouari et al. 2018; Behi et al. 2019; Kök et al. 2020; Labdaoui et al. 2026); ***Aphis umbrella*** (Börner) (Žikić et al. 2015; Pons et al. 2004, 2018); ***Aphis urticata*** Gmelin (González & Michelena 1987; Starý et al. 1988a, 1988b, 2004; Kavallieratos et al. 2001, 2004; Pons et al. 2004, 2018; Tomanović et al. 2009a); ***Aphis varians*** Patch (Mackauer & Starý 1967; Batulla & Robinson 1984; Carroll & Hoyt 1986; Pike et al. 1996, 2000); ***Aphis verbasci*** Schrank (Starý et al. 2004); ***Aphis viburniphila*** Patch (Batulla & Robinson 1984); ***Aphis viburni*** Scopoli, ***Aphis viticis*** Ferrari (Pons et al. 2018); ***Aphis*** spp. (Muesebeck & Walkley 1951; Schlinger & Hall 1960a; Starý 1981a, 1995c; Starý et al. 1985a, 2002b; Costa & Starý 1988; Suay Cano & Michelena Saval 1998; Pike et al. 2000; Kavallieratos et al. 2001, 2004; Cecilio & Ilharco 2002; Andorno et al. 2007; Kos et al. 2012; Žikić et al. 2015; Davidian 2017; Tomanović et al. 2018); ***Aphthargelia symphoricarpi*** (Thomas) (Batulla & Robinson 1984; Carroll & Hoyt 1986; Pike et al. 1996, 2000); ***Asiphonaphis pruni*** Wilson & Davis (Batulla & Robinson 1984); ***Aulacorthum solani*** (Kaltenbach) (Starý 1974c); ***Boernerina variabilis*** Richards (Pike et al. 2000); ***Brachycaudus cardui*** (Linnaeus) (Carroll & Hoyt 1986; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Starý et al. 1988a, 1988b; Pike et al. 1996, 2000; Michelena et al. 2004; Pons et al. 2004; Laamari et al. 2011, 2012; Žikić et al. 2015; Tomanović et al. 2023c); ***Brachycaudus helichrysi*** (Kaltenbach) (Starý 1974c, 1981a, 1995c; Starý & Remaudière 1982; Starý et al. 1988b, 1993a, 2004, 2014c; Pike et al. 1996, 2000; Moreno et al. 1999; Zamora-Mejías et al. 2010; Laamari et al. 2011, 2012); ***Brachycaudus persicae*** Passerini (Starý 1995c); ***Brachycaudus salicinae*** (Baixeras Almela & Michelena Saval 1983; Starý et al. 1988b); ***Brachycaudus schwartzi*** (Börner) (Starý 1995c); ***Brachycaudus tragopogonis*** (Kaltenbach) (Starý 1995c; Pike et al. 1996, 2000); ***Brachycaudus*** spp. (Starý et al. 1985a;

Pons et al. 2018); ***Brachycorynella asparagi*** (Mordvilko) (Angalet & Stevens 1977; Pike et al. 1996, 2000); ***Brachyunguis bonnevillensis*** (Knowlton) (Starý & Remaudière 1982); ***Brachyunguis harmalae*** Das (Gagui et al. 2023); ***Brachyunguis tamaricis*** (Lichtenstein) (Lumbierres et al. 2005; Žikić et al. 2015; Kavallieratos et al. 2016; Pons et al. 2018; Tomanović et al. 2018); ***Brachyunguis tetrapteralis*** (Cockerell) (Starý & Remaudière 1982); ***Braggia agathona*** (Hottes) (Mackauer & Starý 1967); ***Braggia deserticola*** Hille Ris Lambers (Starý & Remaudière 1982); ***Braggia eriogoni*** (Cowen) (Pike et al. 1996, 2000); ***Braggia urovaneta*** (Hottes) (Starý & Remaudière 1982); ***Braggia*** spp. (Starý & Remaudière 1982; Carroll & Hoyt 1986; Pike et al. 2000); ***Brevicoryne brassicae*** (Linnaeus) (Muesebeck 1928; Mackauer 1960e; Mackauer & Starý 1967; Pike et al. 2000; Uysal et al. 2004; Vaz et al. 2004; Starý et al. 2007); ***Capitophorus elaeagni*** (Del Guercio) (Batulla & Robinson 1984; Pike et al. 2000; Pons et al. 2018); ***Capitophorus hippophaes*** (Walker) (Žikić et al. 2015); ***Capitophorus inulae*** (Passerini) (Suay Cano & Michelena Saval 1998); ***Capitophorus xanthii*** (Oestlund) (Starý & Remaudière 1982); ***Carolinaia cyperi*** Ainslie (Starý 1974c, 1981a; Starý et al. 1988b); ***Cavariella aegopodii*** (Scopoli) (Starý et al. 1993a; Starý 1995c; Pike et al. 2000; Michelena et al. 2004; Pons et al. 2004, 2018; Lumbierres et al. 2005; Žikić et al. 2015); ***Cavariella pastinacae*** (Linnaeus) (Pike et al. 2000); ***Cavariella*** sp. (Starý 1974c, 1981a; Starý et al. 1988b); ***Cedoaphis*** sp. (Carroll & Hoyt 1986); ***Chaetosiphon fragaefolii*** (Cockerell) (Trumble & Oatman 1984; Pike et al. 2000); ***Chaitophorus populicola*** Thomas (Batulla & Robinson 1984; Pike et al. 2000); ***Chaitophorus viminalis*** Monell, ***Cinara chinookiana*** Hottes, ***Cinara*** sp. (Pike et al. 2000); ***Coloradoa bournieri*** Remaudière & Leclant (Pons et al. 2004, 2018; Lumbierres et al. 2005); ***Cryptomyzus ribis*** (Linnaeus) (Ashmead 1889; Riley & Howard 1890; Muesebeck 1928; Knowlton & Janes 1930; MacGillivray & Spicer 1953; Mackauer 1960e; Mackauer & Starý 1967); ***Diuraphis noxia*** (Mordvilko) (Gilstrap & McKinnon 1988; Feng et al. 1992; Starý 1995c; Pike et al. 1996, 1997b, 2000; Bosque-Pérez et al. 2002; Day 2005; Lee et al. 2005; Noma et al. 2005; Laamari et al. 2016b; Tomanović et al. 2018; Heddle et al. 2020; Ward et al. 2021b); ***Dysaphis apiifolia*** (Theobald) (Starý 1995c; Michelena et al. 2004; Starý et al. 2007); ***Dysaphis foeniculus*** (Theobald) (Chaouche & Laamari 2015); ***Dysaphis plantaginea*** (Passerini) (McConnell 1928; Mackauer & Starý 1967; Starý et al. 1985a, 1988b; Carroll & Hoyt 1986; Pike et al. 2000; Michelena et al. 2004; Laamari et al. 2012; Pons et al. 2018; Tomanović et al. 2018; Gagui et al. 2023, 2025); ***Dysaphis pyri*** (Boyer de Fonscolombe) (Michelena et al. 2004; Laamari et al. 2012); ***Dysaphis tulipae*** (Boyer de Fonscolombe), ***Dysaphis*** sp. (Laamari et al. 2012); ***Ericaphis*** sp., ***Eriosoma americanum*** (Riley), ***Eriosoma lanigerum*** (Hausmann) (Pike et al. 2000); ***Eucallipterus tiliae*** (Linnaeus), ***Greenidea ficicola*** Takahashi (Pons et al. 2018); ***Hayhurstia atriplicis*** (Linnaeus) (Hayhurst 1909a); ***Hyadaphis foeniculi*** (Passerini) (Pike et al. 2000); ***Hyalopterus pruni*** (Geoffroy) (Michelena et al. 2004; Laamari et al. 2012; Sadat et al. 2019); ***Hyperomyzus lactucae*** (Linnaeus) (Starý 1981a; Starý et al. 1988b); ***Hyperomyzus nigricornis*** (Knowlton) (Pike et al. 2000); ***Hysteroneura setariae*** (Thomas) (Muesebeck 1928; Wolcott 1936; Wadley 1937; Mackauer 1960e; Mackauer & Starý 1967; Starý 1974c, 1981a; Starý et al. 1988b, 2007, 2014c; Starý & Cermeli 1989; Miller et al. 2002; Zamora-Mejías et al. 2010; Miller 2019); ***Illinoia liriodendri*** (Monell) (Zuparko & Dahlsten 1993; Meseguer et al. 2024); ***Illinoia spiraea*** (MacGillivray) (Pike et al. 2000); ***Latgerina orizabaensis mexicanus*** Remaudière (Starý & Remaudière 1982); ***Lipaphis erysimi*** (Kaltenbach) (Paddock 1916; Britton 1917; Ogilvie 1928; Mackauer & Starý 1967; Ramaseshiah et al. 1969; French et al. 2001; Sadat et al. 2019; Ward et al. 2021a); ***Macchiatiella rhamni*** (Boyer de Fonscolombe) (Smith 1944; Mackauer 1960e); ***Macrosiphum creelii*** Davis (Essig 1926; Mackauer & Starý 1967); ***Macrosiphum euphorbiae*** (Thomas) (Provancher 1889; Riley & Howard 1890; Muesebeck 1928; Mackauer 1960e; Mackauer & Starý 1967; Trumble & Oatman 1984; Starý 1995c; Pike et al. 1996, 2000; Laamari et al. 2011, 2012); ***Macrosiphum gaurae*** (Williams) (Pike et al. 2000); ***Macrosiphum hellebori*** Theobald & Walton (Valenzuela et al. 2009); ***Macrosiphum mesosphaeri*** Tissot (Starý 1974c); ***Macrosiphum rosae*** (Linnaeus) (Riley & Howard 1890; Muesebeck 1928; Knowlton & Janes 1930; McLeod 1938; Cardona 1943; Mackauer 1960e; Mackauer & Starý 1967; Pons et al. 2018); ***Macrosiphum salviae*** Bartholomew (Starý 1974c, 1981a; Starý et al. 1988b, 2014c); ***Macrosiphum*** spp. (Riley & Howard 1890; Mackauer & Starý 1967; Pike et al. 2000); ***Melanaphis bambusae*** (Fullaway) (Smith 1944; Mackauer 1960e; Mackauer & Starý 1967; Pons et al. 2004, 2018; Lumbierres et al. 2005); ***Melanaphis sacchari*** (Zehntner) (Beardsley 1961; Mackauer & Starý 1967; Starý et al. 2007; Starý & Cermeli 1989); ***Metopolophium dirhodum***

(Walker) (Starý 1995c; Starý et al. 2007); ***Myzus ascalonicus*** Doncaster (Pike et al. 1996, 2000); ***Myzus cerasi*** (Fabricius) (Muesebeck 1928; Mackauer 1960e; Batulla & Robinson 1984; Pike et al. 2000; Michelena et al. 2004; Pons et al. 2018); ***Myzus certus*** (Walker) (Proverbs 1954; Mackauer & Starý 1967); ***Myzus lythri*** (Schrank) (Pons et al. 2018); ***Myzus ornatus*** Laing (Starý et al. 1993a; Starý 1995c); ***Myzus persicae*** (Sulzer) (Cook 1891; Swezey 1937; Smith 1944; Mackauer 1960e, 1968d; Schlinger & Hall 1960a; Mackauer & Starý 1967; Starý 1967a, 1981a, 1983d, 1995c; González & Michelena 1987; Starý et al. 1988a, 1988b, 1993a, 2007; Finlayson 1990; Michelena et al. 1994; Pike et al. 2000; Cecilio & Ilharco 2002; Andorno et al. 2007; Boukhris-Bouhachem 2011; Yoldaş et al. 2011; Laamari et al. 2011, 2012; Derocles et al. 2012; Chaouche & Laamari 2015; Ghelamallah et al. 2018; Zouari et al. 2018; Aparicio et al. 2019; Ward et al. 2021a); ***Myzus*** spp. (Starý 1995c; Pons et al. 2018); ***Nasonovia houghtonensis*** (Troop) (De Long & Jones 1926; Mackauer & Starý 1967); ***Nasonovia*** sp., ***Nearctaphis bakeri*** (Cowen), ***Nearctaphis californica*** Hille Ris Lamber, ***Nearctaphis clydesmithi*** Hille Ris Lambers (Pike et al. 1996); ***Nearctaphis crataegifoliae*** (Fitch) (Smulyan 1920; Mackauer & Starý 1967); ***Nearctaphis kachena*** (Hottes), ***Nearctaphis yohoensis*** Bradley, ***Neoceruraphis viburnicola*** (Gillette) (Pike et al. 2000); ***Neomyzus circumflexus*** (Buckton) (Sekhar 1960; Mackauer & Starý 1967); ***Neonasonovia*** sp. (Starý & Remaudière 1982); ***Neotoxoptera formosana*** (Takahashi) (Andorno et al. 2007); ***Obtusicauda*** sp. (Carroll & Hoyt 1986); ***Ovatus crataegarius*** (Walker) (Starý 1995c; Starý et al. 1993a); ***Patchiella reamuri*** (Kaltenbach) (Pons et al. 2018); ***Pentalonia nigronervosa*** Coquerel (Starý 1974c, 1981a; Starý et al. 1988b, 1996, 2014c; Stadler & Völkl 1991; Miller et al. 2002; Zamora-Mejías et al. 2010); ***Periphyllus hirticornis*** (Walker) (Pons et al. 2018); ***Phorodon humuli*** (Schrank) (Mackauer & Starý 1967; Pike & Starý 1996a; Pike et al. 1996, 2000; Wright & James 2001); ***Pleotrichophorus*** sp. (Knowlton & Janes 1930; Starý 1983d; Hollingbery et al. 2012); ***Protaphis middletonii*** (Thomas) (Essig 1926; Muesebeck 1928; Zimmerman 1948; Mackauer & Starý 1967; Pike et al. 1996, 2000; Davidian 2017); ***Pseudoepameibaphis tridentatae*** (Wilson), ***Pterocomma*** sp. (Pike et al. 2000); ***Rhodobium porosum*** (Sanderson) (Starý 1974c); ***Rhopalosiphoninus latysiphon*** (Davidson) (Starý 1974c, 1981a; Starý et al. 1988b); ***Rhopalosiphum cerasifoliae*** (Fitch) (Smith 1944; Mackauer 1960e; Mackauer & Starý 1967; Batulla & Robinson 1984; Pike et al. 2000); ***Rhopalosiphum enigmae*** Hottes & Frison (Pike et al. 2000); ***Rhopalosiphum maidis*** (Fitch) (Mackauer 1960e; Swezey 1926a; Frison 1927; Muesebeck 1928; Wildermuth & Walter 1932; Wadley 1937; Smith 1944; Holdaway & Nishida 1946; Schlinger & Hall 1960a; Beardsley 1961; Mackauer & Starý 1967; Jackson et al. 1970; Starý 1974c, 1981a, 1995c; Gilstrap et al. 1984; Bennett 1985; González & Michelena 1987; Starý et al. 1987, 1988a, 1988b, 1996, 2007; Starý & Cermeli 1989; Vinson & Scarborough 1991; Feng et al. 1992; Pike et al. 1996, 2000; Kavallieratos & Lykouressis 1999a; Carver & Franzmann 2001; Gonzáles et al. 2001; Kavallieratos et al. 2001, 2004, 2005b; Michelena et al. 2004; Chen et al. 2006; Ceballos et al. 2009; Tomanović et al. 2009a; Boukhris-Bouhachem 2011; Laamari et al. 2011, 2012; Yoldaş et al. 2011; Ayadi et al. 2017; Davidian 2017; Ward et al. 2021a); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Pike et al. 2000; Tomanović et al. 2018); ***Rhopalosiphum oxyacanthae*** (Schrank) (Mackauer & Starý 1967; Carroll & Hoyt 1986; Pike et al. 2000); ***Rhopalosiphum padi*** (Linnaeus) (Muesebeck 1928; Jackson et al. 1970; Starý & Remaudière 1982; Batulla & Robinson 1984; Starý et al. 1988a, 1988b, 2002b, 2007; Feng et al. 1992; Starý 1995c; Pike et al. 1996, 1997b, 2000; Carver & Franzmann 2001; Giles et al. 2003; Pons et al. 2004, 2018; Ronquim et al. 2004; Chen et al. 2006; Andorno et al. 2007; Ward et al. 2021b; dos Santos et al. 2022; Gagui et al. 2023); ***Schizaphis graminum*** (Rondani) (Riley & Howard 1890; Pergande 1902; Webster 1907; Phillips 1908; Webster 1909; Hunter 1910; Hewitt 1913; Ainslie 1926; Clausen 1935; Fenton & Fisher 1940; Fenton 1943; Wood 1958; Mackauer 1960e; Mackauer & Starý 1967; Jackson et al. 1970; Hight et al. 1972; Walker et al. 1973; Archer et al. 1974a; Ruth et al. 1975; Hamilton et al. 1982; Kring & Gilstrap 1983, 1984; Gilstrap et al. 1984; Smith et al. 1985; Gilstrap & McKinnon 1988; Grasswitz & Paine 1993a, 1993b; Starý 1995c; Starý et al. 1996, 2007; Pike et al. 2000; French et al. 2001; Rodrigues & Bueno 2001; Giles et al. 2003; Wei et al. 2005; Chen et al. 2006; Davidian 2017; dos Santos et al. 2022); ***Schizaphis pyri*** Shaposhnikov (Pons et al. 2018); ***Schizaphis scirpi*** (Passerini) (Žikić et al. 2015); ***Sipha flava*** (Forbes) (Starý 1981a; Starý et al. 1988b); ***Siphonatrophia cupressi*** (Swain) (Starý & Remaudière 1982; Lumbierres et al. 2015; Laamari et al. 2016a; Pons et al. 2018; Tomanović et al. 2018); ***Sitobion avenae*** (Fabricius) (Cresson 1880; Ashmead 1889; Treherne 1916; Muesebeck 1928; Mackauer 1960e; Mackauer & Starý 1967; Carroll & Hoyt 1986; Micha & Wyss 1996; Pike et al. 1996, 1997b, 2000; French et al. 2001; Starý

et al. 2007; Tomanović et al. 2018; dos Santos et al. 2022); ***Sitobion fragariae*** (Walker) (Mackauer & Starý 1967; Starý et al. 1994b; Starý 1995c; Khaladi et al. 2025); ***Sitobion luteum*** (Buckton) (Starý 1974c, 1981a; Starý et al. 1988b); ***Sitobion*** sp. (Riley & Howard 1890; Pike et al. 2000); ***Tinocallis kahawaluokalani*** (Kirkaldy) (Alverson & Allen 1992; Lumbierres et al. 2005; Pons et al. 2018); ***Tuberculatus columbiae*** Richards (Pike et al. 2000); ***Tuberculatus eggleri*** Börner (Lumbierres et al. 2005; Pons et al. 2018); ***Uroleucon ambrosiae*** (Thomas) (Schlinger & Hall 1960a; Mackauer & Starý 1967; Starý 1974c, 1981a; Starý et al. 1988b; Delfino & Buffa 2008); ***Uroleucon cirsii*** (Linnaeus) (Pike et al. 1996, 2000); ***Uroleucon compositae*** (Theobald) (Laamari et al. 2012); ***Uroleucon erigeronense*** (Thomas) (Starý 1974c, 1981a; Starý et al. 1988b); ***Utamphorophora commelinensis*** (Smith) (Starý 1974c, 1981a; Starý et al. 1988b).

***Distribution.*** **Algeria** (Laamari & Cœur d'Acier 2010; Havelka et al. 2011; Laamari et al. 2011, 2012, 2016a, 2016b; Mitrović et al. 2013; Chehma & Laamari 2014; Chaouche & Laamari 2015; Ghelamallah et al. 2018; Labdaoui & Guenaoui 2018; Tomanović et al. 2018; Rakhshani et al. 2019; Sadat et al. 2019; Gagui et al. 2023; Khaladi et al. 2024, 2025; Akrich et al. 2025; Gagui et al. 2025; Labdaoui et al. 2026); **Argentina** (Berta et al. 2002; Boschi et al. 2005; Andorno et al. 2007; Delfino & Buffa 2008); **Australia** (Starý & Carver 1980; Carver & Franzmann 2001; Valenzuela et al. 2009; Heddle et al. 2020; Ward et al. 2021b); **Belgium** (Alhmedi et al. 2006; Verheggen et al. 2009; Lopes et al. 2016); **Benin** (Mitrović et al. 2013; Tepa-Yotto et al. 2013a; Hofsvang et al. 2014; Tomanović et al. 2018); **Bermuda** (Ogilvie 1928; Waterston 1944; Mackauer 1960e; Hilburn et al. 1990; Davidian 2017); **Brazil** (Moreira 1919; Mackauer & Starý 1967; Murakami et al. 1984; Tavares 1996; Ronquim et al. 2004; Vaz et al. 2004; Sampaio et al. 2005; Zanini et al. 2006; Starý et al. 2007; Macedo et al. 2010; Ramalho et al. 2012; Araujo et al. 2013; Bortolotto et al. 2015; dos Santos et al. 2022); **Canada** (Treherne 1916; McLeod 1938; Beaulne 1942; Strickland 1952; MacGillivray & Spicer 1953; Mackauer & Starý 1967; Starý & Remaudière 1977; Batulla & Robinson 1984; Imenes et al. 2002; Olfert et al. 2002; Raworth et al. 2008); **Canary Islands** (Báez et al. 2001); **Colombia** (Adarve 1965; Mackauer & Starý 1967; Martínez-Chávez et al. 2019); **Chile** (Suzuki & Vargas 1980; Starý 1994, 1995c; Starý et al. 1993a, 1994b, 2014c; Derocles et al. 2012; Havelka et al. 2012; Tomanović et al. 2018); **China** (Zheng & Tang 1989; Chen & Shi 2001); **Costa Rica** (Mackauer & Starý 1967; Zamora-Mejías et al. 2010, 2011; Mitrović et al. 2013; Starý et al. 2014c; Zamora-Mejías & Hanson 2017; Tomanović et al. 2018); **Croatia** (Kavallieratos et al. 2004; Tomanović et al. 2009a, 2018); **Cuba** (Cresson 1865; Szépligeti 1904; Gahan 1911a; Bruner 1931; Loftin & Christenson 1933; Smith 1944; Bruner et al. 1945; Mackauer 1960e; Mackauer & Starý 1967; Starý 1967a, 1968e, 1974c, 1981a; Alayo 1970; Alayo 1973; Ravelo & Fernández-Triana 1997; Fernández-Triana & Portuondo 2001; Portuondo Ferrer & Fernández-Triana 2004; Ceballos et al. 2009; Starý et al. 2014c; Davidian 2017); **Czech Republic** (Starý 1989a, 2006); **Dominica** (Cocco et al. 2009); **Ecuador** (Starý et al. 2014c); **Egypt** (Laboratory population – Adly & El-Gantiry 2014); **El Salvador** (Mackauer & Starý 1967; Davidian 2017); **France** (Starý et al. 1975, 1977a, 1988a, 1988b; Starý 1976a, 1989b; Völkl 1989; Bujadoux & Caruana 1995 – Martinique; Rabasse et al. 2001; Starý et al. 2004; Derocles et al. 2012; Havelka et al. 2012; Mitrović et al. 2013; Tomanović et al. 2018); **Germany** (BOLD:AAG1226); **Greece** (Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2002a, 2004, 2005b, 2010, 2013, 2016; Tomanović et al. 2009a, 2018; Havelka et al. 2012; Mitrović et al. 2013); **Guadeloupe** (Starý et al. 1987); **Guam** (Miller et al. 2002; Miller 2019); **Guatemala** (Starý et al. 2014c); **Haiti** (Knight 1944; Narayanan et al. 1962; Mackauer & Starý 1967); **India** (Ramaseshiah et al. 1969; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Starý & Ghosh 1983; Dey & Akhtar 2007; Das & Chakrabarti 2023a); **Iran** (Rakhshani et al. 2005a, 2019; Fallahzadeh & Saghaei 2010; Aleosfoor & Mossadegh 2015); **Iraq** (Al-Hussainawy et al. 2019); **Italy** (Fulmek 1968; Tremblay et al. 1978, 1980; Ippolito & Parenzan 1982; Marullo 1985; Tremblay & Barbagallo 1983; Tremblay 1983b, 1984; Starý et al. 1988b; Bergamesco et al. 1995; Mineo et al. 1997; Mitrović et al. 2013; Tomanović et al. 2018, 2023c); **Kenya** (Mackauer & Starý 1967); **Lebanon** (BOLD:AAG1226); **Leeward Islands** (Mackauer & Starý 1967); **Libya** (Mitrović et al. 2013; Žikić et al. 2015; Tomanović et al. 2018; Rakhshani et al. 2019); **Madeira Islands** (Starý et al. 1996; Cecilio et al. 2004, 2009); **Malawi** (Woolley et al. 2022); **Malta** (Mifsud et al. 2013; Rakhshani et al. 2015b); **Mexico** (Muesebeck & Walkley 1951; Mackauer & Starý 1967; Muesebeck 1967; Starý & Remaudière 1982, 1988; Starý 1983d; Ruiz et al. 1990; Gaona Garcia et al. 2000; Coronado-Blanco et al. 2004; Coronado-Blanco 2011; Ferrer-Suay et al. 2013a; Alonso-Hernandez et al. 2014; Sánchez-García et al. 2015); **Montenegro** (Tomanović 2000; Kavallieratos et al. 2004, 2005b, 2013, 2016;

Žikić et al. 2012; Tomanović et al. 2018); **Moldova** (Davidian 2017); **New Zealand** (Accidental introduction – Ward 2026); **North Korea** (Starý et al. 2002b); **North Macedonia** (Tomanović et al. 2009a); **Pakistan** (Starý & Ghosh 1983); **Paraguay** (González Torres et al. 2018); **Peru** (de Huiza & Ortiz 1980; Redolfi de Huiza 1995); **Poland** (Tran & Piekarska-Boniecka 2017); **Portugal** (Costa & Starý 1988; Starý et al. 1988b, 2004; Cecilio 1994, 1996; Cecilio & Ilharco 2002; Borges et al. 2005; Havelka et al. 2012); **Puerto Rico** (Jones 1914; Wolcott 1922, 1924, 1936, 1941, 1948, 1955; Wadley 1937; Mackauer & Starý 1967; Yokomi & Tang 1996; Michaud 1999; Michaud & Browning 1999; Davidian 2017); **Russia** (Davidian 2017); **Serbia** (Žikić et al. 2015; Tomanović et al. 2018); **Slovenia** (Kos et al. 2012; Mitrović et al. 2013; Kavallieratos et al. 2016; Tomanović et al. 2018); **South Africa** (Moore 1913; Mackauer & Starý 1967); **Spain** (Baixeras Almela & Michelena Saval 1983; Starý et al. 1985a, 1988b, 2004; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Tizado & Núñez-Perez 1991; Tizado Morales et al. 1992; Aguirre Segura & Tizado Morales 1993; Melia 1993; Michelena et al. 1994, 2004; Michelena Saval & Sanchis Segovia 1997b; Suay Cano & Michelena Saval 1998; Moreno et al. 1999; Sanchis et al. 2000; Pons & Starý 2003; Pons et al. 2004, 2011, 2018; Lumbierres et al. 2005, 2007, 2011, 2015; Nebreda et al. 2005; Hermoso de Mendoza et al. 2008; Ruiz Torres 2011; Havelka et al. 2012; Hermoso de Mendoza et al. 2012; Mitrović et al. 2013; Tomanović et al. 2018; Aparicio et al. 2019); **Switzerland** (Mitrović et al. 2013); **Trinidad & Tobago** (Bennett 1985); **Tunisia** (Ben Halima 2011; Boukhris-Bouhachem 2011; Ayadi et al. 2017; Zouari et al. 2018; Behi et al. 2019); **Türkiye** (Uysal et al. 2004; Yoldaş et al. 2011; Aslan 2015; Kök et al. 2017; Bayram et al. 2018; Kök et al. 2020); **USA** (Cresson 1880; Ashmead 1889, 1900a; Provancher 1889; Riley & Howard 1890; Cook 1891; Sanderson 1900, 1906; Szépligeti 1904; Webster 1907; Hayhurst 1909a; Viereck 1910; Essig 1911, 1926; Paddock 1916; Britton 1917; Beyer 1924; Wilson 1923 – in St. Croix; Swezey 1926a, 1927, 1935; Frison 1927; McConnell 1928; Miller 1928; Muesebeck 1928; Swezey & Bryan 1928; Illingworth 1929; Folsom & Bondy 1930; Knowlton & Janes 1930; Wadley 1931; Goft & Tissot 1932; Marcovitch 1935; Walker 1936; Swezey 1937; Knowlton & Harmston 1939; Fenton & Fisher 1940; Holdaway & Suechiro 1940; Bianchi 1941 – Midway Islands; Fenton 1943; Smith 1944; Holdaway & Nishida 1946; Muesebeck & Walkley 1951; Shands et al. 1955; Mackauer 1960e, 1963a, 1968a; Schlinger & Hall 1960a; Sekhar 1960; Beardsley 1961; Bibby 1961; Johnson & Russell 1962; Mackauer & Starý 1967 – in St. Croix; Shenefelt 1968; Jackson et al. 1970; Walker et al. 1973; Archer et al. 1974a; Starý 1974c; Angalet & Stevens 1977; Starý & Remaudière 1977; Kring & Gilstrap 1983, 1984; Gilstrap et al. 1984; Scarborough 1984; Trumble & Oatman 1984; Smith et al. 1985; Rice & Wilde 1988; Finlayson 1990; Kerns & Gaylor 1991; Alverson & Allen 1992; Feng et al. 1992; Smith & Hardee 1993; Weathersbee & Hardee 1993; Zuparko & Dahlsten 1993; Colfer & Rosenheim 1995; Pike & Starý 1996a; Pike et al. 1996, 1997b, 2000; Michaud 1999; French et al. 2001; Royer et al. 2001; Wells et al. 2001; Whitfield & Lewis 2001; Wright & James 2001; Bosque-Pérez et al. 2002; Chen et al. 2002; Messing & Klungness 2002; Giles et al. 2003; Shufran et al. 2004; Day 2005; Jones et al. 2005; Lee et al. 2005; Noma et al. 2005; Kaiser et al. 2007; Costamagna et al. 2008; Noma & Brewer 2008; Brewer & Noma 2010; Burd & Puterka 2012; Havelka et al. 2012; Hollingbery et al. 2012; Elliott et al. 2014a, 2014b; Davidian 2017; Tomanović et al. 2018); **Uzbekistan** (Aripov 2003).

***Remarks.*** *Praon viburnaphis* Fitch, 1855 and *Trioxys fuscatus* Cresson, 1865 have both been treated as synonyms of *Lysiphlebus testaceipes* (Cresson, 1880). However, these are older, apparently available species-group names and cannot simply be regarded as unavailable. Retention of *L. testaceipes* would require either: (1) evidence that the older names are taxonomically unidentifiable (*nomina dubia*), (2) evidence that they are not conspecific with *L. testaceipes*, or (3) a properly documented reversal of precedence under ICZN Article 23.9. No explicit published basis for such a reversal has yet been verified; therefore, the older names are best treated here as senior subjective synonyms of uncertain nomenclatural status.

### *Lysiphlebus ussuriensis* Chiriac, 1979

*Lysiphlebus ussuriensis* Chiriac, 1979:142. Holotype ♀, paratypes ♀♀ ♂♂ (ASM). – Russia.

***Host.*** ***Acyrthosiphon caraganae*** (Cholodkovsky) (Davidian 2017).

***Distribution.*** **Russia** (Chiriac 1979; Davidian 2017, 2019b).

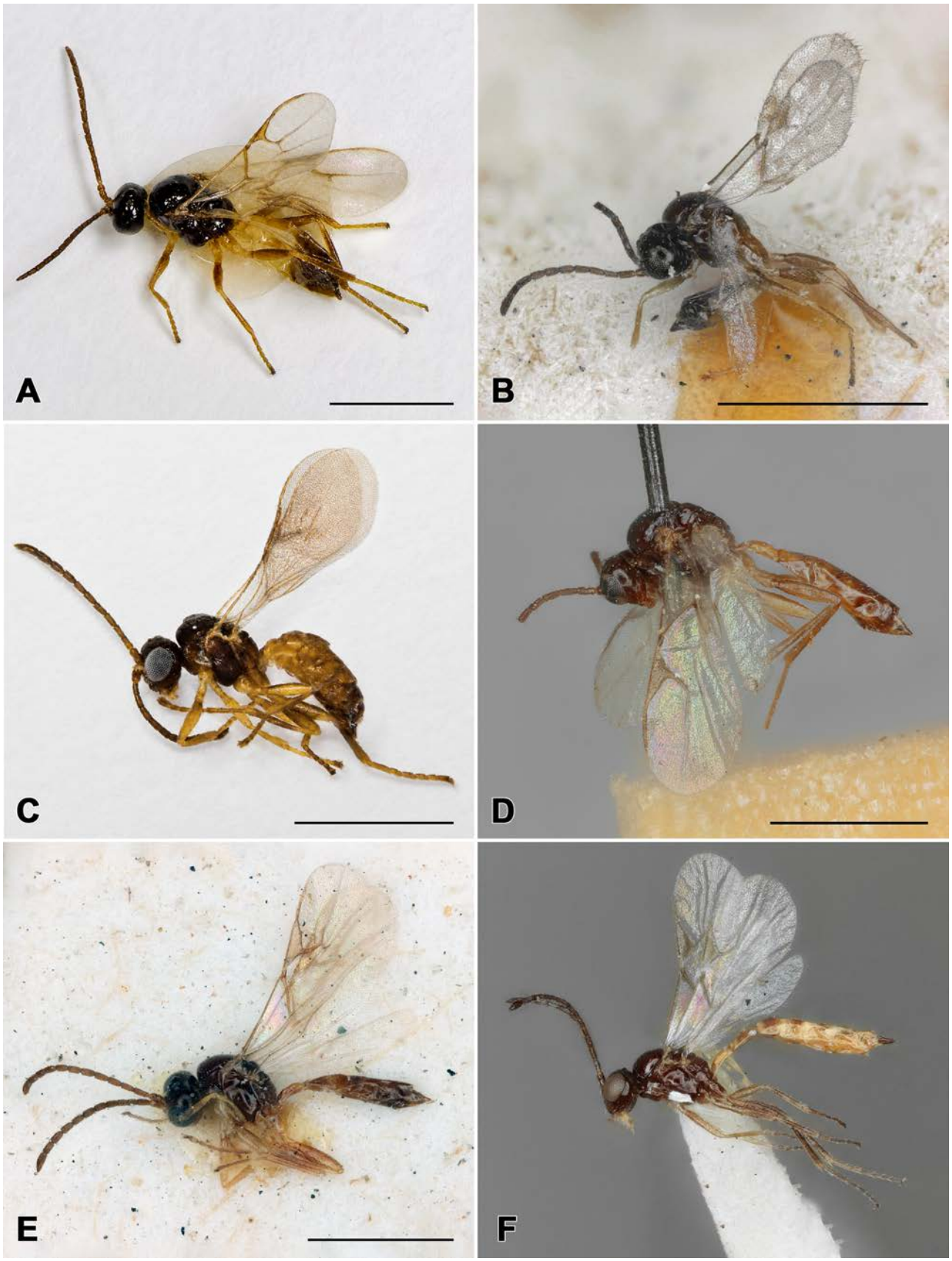



**Figure 30.** Species of the genus *Lysiphlebus* Förster, 1863. **A.** *Lysiphlebus melandriicola* Starý, 1961 – Paratype, IECA; **B.** *Lysiphlebus minutus* Ashmead, 1889 – Lectotype (= *Lysiphlebus testaceipes* (Cresson, 1880)), USNM; **C.** *Lysiphlebus orientalis* Starý & Rakhshani, 2010 – Serbia, FBUB; **D.** *Lysiphlebus persicaphidis* Ashmead, 1889 – Holotype (= *L. testaceipes*), USNM; **E.** *Lysiphlebus testaceipes* (Cresson, 1880) – Lectotype, USNM; **F.** *Lysiphlebus utahensis* (Smith, 1944) – Holotype, USNM. Scale bar: 1 mm.

***Lysiphlebus utahensis* (Smith, 1944)** [Fig. 30F]

*Aphidius utahensis* Smith, 1944:83. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, OSUC, UAES, NCSU). – USA.

***Hosts.*** ***Aphis canae*** Williams (Pike et al. 2000); ***Artemisaphis artemisicola*** (Williams) (Pike et al. 1997a, 2000); ***Epameibaphis atricornis*** Gillette & Palmer, ***Flabellomicrosiphum tridentatae*** (Wilson), ***Obtusicauda artemisiphilus*** (Knowlton & Allen) (Pike et al. 2000); ***Obtusicauda coweni*** (Hunter) (Smith 1944; Mackauer 1960e; Mackauer & Starý 1967; Marsh 1979; Pike et al. 1997a, 2000); ***Obtusicauda filifoliae*** (Gillette & Palmer) (Pike et al. 1997a, 2000); ***Pseudoepameibaphis tridentatae*** (Wilson) (Pike et al. 2000).

***Distribution.*** **USA** (Smith 1944; Muesebeck & Walkley 1951; Mackauer 1960e; Mackauer & Starý 1967; Pike et al. 1997a 2000).

***Lysiphlebus volkli* Tomanović & Kavallieratos, 2018**

*Lysiphlebus volkli* Tomanović & Kavallieratos [in Tomanović et al.], 2018:190. Holotype 1♀, paratypes ♀♀ (FBUB). – Serbia.

***Hosts.*** ***Aphis fabae*** Scopoli, ***Aphis fabae cirsiiacanthoidis*** Scopoli, ***Aphis farinosa*** Gmelin, ***Aphis verbasci*** Schrank, ***Brachycaudus tragopogonis*** (Kaltenbach) (Tomanović et al. 2018).

***Distribution.*** **Iran**, **Lithuania** (Tomanović et al. 2018); **Norway** (Mjøs et al. 2024); **Serbia** (Tomanović et al. 2018).

**Subtribe MONOCTONINA Mackauer, 1961** [9 genera, 41 species (including 2 fossils]

Monoctonina Mackauer, 1961:801. Type genus: *Monoctonus* Haliday, 1833.

**Genus *Boreogalba* Mackauer, 1962** [2 species]

*Boreogalba* Mackauer, 1962:1107. Type species: *Boreogalba gladifer* Mackauer, 1962.

***Boreogalba gladifer* Mackauer, 1962** [Fig. 31A]

*Boreogalba gladifer* Mackauer, 1962a:1108. Holotype ♀ (CNC). – Canada.

***Host.*** Unknown.

***Distribution.*** **Canada** (Mackauer 1962a; Muesebeck 1967).

***Remarks.*** Record for the occurrence of this Nearctic species in South Korea (Chang & Youn 1983a) was due to a misidentification (see Starý & Choi 2000).

***Boreogalba julianae* Todorov, 2006**

*Boreogalba julianae* Todorov, 2006a:438. Holotype ♀, paratype ♀ (AUPB). – Bulgaria.

***Host.*** Unknown.

***Distribution.*** **Bulgaria** (Todorov 2006a).

**Genus *Calaphidius* Mackauer, 1961** [1 species]

*Calaphidius* Mackauer, 1961:283. Type species: *Calaphidius elegans* Mackauer, 1961.

**Syn.:** *Amonoctonus* Takada, 1968:107. Type species: *Monoctonus watanabei* Takada, 1965.

***Calaphidius elegans* Mackauer, 1961** [Fig. 31B]

*Calaphidius elegans* Mackauer, 1961c:283. Holotype ♀ (CNC). – Germany.

**Syn.:** *Monoctonus watanabei* Takada, 1965.

***Host.*** ***Hamamelistes betulinus*** (de Horváth) (Takada 1965a, 1968, 1973; Mackauer & Starý 1967; Starý 1975a, 1987a, 2006; Gärdenfors 1983; Koponen & Vikberg 1984b; Dessart & Gärdenfors 1985; Finlayson 1990; Takada & Kamijo 2012).

***Distribution.*** **Czech Republic** (Starý 1987a 1989a 2006); **Finland** (Koponen & Vikberg 1984a); **Germany** (Mackauer 1961c; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Japan** (Takada 1965a, 1968, 1973; Mackauer & Starý 1967; Starý 1975a; Finlayson 1990; Takada & Kamijo 2012; Davidian 2016b); **Russia** (Davidian 2007, 2016b, 2019b); **Sweden** (Gärdenfors 1983; Dessart & Gärdenfors 1985).

### Genus *Falciconus* Mackauer, 1959 [3 species]

*Falciconus* Mackauer, 1959:180. Type species: *Aphidius pseudoplatani* Marshall, 1896.

#### *Falciconus hispanicus* Tomanović & Michelena, 2023

*Falciconus hispanicus* Tomanović & Michelena [in Tomanović et al.], 2023a:576. Holotype ♀ (ICBiBE). – Spain.

***Host.*** Unknown.

***Distribution.*** **Spain** (Tomanović et al. 2023a).

#### *Falciconus longiradius* (Takada, 1966)

*Monoctonus longiradius* Takada, 1966b:154. Holotype ♀, paratype ♀ (EIHU). – Japan.

***Host.*** ***Macrosiphoniella yomogifoliae*** (Shinji) (Raychaudhuri et al. 1990)

***Distribution.*** **India** (Raychaudhuri et al. 1990; Das & Chakrabarti 2023a); **Japan** (Takada 1966b, 1968; Starý 1975a); **Russia** (Davidian 2007, 2016b, 2019b).

#### *Falciconus pseudoplatani* (Marshall, 1896) [Fig. 31C]

*Aphidius pseudoplatani* Marshall [in Andre], 1896:582. Lectotype ♀ (after Mackauer 1968a) (NHMUK). – United Kingdom.

***Hosts.*** ***Drepanosiphum acerinum*** (Walker) (Marshall 1896; Bignell 1901; Mackauer 1959c); ***Drepanosiphum aceris*** Koch (Mackauer & Starý 1967; Starý 1978a); ***Drepanosiphum platanoidis*** (Schrank) (Starý & Rupais 1963, 1964; Starý 1964d, 1965a, 1966c, 1970b, 1977, 1978a, 1987a, 1995b, 2006; Mackauer & Starý 1967; Starý et al. 1971; Hamilton 1974; Vassileva-Sumnalieva 1976; Kierych 1980, 1997; Kolarov 1997; Tomanović et al. 1999b, 2007b; Wiackowski et al. 2001; Kavallieratos et al. 2004, 2016; Derocles et al. 2012, 2014a; Žikić et al. 2012); ***Drepanosiphum*** spp. (Starý 1977, 1978a, 2006; Derocles et al. 2014a; Rakhshani et al. 2015a; Ferrer-Suay et al. 2017); ***Periphyllus*** sp. (Ferrer-Suay et al. 2017).

***Distribution.*** **Belgium** (Čkrkić et al. 2019a); **Bulgaria** (Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997); **Czech Republic** (Starý 1966c, 1970b, 1977, 1978a, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Ferrer-Suay et al. 2017; Čkrkić et al. 2019a); **Denmark** (Mackauer & Starý 1967; Mackauer 1968a); **France** (Marshall 1896; Szépligeti 1904; Gaulle 1908; Mackauer 1959c; Mackauer & Starý 1967; Starý et al. 1971, 1977a; Starý 1978a; Derocles et al. 2012, 2014a); **Germany** (Mackauer 1959c, 1968a; Mackauer & Starý 1967; Boness & Starý 1988; Starý 1978a; Belokobylskij et al. 2003); **Hungary** (Polgár 1983; Kovács 2001); **Latvia** (Starý & Rupais 1964; Mackauer & Starý 1967; Starý 1978a); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Tomanović et al. 2007b; Žikić et al. 2012; Kavallieratos et al. 2016; Čkrkić et al. 2019a); **Netherlands** (Mackauer & Starý 1967; Mackauer 1968a); **Norway** (Hofsvang & Høgvar 1983b; Mjøs et al. 2024); **Poland** (Niezabitowski 1910; Mackauer & Starý 1967; Kierych 1975, 1980; Huflejt 1997; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Starý & Rupais 1963; Starý 1965a, 1978a; Davidian 2016b, 2019b; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a, 1999b; Kavallieratos et al. 2004, 2016; Žikić et al. 2012; Rakhshani et al. 2015a; Čkrkić et al. 2019a); **Slovakia** (Starý 1977, 1989a); **Spain** (Quilis-Pérez 1931b); **United Kingdom** (Marshall 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1959c, 1961b; Mackauer & Starý 1967; Hamilton 1974; Belshaw & Quicke 2002; Zaldivar-Riveron et al. 2006; Davidian & Rispin 2016).

***Remarks.*** The nomenclatural history of *Falciconus pseudoplatani* (Marshall, 1896) is associated with an earlier misidentification of *Bracon constrictus* Nees, 1811, which was subsequently transferred to the genus *Aphidius*. Haliday (1834) misidentified a different species as *A. constrictus* (*nec* Nees, 1811), for which, Curtis (1837) introduced the name *Aphidius pseudoplatanus*, considered a *nomen nudum* by Mackauer, who subsequently regarded *Aphidius pseudoplatani* Marshall, 1896 as its replacement name (*nomen novum*). Mackauer (1959c) designated *A. pseudoplatani* as the type species of *Falciconus*, and later (1968a) designated a female specimen (England, NHMUK), as lectotype. Broad et al. (2016) reported that the type material of *A. constrictus* Nees, 1811 is lost.

### Genus *Harkeria* Cameron, 1900 [2 species]

*Harkeria* Cameron, 1900:537. Type species: *Harkeria rufa* Cameron, 1900.

**Syn.:** *Paramonoctonus* Starý, 1959a:238. Type species: *Monoctonus* (*Paramonoctonus*) *angustivalvus* Starý, 1959.

#### *Harkeria angustivalva* (Starý, 1959) [Fig. 31D]

*Monoctonus (Paramonoctonus) angustivalvus* Starý, 1959a:239. Holotype ♀ (IECA), paratypes ♀♀ ♂♂ (IECA, USNM, NHMUK). – Czech Republic.

***Hosts.*** *Aphis* spp. (Starý 1967b, 2006); ***Nasonovia compositellae nigra*** (Hille Ris Lambers) (Starý 1959a, 1963b, 1964d, 1966c, 1977, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971; van Achterberg 1989; Tomanović et al. 2008a); ***Nasonovia pilosellae*** (Börner) (Starý 1964d); ***Nasonovia ribisnigri*** (Mosley) (van Achterberg 1989; Starý et al. 1971; Kavallieratos et al. 2004; Tomanović et al. 2008a; Žikić et al. 2012; Čkrkić et al. 2019a); ***Nasonovia*** spp. (Starý 1967b; Tomanović et al. 1999b, 2007b; Tomanović 2000; Žikić et al. 2012; Čkrkić et al. 2019a).

***Distribution.*** **Czech Republic** (Starý 1959a, 1966c, 1977, 1987a, 1989a; Mackauer & Starý 1967; Starý & Havelka 2008; Tomanović et al. 2008a; Rakhshani et al. 2015a; Čkrkić et al. 2019a); **France** (Starý et al. 1971; van Achterberg 1989); **Hungary** (Starý 1959a; Polgár 1983; van Achterberg 1989); **Italy** (Tomanović et al. 2023c); **Montenegro** (Čkrkić et al. 2019a); **Russia** (Davidian 2016b, 2019b); **Serbia** (Tomanović et al. 1999b, 2007a, 2008a; Tomanović 2000; Kavallieratos et al. 2004; Žikić et al. 2012; Čkrkić et al. 2019a); **Slovakia** (Starý 1959a, 1977, 1989a; Čkrkić et al. 2019a); **Spain** (Tizado & Núñez-Perez 1991); **Switzerland** (Mackauer & Starý 1967; van Achterberg 1989).

***Remarks.*** According to the original description (Starý 1959a), some paratypes are deposited in the collections of M. Mackauer (Germany), U. Sedlag (Germany), and W.D. Hincks (Manchester), which may have been included in collections of institutions.

#### *Harkeria rufa* Cameron, 1900

*Harkeria rufa* Cameron, 1900:538. Holotype ♀ (NHMUK). – United Kingdom.

***Host.*** ***Nasonovia houghtonensis*** (Troop) (Pike et al. 2000).

***Distribution.*** **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **United Kingdom** (Cameron 1900; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer & Starý 1967); **USA** (Starý & Smith 1976; Pike et al. 2000).

### Genus *Monoctonia* Starý, 1962 [3 species]

*Monoctonia* Starý, 1962:875. Type species: *Monoctonia pistaciaecola* Starý, 1962

#### *Monoctonia japonica* Rakhshani & Tomanović, 2015

*Monoctonia japonica* Rakhshani & Tomanović [in Rakhshani et al.], 2015a:479. Holotype ♀, paratypes ♀ ♂ (EIHU). – Japan.

***Host.*** ***Pemphigus matsumurai*** Monzen (Takada et al. 2010; Rakhshani et al. 2015a; Čkrkić et al. 2019a)

***Distribution.*** **Japan** (Takada et al. 2010; Rakhshani et al. 2015a; Čkrkić et al. 2019a); **Russia** (Davidian 2016b, 2019b).

#### *Monoctonia pistaciaecola* Starý, 1962 [Fig. 31E]

*Monoctonia pistaciaecola* Starý, 1962f:876. Holotype ♂ (ZISP), paratypes ♀♀ (ZISP, IECA). – Russia.

***Hosts.*** ***Aploneura lentisci*** (Passerini) (de Marzo & Marullo 1993); ***Forda hirsuta*** (Mordvilko) (Starý 1962f; Mackauer & Starý 1967; Čkrkić et al. 2019a); ***Forda marginata*** Koch (Starý 1968c, 1976a; de Marzo & Marullo 1993); ***Forda pawlowae*** (Mordvilko) (Starý 1965a, 1968c, 1976a; Rakhshani et al. 2015a); ***Forda*** sp. (Starý & Kaddou 1971; Starý 1976a); ***Geoica utricularia*** (Passerini) (Rakhshani et al. 2015a; Čkrkić et al. 2019a); ***Smynthurodes betae*** Westwood (Wool & Burstein 1991).

***Distribution.*** **Canary Islands** (Guerrero & Koponen 2000); **Georgia** (Starý 1968c, 1976a, 1981b); **Iran** (Kargarian et al. 2016; Rakhshani et al. 2019); **Iraq** (Starý & Kaddou 1971; Starý 1976a, 1981b; Rakhshani et al. 2019); **Palestine** (Wool & Burstein 1991); **Russia** (Starý 1962f, 1965a, 1968c, 1976a, 1981b; Davidian 2016b, 2019b); **Spain** (Rakhshani et al. 2015a; Čkrkić et al. 2019a); **Tajikistan** (Starý 1965a, 1968c, 1979a).

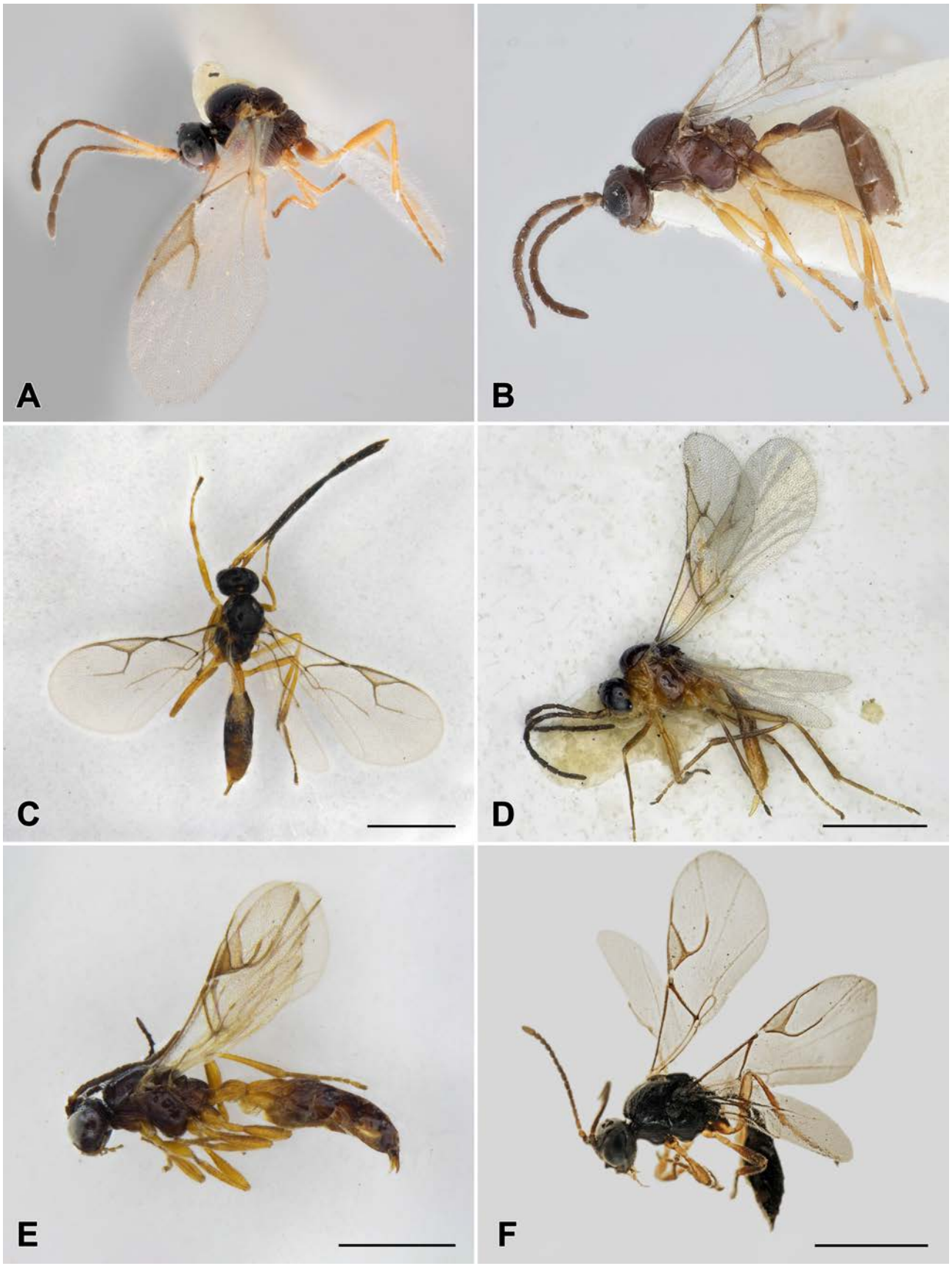



**Figure 31.** Species of the Subtribe Monoctonina Mackauer, 1961. **A.** *Boreogalba gladifer* Mackauer, 1962 – Holotype, CNC; **B.** *Calaphidius elegans* Mackauer, 1961 – Holotype, CNC; **C.** *Falciconus pseudoplatani* (Marshall, 1896) – Russia, ZISP; **D.** *Harkeria angustivalva* (Starý, 1959) – Czech Republic, CNC; **E.** *Monoctonia pistaciaecola* Starý, 1962 – Russia, ZISP; **F.** *Monoctonia vesicarii* Tremblay, 1991 – Iran, DPPZ. Scale bar: 1 mm.

### *Monoctonia vesicarii* Tremblay, 1991 [Fig. 31F]

*Monoctonia vesicarii* Tremblay, 1991[1993]:138. Holotype ♀, paratypes ♂♂ (DAUN). – Italy.

***Hosts.*** ***Pemphigus bursarius*** (Linnaeus) (Starý 1968c, 2006); ***Pemphigus populinigrae*** (Schrank) (Starý 1968c, 2006); ***Pemphigus spyrothecae*** Passerini (Starý 1968c, 2006; Sanchis et al. 2000; Ghafouri Moghaddam et al. 2012, 2014; Rakhshani et al. 2015a); ***Pemphigus vesicarius*** Passerini (Tremblay 1991); ***Pemphigus*** spp. (Starý 1966c, 1968c, 1979a).

***Distribution.*** **Czech Republic** (Starý 1968c, 1989a, 2006); **Iran** (Ghafouri Moghaddam et al. 2012, 2014; Rakhshani et al. 2015a, 2019; Čkrkić et al. 2019a); **Italy** (Starý 1966d, 1968c, 1976a; Tremblay 1991; de Marzo & Marullo 1993; Bergamesco et al. 1995); **Portugal** (BOLD:AAX4725); **Spain** (Suay Cano & Michelena Saval 1998; Sanchis et al. 2000; Rakhshani et al. 2015a; Čkrkić et al. 2019a); **United Kingdom** (BOLD:AAX4725).

## Genus *Monoctonus* Haliday, 1833 [27 species]

*Monoctonus* Haliday, 1833:487. Type species: *Aphidius* (*Monoctonus*) *caricis* Haliday, 1833.

### *Monoctonus allisoni* Pike & Starý, 2003 [Fig. 32A]

*Monoctonus allisoni* Pike & Starý [in Pike et al.], 2003:380. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, IECA, WSUP). – USA.

***Host.*** ***Nasonovia wahinkae*** (Hottes) (Pike et al. 2003).

***Distribution.*** **USA** (Pike et al. 2003).

### *Monoctonus brachyradius* Čkrkić, Petrović & Tomanović, 2019 [Fig. 32B]

*Monoctonus brachyradius* Čkrkić, Petrović & Tomanović [in Čkrkić et al.], 2019a:361. Holotype ♀ (CNC), paratypes ♀ ♂ (FBUB). – Canada.

***Host.*** Unknown.

***Distribution.*** **Canada** (Čkrkić et al. 2019a); **USA** (BOLD:AAK2024).

### *Monoctonus campbellianus* Pike & Starý, 2000 [Fig. 32C]

*Monoctonus campbellianus* Pike & Starý [in Pike et al.], 2000:716. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (IECA, WSUJ). – USA.

***Hosts.*** ***Brachycaudus helichrysi*** (Kaltenbach), ***Hyalopterus pruni*** (Geoffroy), ***Phorodon humuli*** (Schrank) (Pike et al. 2000).

***Distribution.*** **USA** (Pike et al. 2000).

### *Monoctonus canadensis* Čkrkić, Petrović & Tomanović, 2019 [Fig. 32D]

*Monoctonus canadensis* Čkrkić, Petrović & Tomanović [in Čkrkić et al.], 2019a:364. Holotype ♀ (CNC), paratypes ♀ ♂ (FBUB). – Canada.

***Host.*** Unknown.

***Distribution.*** **Canada** (Čkrkić et al. 2019a); **USA** (BOLD:ACC4948).

### *Monoctonus caricis* (Haliday, 1833) [Fig. 32E]

*Aphidius (Monoctonus) caricis* Haliday, 1833:488. Lectotype ♀ (after Mackauer 1961b) (NHMUK), paralectotypes ♀♀ ♂ (NHMUK, NMID). – Ireland.

***Hosts.*** ***Aulacorthum solani*** (Kaltenbach) (Starý & Smith 1976; Starý et al. 1977a; Marsh 1979); ***Brachycaudus helichrysi*** (Kaltenbach) (Starý et al. 1977a); ***Cryptomyzus ballotae*** Hille Ris Lambers (Starý et al. 1977a); ***Hyalopteroides humilis*** (Walker) (Starý et al. 1973; van Achterberg 1989); ***Macrosiphum equiseti*** (Holman) (Starý 1964d, 1966c, 1977, 2006; Mackauer & Starý 1967; van Achterberg 1989); ***Melanaphis pyraria*** (Passerini) (Bignell 1901); ***Metopolophium dirhodum*** (Walker) (Starý et al. 1977a;

Starý 1981b); ***Metopolophium festucae*** (Theobald) (Starý 1981b); ***Myzus ascalonicus*** Doncaster, ***Paramyzus heraclei*** Börner (Starý et al. 1977a); ***Pseudacaudella rubida*** (Börner) (Starý & Smith 1976; Marsh 1979); ***Rhopalosiphum padi*** (Linnaeus) (Starý et al. 1977a; Starý 1981b, 1987a, 2006; van Achterberg 1989); ***Sitobion fragariae*** (Walker) (Starý et al. 1973; Starý 1981b; van Achterberg 1989).

***Distribution.*** **Canada** (Čkrkić et al. 2019a); **Czech Republic** (Starý 1959a, 1966c; Mackauer & Starý 1967; Starý 1977, 1981b, 1987a, 1989a, 2006); **Denmark** (Mackauer & Starý 1967); **Faroe Islands** (Roman 1917; Kryger & Schmiedeknecht 1938; Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Starý et al. 1971, 1973, 1977a, 1981b; Derocles et al. 2012); **Germany** (Mackauer & Starý 1967; Boness & Starý 1988; Belokobylskij et al. 2003; Lazarević et al. 2024); **Hungary** (Polgár 1983); **Iceland** (Ruthe 1859; Lindroth 1931; Petersen 1956; Starý 1959a; Mackauer & Starý 1967); **Ireland** (Szépligeti 1904); **Italy** (Graeffe 1908; Bergamesco et al. 1995); **Moldova** (Talitzky & Kuslitzky 1990); **Netherlands** (Mackauer & Starý 1967; van Achterberg 1989; Papp et al. 1996); **Norway** (Mackauer & Starý 1967; Westrum et al. 2010; Mjøs et al. 2024); **Russia** (Mackauer 1968c; Davidian 2016b, 2019b; Davidian & Humala 2023); **Slovakia** (Starý 1959a, 1989a); **Spain** (Sanchis et al. 1995; Nieves-Aldrey et al. 2003; Michelena Saval & Martínez De Murguía 2012); **Sweden** (Thomson 1895; Szépligeti 1904; Mackauer & Starý 1967); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Marshall 1872a, 1896, 1899; Bignell 1901; Lyle 1933; Kloet & Hincks 1945; Mackauer 1961b; Mackauer & Starý 1967; Starý 1981b; Davidian & Rispin 2016); **USA** (Starý & Smith 1976).

### *Monoctonus cerasi* (Marshall, 1896)

*Aphidius cerasi* Marshall, 1896:608. Holotype ♂ (NHMUK). – United Kingdom.
**Syn.:** *Monoctonus ligustri* van Achterberg, 1989 [Fig. 33B]; *Monoctonus mali* van Achterberg, 1989 [Fig. 33C].

***Hosts.*** ***Aphis fabae*** Scopoli (van Achterberg 1989); ***Aphis pomi*** De Geer (Mackauer & Starý 1967; Starý 1967b, 1975c, 1987a, 2006; Čkrkić et al. 2019a); ***Aphis*** sp. (Finlayson 1990); ***Brachycaudus helichrysi*** (Kaltenbach) (Starý et al. 1977a); ***Dysaphis crataegi*** (Kaltenbach) (Starý 1969a, 1995b, 2006); ***Dysaphis devecta*** (Walker) (Čkrkić et al. 2019a); ***Dysaphis plantaginea*** (Passerini) (Evenhuis & de Jong 1961; Evenhuis 1962; Mackauer & Starý 1967; Starý 1969a; Cierniewska 1973; Kierych 1975; Ferrer-Suay et al. 2017); ***Dysaphis reaumuri*** (Mordvilko) (Kavallieratos et al. 2004, 2008b; Žikić et al. 2012); ***Dysaphis*** spp. (Mackauer & Starý 1967; Cierniewska 1973; Kierych 1975; Tomanović et al. 1999b; Kavallieratos et al. 2004, 2008b; Kos et al. 2012; Žikić et al. 2012); ***Melanaphis pyraria*** (Passerini) (Mackauer & Starý 1967; Fulmek 1968); ***Myzus cerasi*** (Fabricius) (Marshall 1896; Wimshurst 1925; Mackauer & Starý 1967; van Achterberg 1989); ***Myzus certus*** (Walker) (Mackauer 1962c; Mackauer & Starý 1967); ***Myzus ligustri*** (Mosley) (Mackauer 1961b; Starý 1963b, 1964d, 1966c, 1967b, 2006; Mackauer & Starý 1967; Starý et al. 1971, 1973; van Achterberg 1989; Tomanović et al. 2007a; Žikić et al. 2012; Rakhshani et al. 2015a; Ferrer-Suay et al. 2017; Čkrkić et al. 2019a); ***Myzus persicae*** (Sulzer) (Mackauer 1968d); ***Ovatus crataegarius*** (Walker) (Mackauer & Starý 1967; Starý et al. 1971); ***Ovatus insitus*** (Walker) (Ölmez & Ulusoy 2003; Uysal et al. 2004); ***Rhopalosiphum oxyacanthae*** (Schrank) (Mackauer 1961b, 1962c; Evenhuis 1964; Starý 1966c, 1966d, 1975c, 1976a, 1981b, 1995b, 2006; Mackauer & Starý 1967; Starý et al. 1971; van Achterberg 1989; Kavallieratos et al. 2004, 2008b; Ferrer-Suay et al. 2017; Čkrkić et al. 2019a); ***Rhopalosiphum padi*** (Linnaeus) (Mackauer & Starý 1967; Fulmek 1968; Starý 1976c, 1981b; Čkrkić et al. 2019a).

***Distribution.*** **Austria** (Mackauer & Starý 1967); **Bulgaria** (Todorov 2008, 2014); **Canada** (Finlayson 1990); **Czech Republic** (Starý 1966c, 1975c, 1981b, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Ferrer-Suay et al. 2017); **France** (Starý et al. 1971, 1973, 1977a; Starý 1981b); **Germany** (Mackauer 1962c; Mackauer & Starý 1967; van Achterberg 1989; Belokobylskij et al. 2003); **Hungary** (Fulmek 1968; Starý 1981b; Polgár 1983); **Italy** (Mackauer & Starý 1967; Starý 1966d, 1976a, 1981b; Bergamesco et al. 1995); **Netherlands** (Evenhuis & de Jong 1961; Evenhuis 1964; Mackauer & Starý 1967; Starý 1981b; van Achterberg 1989); **Poland** (Cierniewska 1973; Kierych 1975; Huflejt 1997; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian 2016b, 2019b); **Serbia** (Tomanović et al. 1998a, 2007b; Tomanović & Brajković 2001; Kavallieratos et al. 2004, 2008b; Žikić et al. 2012; Rakhshani et al. 2015a; Čkrkić et al. 2019a); **Slovakia** (Starý 1989a; Ferrer-Suay et al. 2017); **Slovenia** (Kos et al. 2012; Čkrkić et al. 2019a); **Spain** (Tizado & Núñez-Perez 1991); **Switzerland** (Mackauer & Starý 1967); **Türkiye** (Ölmez & Ulusoy 2003;

Uysal et al. 2004; Rakhshani et al. 2019); **United Kingdom** (Marshall 1896; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Wimshurst 1925; Mackauer 1961b; Mackauer & Starý 1967; Starý 1981b; van Achterberg 1989; Davidian & Rispin 2016 – as *Monoctonus mali*).

### *Monoctonus crepidis* (Haliday, 1834) [Fig. 32F]

*Aphidius crepidis* Haliday, 1834:94. Lectotype ♀ (after Mackauer 1968a) (NHMUK). – United Kingdom.

**Syn.:** *Aphidius turberculatus* Wesmael, 1835; *Monoctonus paludum* Marshall, 1896.

***Hosts.*** ***Aphis fabae evonymi*** Fabricius (Malaquin & Moitie 1914; Fulmek 1968); ***Aphis*** spp. (Niezabitowski 1910); ***Hyperomyzus hieracii*** (Börner) (Kavallieratos et al. 2004; Tomanović et al. 2007a, 2008a; Žikić et al. 2012); ***Hyperomyzus lactucae*** (Linnaeus) (Aeschlimann & Vitou 1985); ***Hyperomyzus lampsanae*** (Börner) (Mackauer 1962c, 1962f; Mackauer & Starý 1967; Kierych 1975); ***Hyperomyzus*** sp. (Starý 2006); ***Liosomaphis atra*** Hille Ris Lambers (Bhagat 1984); ***Liosomaphis*** sp. (Bhagat 1984); ***Myzus ligustri*** (Mosley) (Starý 1959a; Fulmek 1968); ***Nasonovia compositellae nigra*** (Hille Ris Lambers) (Starý 1959a, 1963b, 1964d, 1966c, 1976a; Thuneberg 1963; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975, 1987a, 2006; Tomanović et al. 2008a); ***Nasonovia pilosellae*** (Börner) (Starý 1959a, 1964d, 1966c; Mackauer 1962c, 1962f; Mackauer & Starý 1967; Tomanović et al. 2008a; Žikić et al. 2012); ***Nasonovia ribisnigri*** (Mosley) (Griffiths 1960, 1961; Mackauer 1962c, 1962f; Starý 1963b, 1964d, 1966c, 1976a, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971; Starý & Remaudière 1977; Kavallieratos et al. 2004; Tomanović et al. 2007b, 2008a; Derocles et al. 2012, 2014a; Žikić et al. 2012; Čkrkić et al. 2019a); ***Nasonovia*** spp. (Mackauer 1962f; Starý 1963b, 1966c, 2006; Mackauer & Starý 1967; Kavallieratos et al. 2004; Tomanović et al. 2007b, 2008a; Kos et al. 2012; Rakhshani et al. 2015a; Čkrkić et al. 2019a; Davidian 2019c).

***Distribution.*** **Austria** (Mackauer & Starý 1967); **Belgium** (Wesmael 1835; Kirchner 1867; Marshall 1891, 1896; de Dalla Torre 1898; Szépligeti 1904; Mackauer 1962f, 1968a; Mackauer & Starý 1967; Lopes et al. 2016); **Bulgaria** (BOLD:ACB8116); **Canada** (Mackauer 1962f; Mackauer & Starý 1967; Muesebeck 1967; Starý & Remaudière 1977); **Czech Republic** (Starý 1959a, 1966c, 1987a, 1989a, 2006; Mackauer 1962f; Mackauer & Starý 1967; Starý & Havelka 2008; Tomanović et al. 2008a; Davidian 2016b); **Denmark** (Mackauer & Starý 1967); **Finland** (Thuneberg 1963; Hellén 1966; Mackauer & Starý 1967; Mackauer 1968c); **France** (Gaulle 1908; Mackauer 1962f; Mackauer & Starý 1967; Starý et al. 1971, 1975, 1977a; Starý 1973a, 1976a; Aeschlimann & Vitou 1985; Tomanović et al. 2008a; Derocles et al. 2012, 2014a); **Germany** (Mackauer 1962c, 1962f; Mackauer & Starý 1967; Finlayson 1990; Belokobylskij et al. 2003); **Hungary** (Györfi 1941; Starý 1959a; Mackauer & Starý 1967; Polgár 1983); **India** (Bhagat 1984; Das & Chakrabarti 2023a); **Italy** (Tomanović et al. 2023c); **Kazakhstan** (Davidian 2016b); **Kyrgyzstan** (Petrović et al. 2021a); **Latvia** (Starý 1965a; Mackauer & Starý 1967); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Kavallieratos et al. 2004; Tomanović et al. 2007a, 2008a; Žikić et al. 2012; Čkrkić et al. 2019a); **Netherlands** (Mackauer 1962f; Mackauer & Starý 1967; van Achterberg 1989; Papp et al. 1996); **Norway** (Riedel & Hansen 2014); **Poland** (Niezabitowski 1910; Mackauer & Starý 1967; Kierych 1975, 1980; Huflejt 1997; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2016b, 2019b, 2019c); **Serbia** (Kavallieratos et al. 2004, 2008b; Tomanović et al. 2008a; Žikić et al. 2012; Rakhshani et al. 2015a; Čkrkić et al. 2019a); **Slovakia** (Starý 1959a, 1989a); **Slovenia** (Kos et al. 2008, 2009a, 2012); **Spain** (Starý 1976a; Tizado & Núñez-Perez 1991); **Sweden** (Mackauer 1962f; Mackauer & Starý 1967); **Türkiye** (Tomanović et al. 2008b; Rakhshani et al. 2019); **United Kingdom** (Curtis 1837; Wesmael 1835; Smith 1853; Kirchner 1867; Marshall 1872a, 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Griffiths 1960; Mackauer 1961b, 1962f; Mackauer & Starý 1967; Davidian & Rispin 2016); **USA** (Starý & Remaudière 1977).

### *Monoctonus fotedari* Bhagat, 1981

*Monoctonus fotedari* Bhagat, 1981b:1087. Holotype ♀, paratypes ♀♀ (ZSI). – India.

***Hosts.*** ***Impatientinum asiaticum*** Nevsky (Starý et al. 1999); ***Myzaphis rosarum*** (Kaltenbach) (Bhagat 1981b).

***Distribution.*** **India** (Bhagat 1981b; Das & Chakrabarti 2023a); **Pakistan** (Starý et al. 1999).

### *Monoctonus gallicus* Starý, 1977

*Monoctonus gallicus* Starý [in Starý et al.], 1977a:173. Holotype ♀, paratypes ♀ (IECA). – France.

***Host.*** ***Therioaphis riehmi*** (Börner) (Starý et al. 1977a; van Achterberg 1989).

***Distribution.*** **France** (Starý et al. 1977a; van Achterberg 1989).

### *Monoctonus genriki* Davidian, 2025

*Monoctonus genriki* Davidian [in Davidian & Belokobylskij], 2025:591. Holotype ♀, paratype ♂ (ZISP). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Davidian & Belokobylskij 2025).

### *Monoctonus hispanicus* Tizado, 1992

*Monoctonus hispanicus* Tizado, 1992:55. Holotype ♀ (NHMUS), paratypes ♀♀ ♂♂ (IECA, NHMUS). – Spain.

***Host.*** ***Nasonovia*** (*Kakimia*) sp. (Tizado 1992).

***Distribution.*** **Spain** (Tizado 1992).

### *Monoctonus indiscretus* Čkrkić, Petrović & Tomanović, 2020

*Monoctonus indiscretus* Čkrkić, Petrović & Tomanović [in Čkrkić et al.], 2020:12. Holotype ♀ (CNC), paratypes ♀ ♂ (FBUB). – Canada.

***Host.*** Unknown.

***Distribution.*** **Canada**, **Norway**, **United Kingdom** (Čkrkić et al. 2020).

### *Monoctonus inexpectatus* Čkrkić, Petrović & Tomanović, 2019

*Monoctonus inexpectatus* Čkrkić, Petrović & Tomanović [in Čkrkić et al.], 2019a:366. Holotype ♀ (CNC), paratype ♀ (FBUB). – Canada.

***Host.*** Unknown.

***Distribution.*** **Canada** (Čkrkić et al. 2019a).

### *Monoctonus koreanus* Kim, Čkrkić & Tomanović, 2024 [Fig. 33A]

*Monoctonus koreanus* Kim, Čkrkić & Tomanović [in Kim et al.], 2024a:4. Holotype ♀ (NIBR). – South Korea.

***Host.*** Unknown.

***Distribution.*** **South Korea** (Kim et al. 2024a; Kim 2026).

### *Monoctonus leclanti* Tomanović & Starý, 2002

*Monoctonus leclanti* Tomanović & Starý [in Tomanović et al.], 2002:160. Holotype ♀ (BNHM), paratypes ♀♀ (BNHM, IECA). – Serbia.

***Host.*** ***Delphiniobium junackianum*** (Karsch) (Tomanović et al. 2002, 2007a; Kavallieratos et al. 2004; Žikić et al. 2012).

***Distribution.*** **Czech Republic** (Havelka et al. 2014b); **Montenegro** (Tomanović et al. 2002; Kavallieratos et al. 2004; Žikić et al. 2012); **Russia** (Davidian 2016b, 2019b); **Serbia** (Tomanović et al. 2002, 2007a; Kavallieratos et al. 2004; Žikić et al. 2012); **United Kingdom** (BOLD:AAF0448).

### *Monoctonus luteus* Čkrkić, Petrović & Tomanović, 2019

*Monoctonus luteus* Čkrkić, Petrović & Tomanović [in Čkrkić et al.], 2019a:368. Holotype ♀ (CNC), paratypes ♂♂ (FBUB). – Canada.

***Host.*** Unknown.

***Distribution.*** **Canada** (Čkrkić et al. 2019a).

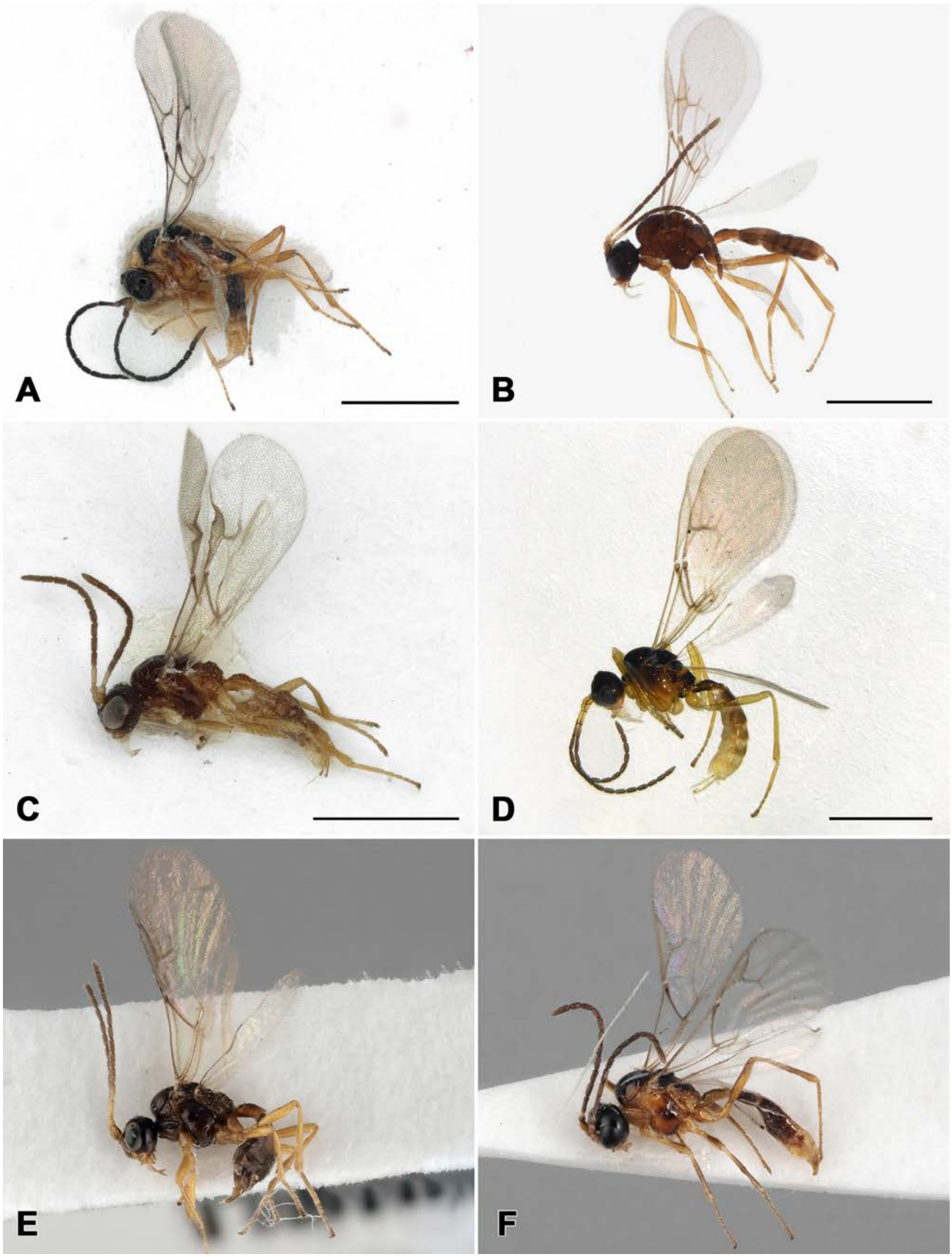



**Figure 32.** Species of the genus *Monoctonus* Haliday, 1833. **A.** *Monoctonus allisoni* Pike & Starý, 2003 – Holotype, USNM; **B.** *Monoctonus brachyradius* Čkrkić, Petrović & Tomanović, 2019 – Canada, BOLD:AAK2024; **C.** *Monoctonus campbellianus* Pike & Starý, 2000 – Holotype, USNM; **D.** *Monoctonus canadensis* Čkrkić, Petrović & Tomanović, 2019 – Canada, BOLD:ACC4948; **E.** *Monoctonus caricis* (Haliday, 1833) – Finland, ZMHF; **F.** *Monoctonus crepidis* (Haliday, 1834) – Finland, ZMHF. Scale bar: 1 mm.

### *Monoctonus montenegrinus* Petrović & Tomanović, 2023

*Monoctonus montenegrinus* Petrović & Tomanović [in Tomanović et al.], 2023a:579. Holotype ♀ (FBUB).

***Host.*** ***Amphorophora*** sp. (Tomanović et al. 2023a).

***Distribution.*** **Montenegro** (Tomanović et al. 2023a).

### *Monoctonus nervosus* (Haliday, 1833) [Fig. 33D]

*Aphidius nervosus* Haliday, 1833:488. Lectotype ♀ (after Mackauer 1968a), paralectotype ♀ (NHMUK). – Ireland.

**Syn.:** *Monoctonus secundus* Viereck, 1915; *Monoctonus biroi* Györfi, 1958; *Monoctonus breviantennalis* Starý, 1959.

***Hosts.*** ***Acyrthosiphon malvae*** (Mosley) (Tomanović et al. 2006a, 2007a; Žikić et al. 2012; Čkrkić et al. 2019a); ***Acyrthosiphon pisum*** (Harris) (Campbell 1926; Smith 1944; Muesebeck & Walkley 1951; Hagen & Schlinger 1960; Calvert & van den Bosch 1972; Starý & Smith 1976; Marsh 1979; Mackauer & Kambhampati 1986); ***Acyrthosiphon*** spp. (Kavallieratos et al. 2004; Tomanović et al. 2006a, 2007b); ***Amphorophora rubitoxica*** Knowlton (Calvert & van den Bosch 1972; Starý 1974a; Marsh 1979); ***Aphis rumicis*** Linnaeus (Essig 1926; Marsh 1979); ***Illinoia grindeliae*** (Williams) (Marsh 1979); ***Illinoia liriodendri*** (Monell) (Zuparko & Dahlsten 1993); ***Impatientinum balsamines*** (Kaltenbach) (Starý 1963b, 1965a, 1966c, 1970d, 1974a, 2006; Mackauer & Starý 1967; Starý et al. 1971, 2014a; Ferrer-Suay et al. 2017; Čkrkić et al. 2019a); ***Macrosiphum californicum*** (Clarke) (Calvert & van den Bosch 1972; Marsh 1979); ***Macrosiphum euphorbiae*** (Thomas) (Calvert & van den Bosch 1972; Marsh 1979); ***Metopolophium dirhodum*** (Walker) (Starý 1995c); ***Myzus ornatus*** Laing, ***Myzus persicae*** (Sulzer) (Calvert & van den Bosch 1972; Marsh 1979); ***Rhopalosiphum padi*** (Linnaeus) (Marsh 1979); ***Sitobion avenae*** (Fabricius) (Starý 1995c); ***Sitobion fragariae*** (Walker) (Calvert & van den Bosch 1972; Starý 1974a; Marsh 1979).

***Distribution.*** **Austria** (Mackauer & Starý 1967); **Belarus** (Davidian 2016b); **Bulgaria** (Todorov 2008); **Canada** (Mackauer & Kambhampati 1986); **Chile** (Starý 1995c); **Czech Republic** (Starý 1959a, 1966c, 1970d, 1989a, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Davidian 2016b; Ferrer-Suay et al. 2017; Čkrkić et al. 2019a); **Denmark** (Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971; Koponen & Vikberg 1984b); **France** (Starý et al. 1971); **Georgia** (Davidian 2016b); **Germany** (Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Mackauer & Starý 1967; Polgár 1981); **India** (Agarwala et al. 1981a; Dey & Akhtar 2007; Das & Chakrabarti 2023a); **Ireland** (Marshall 1896); **Japan** (Takada 1968; Starý 1975a); **Kazakhstan** (Davidian 2016b); **Montenegro** (Kavallieratos et al. 2004; Tomanović et al. 2006a, 2007a; Žikić et al. 2012; Čkrkić et al. 2019a); **Poland** (Huflejt 1997); **Romania** (Györfi 1958); **Russia** (Mackauer 1968c; Davidian 2007, 2016b, 2019b; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Manukyan 2024); **Slovakia** (Starý 1959a, 1989a); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Marshall 1872a, 1896; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1961b; Davidian & Rispin 2016); **USA** (Ashmead 1902; Szépligeti 1904; Gahan 1911a; Viereck 1915, 1923; Campbell 1926; Smith 1944; Muesebeck & Walkley 1951; Hagen & Schlinger 1960; Beardsley 1961; Calvert & van den Bosch 1972; Starý & Smith 1976; Zuparko & Dahlsten 1993); **Uzbekistan** (Starý 1965a; Daminova et al. 2001).

### *Monoctonus pacificus* Pike & Starý, 2000 [Fig. 33E]

*Monoctonus pacificus* Pike & Starý [in Pike et al.], 2000:718. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (WSUJ, IECA). – USA.

***Host.*** ***Macrosiphum tuberculaceps*** (Essig) (Pike et al. 2000).

***Distribution.*** **USA** (Pike et al. 2000).

### *Monoctonus parvipalpus* Čkrkić, Petrović & Tomanović, 2019

*Monoctonus parvipalpus* Čkrkić, Petrović & Tomanović, 2019:38. Holotype ♀ (CNC). – Canada.

***Host.*** Unknown.

***Distribution.*** **Canada** (Čkrkić et al. 2019a).

### *Monoctonus paulensis* (Ashmead, 1902) [Fig. 33F]

*Aphidius paulensis* Ashmead, 1902:246. Lectotype ♀ (after Mackauer 1968a) (USNM). – USA.

***Hosts.*** ***Acyrthosiphon pisum*** (Harris) (Campbell 1926; Fluke 1929; Smith 1944; Muesebeck & Walkley 1951; Hagen & Schlinger 1960; Mackauer & Starý 1967; Calvert & van den Bosch 1972; Calvert 1973; Starý 1974a; Mackauer & Kambhampati 1986; Mackauer & Chau 2001); ***Amphorophora rubitoxica*** Knowlton (Calvert & van den Bosch 1972; Calvert 1973; Starý 1974a); ***Aulacorthum solani*** (Kaltenbach) (Čkrkić et al. 2019a); ***Illinoia grindeliae*** (Williams), ***Macrosiphum californicum*** (Clarke) (Calvert & van den Bosch 1972; Starý 1974a); ***Macrosiphum euphorbiae*** (Thomas), ***Myzus ornatus*** Laing (Calvert & van den Bosch 1972; Calvert 1973; Starý 1974a); ***Myzus persicae*** (Sulzer) (Calvert & van den Bosch 1972; Calvert 1973; Starý 1974a; Čkrkić et al. 2019a); ***Rhopalosiphum padi*** (Linnaeus) (Tremblay & Calvert 1971; Calvert & van den Bosch 1972; Calvert 1973; Starý 1974a); ***Sitobion fragariae*** (Walker) (Calvert & van den Bosch 1972).

***Distribution.*** **Canada** (Mackauer & Starý 1967; Mackauer & Kambhampati 1986); **Finland** (BOLD:AAL4464); **USA** (Ashmead 1902; Szépligeti 1904; Gahan 1911a; Campbell 1926; Viereck 1923; Smith 1944; Muesebeck & Walkley 1951; Hagen & Schlinger 1960; Beardsley 1961; Mackauer & Starý 1967; Calvert & van den Bosch 1972).

### *Monoctonus sambuci* Davidian, 2024 [Fig. 34A]

*Monoctonus sambuci* Davidian [in Davidian & Manukyan], 2024:254. Holotype ♀, paratypes ♀♀ ♂♂ (ZISP). – Russia.

***Host.*** ***Aphis sambuci*** Linnaeus (Davidian & Manukyan 2024).

***Distribution.*** **Russia** (Davidian & Manukyan 2024).

### *Monoctonus sichuanicus* Davidian, 2025

*Monoctonus sichuanicus* Davidian [in Davidian & Belokobylskij], 2025:593. Holotype ♀ (ZISP). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Davidian & Belokobylskij 2025).

### *Monoctonus similis* Starý & Schlinger, 1967 [Fig. 34B]

*Monoctonus similis* Starý & Schlinger, 1967:78. Holotype ♀ (USNM), paratypes ♀♀ ♂ (IECA, USNM). – Japan.

***Host.*** ***Myzus*** sp. (Starý & Schlinger 1967).

***Distribution.*** **Japan** (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a); **South Korea** (Chang & Youn 1983b; Starý & Choi 2000; Kim 2026).

***Remarks.*** Earlier record of *M. similis* from South Korea (Chang & Youn 1983b) should be considered as doubtful evidence (Jong-Cheol Paik, pers. comm.).

### *Monoctonus tianshanensis* Starý, 1978

*Monoctonus tianshanensis* Starý [in Starý & González], 1978:140. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). –Uzbekistan.

***Hosts.*** ***Amphorophora rubi*** (Kaltenbach), ***Impatientinum asiaticum*** Nevsky (Starý & González 1978; Starý 1979a).

***Distribution.*** **Uzbekistan** (Starý & González 1978; Starý 1979a; Aripov 2003; Davidian 2016b); **Kyrgyzstan**, **Tajikistan** (Davidian 2016b).

### *Monoctonus washingtonensis* Pike & Starý, 1995 [Fig. 34C]

*Monoctonus washingtonensis* Pike & Starý, 1995 [1996b]:408. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, IECA, WSUJ, WSUP). – USA.

***Hosts.*** ***Aphis*** sp. (Pike et al. 2000); ***Diuraphis noxia*** (Mordvilko) (Pike & Starý 1996; Pike et al. 1996, 2000; Bosque-Pérez et al. 2002); ***Rhopalosiphum padi*** (Linnaeus) (Pike & Starý 1996; Pike et al. 1996, 2000).

***Distribution.*** **Canada** (BOLD:AAM7497); **USA** (Pike & Starý 1996; Pike et al. 1996, 1997b, 2000; Bosque-Pérez et al. 2002).

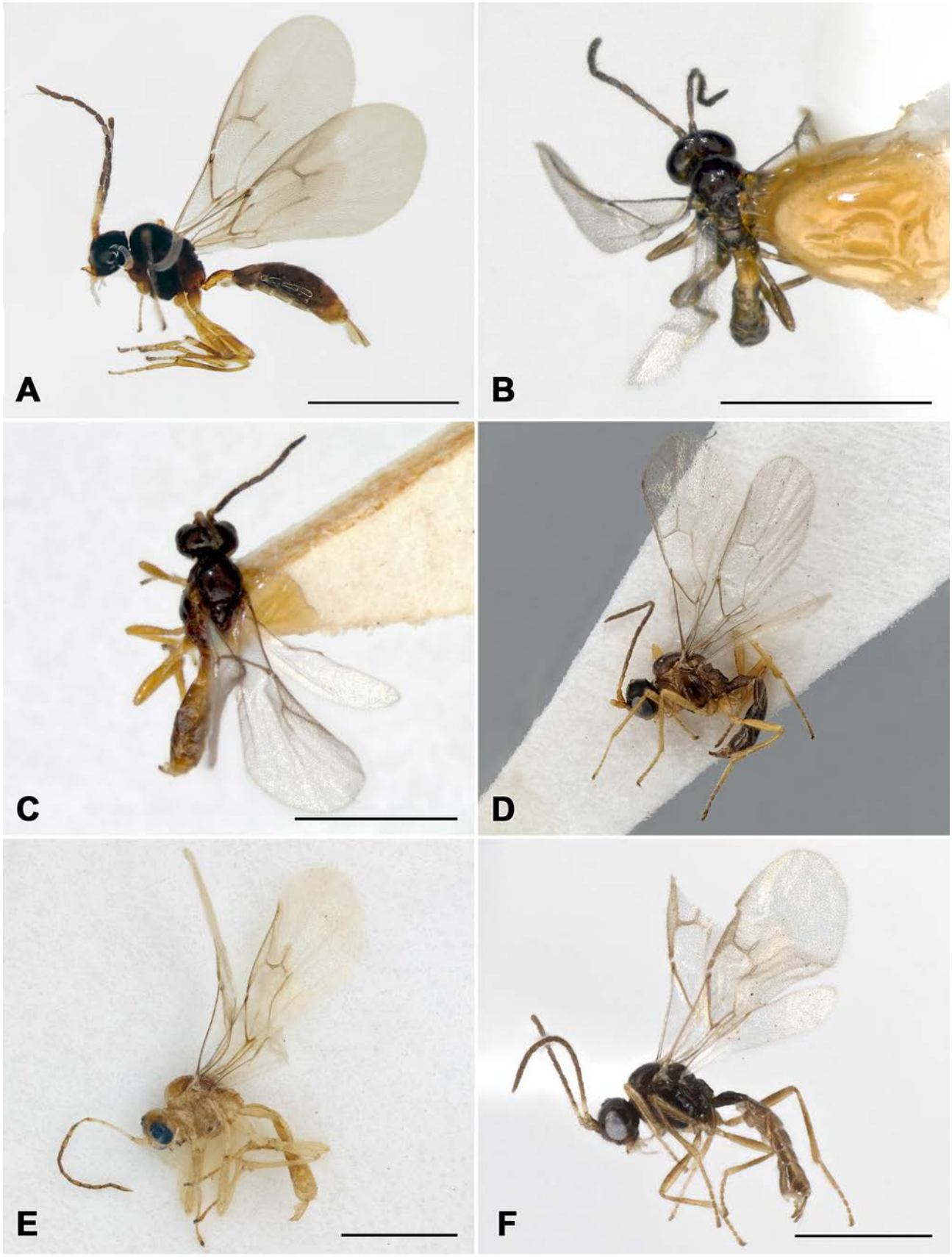



**Figure 33.** Species of the genus *Monoctonus* Haliday, 1833. **A.** *Monoctonus koreanus* Kim, Čkrkić & Tomanović, 2024 – South Korea, NIBR; **B.** *Monoctonus ligustri* van Achterberg, 1989 – Holotype (= *Monoctonus cerasi* (Marshall, 1896)), RMNH; **C.** *Monoctonus mali* van Achterberg, 1989 – Holotype (= *M. cerasi*), RMNH; **D.** *Monoctonus nervosus* (Haliday, 1833) – Finland, ZMHF; **E.** *Monoctonus pacificus* Pike & Starý, 2000 – Holotype, USNM; **F.** *Monoctonus paulensis* (Ashmead, 1902) – Canada, BOLD:AAL4464. Scale bar: 1 mm.

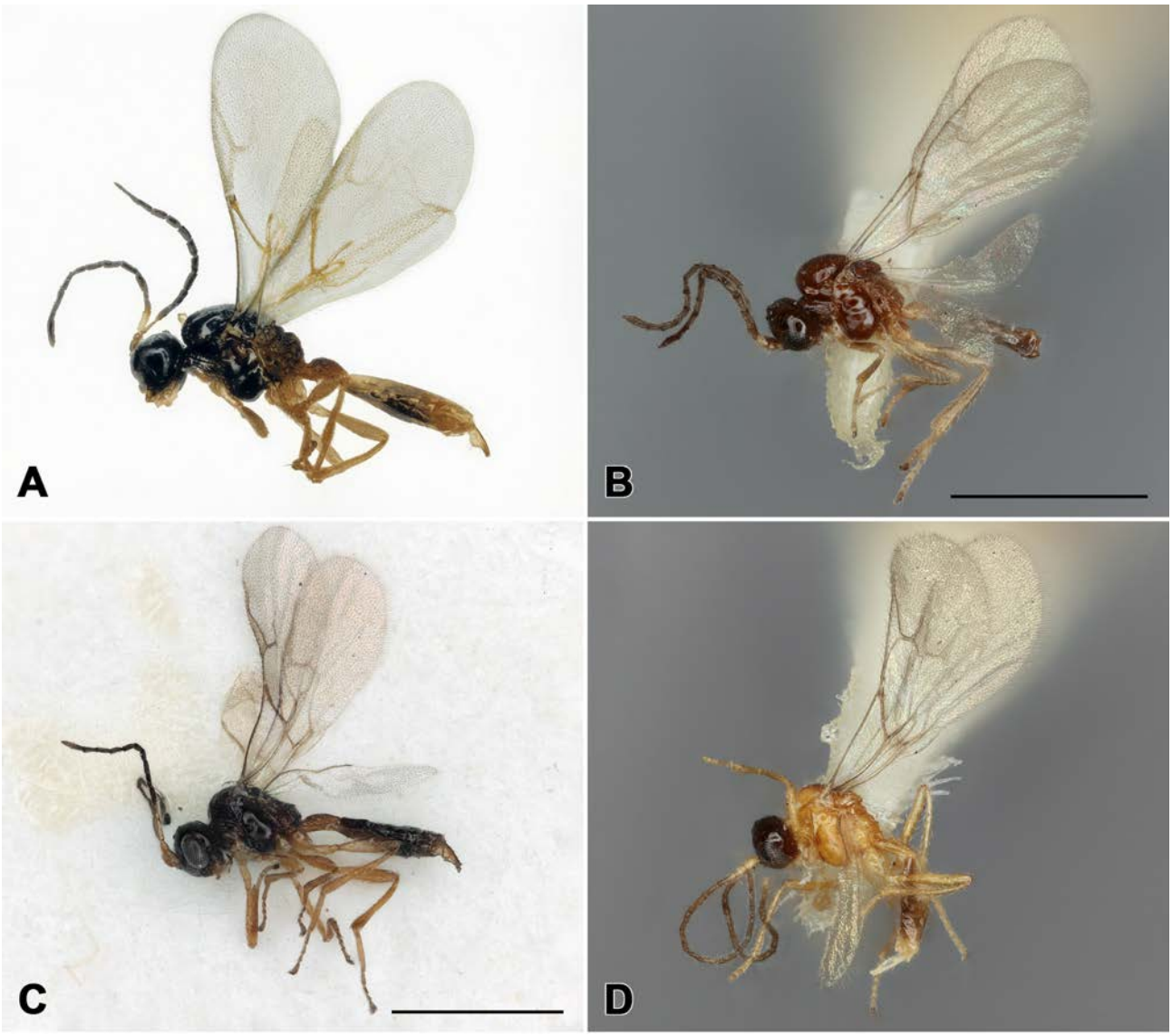



**Figure 34.** Species of the genus *Monoctonus* Haliday, 1833. **A.** *Monoctonus sambuci* Davidian, 2024 – Holotype, ZISP; **B.** *Monoctonus similis* Starý & Schlinger, 1967 – Paratype, USNM; **C.** *Monoctonus washingtonensis* Pike & Starý, 1995 – Holotype, USNM; **D.** *Monoctonus woodwardiae* Starý & Schlinger, 1967 – Holotype, USNM. Scale bar: 1 mm.

### *Monoctonus woodwardiae* Starý & Schlinger, 1967 [Fig. 34D]

*Monoctonus woodwardiae* Starý & Schlinger, 1967:80. Holotype ♀ (USNM), paratypes ♀♀ (IECA). – Taiwan.

***Host. Macromyzus woodwardiae*** (Takahashi) (Mackauer & Starý 1967; Starý & Schlinger 1967; Liu 1975; Starý 1975a; Chou 1981; Chen et al. 2009).

***Distribution.*** **China** (Mackauer & Starý 1967; Starý & Schlinger 1967; Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009).

### Genus *Protoctonus* Davidian, 2022 [1 species]

*Protoctonus* Davidian, 2022:521. Type species: *Protoctonus groehni* Davidian, 2022.

### *Protoctonus groehni* Davidian, 2022 [Fossil] [Fig. 35A]

*Protoctonus groehni* Davidian [in Davidian et al.], 2022:522. Holotype ♀ (GPIH). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** - Kaliningrad, Upper Eocene (Davidian et al. 2022).




**Figure 35.** Species of the fossil genera *Protoctonus* Davidian, 2022, and *Sakhalinoctonus* Davidian, 2021. **A.** *Protoctonus groehni* Davidian, 2022 – Holotype, GPIH (Davidian et al. 2022); B. *Sakhalinoctonus alexrasnitsyni* Davidian, 2021 – Holotype, PIN (Davidian et al. 2021b). Scale bar: 1 mm.

### Genus *Quadrictonus* Starý & Remaudière, 1982 [1 species]

*Quadrictonus* Starý & Remaudière, 1982:118. Type species: *Quadrictonus luteolus* Starý & Remaudière, 1982.

### *Quadrictonus luteolus* Starý & Remaudière, 1982

*Quadrictonus luteolus* Starý & Remaudière, 1982:118. Holotype ♀, paratypes ♀♀ ♂ (IECA). – Mexico.

***Hosts.*** ***Illinoia*** sp. (Starý & Remaudière 1982); ***Macrosiphum californicum*** (Clarke) (Starý & Remaudière 1982); ***Myzus ornatus*** Laing, ***Sitobion*** sp. (Starý 1983d); ***Utamphorophora crataegi*** (Monell) (Starý & Remaudière 1982; Starý 1983d).

***Distribution.*** **Mexico** (Starý & Remaudière 1982; Starý 1983d; Starý & Remaudière 1988).

### Genus *Sakhalinoctonus* Davidian, 2021 [1 species]

*Sakhalinoctonus* Davidian, 2021:538. Type species: *Sakhalinoctonus alexrasnitsyni* Davidian, 2021.

### *Sakhalinoctonus alexrasnitsyni* Davidian, 2021 [Fossil] [Fig. 35B]

*Sakhalinoctonus alexrasnitsyni* Davidian [in Davidian et al.], 2021b: 541. Holotype ♀ (PIN). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian et al. 2021b).

### Subtribe PROTAPHIDIINA Mackauer, 1961 [9 genera, 95 species]

Protaphidiina Mackauer, 1961:801. Type genus: *Protaphidius* Ashmead, 1900.

### Genus *Chaetopauesia* Mackauer, 1967 [3 species]

*Chaetopauesia* Mackauer, 1967:141. Type species: *Chaetopauesia talis* Mackauer, 1967.

### *Chaetopauesia crassicornis* (Ashmead, 1891) [Fig. 36A]

*Aphidius crassicornis* Ashmead, 1891:5. Holotype ♂ (USNM). – Canada.

***Host.*** Unknown.

***Distribution.*** **Canada** (Ashmead 1891; Gahan 1911a; Muesebeck & Walkley 1951; Mackauer & Starý 1967).

### *Chaetopauesia mackaueri* Davidian, 2007

*Chaetopauesia mackaueri* Davidian, 2007:222. Holotype ♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2007, 2017, 2019b).

### *Chaetopauesia talis* Mackauer, 1967

*Chaetopauesia talis* Mackauer, 1967a:142. Holotype ♀ (USNM). – Canada.

***Host.*** Unknown.

***Distribution.*** **Canada** (Mackauer 1967a; Mackauer & Starý 1967).

### Genus *Diaeretus* Förster, 1863 [2 species]

*Diaeretus* Förster, 1863:249. Type species: *Aphidius leucopterus* Haliday, 1834.

### *Diaeretus essigellae* Starý & Zuparko, 2002 [Fig. 36B]

*Diaeretus essigellae* Starý & Zuparko, 2002:57. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (ANIC, CASC, BNHM, EMEC, IECA, UCDC, UCRC, USNM). – USA.

***Host.*** ***Essigella californica*** (Essig), ***Essigella*** sp. (Starý & Zuparko 2002).

***Distribution.*** **USA** (Starý & Zuparko 2002); **Australia** (Introduced - Kimber et al. 2010).

### *Diaeretus leucopterus* (Haliday, 1834) [Fig. 36C]

*Aphidius leucopterus* Haliday, 1834:103. Syntype (lost). – United Kingdom.

*Diaeretus leucopterus*: Starý, 1960e:240. Neotype ♀ (IECA), [neo]paratypes ♀♀ (NHMUK, USNM). – Czech Republic.

**Syn.:** *Aphidius exspectatus* Gautier & Bonnamour, 1936.

***Hosts.*** *Acyrthosiphon gossypii* Mordvilko (Ataeva 1961); *Brachycaudus cardui* (Linnaeus) (Ataeva 1961; Fulmek 1968); *Chaitophorus populialbae* (Boyer de Fonscolombe) (Ataeva 1961); ***Cinara formosana*** (Takahashi) (Starý & Schlinger 1967); ***Cinara pineti*** (Fabricius) (Starý 1960e; Starý & Schlinger 1967; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); ***Cinara*** sp. (Kavallieratos et al. 2016); *Dysaphis sorbiarum* (Narzikulov) (Ataeva 1961); ***Eulachnus agilis*** (Kaltenbach) (Mackauer 1962c; Starý 1964d, 1977, 1987a, 2006; Mackauer & Starý 1967; Takada 1968; Kierych 1980; Murphy & Völkl 1996; Wiackowski & Wiackowska 2000; Kavallieratos et al. 2001, 2004, 2016; Michelena et al. 2003; Ben Halima et al. 2020); ***Eulachnus brevipilosus*** Börner (Mackauer & Heie 1965; Mackauer & Starý 1967); ***Eulachnus mediterraneus*** Binazzi (Michelena et al. 2003); ***Eulachnus rileyi*** (Williams) (Tremblay 1975a; Starý 1976a; González & Michelena 1987; Suay Cano et al. 1992; Suay Cano & Michelena Saval 1998; Sanchis et al. 2000; Michelena et al. 2003; Kavallieratos et al. 2004, 2016; Lumbierres et al. 2005; Žikić et al. 2012; Pons et al. 2018); ***Eulachnus thunbergii*** (Wilson) (Takada 1968, 1973; Starý 1975a; Starý & Ghosh 1975; Chou 1981; Starý & Ghosh 1983; Paonam & Singh 1986b; Finlayson 1990; Singh et al. 1995; Chen & Shi 2001; Chen et al. 2009); ***Eulachnus tuberculostemmata*** (Theobald) (Mackauer & Starý 1967; Starý 1976a; Mescheloff & Rosen 1990b; Kavallieratos et al. 2001, 2004, 2016); ***Eulachnus*** spp. (Mackauer & Heie 1965; Starý 1965a, 1966c; Mackauer & Starý 1967; Michelena et al. 1998; Chen & Shi 2001; Wei et al. 2005; Davidian 2017; Pons et al. 2018); ***Mindarus abietinus*** Koch (Capek 1960); *Schizaphis graminum* (Rondani) (Meyer 1934; Luzhetski 1960); *Tinocallis saltans* Nevsky (Ataeva 1961).

***Distribution.*** **Andorra** (Michelena et al. 1998; Sanchis et al. 1999); **Bulgaria** (Todorov 2008); **China** (Chou 1981; Chen & Shi 2001; Chen et al. 2009); **Czech Republic** (Starý 1960e, 1966c, 1977, 1987a, 1989a, 2006; Mackauer & Starý 1967; Starý & Havelka 2008); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967); **Finland** (BOLD:ACQ1100); **France** (Gautier & Bonnamour 1936; Starý 1960e; Mackauer & Starý 1967; Starý et al. 1977a); **Germany** (Mackauer 1962c; Mackauer & Starý 1967; Murphy & Völkl 1996; Belshaw & Quicke 2002; Belokobylskij et al. 2003); **Greece** (Kavallieratos et al. 2001, 2004, 2016); **Hungary** (Polgár 1983); **India** (Starý & Ghosh 1975; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Starý & Ghosh 1983; Paonam & Singh 1986b; Raychaudhuri et al. 1990; Singh et al. 1995; Dey & Akhtar 2007;

Das & Chakrabarti 2023a); **Italy** (Starý 1966d, 1976a; Bergamesco et al. 1995); **Japan** (Mackauer & Starý 1967; Takada 1968, 1973; Starý 1975a; Finlayson 1990); **Moldova** (Talitzky & Kuslitzky 1990); **Norway** (Mjøs et al. 2024); **Palestine** (Mackauer & Starý 1967; Starý 1976a; Mescheloff & Rosen 1990b); **Poland** (Kierych 1980; Huflejt 1997; Wiackowski & Wiackowska 2000; Tran & Piekarska-Boniecka 2017); **Russia** (Starý 1965a; Mackauer & Starý 1967; Davidian & Gavrilyuk 2014; Davidian 2017, 2018b, 2019b, 2020b; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a, 1999b; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); **Slovakia** (Capek 1960; Starý 1960e, 1977, 1989a); **South Korea** (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a; Starý & Choi 2000; Davidian 2017; Kim 2026); **Spain** (Mackauer & Starý 1967; Starý 1976a; González & Michelena 1987; Tizado & Núñez-Perez 1991; Suay Cano & Michelena Saval 1998; Sanchis et al. 2000; Michelena et al. 2003; Lumbierres et al. 2005; Michelena Saval & Martínez De Murguía 2012; Pons et al. 2018); **Tajikistan** (Fulmek 1968); **Thailand** (Starý et al. 2010c); **Tunisia** (Ben Halima et al. 2020); **Ukraine** (Kaliuzhna 2014, 2019a, 2019b); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Marshall 1872a, 1896, 1899; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer & Starý 1967); **Uzbekistan** (Aripov 2003).

***Remarks.*** *Diaeretus leucopterus* is a specific parasitoid of *Eulachnus* and *Cinara* (*Schizolachnus*) aphid hosts, and all other host records are doubtful.

### Genus *Metaphidius* Starý & Sedlag, 1959 [1 species]

*Metaphidius* Starý & Sedlag, 1959:160. Type species: *Coelonotus aterrimus* Fahringer, 1935.

#### *Metaphidius aterrimus* (Fahringer, 1935) [Fig. 36D]

*Coelonotus aterrimus* Fahringer [in Schimitschek], 1935:215. Syntype ♀ (NHMW?) – Austria.

**Syn.:** *Metaphidius trioxyformis* Starý & Sedlag, 1959.

***Hosts. Cinara cembrae*** (Seitner) (Seitner 1936; Braun 1938); ***Cinara neubergi*** (Arnhart) (Schimitschek 1935, 1936; Fahringer 1937; Mackauer & Starý 1967); ***Cinara nuda*** (Mordvilko) (Starý & Sedlag 1959); ***Cinara pinea*** (Mordvilko) (Braun 1938; Mackauer & Starý 1967); ***Cinara pini*** (Linnaeus) (Mackauer & Starý 1967; Michelena Saval & Sanchis Segovia 1997a; Michelena et al. 2003); ***Cinara*** spp. (Starý 1964d, 1966c, 1977, 2006; Kierych 1980; Davidian 2017).

***Distribution.*** **Austria** (Fahringer 1935; Schimitschek 1935, 1936; Seitner 1936; Mackauer & Starý 1967); **Czech Republic** (Starý 1966c, 1977, 1989a, 2006; Starý & Havelka 2008); **Finland** (Mackauer & Starý 1967); **Germany** (Starý & Sedlag 1959; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Györfi 1941; Mackauer & Starý 1967; Polgár 1983); **Moldova** (Talitzky & Kuslitzky 1990); **Poland** (Kierych 1980; Huflejt 1997); **Russia** (Mackauer 1968c; Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Davidian & Humala 2023); **Slovakia** (Starý 1977); **Spain** (Michelena Saval & Sanchis Segovia 1997a; Michelena et al. 2003).

### Genus *Neopauesia* Paonam & Singh, 1988 [1 species]

*Neopauesia* Paonam & Singh, 1988:2. Type species: *Neopauesia manipurensis* Paonam & Singh, 1988.

#### *Neopauesia manipurensis* Paonam & Singh, 1988

*Neopauesia manipurensis* Paonam & Singh, 1988:2. Holotype ♀, paratypes ♀♀ ♂♂ (MANEC). – India.

***Host.*** ***Lachnus longirostrum*** David & Ghosh (Paonam & Singh 1988).

***Distribution.*** **India** (Paonam & Singh 1988).

### Genus *Pauesia* Quilis, 1931 [82 species]

*Pauesia* Quilis, 1931:67. Type species: *Pauesia albuferensis* Quilis, 1931.

**Syn.:** *Aphidius* Nees, 1819 – subgenus *Protaphidius*: C. F. Smith, 1944:35. nec *sensu* Ashmead, 1900; *Aphidius* Nees, 1819 – subgenus *Paraphidius* Starý, 1958:56, nom. nov. pro *Protaphidius sensu* auctt., nec Ashmead, 1900. Type species: *Aphidius californicus* Ashmead, 1889.

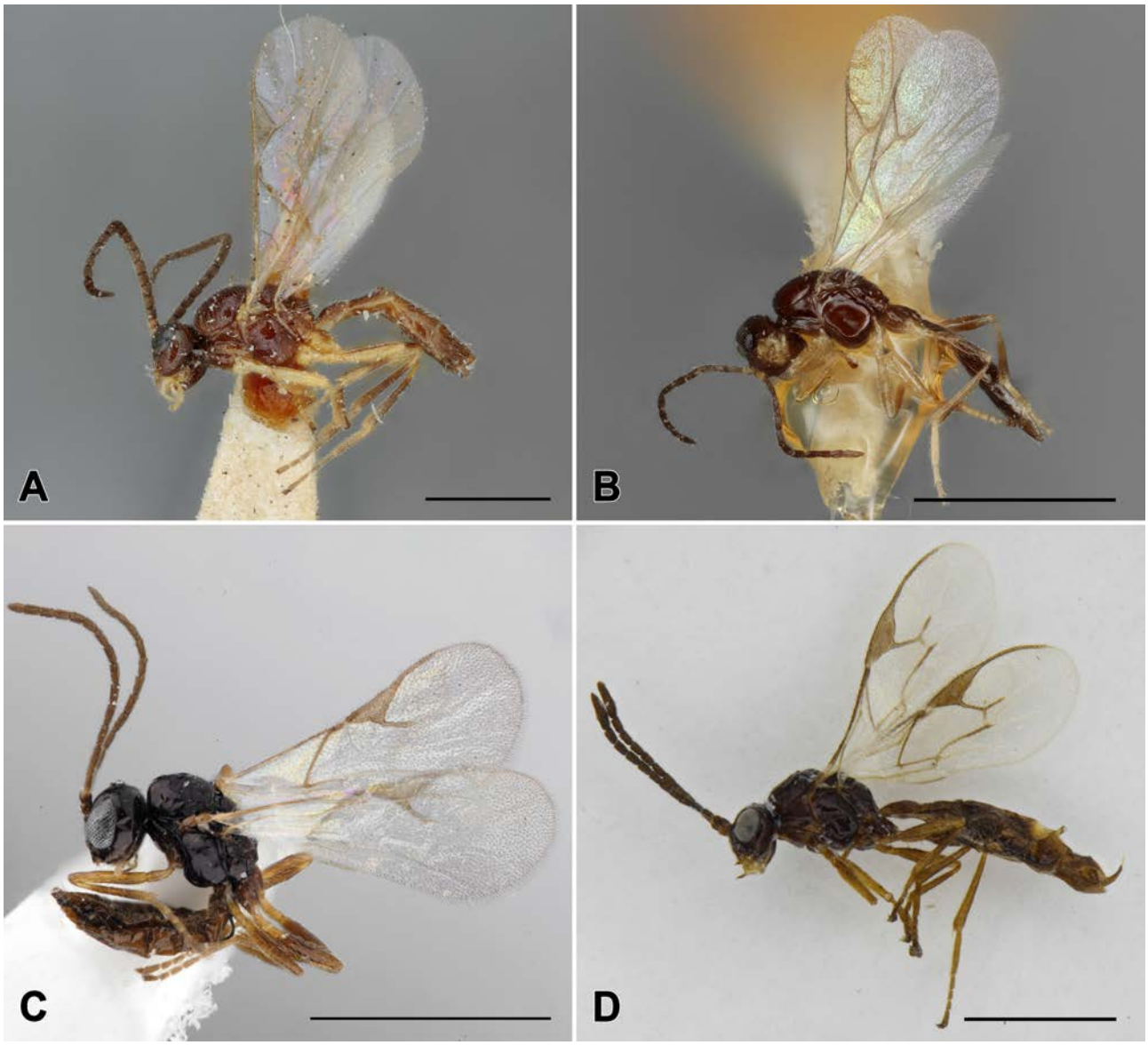



**Figure 36.** Species of the subtribe Protaphidiina Mackauer, 1961. **A.** *Chaetopauesia crassicornis* (Ashmead, 1891) – Holotype, USNM; **B.** *Diaeretus essigellae* Starý & Zuparko, 2002 – Holotype, USNM; **C.** *Diaeretus leucopterus* (Haliday, 1834) – Tunisia, DPPZ; **D.** *Metaphidius aterrimus* (Fahringer, 1935) – Russia, ZISP. Scale bar: 1 mm.

### *Pauesia abietis* (Marshall, 1896) [Fig. 37A]

*Aphidius abietis* Marshall [in André], 1896:565. Holotype ♀ (NHMUK). – United Kingdom.

***Hosts.*** *Aphis craccivora* Koch (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Cinara brauni*** Börner (Davidian 2017); ***Cinara cuneomaculata*** (Del Guercio) (Starý et al. 1971, 1973); ***Cinara formosana*** (Takahashi) (Mackauer & Starý 1967; Paik 1976); ***Cinara laricis*** (Hartig) (Starý 1960b, 1964d, 1966c, 2006; Schimitschek 1962; Mackauer & Starý 1967; Takada 1968); ***Cinara neubergi*** (Arnhart) (Havelka et al. 2021); ***Cinara pilicornis*** (Hartig) (Schimitschek 1944; Watanabe & Takada 1965; Takada 1968; Starý 1976a); ***Cinara pilosa*** (Zetterstedt) (Havelka et al. 2021); ***Cinara pinea*** (Mordvilko) (Mackauer & Starý 1967; Finlayson 1990; Davidian 2017; Havelka et al. 2021); ***Cinara pineti*** (Fabricius) (Schimitschek 1936; Braun 1938; Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968; Starý 1975a); ***Cinara pini*** (Linnaeus) (Marshall 1896; Quilis-Pérez 1931b; Mackauer 1961b); ***Cinara pinimaritimae*** (Dufour) (Watanabe & Takada 1965; Takada 1968, 1973; Starý 1976a; Uysal et al. 2004); ***Cinara piniphila*** (Ratzeburg) (Schimitschek 1944; Mackauer & Starý 1967; Havelka et al. 2021); ***Cinara pruinosum*** (Hartig)

(Scheurer 1964; Mackauer & Starý 1967); ***Cinara schimitscheki*** Börner (Davidian 2017); ***Cinara*** spp. (Starý 1966d; Mackauer & Starý 1967; Davidian 2017).

***Distribution.*** **Austria** (Schimitschek 1936; Mackauer & Starý 1967); **Bulgaria** (Todorov 2008); **China** (Chen & Shi 2001); **Czech Republic** (Starý 1960b, 1966c, 1989a, 2006; Mackauer & Starý 1967; Zeman & Vanek 2001; Starý & Havelka 2008); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Starý et al. 1971, 1973, 1977a); **Germany** (Schimitschek 1962; Starý 1960b; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Györfi 1941; Mackauer & Starý 1967; Polgár 1983, 1987); **Italy** (Cecconi 1924; Starý 1966d; Bergamesco et al. 1995); **Japan** (Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968, 1973; Starý 1975a; Finlayson 1990); **Kenya** (Todorov 2009a); **Lithuania** (Havelka et al. 2021); **Moldova** (Talitzky & Kuslitzky 1990); **Poland** (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **North Korea** (Starý & Choi 2000); **Russia** (Davidian 2007, 2017, 2018b, 2019b; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Manukyan 2024); **South Korea** (Paik 1976; Takada 1976b; Starý & Choi 2000; Davidian 2017); **Spain** (Quilis-Pérez 1931b; Starý 1976a); **Sweden** (Starý 1960b; Mackauer & Starý 1967); **Türkiye** (Schimitschek 1944; Mackauer & Starý 1967; Starý 1976a; Uysal et al. 2004; Rakhshani et al. 2019); **Ukraine** (Kaliuzhna 2013a, 2014; Davidian 2017; Kaliuzhna 2019a, 2019b); **United Kingdom** (Marshall 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1961b; Mackauer & Starý 1967).

### *Pauesia ahtanumensis* Pike & Starý, 1996 [Fig. 37B]

*Pauesia ahtanumensis* Pike & Starý, 1996c:325. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (IECA, USNM, WSUJ). – USA.

***Host.*** ***Cinara ponderosae*** (Williams) (Pike & Starý 1996; Pike et al. 2000; Sanchis et al. 2000, 2001).

***Distribution.*** **USA** (Pike & Starý 1996; Pike et al. 1996; 2000; Sanchis et al. 2000, 2001).

### *Pauesia akamatsucola* Takada, 1968

*Pauesia akamatsucola* Takada, 1968:88. Holotype ♀, paratypes ♀ ♂♂ (EIHU). – Japan.

**Syn.:** *Pauesia longicauda* Chiriac, 1993.

***Hosts.*** ***Cinara pilosa*** (Zetterstedt) (Davidian 2017); ***Cinara pinea*** (Mordvilko) (Kaliuzhna 2014; Davidian 2017); ***Cinara pineti*** (Fabricius) (Takada 1968, 1973; Starý 1975a); ***Cinara piniphila*** (Ratzeburg) (Havelka et al. 2021); ***Cinara*** sp. (Havelka et al. 2021).

***Distribution.*** **Japan** (Takada 1968, 1973; Starý 1975a); **Lithuania** (Havelka et al. 2021); **Moldova** (Chiriac 1993); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Davidian & Humala 2023); **Türkiye** (Davidian 2015); **Ukraine** (Davidian & Gavrilyuk 2014; Kaliuzhna 2014; Davidian 2015, 2017; Kaliuzhna 2019a, 2019b).

### *Pauesia alpina* Starý, 1966

*Pauesia alpina* Starý, 1966d:105. Holotype ♀ (MRSN). – Italy.

***Hosts.*** ***Cinara kochiana*** (Börner) (Sanchis et al. 2001); ***Cinara*** sp. (Starý 1966d; Mackauer & Starý 1967; Mackauer 1968a).

***Distribution.*** **Italy** (Starý 1966d; Mackauer & Starý 1967; Mackauer 1968a; Bergamesco et al. 1995); **Sweden** (Sanchis et al. 2001).

### *Pauesia anatolica* Michelena, Assael & Mendel, 2005

*Pauesia anatolica* Michelena, Assael & Mendel, 2005:500. Holotype ♀ (ICBiBE), paratypes ♀♀ ♂♂ (ICBiBE, AROV). – Türkiye.

***Host.*** ***Cinara cedri*** Mimeur (Michelena et al. 2005; Kocić et al. 2024a).

***Distribution.*** **Palestine** (Michelena et al. 2005); **Serbia** (Kocić et al. 2024a); **Türkiye** (Michelena et al. 2005; Rakhshani et al. 2019).

### *Pauesia antennata* (Mukerji, 1950) [Fig. 37C]

*Aphidius antennatus* Mukerji, 1950:33. Holotype ♀, paratypes ♀♀ ♂ (NPCI). – Pakistan.

**Syn.:** *Aphidius chloratus* Telenga, 1953.

***Hosts.*** *Cinara cupressi* (Buckton) (Starý 1965a); *Myzus persicae* (Sulzer) (Davidian 2017); ***Pterochloroides persicae*** (Cholodkovsky) (Mukerji 1950; Starý 1965a, 1971d, 1976a, 1979a; Mackauer & Starý 1967; Starý & Kaddou 1971; Starý et al. 1999, 2000; Rakhshani et al. 2005b, 2012b; Talebi et al. 2009; Nazari et al. 2012; Rakhshani 2012; Barahoei et al. 2013; Adouani et al. 2017, 2021); *Rhopalosiphum nymphaeae* (Linnaeus) (Agarwala et al. 1981b).

***Distribution.*** **Armenia** (Davidian 2017); **India** (Agarwala et al. 1981a; Das & Chakrabarti 2023a); **Iran** (Mackauer & Starý 1967; Starý 1979a; Starý et al. 2000; Rakhshani et al. 2005b, 2012b, 2019; Fallahzadeh & Saghaei 2010; Nazari et al. 2012; Rakhshani 2012; Barahoei et al. 2013); **Iraq** (Starý & Kaddou 1971; Starý 1976a; Rakhshani et al. 2005b, 2019); **Pakistan** (Mukerji 1950; Mackauer & Starý 1967; Starý 1979a; Starý & Ghosh 1983; Starý et al. 1999); **Tajikistan** (Starý 1965a, 1979a; Mackauer & Starý 1967; Fulmek 1968); **Tunisia** (Mdellel et al. 2015; Adouani et al. 2017, 2021; Rakhshani et al. 2019); **Uzbekistan** (Starý 1965a, 1979a; Mackauer 1968a; Aripov 2003; Rakhshani et al. 2005b; Davidian 2017); **Yemen** (Cross & Poswal 2013; Rakhshani et al. 2019).

### *Pauesia arcuata* Starý & Raychaudhuri, 1982

*Pauesia* (*Paraphidius*) *arcuata* Starý & Raychaudhuri, 1982:297. Holotype ♀ (CUCE). – India.

***Hosts.*** ***Cinara atrotibialis*** David & Rajasingh (Samanta & Raychaudhuri 1984b; Raychaudhuri et al. 1990); ***Cinara tenuipes*** Chakrabarti & Ghosh (Starý & Raychaudhuri 1982; Starý & Ghosh 1983).

***Distribution.*** **India** (Starý & Raychaudhuri 1982; Starý & Ghosh 1983; Samanta & Raychaudhuri 1984b; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Das & Chakrabarti 2023a).

### *Pauesia bicolor* (Ashmead, 1889) [Fig. 37D]

*Aphidius bicolor* Ashmead, 1889:658. Holotype ♀ (USNM). – USA.

**Syn.:** *Aphidius* (*Protaphidius*) *scorpinicus* Smith, 1944.

***Hosts.*** ***Cinara australi*** (Ashmead) [*n. dub.*] (Muesebeck & Walkley 1951); ***Cinara cronartii*** Tissot & Pepper (Mills 1990); ***Cinara newelli*** Tissot (Marsh 1979); ***Cinara pergandei*** (Wilson) (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Marsh 1979); ***Cinara pini*** (Linnaeus) (Smith 1944; Muesebeck & Walkley 1951; Marsh 1979); ***Cinara strobi*** (Fitch) (Smith 1944; Muesebeck & Walkley 1951; Marsh 1979); ***Cinara*** spp. (Mackauer & Starý 1967; Pike et al. 2000).

***Distribution.*** **Canada** (Bradley 1961; Mackauer & Starý 1967); **South Africa** (Introduced - Mills 1990); **USA** (Ashmead 1889, 1900a; Viereck 1910; Gahan 1911a; Smith 1944; Muesebeck & Walkley 1951; Muesebeck 1958a; Mackauer & Starý 1967; Pike et al. 2000).

### *Pauesia bizarrii* Samanta & Raychaudhuri, 1984

*Pauesia bizarrii* Samanta & Raychaudhuri, 1984b:9. Holotype ♀, paratypes ♀♀ ♂ (CUCE). – India.

***Host.*** ***Cinara atrotibialis*** David & Rajasingh (Samanta & Raychaudhuri 1984b).

***Distribution.*** **India** (Samanta & Raychaudhuri 1984b; Raychaudhuri et al. 1990; Das & Chakrabarti 2023a).

### *Pauesia californica* (Ashmead, 1889) [Fig. 37E]

*Aphidius californicus* Ashmead, 1889:660. Holotype ♀ (USNM). – USA.

***Hosts.*** ***Cinara occidentalis*** (Davidson) (Smith 1944; Muesebeck & Walkley 1951); ***Cinara parva*** (Wilson) (Mackauer & Starý 1967; Marsh 1979); ***Cinara piniradiatae*** (Davidson) (Smith 1944; Muesebeck & Walkley 1951; Grobler 1962; Mackauer & Starý 1967; Marsh 1979).

***Distribution.*** **Canada** (Muesebeck 1958a, 1967; Grobler 1962; Mackauer & Starý 1967); **USA** (Ashmead 1889; Szépligeti 1904; Gahan 1911a; Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Muesebeck 1967).

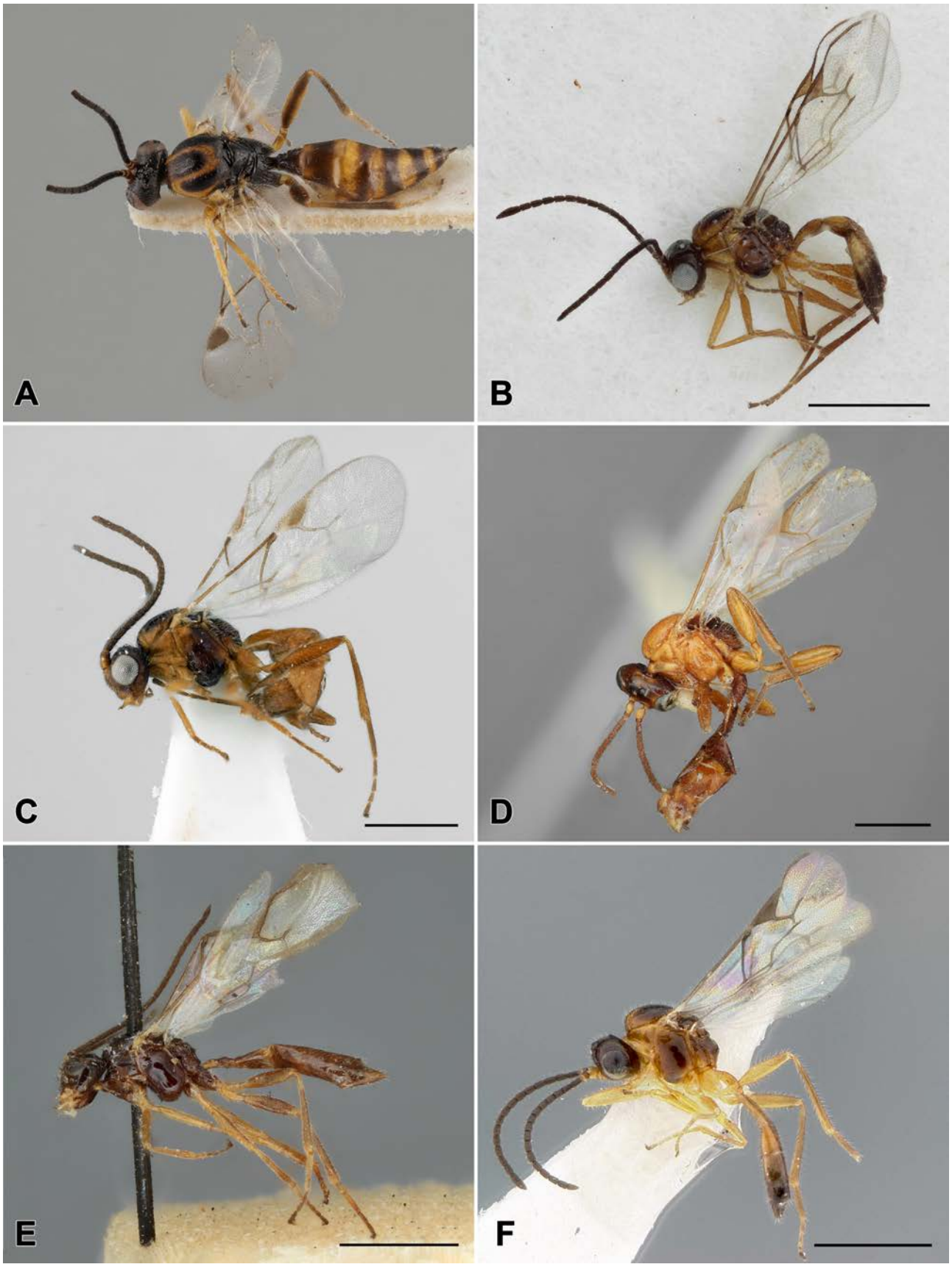



**Figure 37.** Species of the genus *Pauesia* Quilis, 1931. **A.** *Pauesia abietis* (Marshall, 1896) – Finland, ZMHF; **B.** *Pauesia ahtanumensis* Pike & Starý, 1996 – Holotype, USNM; **C.** *Pauesia antennata* (Mukerji, 1950) – Iran, DPPZ; **D.** *Pauesia bicolor* (Ashmead, 1889) – Holotype, USNM; **E.** *Pauesia californica* (Ashmead, 1889) – Holotype, USNM; **F.** *Pauesia cinaravora* Marsh, 1991 – Holotype, USNM (Robert Kula, Kweskin). Scale bar: 1 mm.

### *Pauesia cedrobii* Starý & Leclant, 1977

*Pauesia cedrobii* Starý & Leclant, 1977:160. Holotype ♀ (IECA), paratypes ♀♀ ♂♂ (IECA, MNHN). – France.

***Host. Cinara laportei*** (Remaudière) (Starý & Leclant 1977; Fabre & Rabasse 1987; Remaudière & Starý 1993).

***Distribution.*** **Algeria** (Aroun et al. 2016); **France** (Fabre & Rabasse 1987; Remaudière & Starý 1993); **Morocco** (Starý & Leclant 1977; Fabre & Rabasse 1987; Mills 1990; Rakhshani et al. 2019).

### *Pauesia cinaravora* Marsh, 1991 [Fig. 37F]

*Pauesia cinaravora* Marsh, 1991:81. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, SANC). – USA.

***Hosts. Cinara cronartii*** Tissot & Pepper (Marsh 1991); ***Cinara newelli*** Tissot (Kfir et al. 2003); ***Cinara pinivora*** (Wilson) (Marsh 1991).

***Distribution.*** **South Africa** (Marsh 1991; van Rensburg 1992; Kfir et al. 2003); **USA** (Marsh 1991).

### *Pauesia columbiana* Pike & Starý, 2002 [Fig. 38A]

*Pauesia columbiana* Pike & Starý [in Pike et al.], 2002:651. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (IECA, WSUJ). – USA.

***Host. Cinara burrilli*** (Wilson) (Pike et al. 2002).

***Distribution.*** **USA** (Pike et al. 2002).

### *Pauesia confusa* Samanta & Raychaudhuri, 1984

*Pauesia confusa* Samanta & Raychaudhuri, 1984b:3. Holotype ♀, paratype ♀ (CUCE). – India.

***Host. Cinara atrotibialis*** David & Rajasingh (Samanta & Raychaudhuri 1984b; Raychaudhuri et al. 1990).

***Distribution.*** **India** (Samanta & Raychaudhuri 1984b; Raychaudhuri et al. 1990; Das & Chakrabarti 2023a).

### *Pauesia cupressobii* (Starý, 1960) [Fig. 38B]

*Paraphidius cupressobii* Starý, 1960b:11. Holotype ♀ (IECA), paratypes ♀♀ ♂♂ (IECA, USNM). – Slovakia.

***Hosts. Cinara juniperi*** (De Geer) (Starý 1960b, 1964d, 1966c, 1973a, 1976a, 2006; Starý & Rupais 1964; Mackauer & Starý 1967; Starý et al. 1975; Michelena Saval & González Funes 1988a; Sanchis et al. 2000, 2001; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Michelena et al. 2003; Žikić et al. 2012; Kavallieratos et al. 2016; Havelka et al. 2021; Kocić et al. 2024a); ***Cinara piceicola*** (Cholodkovsky) (Starý et al. 1971); ***Cinara pilicornis*** (Hartig) (Davidian 2017); ***Cinara*** spp. (Sanchis et al. 2001; Kavallieratos et al. 2004; Žikić et al. 2012).

***Distribution.*** **Czech Republic** (Starý 1966c, 1989a, 2006; Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975; Starý 1976a); **Germany** (Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1983; Kovács 1999); **Latvia** (Starý & Rupais 1964; Mackauer & Starý 1967); **Lithuania** (Starý & Rupais 1964; Havelka et al. 2021); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Tomanović et al. 1998a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); **Poland** (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Mackauer 1968c); **Serbia** (Kavallieratos et al. 2016; Kocić et al. 2024a); **Slovakia** (Starý 1960b, 1989a); **Spain** (Michelena Saval & González Funes 1988a; Tizado & Núñez-Perez 1991; Suay Cano & Michelena Saval 1998; Sanchis et al. 2000, 2001; Michelena et al. 2003); **Sweden** (Sanchis et al. 2001); **Switzerland** (Mackauer & Starý 1967); **Ukraine** (Davidian 2017).

***Remarks.*** According to the original description (Starý 1960b), some paratypes are deposited in the collections of M. Mackauer (Frankfurt, Germany), and U. Sedlag (Greifswald, Germany), which may be transferred to institute collections.

### *Pauesia decurrens* Starý & Zuparko, 2005 [Fig. 38C]

*Pauesia decurrens* Starý & Zuparko, 2005:171. Holotype ♀ (EMEC), paratypes ♀♀ ♂♂ (EMEC, USNM, IECA). – USA.

***Host. Cinara*** sp. (Starý & Zuparko 2005).

***Distribution.*** **USA** (Starý & Zuparko 2005).

### *Pauesia eugenii* Davidian, 2015

*Pauesia eugenii* Davidian, 2015:501. Holotype ♀, paratypes ♀♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2015, 2017, 2019b).

### *Pauesia gillettei* (Gahan, 1911) [Fig. 38D]

*Aphidius gillettei* Gahan, 1911a:171. Lectotype ♀ (after Mackauer 1968a) (USNM). – USA.

***Host.*** ***Cinara*** sp. (Mackauer & Starý 1967).

***Distribution.*** **USA** (Gahan 1911a; Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967).

### *Pauesia goidanichi* Starý, 1966

*Pauesia goidanichi* Starý, 1966d:107. Holotype ♀, paratypes ♀♀ ♂♂ (MRSN). – Italy.

***Hosts.*** ***Cinara juniperi*** (De Geer) (Starý 1976a; Michelena Saval & González Funes 1988a; Havelka et al. 2021); ***Cinara*** sp. (Starý 1966d; Mackauer & Starý 1967).

***Distribution.*** **Italy** (Starý 1966d, 1976a; Mackauer & Starý 1967; Mackauer 1968a; Bergamesco et al. 1995); **Kyrgyzstan** (Davidian 2017); **Lithuania** (Havelka et al. 2021); **Russia** (Davidian 2017, 2019b; Davidian & Humala 2023); **Spain** (Michelena Saval & González Funes 1988a; Tizado & Núñez-Perez 1991).

### *Pauesia grossa* (Fahringer, 1937)

*Coelonotus grossus* Fahringer, 1937:244. Syntypes ♀♀ ♂♂ (NHMW). – Austria.

***Hosts.*** ***Cinara confinis*** (Koch) (Fahringer 1937; Braun 1938; Starý 1960b, 1966c; Mackauer & Starý 1967; Starý et al. 1977a); ***Cinara piceae*** (Panzer) (Starý 2006).

***Distribution.*** **Austria** (Fahringer 1937; Mackauer & Starý 1967; Mackauer 1968c); **Czech Republic** (Starý 1960b, 1966c, 1989a, 2006; Mackauer & Starý 1967); **France** (Starý et al. 1977a); **Hungary** (Polgár 1983); **Russia** (Davidian 2017, 2019b); **Switzerland** (Mackauer & Starý 1967; Mackauer 1968c).

### *Pauesia gulmargensis* Bhagat, 1981

*Pauesia* (*Paraphidius*) *gulmargensis* Bhagat, 1981c:197. Holotype ♀, paratypes ♀ (DZKU). – India.

***Hosts.*** ***Cinara lachnirostris*** Hille Ris Lambers (Bhagat 1985); ***Cinara*** sp. (Bhagat 1981c).

***Distribution.*** **India** (Bhagat 1981c, 1985; Starý & Ghosh 1983; Dey & Akhtar 2007; Ahmad & Wani 2014).

### *Pauesia gwangleungensis* Starý, 2001

*Pauesia gwangleungensis* Starý [in Starý et al.], 2001:167. Holotype ♀ (IECA), paratypes ♀♀ ♂♂ (IECA, NAS). – South Korea.

***Host.*** ***Cinara shinjii*** Inouye (Starý et al. 2001).

***Distribution.*** **South Korea** (Starý et al. 2001; Kim 2026).

### *Pauesia hazratbalensis* Bhagat, 1981 [Fig. 38E]

*Pauesia* (*Kashmirpauesia*) *azratbalensis* Bhagat, 1981c:197. Holotype ♀, paratypes ♀♀ ♂♂ (DZKU). – India.

***Hosts.*** ***Cinara pinihabitans*** (Mordvilko) (Heidari Latibari et al. 2019); ***Cinara tujafilina*** (Del Guercio) (Starý et al. 2005; Rakhshani et al. 2012b, 2017b; Davidian 2017); ***Lachnus*** sp. (Bhagat 1981c).

***Distribution.*** **India** (Bhagat 1981c; Starý & Ghosh 1983; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Iran** (Starý et al. 2005; Davidian 2007; Fallahzadeh & Saghaei 2010; Rakhshani et al. 2012b, 2017b, 2019; Heidari Latibari et al. 2019); **Kyrgyzstan** (Davidian 2004, 2017; Rakhshani et al. 2017b); **Uzbekistan** (Rakhshani et al. 2017b; Davidian 2017).

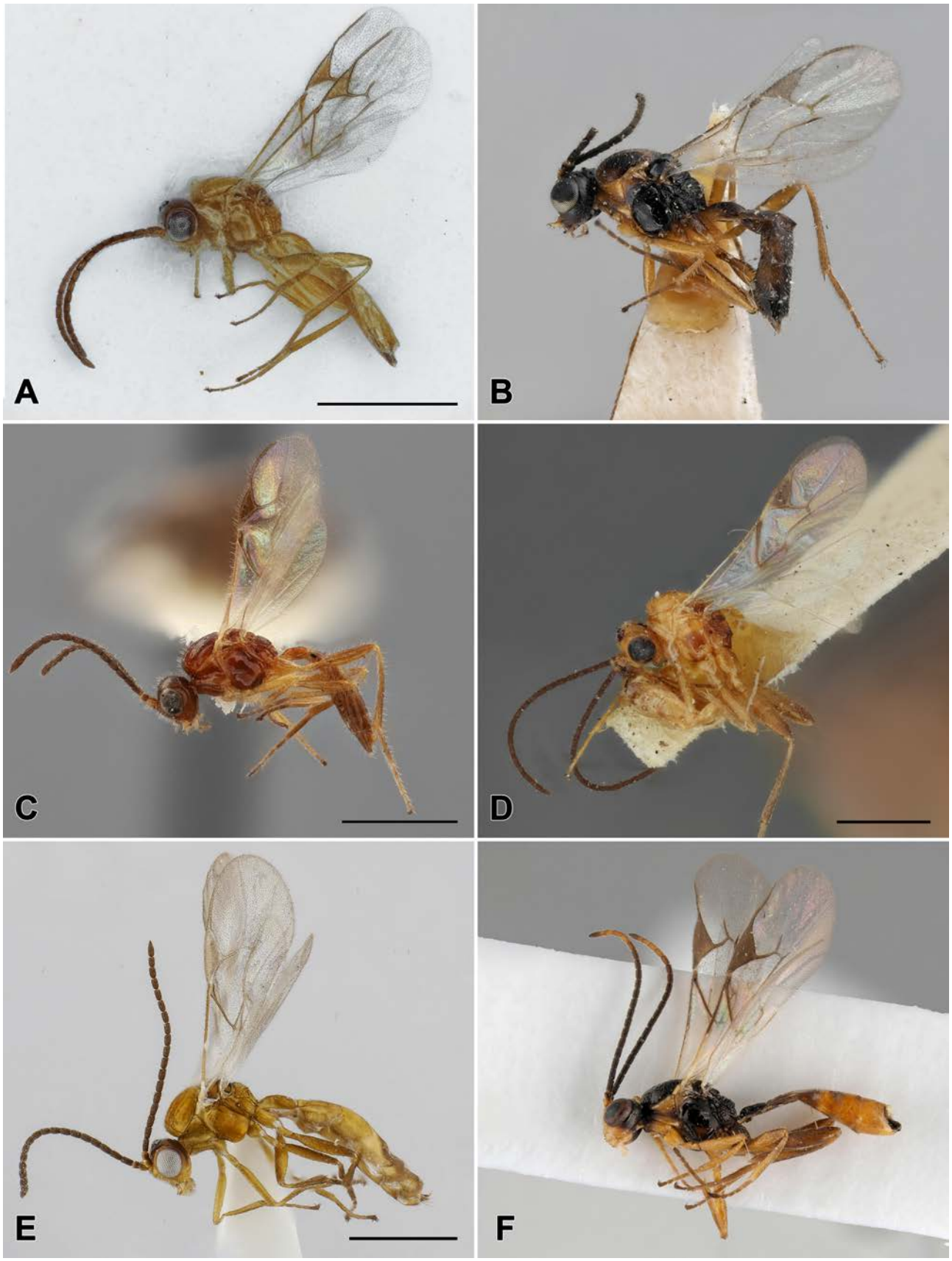



**Figure 38.** Species of the genus *Pauesia* Quilis, 1931. **A.** *Pauesia columbiana* Pike & Starý, 2002 – Holotype, USNM; **B.** *Pauesia cupressobii* (Starý, 1960) – Finland, ZMHF; **C.** *Pauesia decurrens* Starý & Zuparko, 2005 – Holotype, EMEC; **D.** *Pauesia gillettei* (Gahan, 1911) – Lectotype, USNM; **E.** *Pauesia hazratbalensis* Bhagat, 1981 – Iran, DPPZ; **F.** *Pauesia infulata* (Haliday, 1834) – Finland, ZMHF. Scale bar: 1 mm.

### *Pauesia himalayensis* Bhagat, 1981

*Pauesia* (*Paraphidius*) *himalayensis* Bhagat, 1981c:199. Holotype ♀, paratypes ♀ ♂♂ (DZKU). – India.

***Hosts. Cinara maculipes*** Hille Ris Lambers (Starý et al. 1999); ***Lachnus tropicalis*** (van der Goot) (Bhagat 1981c, 1985).

***Distribution.*** **India** (Bhagat 1981c, 1985; Starý & Ghosh 1983; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Pakistan** (Starý et al. 1999).

### *Pauesia holmani* Starý, 2001

*Pauesia holmani* Starý [in Starý et al.], 2001:166. Holotype ♀ (IECA), paratypes ♀♀ ♂♂ (IECA, NAS). – South Korea.

***Hosts. Cinara laricis*** (Hartig), ***Cinara watanabei*** Inouye (Starý et al. 2001).

***Distribution.*** **South Korea** (Starý et al. 2001; Kim 2026); **Russia** (Davidian 2007).

### *Pauesia hundungensis* Paonam & Singh, 1986

*Pauesia hundungensis* Paonam & Singh, 1986c:1. Holotype ♀ (MANEC). – India.

***Host. Cinara orientalis*** (Takahashi) (Paonam & Singh 1986c).

***Distribution.*** **India** (Paonam & Singh 1986c; Raychaudhuri et al. 1990; Das & Chakrabarti 2023a).

### *Pauesia indica* Starý, 1977

*Pauesia* (*Paraphidius*) *indica* Starý [in Starý & Raychaudhuri], 1977:233. Holotype ♀ (ZSI), paratype ♀ (IECA). – India.

***Host. Lachnus tropicalis*** (van der Goot) (Starý & Raychaudhuri 1977; Raychaudhuri et al. 1978, 1990; Starý & Ghosh 1983; Paonam & Singh 1986b, 1989).

***Distribution.*** **India** (Starý & Raychaudhuri 1977; Raychaudhuri et al. 1978, 1990; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Starý & Ghosh 1983; Paonam & Singh 1986b, 1989; Dey & Akhtar 2007; Das & Chakrabarti 2023a).

### *Pauesia infulata* (Haliday, 1834) [Fig. 38F]

*Aphidius infulatus* Haliday, 1834:96. Lectotype ♀ (after Mackauer 1968a) (NHMUK). – United Kingdom.

**Syn.:** *Paraphidius albiflagellaris* Starý, 1960.

***Hosts. Cinara costata*** (Zetterstedt) (Mackauer 1962c; Mackauer & Starý 1967; Sanchis et al. 2001); ***Cinara cupressi*** (Buckton) (Starý 1965a); ***Cinara juniperi*** (De Geer) (Starý 1960b; Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968); ***Cinara kochiana*** (Börner) (Fahringer 1937; Mackauer & Starý 1967); ***Cinara louisianensis*** Boudreaux (Paik 1976); ***Cinara pectinatae*** (Nördlinger) (Capek 1960; Starý 1964d, 1966c, 1976a, 1977, 2006; Mackauer & Starý 1967; Takada 1968; Starý et al. 1971; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Cinara pilicornis*** (Hartig) (Mackauer 1962c); ***Cinara pinea*** (Mordvilko), ***Cinara pineti*** (Fabricius) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Cinara*** spp. (Watanabe & Takada 1965; Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a, 2006; Finlayson 1990; Takada 1968, 1973).

***Distribution.*** **Austria** (Mackauer & Starý 1967); **Czech Republic** (Starý 1960b, 1966c, 1977, 1989a, 2006; Mackauer & Starý 1967; Starý & Havelka 2008); **Denmark** (Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Starý et al. 1971, 1977a; Starý 1976a); **Germany** (Mackauer 1962c; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1983; Kovács 1999); **Japan** (Watanabe & Takada 1965; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968, 1973; Starý 1975a; Finlayson 1990); **Kyrgyzstan** (Davidian 2017); **Lithuania** (Davidian 2017); **Moldova** (Talitzky & Kuslitzky 1990); **North Korea** (Takada 1979b; Starý & Choi 2000; Kim 2026); **Norway** (Mjøs et al. 2024); **Poland** (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Starý 1960b, 1965a; Mackauer & Starý 1967; Mackauer 1968c; Davidian 2007, 2017, 2019b; Davidian & Gavrilyuk 2014; Davidian & Humala 2023); **Slovakia** (Capek 1960; Starý 1977, 1989a); **South Korea** (Paik 1976; Starý & Choi 2000); **Sweden** (Mackauer & Starý 1967; Sanchis et al.

2001); **Switzerland** (Blösch 1906); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Lyle 1933; Marshall 1872a, 1896, 1899; Szépligeti 1904; Kloet & Hincks 1945; Mackauer & Starý 1967).

### *Pauesia inouyei* (Watanabe, 1941)

*Aphidius inouyei* Watanabe, 1941a:106. Holotype ♀, paratype ♀ ♀ ♂♂ (EIHU). – Japan.

***Hosts.*** ***Cinara todocola*** (Inouye) (Watanabe 1941a; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968; Starý 1975a); ***Cinara*** sp. (Finlayson 1990); ***Eulachnus thunbergii*** (Wilson) (Wei et al. 2005).

***Distribution.*** **Japan** (Watanabe 1941a; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968; Starý 1975a; Finlayson 1990); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2019b).

### *Pauesia japonica* (Ashmead, 1906) [Fig. 39A]

*Aphidius japonicus* Ashmead, 1906:189. Lectotype ♀ (after Watanabe 1957), paralectotypes ♂♂ (USNM). – Japan.

***Host.*** ***Lachnus tropicalis*** (van der Goot) (Watanabe 1939, 1957; Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968, 1973; Starý 1971d, 1975a; Paik 1976; Finlayson 1990; Wei et al. 2005).

***Distribution.*** **China** (Davidian 2020b); **Japan** (Ashmead 1906; Watanabe 1939; Watanabe & Takada 1965; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968, 1973; Starý 1975a; Finlayson 1990); **Russia** (Davidian 2007, 2017, 2019b); **South Korea** (Paik 1976; Starý & Choi 2000; Kim 2026).

***Remarks.*** According to Watanabe (1957), some of the paralectotypes (2♂♂, labelled Gifu, Yanagi) are identical with *Pauesia salignae* (Watanabe, 1939).

### *Pauesia jezoensis* (Watanabe, 1941) [Fig. 39B]

*Aphidius jezoensis* Watanabe, 1941a:108. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

**Syn.:** *Paraphidius piceaecollis* Starý, 1960; *Pauesia rufiabdominalis* Starý, 1966.

***Hosts.*** ***Cinara acutirostris*** Hille Ris Lambers (Tremblay 1975a); ***Cinara brauni*** Börner (Kocić et al. 2024a); ***Cinara costata*** (Zetterstedt) (Watanabe 1941a; Mackauer 1962c; Starý & Schlinger 1967; Takada 1968, 1973); ***Cinara hyperophila*** (Koch) (Havelka et al. 2021); ***Cinara maghrebica*** Mimeur (Tremblay 1975a; Starý 1976a); ***Cinara nopporensis*** Inouye (Watanabe 1941a; Watanabe & Takada 1965; Mackauer & Starý 1967; Starý & Schlinger 1967); ***Cinara piceicola*** (Cholodkovsky) (Sanchis et al. 2001); ***Cinara pilicornis*** (Hartig) (Michelena Saval & González Funes 1988a; Sanchis et al. 2001; Michelena et al. 2003; Kocić et al. 2024a); ***Cinara pinea*** (Mordvilko) (Suay Cano et al. 1992; Havelka et al. 2021); ***Cinara pinimaritimae*** (Dufour) (Takada 1968; Starý et al. 1975, 1977a; Starý 1976a; Michelena Saval & González Funes 1988a; Núñez-Perez & Tizado 1996; Sanchis et al. 2000; Michelena et al. 2003; Kavallieratos et al. 2001, 2004); ***Cinara piniphila*** (Ratzeburg) (Watanabe & Takada 1965; Mackauer & Starý 1967; Starý 1975a; Havelka et al. 2021); ***Cinara schimitscheki*** Börner (Tremblay 1975a); ***Cinara tujafilina*** (Del Guercio) (Paik 1976; Wei et al. 2005); ***Cinara*** spp. (Starý 1960b, 1964d, 1966c, 1977, 2006; Starý & Rupais 1964; Mackauer & Starý 1967; Tremblay 1967a; Mackauer 1968a; Kocić et al. 2024a).

***Distribution.*** **Andorra** (Sanchis et al. 1999); **China** (Zhang & Ji 1992; Gu et al. 1995; Chen & Shi 2001); **Czech Republic** (Starý 1960b, 1966c, 1977, 1989a, 2006; Mackauer & Starý 1967; Starý & Havelka 2008); **Denmark** (Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Starý et al. 1975, 1977a; Starý 1976a); **Germany** (Mackauer 1962c; Scheurer 1964; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Greece** (Kavallieratos et al. 2001, 2004); **Hungary** (Polgár 1983); **Italy** (Mackauer & Starý 1967; Tremblay 1967a; Mackauer 1968a; Starý 1976a; Bergamesco et al. 1995); **Japan** (Watanabe 1941a; Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968, 1973; Starý 1975a); **Latvia** (Starý & Rupais 1964); **Lithuania** (Havelka et al. 2021); **Moldova** (Talitzky & Kuslitzky 1990); **Russia** (Davidian 2017, 2019b; Davidian & Humala 2023); **Serbia** (Kocić et al. 2024a); **Slovakia** (Starý 1960b, 1977, 1989a); **South Korea** (Paik 1976; Starý & Choi 2000); **Spain** (Michelena Saval & González Funes 1988a; Tizado & Núñez-Perez 1991; Núñez-Perez & Tizado 1996; Sanchis et al. 2000; Michelena et al. 2003); **Sweden** (Sanchis et al. 2001).

### *Pauesia juniperaphidis* (Gahan, 1911) [Figs 39C–D]

*Aphidius juniperaphidis* Gahan, 1911a:152. Lectotype ♀ (after Mackauer 1968a) (USNM). – USA.

***Hosts. Cinara burrilli*** (Wilson) (Smith 1944; Marsh 1979); ***Cinara juniperi*** (De Geer) (Bradley 1961; Marsh 1979); ***Cinara occidentalis*** (Davidson) (Smith 1944; Marsh 1979); ***Cinara pilicornis*** (Hartig) (Pike et al. 1996, 2000); ***Cinara pulverulens*** (Gillette & Palmer) (Smith 1944; Mackauer & Starý 1967).

***Distribution.*** **Canada** (Muesebeck 1958a; Mackauer & Starý 1967); **USA** (Gahan 1911a; Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Pike et al. 1996, 2000).

### *Pauesia juniperina* Starý, 1979

*Pauesia juniperina* Starý, 1979:34. Holotype ♂, paratypes ♀♂ (IECA). – Tajikistan.

***Host. Cinara juniperi*** (De Geer) (Starý 1979a).

***Distribution.*** **Tajikistan** (Starý 1979a).

### *Pauesia juniperorum* (Starý, 1960) [Fig. 39E]

*Paraphidius juniperorum* Starý, 1960b:16. Holotype ♀, paratype ♀ (IECA). – Slovakia.

***Hosts. Cinara cupressi*** (Buckton) (Kamanga-Thole et al. 2021); ***Cinara juniperi*** (De Geer) (Starý 1960b, 1964d, 1966c, 1976a, 2006; Mackauer & Starý 1967; Starý et al. 1975, 1977a; Wiackowski & Wiackowska 2000; Sanchis et al. 2001; Wiackowski et al. 2001; Michelena et al. 2003; Kavallieratos et al. 2004; Žikić et al. 2012; Ferrer-Suay et al. 2017; Kocić et al. 2024a); ***Cinara*** spp. (Starý 1966d; Mackauer & Starý 1967; Derocles et al. 2012).

***Distribution.*** **Czech Republic** (Starý 1966c, 1989a, 2006; Mackauer & Starý 1967; Ferrer-Suay et al. 2017); **Finland** (BOLD:ACB8101); **France** (Starý et al. 1975, 1977a; Starý 1976a; Kairo & Murphy 2005; Derocles et al. 2012); **Germany** (Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1983; Kovács 1999); **Italy** (Starý 1966d, 1976a; Bergamesco et al. 1995); **Kyrgyzstan** (Davidian 2017); **Malawi** (Kamanga-Thole et al. 2021); **Moldova** (Talitzky & Kuslitzky 1990); **Norway** (BOLD:ACB8101); **Poland** (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian & Humala 2023); **Serbia** (Tomanović et al. 1998a; Kavallieratos et al. 2004; Žikić et al. 2012; Kocić et al. 2024a); **Slovakia** (Starý 1960b, 1989a); **Spain** (Sanchis et al. 2001; Michelena et al. 2003); **Sweden** (Sanchis et al. 2001); **United Kingdom** (Kairo & Murphy 2005).

### *Pauesia konoi* (Watanabe, 1941)

*Aphidius konoi* Watanabe, 1941a:106. Holotype ♂, paratypes ♂♂ (EIHU). – Japan.

***Host. Cinara longipennis*** (Matsumura) (Watanabe 1941a; Watanabe & Takada 1964a, 1965; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968, 1973; Starý 1975a; Finlayson 1990).

***Distribution.*** **Japan** (Watanabe 1941a; Watanabe & Takada 1964a, 1965; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968, 1973; Starý 1975a; Finlayson 1990; Davidian 2017); **Russia** (Davidian 2017, 2019b).

### *Pauesia koraiensis* Starý, 2001

*Pauesia koraiensis* Starý [in Starý et al.], 2001:164. Holotype ♀ (IECA), paratypes ♀♀ ♂♂ (IECA, NAS). – South Korea.

***Host. Cinara cembrae*** (Seitner) (Starý et al. 2001).

***Distribution.*** **South Korea** (Starý et al. 2001; Kim 2026).

### *Pauesia kunashirensis* Davidian, 2007

*Pauesia kunashirensis* Davidian, 2007:215. Holotype ♀, paratypes ♀♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2007, 2017, 2019b; Rakhshani et al. 2017b).

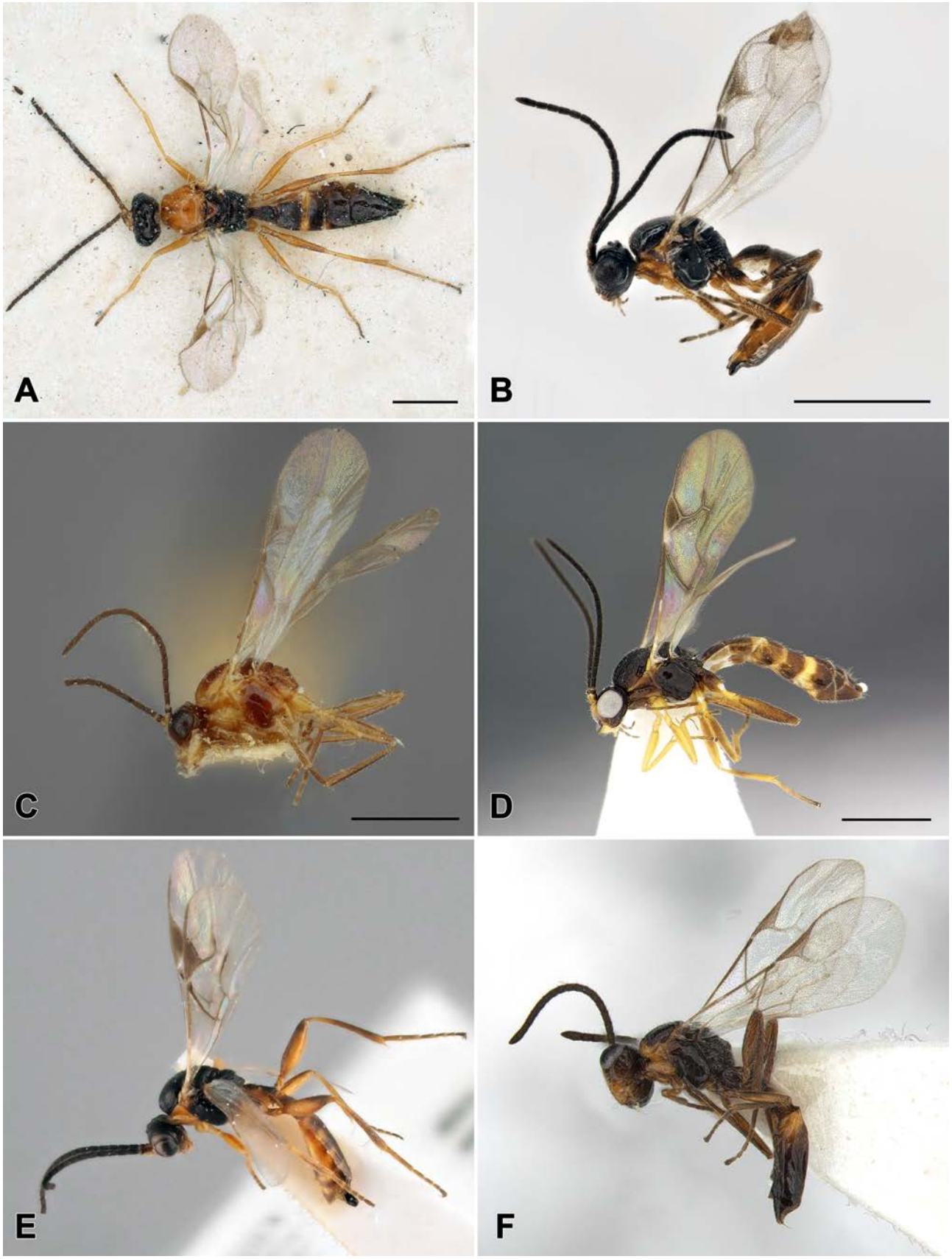



**Figure 39.** Species of the genus Pauesia Quilis, 1931. **A.** *Pauesia japonica* (Ashmead, 1906) – Lectotype, USNM; **B.** *Pauesia jezoensis* (Watanabe, 1941) – Netherlands, RMNH; **C.** *Pauesia juniperaphidis* (Gahan, 1911) – Lectotype, USNM; **D.** *Pauesia juniperaphidis* (Gahan, 1911) – USA, UWIM; **E.** *Pauesia juniperorum* (Starý, 1960) – Finland, ZMHF; **F.** *Pauesia laricis* (Haliday, 1834) – Netherlands, RMNH. Scale bar: 1 mm.

### *Pauesia kunmingensis* Dong, 1988

*Pauesia kunmingensis* Dong, 1988:23. Holotype ♀, paratypes ♀♀ ♂ (KIZ). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Dong 1988; Chen & Shi 2001).

### *Pauesia labanensis* Samanta, Pramanik & Raychaudhuri, 1983

*Pauesia labanensis* Samanta, Pramanik & Raychaudhuri, 1983a:6. Holotype ♀, paratypes ♀♀ ♂ (CUCE). – India.

***Host.*** ***Pyrolachnus pyri*** (Buckton) (Samanta et al. 1983a; Dey & Akhtar 2007).

***Distribution.*** **India** (Samanta et al. 1983a; Dey & Akhtar 2007; Das & Chakrabarti 2023a).

### *Pauesia lachniella* Das & Chakrabarti, 1989

*Pauesia* (*Paraphidius*) *lachniella* Das & Chakrabarti, 1989b:341. Holotype ♀, paratypes ♀♀ ♂♂ (ZSI). – India.

***Host.*** ***Cinara tujafilina*** (del Guercio) (Bisht et al. 2001); ***Lachnus tropicalis*** (van der Goot) (Das & Chakrabarti 1989b; Dey & Akhtar 2007).

***Distribution.*** **India** (Das & Chakrabarti 1989b, 2023a; Dey & Akhtar 2007).

### *Pauesia laricis* (Haliday, 1834) [Fig. 39F]

*Aphidius* (*Aphidius*) *laricis* Haliday, 1834:97. Lectotype ♀ (after Mackauer 1961b), paralectotype ♂ (NHMUK). – Ireland.

***Hosts.*** *Aphis* sp. (Giraud & Laboulbène 1877); ***Cinara atrotibialis*** David & Rajasingh (Starý & Ghosh 1975; Starý & Ghosh 1983; Samanta & Raychaudhuri 1984b; Agarwala 1989); ***Cinara brauni*** Börner (Davidian 2015); ***Cinara cuneomaculata*** (Del Guercio) (Watanabe 1940; Watanabe & Takada 1965; Takada 1968; Chiriac 1993); ***Cinara kochiana*** (Börner) (Mackauer & Starý 1967; Takada 1968); ***Cinara laricis*** (Hartig) (Györfi 1961; Mackauer & Starý 1967; Starý 1977); ***Cinara laricicolum*** (Matsumura) (Watanabe 1941a; Watanabe & Takada 1965; Mackauer & Starý 1967; Starý 1975a); ***Cinara nuda*** (Mordvilko) (Starý 1960b; Watanabe & Takada 1965; Takada 1968); ***Cinara piceicola*** (Cholodkovsky) (Starý et al. 1973); ***Cinara pinea*** (Mordvilko) (Mackauer & Starý 1967; Michelena Saval & González Funes 1988a; Michelena et al. 2003); ***Cinara pineti*** (Fabricius) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Cinara pini*** (Linnaeus) (Györfi 1961; Mackauer & Starý 1967); ***Cinara pinimaritimae*** (Dufour) (Michelena Saval & González Funes 1988a; Suay Cano & Michelena Saval 1998; Michelena et al. 2003); ***Cinara schimitscheki*** Börner (Michelena et al. 2003); ***Cinara*** spp. (Schimitschek 1936; Starý 1964d, 1966c, 1966d, 1977, 2006; Mackauer & Starý 1967; Moraal 1990; Sanchis et al. 2001; Ferrer-Suay et al. 2017; Pons et al. 2018); *Stomaphis* spp. (Zhang & Ji 1992).

***Distribution.*** **Austria** (Schimitschek 1936; Mackauer & Starý 1967); **China** (Zhang & Ji 1992; Gu et al. 1995; Chen & Shi 2001); **Croatia** (Graeffe 1908); **Czech Republic** (Starý 1960b, 1966c, 1977, 1989a, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Ferrer-Suay et al. 2017); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Starý et al. 1973, 1977a); **Germany** (Starý 1960b; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Györfi 1961; Mackauer & Starý 1967; Polgár 1983); **India** (Starý & Ghosh 1975, 1983; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Samanta & Raychaudhuri 1984b; Agarwala 1989; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Das & Chakrabarti 2023a); **Ireland** (Haliday 1834); **Italy** (Cecconi 1924; Starý 1966d, 1976a; Bergamesco et al. 1995); **Japan** (Watanabe 1940; Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968; Starý 1975a); **Moldova** (Talitzky & Kuslitzky 1990; Chiriac 1993); **Netherlands** (Moraal 1990); **Poland** (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian 2017, 2019b; Davidian & Humala 2023); **Slovakia** (Starý 1977); **Spain** (Quilis-Pérez 1931b; Michelena Saval & González Funes 1988a; Tizado & Núñez-Perez 1991; Suay Cano & Michelena Saval 1998; Sanchis et al. 2001; Michelena et al. 2003; Pons et al. 2018); **Sweden** (Haliday 1834; Thomson 1895; Szépligeti 1904; Mackauer & Starý 1967); **Ukraine** (Kaliuzhna 2013a; Davidian 2015; Kaliuzhna 2019a, 2019b); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Marshall 1872a, 1896, 1899; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1961b; Mackauer & Starý 1967).

### *Pauesia laticeps* (Gahan, 1926) [Fig. 40A]

*Aphidius laticeps* Gahan, 1926:2. Holotype ♀ (USNM). – Taiwan.

***Hosts. Cinara pinea*** (Mordvilko) (Chen et al. 2009); ***Cinara pinimaritimae*** (Dufour) (Sonan 1944); ***Cinara*** spp. (Gahan 1926; Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a).

***Distribution.*** **China** (Gahan 1926; Sonan 1944; Mackauer & Starý 1967; Starý & Schlinger 1967; Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009).

### *Pauesia leirikae* Paonam & Singh, 1989 [*nomen nudum*]

*Pauesia leirikae* Paonam & Singh, 1989. – India.

***Host. Cinara orientalis*** (Takahashi) (Paonam & Singh 1989).

***Distribution.*** **India** (Paonam & Singh 1989).

### *Pauesia luntervalvae* Chiriac, 1993

*Pauesia luntervalvae* Chiriac, 1993:41. Holotype ♀, paratypes ♀♀ ♂♂ (ASM). – Moldova.

***Hosts. Cinara brauni*** Börner, ***Cinara*** spp. (Chiriac 1993).

***Distribution.*** **Moldova** (Chiriac 1993; Davidian 2015, 2017).

### *Pauesia macrogaster* (Ashmead, 1891) [Fig. 40B]

*Aphidius macrogaster* Ashmead, 1891:23. Holotype ♀ (USNM). – USA.

***Host. Cinara confinis*** (Koch) (Mackauer & Starý 1967; Marsh 1979).

***Distribution.*** **USA** (Ashmead 1891; Gahan 1911a; Muesebeck & Walkley 1951).

### *Pauesia maculolachni* (Starý, 1960)

*Paraphidius maculolachni* Starý, 1960b:19. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Czech Republic.

***Host. Maculolachnus submacula*** (Walker) (Starý 1960b, 1966c, 1971d, 1979a, 1987a, 2006; Mackauer & Starý 1967; Starý & Juchnevič 1978; Michelena Saval & González Funes 1988a; Polaszek 2011).

***Distribution.*** **Austria** (Mackauer & Starý 1967); **Czech Republic** (Starý 1960b, 1966c, 1987a, 1989a, 2006; Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **Hungary** (Polgár 1983); **Kazakhstan** (Starý & Juchnevič 1978; Starý 1979a); **Moldova** (Talitzky & Kuslitzky 1990); **Russia** (Davidian & Humala 2023); **Spain** (Michelena Saval & González Funes 1988a; Tizado & Núñez-Perez 1991; Sanchis et al. 1996); **Sweden** (Mackauer & Starý 1967); **United Kingdom** (Polaszek 2011).

### *Pauesia malongensis* Dong & Wang, 1997

*Pauesia malongensis* Dong & Wang [in Wang & Dong], 1997:215. Holotype ♀, paratypes ♀♀ ♂♂ (KIZ). – China.

***Host. Cinara tujafilina*** (Del Guercio) (Wang & Dong 1997; Chen & Shi 2001).

***Distribution.*** **China** (Wang & Dong 1997; Chen & Shi 2001).

### *Pauesia mashobrica* Starý & Raychaudhuri, 1982

*Pauesia* (*Pauesia*) *mashobrica* Starý & Raychaudhuri, 1982:299. Holotype ♀ (CUCE). – India.

***Host. Cinara tenuipes*** Chakrabarti & Ghosh (Starý & Raychaudhuri 1982; Starý & Ghosh 1983).

***Distribution.*** **India** (Starý & Raychaudhuri 1982; Starý & Ghosh 1983; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Das & Chakrabarti 2023a).

### *Pauesia media* Starý, 1966

*Pauesia media* Starý, 1966d:108. Holotype ♀, paratypes ♀ (MRSN). – Italy.

***Host. Cinara*** (*Cupressobium*) sp. (Starý 1966d).

***Distribution.*** **Italy** (Starý 1966d; Mackauer 1968a; Bergamesco et al. 1995).

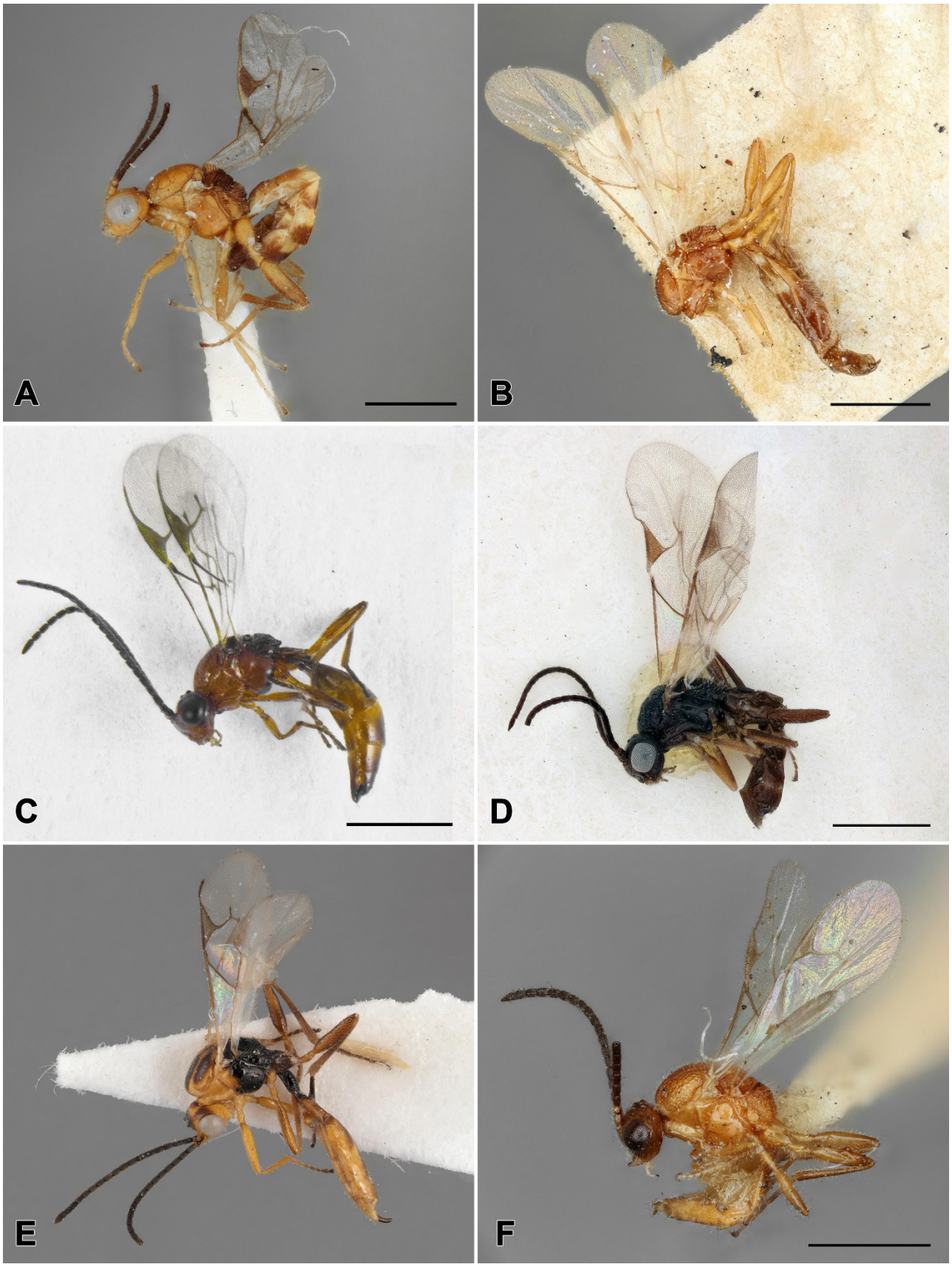



**Figure 40.** Species of the genus *Pauesia* Quilis, 1931. **A.** *Pauesia laticeps* (Gahan, 1926) – Holotype, USNM; **B.** *Pauesia macrogaster* (Ashmead, 1891) – Holotype, USNM; **C.** *Pauesia nigrovaria* (Provancher, 1888) – New Zealand (Roger Wallis - iNaturalist.org); **D.** *Pauesia pahtonis* Pike & Starý, 1996 – Holotype, USNM; **E.** *Pauesia picta* (Haliday, 1834) – Finland, ZMHF; **F.** *Pauesia pinaphidis* (Ashmead, 1891) – Lectotype, USNM. Scale bar: 1 mm.

### *Pauesia momicola* Watanabe & Takada, 1965

*Pauesia momicola* Watanabe & Takada, 1965:11. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Hosts.*** ***Cinara todocola*** (Inouye) (Mackauer & Starý 1967; Takada 1968; Starý 1975a); ***Cinara*** spp. (Watanabe & Takada 1965; Takada 1973; Starý 1975a).

***Distribution.*** **Japan** (Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968, 1973; Starý 1975a).

### *Pauesia montana* Starý, 1966

*Pauesia montana* Starý, 1966d:109. Holotype ♀, paratypes ♂♂ (MRSN). – Italy.

***Host.*** ***Cinara*** sp. (Starý 1966d; Mackauer & Starý 1967).

***Distribution.*** **Bulgaria** (Todorov & Ivanova 2016); **Italy** (Starý 1966d; Mackauer & Starý 1967; Mackauer 1968a; Bergamesco et al. 1995); **Russia** (Davidian 2017, 2019b).

### *Pauesia nigrovaria* (Provancher, 1888) [Fig. 40C]

*Aphidius nigrovarius* Provancher, 1888:396. Syntype ♀ (ULQC?). – USA.

***Hosts.*** ***Cinara*** sp. (Mackauer & Starý 1967); ***Lachnus*** sp. (Gahan 1910); ***Tuberolachnus salignus*** (Gmelin) (Sopow et al. 2021).

***Distribution.*** **New Zealand** (Purposeful introduction – Bulman et al. 2021; Sopow et al. 2021; Ward 2026); **USA** (Gahan 1910, 1911a; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Mackauer 1968a).

### *Pauesia nopporensis* Watanabe & Takada, 1965

*Pauesia nopporensis* Watanabe & Takada, 1965:4. Holotype ♀, paratype ♀ (EIHU). – Japan.

***Host.*** ***Cinara longipennis*** (Matsumura) (Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968; Starý 1975a).

***Distribution.*** **Japan** (Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968; Starý 1975a).

### *Pauesia orientalis* Das & Chakrabarti, 1989

*Pauesia* (*Paraphidius*) *orientalis* Das & Chakrabarti, 1989b:341. Holotype ♀, paratypes ♀♀ (ZSI). – India.

***Host.*** ***Cinara maculipes*** Hille Ris Lambers (Das & Chakrabarti 1989b).

***Distribution.*** **India** (Das & Chakrabarti 1989b, 2023a; Dey & Akhtar 2007).

### *Pauesia pahtonis* Pike & Starý, 1996 [Fig. 40D]

*Pauesia pahtonis* Pike & Starý, 1996c:327. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (IECA, WSUJ). – USA.

***Host.*** ***Cinara ponderosae*** (Williams) (Pike & Starý 1996c; Pike et al. 2000).

***Distribution.*** **USA** (Pike & Starý 1996c; Pike et al. 1996, 2000).

### *Pauesia picta* (Haliday, 1834) [Fig. 40E]

*Aphidius pictus* Haliday, 1834:85. Lectotype ♀ (after Mackauer 1968a) (NHMUK). – United Kingdom.

***Hosts.*** ***Cinara acutirostris*** Hille Ris Lambers (Michelena Saval & González Funes 1988a); ***Cinara atrotibialis*** David & Rajasingh (Samanta & Raychaudhuri 1984b); ***Cinara brauni*** Börner (Núñez-Perez & Tizado 1996); ***Cinara cembrae*** (Seitner) (Fahringer 1937; Mackauer & Starý 1967); ***Cinara confinis*** (Koch) (Schimitschek 1936; Braun 1938); ***Cinara costata*** (Zetterstedt) (Mackauer & Starý 1967; Kocić et al. 2024a); ***Cinara laricicolum*** (Matsumura) (Mackauer & Starý 1967; Starý 1975a); ***Cinara neubergi*** (Arnhart) (Michelena Saval & González Funes 1988a); ***Cinara nuda*** (Mordvilko) (Starý 1960b); ***Cinara orientalis*** (Takahashi) (Paonam & Singh 1989); ***Cinara piceicola*** (Cholodkovsky) (Fahringer 1937; Braun 1938; Mackauer & Starý 1967); ***Cinara pilicornis*** (Hartig) (Fahringer 1937; Mackauer 1962c; Starý 2006; Havelka et al. 2021); ***Cinara pinea*** (Mordvilko) (Mackauer & Starý 1967; Michelena Saval & González Funes 1988a; Núñez-Perez & Tizado 1996; Michelena et al. 1998, 2003; Völkl 2000; Kavallieratos et al.

2004, 2016; Žikić et al. 2012; Havelka et al. 2021); ***Cinara pini*** (Linnaeus) (Fahringer 1937; Starý 1962b, 1976a; Mackauer & Starý 1967; Michelena Saval & González Funes 1988a; Atanassova 1997; Kolarov 1997; Michelena et al. 2003; Aslan et al. 2004; Uysal et al. 2004); ***Cinara pinimaritimae*** (Dufour) (Michelena Saval & González Funes 1988a; Núñez-Perez & Tizado 1996; Michelena et al. 2003); ***Cinara piniphila*** (Ratzeburg) (Mackauer & Starý 1967; Havelka et al. 2021); ***Cinara pruinosa*** (Hartig) (Fahringer 1937; Braun 1938; Mackauer & Starý 1967); ***Cinara schimitscheki*** Börner (Tremblay 1975a; Michelena Saval & González Funes 1988a; Davidian 2015, 2017); ***Cinara*** spp. (Kierych 1980; Moraal 1990; Chiriac 1993; Sanchis et al. 2001; Kavallieratos et al. 2004, 2016; Starý 2006; Davidian 2017; Kocić et al. 2024a); ***Eulachnus thunbergii*** (Wilson) (Paonam & Singh 1989); *Macrosiphum rosae* (Linnaeus) (Ferrière 1928); *Nasonovia ribisnigri* (Mosley) (Ferrière 1928; Fulmek 1968).

***Distribution.*** **Andorra** (Sanchis et al. 1999); **Austria** (Schimitschek 1936; Mackauer & Starý 1967); **Bulgaria** (Starý 1962b, 1976a; Atanassova 1997; Kolarov 1997; Todorov & Ivanova 2016); **Czech Republic** (Starý 2006); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Gaulle 1908; Starý et al. 1971); **Germany** (Kirchner 1867; Starý 1960b; Mackauer 1962c; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **India** (Samanta & Raychaudhuri 1984b; Raychaudhuri et al. 1990; Paonam & Singh 1989; Das & Chakrabarti 2023a); **Italy** (Tremblay 1975a; Starý 1976a; Bergamesco et al. 1995); **Japan** (Inouye & Takai 1961; Starý 1975a); **Lithuania** (Havelka et al. 2021); **Madeira Islands** (van Achterberg & Aguiar 2009); **Moldova** (Chiriac 1993); **Montenegro** (Tomanović et al. 2026a); **Netherlands** (Moraal 1990); **Poland** (Kierych 1980; Huflejt 1997); **Russia** (Mackauer 1968c; Davidian & Gavrilyuk 2014; Davidian 2015, 2017, 2019b; Davidian & Humala 2023; Davidian & Ruchin 2023); **Serbia** (Tomanović et al. 1998a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012; Kocić et al. 2024a); **Slovakia** (Starý 1989a); **Spain** (Michelena Saval & González Funes 1988a; Tizado & Núñez-Perez 1991; Núñez-Perez & Tizado 1996; Michelena et al. 1998, 2003; Sanchis et al. 2001); **Sweden** (Thomson 1895; Szépligeti 1904; Starý 1960b; Mackauer & Starý 1967); **Switzerland** (Ferrière 1928; Mackauer & Starý 1967; Fulmek 1968); **Türkiye** (Aslan et al. 2004; Uysal et al. 2004; Rakhshani et al. 2019); **Ukraine** (Davidian 2015); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Marshall 1896, 1899; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer & Starý 1967).

### *Pauesia pinaphidis* (Ashmead, 1891) [Fig. 40F]

*Aphidius pinaphidis* Ashmead, 1891:6. Lectotype ♀ (after Mackauer 1968a), paralectotypes ♀ ♂ (USNM). – USA.

***Hosts.*** ***Cinara australi*** (Ashmead) [*n. dub.*] (Ashmead 1891; Mackauer & Starý 1967; Marsh 1979); ***Cinara pergandei*** (Wilson) (Mackauer & Starý 1967; Marsh 1979); ***Cinara pini*** (Linnaeus) (Mason 1922); ***Cinara*** sp. (Mackauer & Starý 1967).

***Distribution.*** **USA** (Ashmead 1891; Gahan 1911a; Mason 1922; Mackauer & Starý 1967).

### *Pauesia pini* (Haliday, 1834)

*Aphidius* (*Aphidius*) *pini* Haliday, 1834:96. Lectotype ♀ (after Mackauer 1961b), paralectotype ♀ (NHMUK). – United Kingdom.

**Syn.:** *Aphidius planistipes* Nees, 1834; *Aphidius varius* Nees, 1834; *Aphidius panzerii* Rondani, 1848; *Aphidius lachnivorus* Ashmead 1906 [Fig. 41A].

***Hosts.*** *Aphis frangulae* Kaltenbach (Rondani 1876); *Aphis pomi* De Geer (Fulmek 1968); *Aphis* sp. (Giraud & Laboulbène 1877); ***Cinara cembrae*** (Seitner) (Seitner 1936; Braun 1938; Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968); ***Cinara cuneomaculata*** (Del Guercio) (Watanabe 1940, 1957; Watanabe & Takada 1965; Takada 1968; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Cinara formosana*** (Takahashi) (Paik 1976); ***Cinara juniperi*** (De Geer) (Braun 1938; Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968); ***Cinara kochiana*** (Börner) (Schimitschek 1935, 1936; Pontin 1960; Mackauer & Starý 1967; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Davidian & Gavrilyuk 2014; Davidian 2017); ***Cinara lachnirostris*** Hille Ris Lambers (Bhagat 1981c, 1985); ***Cinara laricicolum*** (Matsumura) (Watanabe 1940, 1957; Starý & Schlinger 1967; Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968; Starý 1975a); ***Cinara laricis*** (Hartig) (Watanabe 1940; Watanabe & Takada 1965; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968, 1973; Starý 1977;

Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Finlayson 1990); ***Cinara neubergi*** (Arnhart) (Michelena et al. 1998); ***Cinara nuda*** (Mordvilko) (Fahringer 1937; Starý 1960b, 1975a); ***Cinara palaestinensis*** Hille Ris Lambers (Bodenheimer & Swirski 1957; Avidov & Harpaz 1969; Starý 1976a); ***Cinara pectinatae*** (Nördlinger) (Starý 1977); ***Cinara piceicola*** (Cholodkovsky) (Fahringer 1937; Mackauer & Starý 1967; Takada 1968; Starý et al. 1977a; Mackauer & Völkl 2002); ***Cinara pinea*** (Mordvilko) (Mackauer & Starý 1967; Starý et al. 1971; Michelena Saval & González Funes 1988a; Núñez-Perez & Tizado 1996; Sanchis et al. 2001; Michelena et al. 2003; Davidian & Gavrilyuk 2014; Davidian 2017; Mustafayeva 2020); ***Cinara pineti*** (Fabricius) (Watanabe 1941a); ***Cinara pini*** (Linnaeus) (Marshall 1896; Quilis-Pérez 1931b; Schimitschek 1936; Braun 1938; Watanabe 1940; Györfi 1961; Mackauer & Starý 1967; Takada 1968; Starý 1975a; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Cinara pinimaritimae*** (Dufour) (Rondani 1876; Watanabe 1941a; Starý et al. 1975, 1977a; Starý 1976a; Núñez-Perez & Tizado 1996; Michelena et al. 1998); ***Cinara pruinosa*** (Hartig) (Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968); ***Cinara schimitscheki*** Börner (Tremblay 1975a; Starý 1976a; Michelena Saval & González Funes 1988a; Michelena et al. 2003); ***Cinara taeniatum*** (Koch) [*n. dub.*] (Watanabe & Takada 1965; Mackauer & Starý 1967); ***Cinara*** spp. (Starý & Rupais 1964; Starý 1964d, 1966c, 1966d, 1977, 1987a, 2006; Mackauer & Heie 1965; Mackauer & Starý 1967; Kierych 1975, 1980; Sanchis et al. 2000, 2001; Kavallieratos et al. 2004, 2016; Žikić et al. 2012; Davidian 2017; Ferrer-Suay et al. 2017; Kocić et al. 2024a); *Macchiatiella rhamni* (Boyer de Fonscolombe) (Fulmek 1968); *Macrosiphum rosae* (Linnaeus) (Reinhard 1856; Rondani 1876).

***Distribution.*** **Andorra** (Michelena et al. 1998); **Austria** (Schimitschek 1936; Mackauer & Starý 1967); **Azerbaijan** (Mustafayeva 2020); **China** (Zhang & Ji 1992; Gu et al. 1995; Chen & Shi 2001); **Czech Republic** (Starý 1960b, 1966c, 1977, 1987a, 1989a, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Ferrer-Suay et al. 2017); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Dours 1873; Starý et al. 1971, 1975, 1977a; Starý 1976a); **Germany** (Nees von Esenbeck 1834a; Kirchner 1867; Szépligeti 1904; Starý 1960b; Mackauer & Starý 1967; Mackauer & Völkl 2002; Belokobylskij et al. 2003); **Hungary** (Györfi 1941, 1961; Mackauer & Starý 1967; Polgár 1983; Kovács 1999); **India** (Rishi & Bhagat 1980; Bhagat 1981c, 1985; Starý & Ghosh 1983; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Italy** (Disconzi 1865; Rondani 1876; Gribodo 1881; Cecconi 1924; Starý 1966d, 1976a; Mackauer & Starý 1967; Tremblay 1975a; Bergamesco et al. 1995); **Japan** (Ashmead 1906; Watanabe 1940, 1941a; Starý 1960b, 1975a; Watanabe & Takada 1965; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1973; Finlayson 1990); **Latvia** (Starý & Rupais 1964); **Moldova** (Talitzky & Kuslitzky 1990); **Mongolia** (Takada 1979a); **Montenegro** (BOLD:ACB8101 | Tomanović et al. 2026a); **North Korea** (Takada 1979b; Starý & Choi 2000); **Palestine** (Bodenheimer & Swirski 1957; Avidov & Harpaz 1969; Starý 1976a); **Poland** (Kierych 1975, 1980; Huflejt 1997; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Romania** (Fulmek 1968; Lacatusu & Panu 1969); **Russia** (Davidian 2007, 2017, 2019b; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Manukyan 2024); **Serbia** (Graeffe 1908; Tomanović et al. 1998a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012; Kocić et al. 2024a); **Slovakia** (Starý 1977, 1989a); **Slovenia** (Graeffe 1908); **South Korea** (Starý & Choi 2000; Kim 2026); **Spain** (Quilis-Pérez 1931b; Starý 1976a; Michelena Saval & González Funes 1988a; Tizado & Núñez-Perez 1991; Núñez-Perez & Tizado 1996; Michelena et al. 1998, 2003; Sanchis et al. 2000, 2001; Michelena Saval & Martínez De Murguía 2012); **Sweden** (Thomson 1895; Szépligeti 1904; Mackauer & Starý 1967; Gärdenfors 1984; Sanchis et al. 2001); **Switzerland** (Mackauer & Starý 1967); **Ukraine** (Kaliuzhna 2019a, 2019b); **United Kingdom** (Curtis 1837; Smith 1853; Marshall 1872a, 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Pontin 1960; Mackauer 1961b; Mackauer & Starý 1967).

### *Pauesia pinicollis* (Starý, 1960)

*Paraphidius pinicollis* Starý, 1960b:26. Holotype ♀, paratypes ♀ ♂ (IECA). – Germany.

***Hosts.*** ***Cinara brauni*** Börner (Davidian 2017; Havelka et al. 2021); ***Cinara hyperophila*** (Koch) (Sanchis et al. 2001); ***Cinara neubergi*** (Arnhart) (Havelka et al. 2021); ***Cinara nuda*** (Mordvilko) (Starý 1960b); ***Cinara pinea*** (Mordvilko) (Mackauer & Starý 1967; Michelena et al. 1998; Sanchis et al. 2001; Havelka et al. 2021); ***Cinara pini*** (Linnaeus) (Starý 1960b; Mackauer & Starý 1967; Davidian 2017); ***Cinara piniphila***

(Ratzeburg) (Havelka et al. 2021); ***Cinara*** spp. (Sanchis et al. 2001; Michelena et al. 2003; Davidian 2017).

***Distribution.*** **Belarus** (Davidian 2017); **Germany** (Starý 1960b; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **Lithuania** (Havelka et al. 2021); **Moldova** (Talitzky & Kuslitzky 1990); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Davidian & Humala 2023); **Spain** (Starý 1976a; Michelena et al. 1998, 2003; Sanchis et al. 2001); **Sweden** (Sanchis et al. 2001); **Ukraine** (Davidian 2017; Kaliuzhna 2019a, 2019b).

***Remarks.*** According to the original description (Starý 1960b), some paratypes are deposited in the collection of U. Sedlag (Greifswald, Germany).

### *Pauesia platyclaudi* Zhang & Ji, 1992

*Pauesia platyclaudi* Zhang & Ji, 1992:232. Holotype ♀, paratypes ♀♀ ♂♂ (MHBU). – China.

***Host. Cinara tujafilina*** (Del Guercio) (Zhang & Ji 1992; Wei et al. 2005).

***Distribution.*** **China** (Zhang & Ji 1992; Gu et al. 1995; Chen & Shi 2001).

### *Pauesia ponderosae* (Muesebeck, 1958) [Fig. 41B]

*Aphidius* (*Protaphidius*) *ponderosae* Muesebeck, 1958b:141. Holotype ♀, paratypes ♀♀ ♂♂ (USNM). – Canada.

***Host. Cinara*** spp. (Muesebeck 1958b; Mackauer & Starý 1967; Finlayson 1990).

***Distribution.*** **Canada** (Muesebeck 1958b, 1967; Schlinger & Hall 1960a; Mackauer & Starý 1967; Finlayson 1990); **Mexico** (Coronado-Blanco et al. 2004); **USA** (Muesebeck 1967).

### *Pauesia ponderosaecola* Pike & Starý, 1996 [Fig. 41C]

*Pauesia ponderosaecola* Pike & Starý, 1996c:329. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (IECA, WSUJ). – USA.

***Host. Cinara ponderosae*** (Williams) (Pike & Starý 1996; Pike et al. 1996, 2000).

***Distribution.*** **USA** (Pike & Starý 1996; Pike et al. 1996, 2000).

### *Pauesia procephali* (Ashmead, 1889) [Fig. 41D]

*Aphidius procephali* Ashmead, 1889:659. Holotype ♂ (USNM). – USA.

***Hosts. Cinara confinis*** (Koch) (Marsh 1979); ***Cinara pergandei*** (Wilson) (Mackauer & Starý 1967; Marsh 1979); ***Cinara*** sp. (Mackauer & Starý 1967); ***Prociphilus*** sp. (Riley & Howard 1890).

***Distribution.*** **Canada** (Bradley 1961; Mackauer & Starý 1967); **USA** (Ashmead 1889; Riley & Howard 1890; Gahan 1911a; Hoffmann 1945; Muesebeck & Walkley 1951; Mackauer & Starý 1967).

### *Pauesia pseudosilana* Samanta & Raychaudhuri, 1984

*Pauesia pseudosilana* Samanta & Raychaudhuri, 1984b:4. Holotype ♀ (CUCE). – India.

***Host. Cinara atrotibialis*** David & Rajasingh (Samanta & Raychaudhuri 1984b; Raychaudhuri et al. 1990)

***Distribution.*** **India** (Samanta & Raychaudhuri 1984b; Raychaudhuri et al. 1990; Das & Chakrabarti 2023a).

### *Pauesia pseudotsugae* Pike & Starý, 1996

*Pauesia pseudotsugae* Pike & Starý [in Pike et al.], 1996:582. Holotype ♀ (USNM), paratype ♀ (IECA). – USA.

***Host. Cinara pseudotaxifoliae*** Palmer (Pike et al. 1996, 2000).

***Distribution.*** **USA** (Pike et al. 1996, 2000).

### *Pauesia rufithorax* Starý & Remaudière, 1982

*Pauesia rufithorax* Starý & Remaudière, 1982:113. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Mexico.

***Host. Cinara*** spp. (Starý & Remaudière 1982).

***Distribution.*** **Mexico** (Starý & Remaudière 1982, 1988).

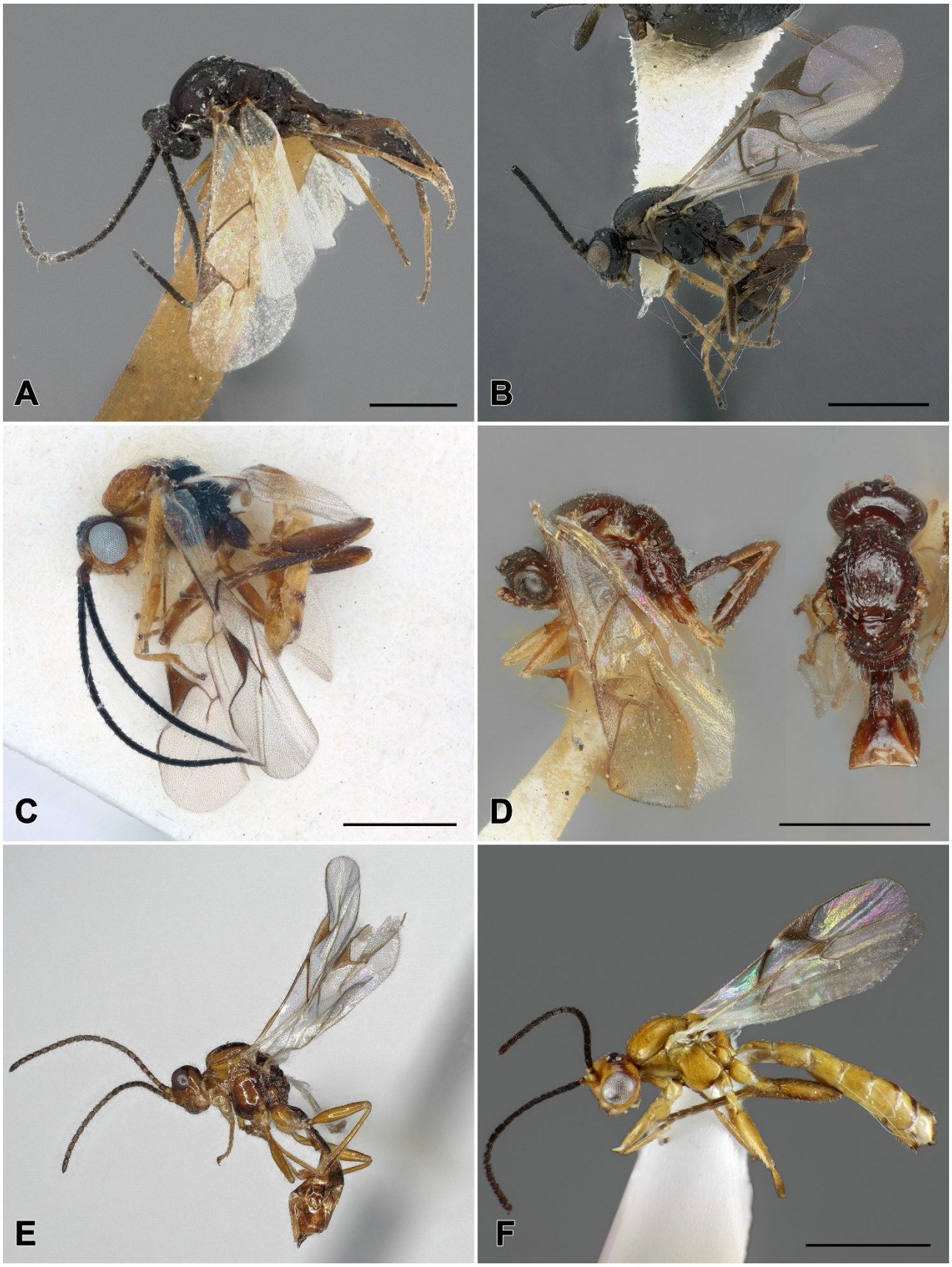



**Figure 41.** Species of the genus *Pauesia* Quilis, 1931. **A.** *Pauesia pini* (Haliday, 1834) – Holotype of *Pauesia lachnivora* (Ashmead, 1906), USNM; **B.** *Pauesia ponderosae* (Muesebeck, 1958) – Holotype, USNM; **C.** *Pauesia ponderosaecola* Pike & Starý, 1996 – Holotype, USNM; **D.** *Pauesia procephali* (Ashmead, 1889) – Holotype, USNM; **E.** *Pauesia salignae* (Watanabe, 1939) – South Korea, KSNU; **F.** *Pauesia silana* Tremblay, 1969 – Tunisia, DPPZ. Scale bar: 1 mm.

### *Pauesia rugosa* Starý & Remaudière, 1982

*Pauesia rugosa* Starý & Remaudière, 1982:115. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Mexico.

***Host.*** ***Cinara*** spp. (Starý & Remaudière 1982).

***Distribution.*** **Mexico** (Starý & Remaudière 1982, 1988).

### *Pauesia sachalinensis* Davidian, 2007

*Pauesia sachalinensis* Davidian, 2007:215. Holotype ♀, paratypes ♀♀ ♂ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2007, 2017, 2019b; Rakhshani et al. 2017b).

### *Pauesia salignae* (Watanabe, 1939) [Fig. 41E]

*Aphidius salignae* Watanabe, 1939:81. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Hosts.*** ***Cinara atrotibialis*** David & Rajasingh (Raychaudhuri et al. 1990); ***Pyrolachnus pyri*** (Buckton) (Samanta & Raychaudhuri 1984b; Raychaudhuri et al. 1990); ***Tuberolachnus salignus*** (Gmelin) (Watanabe 1939; Yasumatsu et al. 1946; Watanabe & Takada 1965; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968, 1973; Starý 1971d, 1975a; Liu 1975; Marsh 1979; Chou 1981; Raychaudhuri et al. 1990; Chen et al. 2009).

***Distribution.*** **China** (Mackauer & Starý 1967; Liu 1975; Starý & Schlinger 1967; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); **India** (Samanta & Raychaudhuri 1984b; Raychaudhuri et al. 1990; Bhagat & Ahmad 1995; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Japan** (Watanabe 1939; Yasumatsu et al. 1946; Watanabe & Takada 1965; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968, 1973; Starý 1975a); **North Korea** (Chiriac 1993; Starý & Choi 2000); **Russia** (Davidian 2017, 2019b; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **South Korea** (Paik 1975; Kim 2026); **USA** (Mackauer & Starý 1967; Starý & Schlinger 1967).

### *Pauesia shii* Ghafouri Moghaddam, nom. nov.

*Pauesia rugosa* Shi [in Chen & Shi], 2001:98. Holotype ♀, paratypes ♀♀ ♂♂ (FAFU). – China.

***Host.*** Unknown.

***Distribution.*** China (Chen & Shi 2001).

***Etymology.*** The species is named in honor of Quan-Xiu Shi, the author of *Pauesia rugosa* Shi, 2001 [Emendation of *Pauesia rugosus* Shi].

***Remarks.*** Replacement name for *Pauesia rugosa* Shi, 2001, junior primary homonym, not *Pauesia rugosa* Starý & Remaudière, 1982.

### *Pauesia silana* Tremblay, 1969 [Fig. 41F]

*Pauesia silana* Tremblay, 1969:153. Holotype ♀, paratypes ♀♀ ♂♂ (DAUN). – Italy.

***Hosts.*** ***Cinara acutirostris*** Hille Ris Lambers (Tremblay 1969, 1975a; Starý 1976a); ***Cinara hyperophila*** (Koch) (Davidian & Gavrilyuk 2014; Davidian 2017); ***Cinara maghrebica*** Mimeur (Starý et al. 1973; Starý 1976a; González & Michelena 1987; Michelena Saval & González Funes 1988a; Aggoun et al. 2022; Bourouba & Laamari 2025); ***Cinara palaestinensis*** Hille Ris Lambers (Mescheloff & Rosen 1990b; Kavallieratos et al. 2001, 2004, 2016; Mifsud & Starý 2009, 2012; Ben Halima et al. 2022); ***Cinara pinea*** (Mordvilko) (Davidian 2017); ***Cinara pini*** (Linnaeus) (Ben Hamacha et al. 2017; Havelka et al. 2021); ***Cinara pinimaritimae*** (Dufour) (Suay Cano & Michelena Saval 1998; Sanchis et al. 2000, 2001); ***Cinara*** spp. (Davidian 2017).

***Distribution.*** **Algeria** (Ben Hamacha et al. 2017; Rakhshani et al. 2019; Aggoun et al. 2022; Bourouba & Laamari 2025); **Belarus** (Davidian 2017); **Bulgaria** (Todorov 2008); **France** (Starý et al. 1973; Starý 1976a); **Greece** (Kavallieratos et al. 2001, 2004, 2016; Mifsud & Starý 2009); **Italy** (Tremblay 1969, 1975a; Starý

1976a; Bergamesco et al. 1995); **Lithuania** (Havelka et al. 2021); **Malta** (Mifsud & Starý 2009, 2012; Rakhshani et al. 2015b); **Palestine** (Mescheloff & Rosen 1990b); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Davidian & Humala 2023; Davidian & Manukyan 2024); **Spain** (González & Michelena 1987; Michelena Saval & González Funes 1988a; Tizado & Núñez-Perez 1991; Suay Cano & Michelena Saval 1998; Sanchis et al. 2000, 2001); **Tunisia** (Ben Halima et al. 2022).

### *Pauesia silvestris* (Starý, 1960)

*Paraphidius silvestris* Starý, 1960b:29. Holotype ♀ (IECA), paratypes ♀♀ ♂ (IECA, CNC). – Czech Republic.

***Hosts.*** ***Cinara piceicola*** (Cholodkovsky) (Starý et al. 1977a); ***Cinara pinea*** (Mordvilko) (Völkl & Kroupa 1997; Wiackowski et al. 2001); ***Cinara pini*** (Linnaeus) (Michelena Saval & González Funes 1988a; Starý 1966d, 1976a; Starý et al. 1971; Völkl & Kroupa 1997; Sanchis et al. 2001); ***Cinara pinimaritimae*** (Dufour) (Starý 1966d, 1976a); ***Cinara*** spp. (Starý 1960b, 1964d, 1966c, 1966d, 2006; Mackauer & Starý 1967; Sanchis et al. 2000; Michelena et al. 2003; Davidian 2017; Kocić et al. 2024a).

***Distribution.*** **Czech Republic** (Starý 1960b, 1966c, 1989a, 2006; Mackauer & Starý 1967); **France** (Starý et al. 1971, 1977a); **Germany** (Mackauer & Starý 1967; Völkl & Kroupa 1997; Belokobylskij et al. 2003); **Hungary** (Polgár 1983, 1987); **Italy** (Starý 1966d, 1976a; Bergamesco et al. 1995); **Moldova** (Talitzky & Kuslitzky 1990); **Poland** (Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian 2017, 2019b; Davidian & Humala 2023; Davidian & Ruchin 2023); **Serbia** (Kocić et al. 2024a); **Spain** (Michelena Saval & González Funes 1988a; Tizado & Núñez-Perez 1991; Sanchis et al. 2000; Michelena et al. 2003); **Sweden** (Sanchis et al. 2001).

### *Pauesia similis* Starý, 1966 [Fig. 42A]

*Pauesia similis* Starý, 1966d:111. Holotype ♀, paratypes ♀♀ ♂♂ (MRSN). – Italy.

***Hosts.*** ***Cinara cembrae*** (Seitner) (Starý et al. 1971); ***Cinara laricis*** (Hartig) (Sanchis et al. 2001); ***Cinara piceicola*** (Cholodkovsky) (Starý et al. 1977a; Sanchis et al. 2001); ***Cinara pruinosa*** (Hartig) (Sanchis et al. 2001; Havelka et al. 2021); ***Cinara*** spp. (Starý 1966d, 2006; Mackauer & Starý 1967; Halme 1977; Davidian 2017; Kocić et al. 2024a).

***Distribution.*** **Czech Republic** (Starý 2006); **Finland** (Halme 1977); **France** (Starý et al. 1971, 1977a); **Germany** (Sanchis et al. 2001); **Italy** (Starý 1966d; Mackauer & Starý 1967; Mackauer 1968a; Bergamesco et al. 1995); **Lithuania** (Havelka et al. 2021); **Norway** (Mjøs et al. 2024); **Russia** (Davidian 2017, 2018b, 2019b; Davidian & Humala 2023); **Serbia** (Kocić et al. 2024a); **Sweden** (Sanchis et al. 2001).

### *Pauesia soranumensis* Watanabe & Takada, 1965

*Pauesia soranumensis* Watanabe & Takada, 1965:9. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Hosts.*** ***Cinara costata*** (Zetterstedt) (Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968; Starý 1975a); ***Cinara nopporensis*** Inouye (Watanabe & Takada 1965; Mackauer & Starý 1967); ***Cinara piniphila*** (Ratzeburg) (Takada 1968); ***Cinara pinimaritimae*** (Dufour) (Watanabe & Takada 1965); ***Cinara*** sp. (Zhang & Ji 1992).

***Distribution.*** **China** (Zhang & Ji 1992; Chen & Shi 2001); **Japan** (Watanabe & Takada 1965; Takada 1968; Starý 1975a); **Russia** (Davidian & Humala 2023; Davidian & Ruchin 2023).

### *Pauesia spatulata* Sedlag & Starý, 1980

*Pauesia spatulata* Sedlag & Starý, 1980:384. Holotype ♀, paratypes ♀ ♂ (IECA). – Germany.

***Hosts.*** ***Cinara piceicola*** (Cholodkovsky) (Sedlag & Starý 1980; Rakhshani et al. 2017b); ***Cinara pilicornis*** (Hartig) (Sedlag & Starý 1980; Rakhshani et al. 2017b).

***Distribution.*** **Germany** (Sedlag & Starý 1980; Belokobylskij et al. 2003; Rakhshani et al. 2017b); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2019b; Rakhshani et al. 2017b; Davidian & Humala 2023).

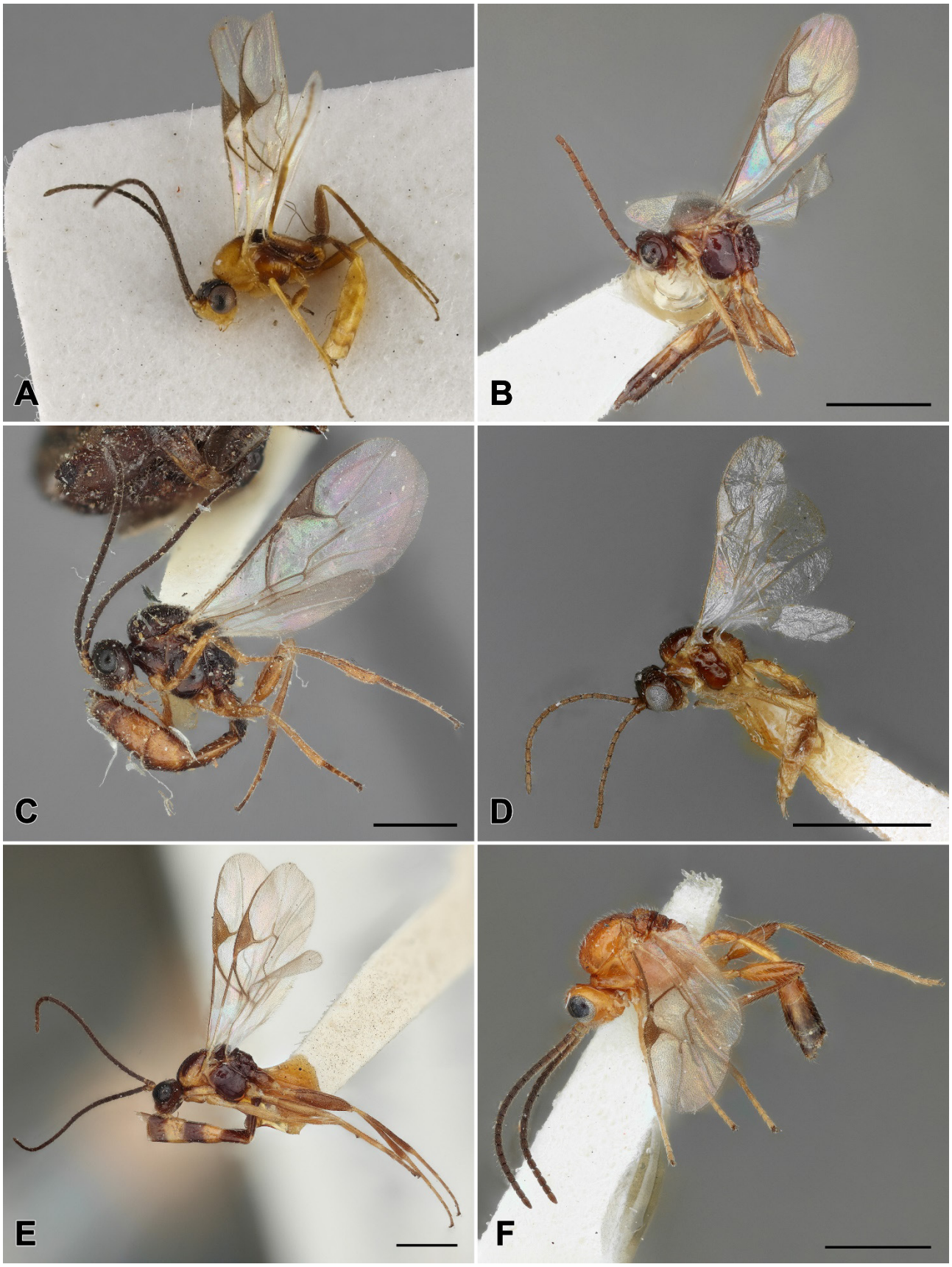



**Figure 42.** Species of the genus *Pauesia* Quilis, 1931. **A.** *Pauesia similis* Starý, 1966 – Finland, ZMHF; **B.** *Pauesia takomaensis* (Smith, 1944) – Holotype, USNM; **C.** *Pauesia tropicalis* Starý & Schlinger, 1967 – Holotype, USNM; **D.** *Pauesia unilachni* (Gahan, 1926) – Lectotype, USNM; **E.** *Pauesia varigata* (Smith, 1944) – Holotype, USNM; **F.** *Pauesia xanthothera* (Smith, 1944), Holotype, USNM. Scale bar: 1 mm.

### *Pauesia szepligetii* (Starý, 1960)

*Aphidius bicolor* Szépligeti, 1898:395, 407. Holotype ♂ (HNHM) – Croatia.

*Paraphidius szépligetii* Starý, 1960b:31, nom. nov. pro *Aphidius bicolor* Szépligeti, 1898, nec Ashmead, 1889.

***Host.*** Unknown.

***Distribution.*** **Croatia** (Szépligeti 1904; Starý 1960b; Mackauer & Starý 1967); **Hungary** (Polgár 1983).

### *Pauesia taianensis* Lu & Ji, 1992

*Pauesia taianensis* Lu & Ji, 1992:6. Holotype ♀, paratypes ♀♀ ♂♂ (MHBU). – China.

***Host. Cinara tujafilina*** (Del Guercio) (Lu & Ji 1992; Chen & Shi 2001).

***Distribution.*** **China** (Lu & Ji 1992; Chen & Shi 2001).

### *Pauesia takomaensis* (Smith, 1944) [Fig. 42B]

*Aphidius takomaensis* Smith, 1944:46. Holotype ♀ (USNM), paratypes ♀♀ ♂ (USNM, NCSU). – USA.

***Hosts. Cinara hottesi*** (Gillette & Palmer) (Muesebeck 1958a; Mackauer & Starý 1967; Marsh 1979); ***Cinara ponderosae*** (Williams) (Mackauer & Starý 1967; Marsh 1979); ***Cinara*** sp. (Smith 1944).

***Distribution.*** **Canada** (Muesebeck 1958a; Mackauer & Starý 1967); **USA** (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Finlayson 1990).

### *Pauesia tropicalis* Starý & Schlinger, 1967 [Fig. 42C]

*Pauesia tropicalis* Starý & Schlinger, 1967:89. Holotype ♀ (USNM). – Japan.

***Host. Lachnus tropicalis*** (van der Goot) (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1971d, 1975a).

***Distribution.*** **Japan** (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a).

### *Pauesia unilachni* (Gahan, 1926) [Fig. 42D]

*Aphidius unilachni* Gahan, 1926:1–2. Lectotype ♀ (after Mackauer 1968a) (USNM). – Taiwan.

**Syn.:** *Pauesia albuferensis* Quilis, 1931; *Aphidius praevisus* Gautier & Bonnamour, 1936; *Trioxys basilewskyi* Benoit, 1955.

***Hosts. Cinara formosana*** (Takahashi) (Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Cinara nuda*** (Mordvilko) (Starý 1976a); ***Cinara obscura*** Bradley (Mackauer 1962c; Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968; Michelena et al. 1998, 2003); ***Cinara orientalis*** (Takahashi) (Sonan 1944; Starý & Schlinger 1967; Starý 1975a; Chen et al. 2009); ***Cinara pinea*** (Mordvilko) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Cinara pineti*** (Fabricius) (Starý 1960b, 1962b, 1964d, 1965a, 1966c, 1976a, 1977, 1987a, 1995b, 2006; Mackauer 1962c; Starý & Rupais 1964; Watanabe & Takada 1965; Mackauer & Starý 1967; Takada 1968; Tremblay 1975a; Kierych 1980; Düzgüneş et al. 1982; González & Michelena 1987; Michelena Saval & González Funes 1988a; Moraal 1990; Chiriac 1993; Trjapitzin & Manukyan 1993; Núñez-Perez & Tizado 1996; Völkl & Kraus 1996; Völkl & Stadler 1996; Atanassova 1997; Kolarov 1997; Michelena et al. 1998, 2003; Suay Cano & Michelena Saval 1998; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Kavallieratos et al. 2004, 2016; Uysal et al. 2004; Žikić et al. 2012; Davidian & Gavrilyuk 2014; Davidian 2017; Havelka et al. 2021); ***Cinara*** spp. (Gahan 1926; Starý 1966d, 1975a; Watanabe & Takada 1965; Mackauer & Starý 1967; Starý & Schlinger 1967; Finlayson 1990; Moraal 1990; Kocić et al. 2024a); ***Cranaphis formosana*** (Takahashi) (Starý & Schlinger 1967); ***Eulachnus agilis*** (Kaltenbach) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Eulachnus thunbergii*** (Wilson) (Paonam & Singh 1989); ***Mindarus abietinus*** Koch (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001).

***Distribution.*** **Andorra** (Michelena et al. 1998, 2003); **Austria** (Mackauer & Starý 1967); **Belarus** (Davidian 2015, 2017); **Bulgaria** (Starý 1962b, 1976a; Mackauer & Starý 1967; Atanassova 1997; Kolarov 1997; Todorov & Ivanova 2016); **Burundi** (Benoit 1955; Mackauer & Starý 1967); **China** (Gahan

1926; Sonan 1944; Mackauer & Starý 1967; Starý & Schlinger 1967; Liu 1975; Starý 1975a; Chou 1981; Yang & Wu 1981; Lu & Ji 1992; Zhang & Ji 1992; Chen & Shi 2001; Chen et al. 2009); **Czech Republic** (Starý 1960b, 1966c, 1977, 1987a, 1989a, 1995b; Mackauer & Starý 1967; Starý & Havelka 2008); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Gautier & Bonnamour 1936; Mackauer & Starý 1967; Starý et al. 1971); **Germany** (Starý 1960b; Mackauer 1962c; Mackauer & Starý 1967; Völkl & Stadler 1996; Belokobylskij et al. 2003); **Hungary** (Kovács 1999); **India** (Paonam & Singh 1989); **Italy** (Starý 1966d, 1976a; Mackauer & Starý 1967; Tremblay 1967a, 1975a; Bergamesco et al. 1995); **Japan** (Watanabe & Takada 1965; Takada 1968, 1973; Starý 1975a; Finlayson 1990); **Kazakhstan** (Davidian 2017); **Latvia** (Starý & Rupais 1964; Starý 1965a; Mackauer & Starý 1967); **Lithuania** (Starý & Rupais 1964; Havelka et al. 2021); **Moldova** (Talitzky & Kuslitzky 1990; Chiriac 1993); **Netherlands** (Moraal 1990); **Poland** (Kierych 1980; Huflejt 1997; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Starý 1965a; Mackauer & Starý 1967; Mackauer 1968c; Trjapitzin & Manukyan 1993; Davidian & Gavrilyuk 2014; Davidian 2015, 2017, 2019b; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012; Kocić et al. 2024a); **Slovakia** (Starý 1960b, 1977, 1989a); **South Korea** (Mackauer & Starý 1967; Starý & Schlinger 1967; Paik 1975; Starý 1975a; Starý & Choi 2000; Kim 2026); **Spain** (Quilis-Pérez 1931b; Ceballos 1956; Starý 1961e, 1976a; Mackauer & Starý 1967; González & Michelena 1987; Michelena Saval & González Funes 1988a; Tizado & Núñez-Perez 1991; Núñez-Perez & Tizado 1996; Michelena et al. 1998, 2003; Suay Cano & Michelena Saval 1998; Michelena Saval & Martínez De Murguía 2012); **Sweden** (Starý 1960b; Mackauer & Starý 1967); **Türkiye** (Düzgüneş et al. 1982; Uysal et al. 2004); **Ukraine** (Kaliuzhna 2016a, 2019b); **United Kingdom** (Mackauer & Starý 1967; Davidian & Rispin 2016).

### *Pauesia varigata* (Smith, 1944) [Fig. 42E]

*Aphidius varigatus* Smith, 1944:47. Holotype ♀ (USNM), paratypes ♀♀ (CAES, NCSU). – USA.

***Hosts.*** ***Cinara fornacula*** Hottes (Mackauer & Starý 1967; Marsh 1979); ***Cinara hottesi*** (Gillette & Palmer) (Smith 1944; Mackauer & Starý 1967; Marsh 1979); ***Lachnus*** sp. (Smith 1944).

***Distribution.*** **Canada** (Bradley 1961; Mackauer & Starý 1967); **USA** (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967).

### *Pauesia xanthothera* (Smith, 1944) [Fig. 42F]

*Aphidius xanthotherus* Smith, 1944:48. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, NCSU). – USA.

***Hosts.*** ***Cinara atlantica*** (Wilson) (Smith 1944; Mackauer & Starý 1967; Marsh 1979); ***Cinara pergandei*** (Wilson) (Mackauer & Starý 1967; Marsh 1979); ***Cinara pinea*** (Mordvilko) (Mackauer & Starý 1967; Marsh 1979); ***Cinara strobi*** (Fitch) (Smith 1944; Mackauer & Starý 1967; Marsh 1979); ***Cinara watsoni*** Tissot (Marsh 1979).

***Distribution.*** **Canada** (Mackauer & Starý 1967); **USA** (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967).

## Genus *Protacanthoides* Mackauer, 1961 [1 species]

*Protacanthoides* Mackauer, 1961:289. Type species: *Trioxys fossilis* Mackauer, 1959.

### *Protacanthoides fossilis* (Mackauer, 1959) [Fossil]

*Trioxys fossilis* Mackauer, 1959g:58. Holotype ♀ (MNHN). – France.

**Syn.:** *Protacanthoides obscuriformis* (Quilis, 1940).

***Host.*** Unknown.

***Distribution.*** **France** – Oligocene (Quilis-Pérez 1940; Mackauer 1959g; Starý 1970a, 1973b).

***Remarks.*** The position of this genus within the subtribe Protaphidiina (Mackauer 1968a) needs further examination to be confirmed.

### Genus *Protaphidius* Ashmead, 1900 [3 species]

*Protaphidius* Ashmead, 1900:368. Type species: *Coelonotus rufus* Förster, 1863.

**Syn.:** *Coelonotus* Förster, 1863:248. Type species: *Coelonotus rufus* Förster, 1862; *Menozzia* Goidanich, 1934:217. Type species: *Menozzia formicaria* Goidanich, 1934.

### *Protaphidius belokobylskiji* Davidian, 2007

*Protaphidius belokobylskiji* Davidian, 2007:223. Holotype ♀, paratypes ♀♀ ♂♂ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2007, 2017, 2019b).

### *Protaphidius nawaii* (Ashmead, 1906) [Figs 43A–B]

*Aclitus nawaii* Ashmead, 1906:188. Lectotype ♀ (after Watanabe 1957), paralectotypes ♀ ♂ (USNM). – Japan.

***Hosts.*** *Lachnus* sp. (Ashmead 1906); *Pterocomma salicis* (Linnaeus) (Takada 1968); ***Stomaphis aphananthae*** Sorin (Takada 2009); ***Stomaphis japonica*** Takahashi (Takada 1983, 2009; Yamamoto et al. 2020); ***Stomaphis malloti*** Sorin (Takada 2009); ***Stomaphis yanonis*** Takahashi (Watanabe 1957; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968, 1983, 2009; Starý 1971d, 1975a); ***Stomaphis*** sp. (Kim et al. 2025b).

***Distribution.*** **South Korea** (Kim et al. 2025b; Kim 2026); **Japan** (Ashmead 1906; Esaki et al. 1932; Watanabe 1957; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968, 1983, 2009; Starý 1975a; Davidian 2017; Yamamoto et al. 2020); **Russia** (Davidian 2004, 2007, 2017, 2019b).

### *Protaphidius wissmannii* (Ratzeburg, 1848)

*Aphidius wissmannii* Ratzeburg, 1848:59. Syntype ♀ (SDEI - destroyed). – Germany.

**Syn.:** *Coelonotus rufus* Förster, 1863; *Menozzia formicaria* Goidanich, 1934.

***Hosts.*** *Acyrthosiphon malvae* (Mosley) (Fulmek 1968); ***Stomaphis acquerinoi*** Binazzi (Binazzi & Pennacchio 2003); ***Stomaphis cupressi*** (Pintera) (Sanchis et al. 1994, 1996; Michelena et al. 2003); ***Stomaphis graffii*** Cholodkovsky (Mackauer & Starý 1967; Starý 1971d; Starý et al. 1977a; Kovács 2009; Kaliuzhna 2012); ***Stomaphis juglandis*** Petrović-Obradović (Kavallieratos et al. 2004; Žikić et al. 2012); ***Stomaphis longirostris*** (Fabricius) (Staverløkk et al. 2022); ***Stomaphis quercus*** (Linnaeus) (Ratzeburg 1848; Fahringer 1937; Starý 1958, 1965a, 1971d, 1987a, 2006; Starý & Rupais 1963; Mackauer & Starý 1967; Takada 1968; Kierych 1980; Kovács 2009; Davidian & Gavrilyuk 2014; Davidian 2017; Staverløkk et al. 2022); ***Stomaphis radicicola*** Hille Ris Lambers (Sobczyk et al. 2025); ***Stomaphis wojciechowskii*** Depa (Hodgson et al. 2019); ***Stomaphis*** spp. (Starý 1966c, 1966d; Sanchis et al. 2000).

***Distribution.*** **Austria** (Mackauer & Starý 1967); **Bulgaria** (Staverløkk et al. 2022); **Czech Republic** (Starý 1956, 1958, 1966c, 1987a, 1989a, 2006; Mackauer & Starý 1967); **France** (Dours 1873; Fulmek 1968; Starý 1976a; Starý et al. 1977a; Staverløkk et al. 2022); **Germany** (Kirchner 1867; Marshall 1896; Szépligeti 1904; Fahringer 1937; Ratzeburg 1848; Mackauer 1964b; Mackauer & Starý 1967; Belokobylskij & Taeger 2001; Belokobylskij et al. 2003; Staverløkk et al. 2022); **Hungary** (Györfi 1961; Mackauer & Starý 1967; Polgár 1983; Kovács & Kovács 2000); **Italy** (Goidanich 1934; Mackauer & Starý 1967; Fulmek 1968; Starý 1966d, 1976a; Bergamesco et al. 1995; Binazzi & Pennacchio 2003); **Latvia** (Starý 1965a; Starý & Rupais 1963; Mackauer & Starý 1967); **Moldova** (Davidian 2017); **Netherlands**, **Norway** (Staverløkk et al. 2022); **Poland** (Kierych 1980; Huflejt 1997); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2019b); **Serbia** (Tomanović et al. 1998a; Kavallieratos et al. 2004; Žikić et al. 2012); **Slovakia** (Starý 1958, 1989a); **Spain** (Sanchis et al. 1994, 1996, 2000; Michelena et al. 2003); **Ukraine** (Kaliuzhna 2012, 2013a, 2019a, 2019b); **Sweden** (Staverløkk et al. 2022); **United Kingdom** (Hodgson et al. 2019).

***Remarks.*** According to Schulz et al. (2018), most of the type specimens held at the Forestry College of Eberswalde (Forstliche Hochschule Eberswalde) were destroyed during World War II. However, five drawers containing various Hymenoptera, including some of the type specimens from Ratzeburg, were preserved and are now safely stored at the Senckenberg Deutsches Entomologisches Institut (SDEI) in Müncheberg, Germany.

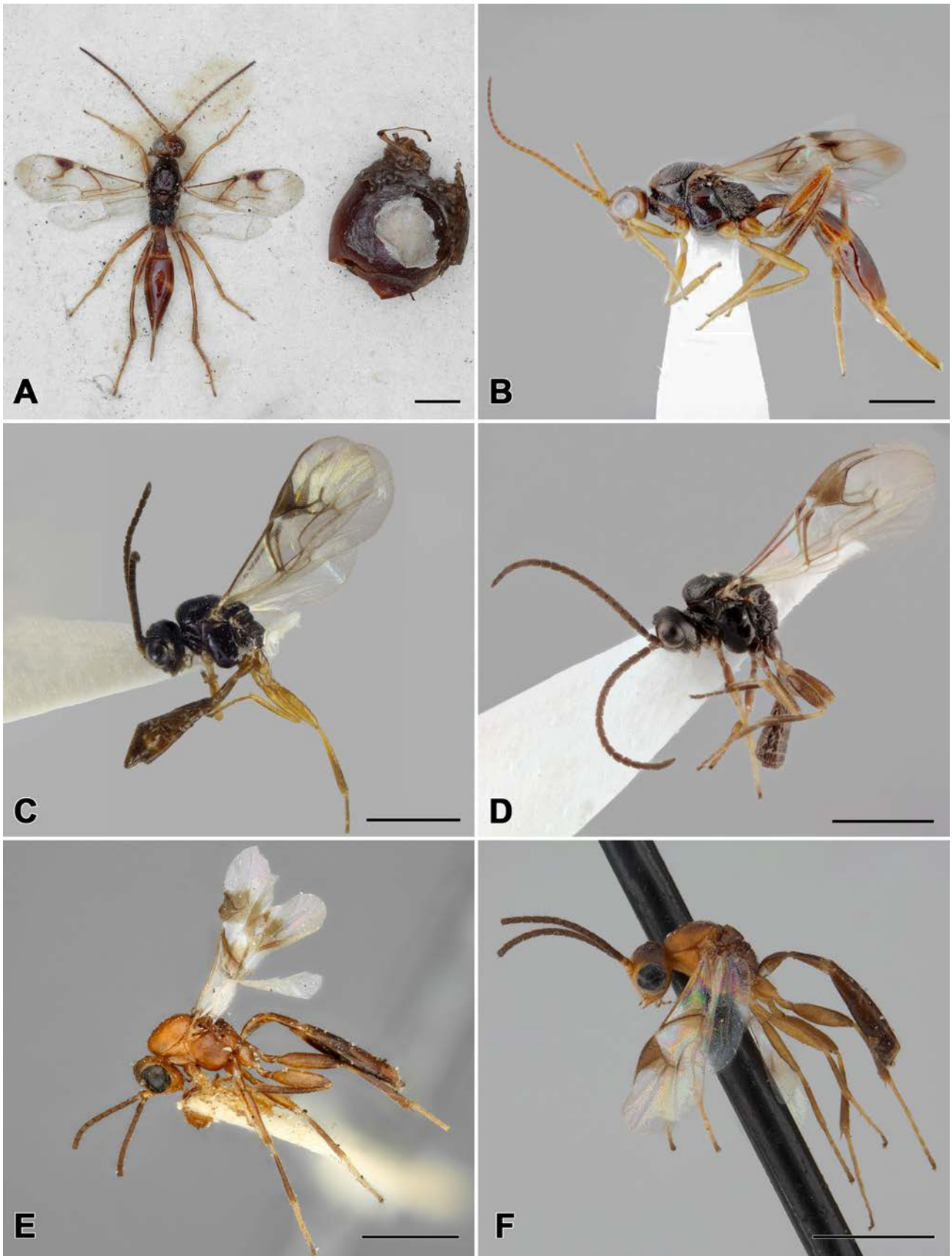



**Figure 43.** Species of the subtribe Protaphidiina Mackauer, 1961. **A.** *Protaphidius nawaii* (Ashmead, 1906) – Lectotype, USNM; **B.** *Protaphidius nawaii* (Ashmead, 1906) – Japan, KUEC; **C–D.** *Pseudopauesia prunicola* Halme, 1986 – Holotype and paratype, ZMHF; **E.** *Xenostigmus bifasciatus* (Ashmead, 1891) – Holotype, USNM; **F.** *Xenostigmus bifasciatus* (Ashmead, 1891) – USA, CNC. Scale bar: 1 mm.

### Genus *Pseudopauesia* Halme, 1986 [1 species]

*Pseudopauesia* Halme, 1986:20. Type species: *Pseudopauesia prunicola* Halme, 1986.

#### *Pseudopauesia prunicola* Halme, 1986 [Figs 43C–D]

*Pseudopauesia prunicola* Halme, 1986:21. Holotype ♀, paratypes ♀♀ ♂♂ (ZMHF). – Finland.

***Hosts.*** ***Dysaphis sorbi*** (Kaltenbach) (Davidian & Gavrilyuk 2014); ***Myzus cerasi*** (Fabricius) (Sanchis et al. 2000); ***Rhopalosiphum padi*** (Linnaeus) (Halme 1986).

***Distribution.*** **Finland** (Halme 1986); **Germany** (Sanchis et al. 2000); **Norway** (Mjøs et al. 2024); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2017, 2019b).

### Genus *Xenostigmus* Smith, 1944 [2 species]

*Xenostigmus* Smith, 1944:36. Type species: *Aphidius bifasciatus* Ashmead, 1891.

#### *Xenostigmus bifasciatus* (Ashmead, 1891) [Figs 43E–F]

*Aphidius bifasciatus* Ashmead, 1891:23. Holotype ♀ (USNM). – USA.

***Hosts.*** ***Cinara atlantica*** (Wilson) (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Marsh 1979; Starý et al. 2007); ***Cinara australi*** (Ashmead) [*n. dub.*] (Muesebeck & Walkley 1951; Mackauer & Starý 1967; Marsh 1979); ***Cinara hottesi*** (Gillette & Palmer) (Mackauer & Starý 1967; Marsh 1979); ***Cinara pini*** (Linnaeus) (Mason 1922); ***Cinara ponderosae*** (Williams) (Pike et al. 1996, 2000); ***Cinara pseudotaxifoliae*** Palmer (Bradley 1961; Mackauer & Starý 1967; Marsh 1979); ***Cinara taedae*** Tissot (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Marsh 1979); ***Cinara*** spp. (Mackauer & Starý 1967; Oliveira et al. 2026).

***Distribution.*** **Brazil** (Starý et al. 2007; Oliveira et al. 2026); **Canada** (Muesebeck 1958a; Bradley 1961; Mackauer & Starý 1967); **USA** (Ashmead 1891; Gahan 1911a; Mason 1922; Smith 1944; Muesebeck & Walkley 1951; Keen 1958; Muesebeck 1958a, 1967; Finlayson 1990; Pike et al. 1996, 2000; Sanchis et al. 2000; Boone et al. 2009).

#### *Xenostigmus takadai* Davidian, 2007

*Xenostigmus takadai* Davidian, 2007:213. Holotype ♀, paratypes ♀♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2007, 2017, 2019b).

### Subtribe TRIOXINA Ashmead, 1900 [14 genera, 206 species (including 2 fossils)]

Trioxina Ashmead, 1900 - *sensu* Mackauer, 1961:113. Type genus: *Trioxys* Haliday, 1833.

### Genus *Acanthocaudus* Smith, 1944 [3 species]

*Trioxys* – subgenus *Acanthocaudus* Smith, 1944:96. Type species: *Trioxys* (*Acanthocaudus*) *tissoti* Smith, 1944.

#### *Acanthocaudus bicolor* Kula, 2017

*Acanthocaudus bicolor* Kula [in Kula et al.], 2017:546. Holotype ♀, paratypes ♀♂ (USNM). – USA.

***Host.*** ***Uroleucon bradburyi*** (Olive) (Kula et al. 2017).

***Distribution.*** **USA** (Kula et al. 2017).

#### *Acanthocaudus caudacanthus* (Smith, 1944) [Fig. 44A]

*Trioxys* (*Acanthocaudus*) *caudacanthus* Smith, 1944:97. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, CAES, NCSU). – USA.

***Hosts.*** *Aphis gossypii* Glover (Smith 1944); ***Uroleucon erigeronense*** (Thomas) (Smith 1944; Mackauer & Starý 1967; Marsh 1979); ***Uroleucon gravicorne*** (Patch) (Smith 1944; Mackauer & Starý 1967; Marsh 1979); ***Uroleucon*** spp. (Pike et al. 2000).

***Distribution.*** **USA** (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Pike et al. 2000).

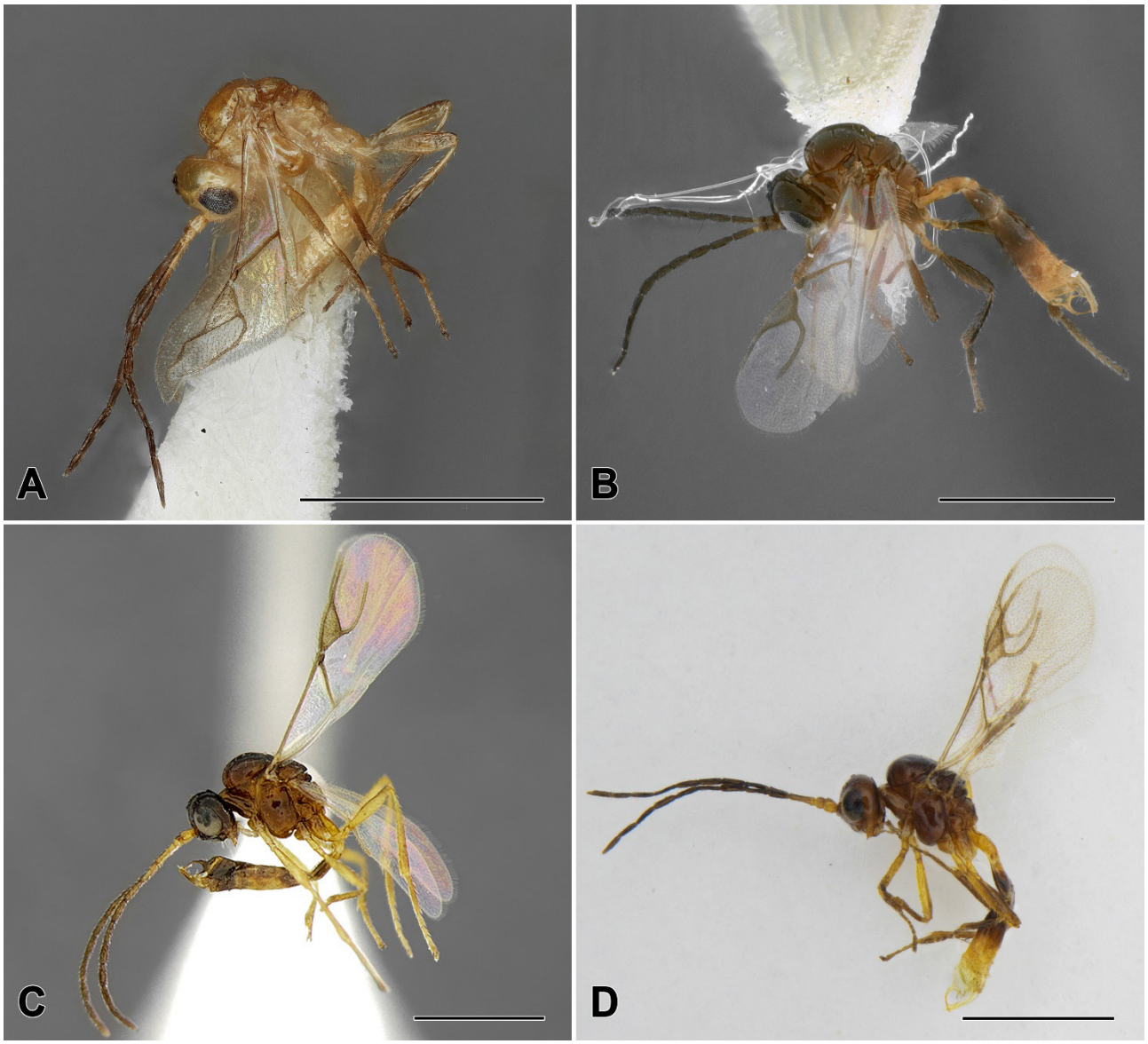



**Figure 44.** Species of the genus *Acanthocaudus* Smith, 1944. **A.** *Acanthocaudus caudacanthus* (Smith, 1944) – Holotype, USNM; **B.** *Acanthocaudus schlingeri* (Muesebeck, 1958) – Holotype (= *Acanthocaudus tissoti*), USNM; **C.** *Acanthocaudus tissoti* (Smith, 1944) – SMIRC, USA; **D.** *Acanthocaudus* sp.– USA, ZISP. Scale bar: 1 mm.

### *Acanthocaudus tissoti* (Smith, 1944) [Fig. 44C]

*Trioxys* (*Acanthocaudus*) *tissoti* Smith, 1944:96. Holotype ♀ (USNM). – USA.

**Syn.:** *Trioxys* (*Acanthocaudus*) *schlingeri* Muesebeck, 1958 [Fig. 44B].

***Hosts.*** ***Uroleucon ambrosiae*** (Thomas) (Mackauer & Starý 1967; Starý 1981a); ***Uroleucon rudbeckiae*** (Fitch) (Smith 1944; Mackauer & Starý 1967; Marsh 1979; Assefa et al. 2015); ***Uroleucon russellae*** (Hille Ris Lambers) (Mackauer & Starý 1967; Marsh 1979; Batulla & Robinson 1984).

***Distribution.*** **Argentina** (BOLD:ABY2411); **Canada** (Muesebeck 1958b; Schlinger & Hall 1960a; Mackauer & Starý 1967); **Cuba** (Starý 1981a); **USA** (Smith 1944; Mackauer & Starý 1967).

### Genus *Betuloxys* Mackauer, 1960 [10 species]

*Trioxys* – subgenus *Betuloxys* Mackauer, 1960:139. Type species: *Trioxys compressicornis* Ruthe, 1859.

### *Betuloxys alnicolus* Pike & Starý, 2000 [Fig. 45B]

*Betuloxys alnicolus* Pike & Starý [in Pike et al.], 2000:701. Holotype ♀ (USNM). – USA.

***Host.*** ***Boernerina variabilis*** Richards (Pike et al. 2000).

***Distribution.*** **USA** (Pike et al. 2000).

### *Betuloxys assamensis* (Starý, 1975)

*Trioxys* (*Betuloxys*) *assamensis* Starý [in Starý & Ghosh], 1975:346. Holotype ♀ (ZSI), paratypes ♂♂ (ZSI, IECA). – India.

***Host.*** ***Betacallis querciphaga*** Basu, Ghosh & Raychaudhuri (Starý & Ghosh 1975, 1983).

***Distribution.*** **Bangladesh** (Starý & Ghosh 1983); **India** (Starý & Ghosh 1975; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Das & Chakrabarti 2023a).

### *Betuloxys compressicornis* (Ruthe, 1859) [Fig. 45C]

*Trioxys compressicornis* Ruthe, 1859:314. Holotype ♀ (lost). – Iceland.

*Trioxys compressicornis*: Mackauer 1959b:161. Neotype ♀ (USNM). – Ireland.

**Syn.:** *Trioxys testaceus* Stelfox, 1948 [Fig. 45D].

***Hosts.*** ***Euceraphis punctipennis*** (Zetterstedt) (Mackauer 1960f; Mackauer & Heie 1965; Mackauer & Starý 1967; Marsh 1979; Starý et al. 1971; Starý 1978a, 1987a, 1988b, 2006; Tomanović et al. 1999b; Kavallieratos et al. 2004, 2016; Žikić et al. 2012; Davidian & Gavrilyuk 2014; Davidian 2016b; Ferrer-Suay et al. 2017); ***Euceraphis*** sp. (Mackauer & Starý 1967; Starý 1978a; Davidian 2005c, 2016b).

***Distribution.*** **Andorra** (Sanchis et al. 1999); **Canada** (Mackauer 1965b; Mackauer & Starý 1967); **Czech Republic** (Starý 1978a, 1987a, 1988b, 1989a, 2006; Ferrer-Suay et al. 2017); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967; Mackauer 1968a); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Starý et al. 1971; Starý 1978a); **Germany** (Kirchner 1867; Mackauer 1959b, 1960f; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Greenland** (van Achterberg 2006); **Hungary** (Kovács 2001); **Iceland** (Ruthe 1859; Szépligeti 1904; Lindroth 1931; Petersen 1956; Mackauer 1959b; Mackauer & Starý 1967); **Ireland** (Stelfox 1948; Mackauer 1959b; Mackauer & Starý 1967; O'Connor et al. 1999); **Netherlands** (Mackauer & Starý 1967; Mackauer 1968a); **Russia** (Starý 1978a; Davidian 2005c, 2016b, 2019b; Davidian & Gavrilyuk 2014; Davidian & Humala 2023); **Serbia** (Tomanović et al. 1998a, 1999b; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); **United Kingdom** (Hincks 1948; Mackauer 1959b; Mackauer & Starý 1967; Starý 1978a; Davidian & Rispin 2016).

### *Betuloxys hortorum* (Starý, 1960)

*Trioxys* (*Betuloxys*) *hortorum* Starý, 1960g:365. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Czech Republic.

**Syn.:** *Trioxys* (*Betuloxys*) *affinis* Mackauer, 1960 [Fig. 45A].

***Hosts.*** ***Myzocallis carpini*** (Koch) (Starý 1976a, 1978a, 1988b); ***Myzocallis coryli*** (Goeze) (Starý 1988b, 1995b, 2006); ***Tinocallis nevskyi*** Remaudière, Quednau & Heie (Davidian 2005c); ***Tinocallis platani*** (Kaltenbach) (Starý 1960g, 1961b, 1964d, 1966c, 1978a, 1987a, 1988b, 1995b, 2006; Mackauer & Starý 1967; Kierych 1980; Wiackowski et al. 2001); ***Tinocallis saltans*** (Nevsky) (Mackauer & Starý 1967; Starý 1978a, 1979a; Starý et al. 2000); ***Tuberculatus annulatus*** (Hartig) (Starý 1988b).

***Distribution.*** **Czech Republic** (Starý 1960g, 1961b, 1966c, 1978a, 1987a, 1988b, 1989a, 1995b, 2006; Mackauer & Starý 1967); **Finland** (LEFIJ36080-23); **Georgia** (Starý 1976a, 1978a; Davidian 2016b); **Germany** (Mackauer 1960c; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **India** (Rishi 1976; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Iran** (Mackauer & Starý 1967; Starý 1979a; Starý et al. 2000; Fallahzadeh & Saghaei 2010; Rakhshani et al. 2019); **Moldova** (Starý 1978a); **Poland** (Kierych 1980; Huflejt 1997; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian 2005c, 2016b, 2019b).

***Remarks.*** The record of this species from Serbia (Tomanović et al. 1999b) was due to a misidentification of the specimens.

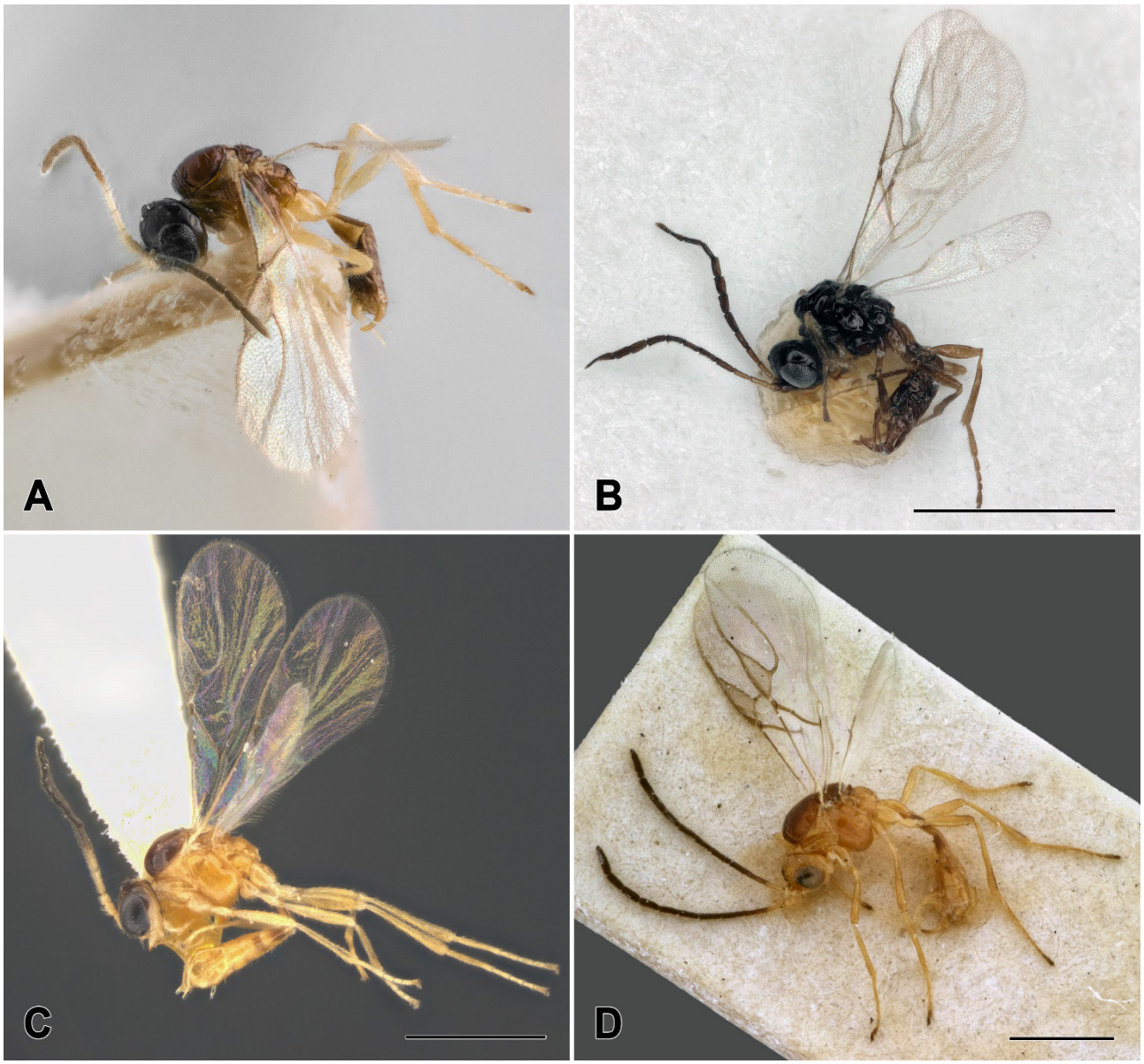



**Figure 45.** Species of the genus *Betuloxys* Mackauer, 1960. **A.** *Betuloxys affinis* (Mackauer, 1960) – Holotype (= *Betuloxys hortorum* (Starý, 1960)), CNC; **B.** *Betuloxys alnicolus* Pike & Starý, 2000 – Holotype, USNM; **C.** *Betuloxys compressicornis* (Ruthe, 1859) – CNC, Canada; **D.** *Betuloxys compressicornis* (Ruthe, 1859) – Neotype (Holotype of *Trioxys testaceus* Stelfox, 1948), USNM. Scale bar: 1 mm.

### *Betuloxys intermedius* (Shuja-Uddin, 1975)

*Trioxys* (*Betuloxys*) *intermedius* Shuja-Uddin, 1975a:415. Holotype ♀, paratypes ♀♀ ♂♂ (ZMAU). – India.

***Host.*** ***Capitophorus formosartemisiae*** (Takahashi) (Das & Chakrabarti 1991a).

***Distribution.*** **Bangladesh** (Starý & Ghosh 1983); **India** (Shuja-Uddin 1975a; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Das & Chakrabarti 1991a, 2023a; Dey & Akhtar 2007; Ahmad & Wani 2014).

### *Betuloxys kamijoi* (Takada, 1968)

*Trioxys kamijoi* Takada, 1968:111. Holotype ♀ (EIHU). – Japan.

***Host.*** Unknown.

***Distribution.*** **Japan** (Takada 1968; Starý 1975a); **Russia** (Davidian 2007, 2016b, 2019b).

### *Betuloxys kostyukovi* Davidian, 2005

*Betuloxys kostyukovi* Davidian, 2005b:127. Holotype ♀, paratypes ♀♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2005b, 2016b, 2019b; Davidian & Humala 2023).

### *Betuloxys manipurensis* Paonam, Singh & Singh, 1993

*Betuloxys manipurensis* Paonam, Singh & Singh, 1993:124. Holotype ♀, paratypes ♀♀ ♂ (MANEC). – India.

***Host.*** ***Tuberculatus nervatus*** Chakrabarti & Raychaudhuri (Paonam et al. 1993).

***Distribution.*** **India** (Paonam et al. 1993).

### *Betuloxys sugonyaevi* Davidian, 2005

*Betuloxys sugonyaevi* Davidian, 2005c:457. Holotype ♀, paratype ♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2005c, 2016b).

### *Betuloxys takecallis* (Starý, 1978)

*Trioxys* (*Betuloxys*) *takecallis* Starý [in Starý & Raychaudhuri], 1978:365. Holotype ♀ (ZSI). – India.

***Host.*** ***Takecallis arundinariae*** (Essig) (Starý & Raychaudhuri 1978; Raychaudhuri et al. 1979; Starý & Ghosh 1983).

***Distribution.*** **India** (Starý & Raychaudhuri 1978; Raychaudhuri et al. 1979, 1990; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Starý & Ghosh 1983; Dey & Akhtar 2007; Das & Chakrabarti 2023a).

## Genus *Binodoxys* Mackauer, 1960 [76 species]

*Binodoxys* Mackauer, 1960:141. Type species: *Aphidius angelicae* Haliday, 1833.

**Syn.:** *Misaphidus* Rondani, 1877:10. Type species: *Misaphidus crudelis* Rondani, 1848.

### *Binodoxys acalephae* (Marshall, 1896) [Fig. 46A]

*Aphidius acalephae* Marshall, 1896:608. Holotype ♂ (after Mackauer 1961b) (NHMUK). – United Kingdom.

**Syn.:** *Trioxys amoplanus* Quilis, 1934; *Trioxys rietscheli* Mackauer, 1959 [Fig. 58B]; *Trioxys urticae* Mackauer, 1959.

***Hosts.*** *Acyrthosiphon pisum* (Harris) (Talebi et al. 2009; Barahoei et al. 2013; Chaouche & Laamari 2015); ***Anuraphis*** sp. (Güz & Kılınçer 2005); ***Appendiseta robiniae*** (Gillette) (Pons et al. 2018); ***Aphis affinis*** Del Guercio (Starý & Kaddou 1971; Starý 1976a, 1979a; Bhagat 1984; Kavallieratos et al. 2001, 2004); ***Aphis callunae*** Theobald (Starý et al. 1971); ***Aphis cisticola*** Leclant & Remaudière (Starý et al. 1975; Starý 1976a); ***Aphis citricidus*** (Kirkaldy) (Hermoso de Mendoza et al. 2008); ***Aphis craccae*** Linnaeus (Starý 1965a, 1966c, 1967b, 2006; Mackauer & Starý 1967; Derocles et al. 2012; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Aphis craccivora*** Koch (Starý 1966c, 1967a, 1967b, 1976a, 1977, 1979a, 1987a, 1995b; Mackauer & Starý 1967; Starý & Juchnevič 1978; Zheng et al. 1985; Devi et al. 1997; Tomanović et al. 1999b; Starý et al. 2000; Wiackowski & Wiackowska 2000; Kavallieratos et al. 2001, 2004, 2005b, 2010, 2016; Wiackowski et al. 2001; Uysal et al. 2004; Lumbierres et al. 2005; Rakhshani et al. 2005a, 2012b; Talebi et al. 2009; Laamari et al. 2011, 2012; Nazari et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Davidian 2016b; Ayadi et al. 2017; Kök et al. 2017; Bayram et al. 2018; Pons et al. 2018; Mustafayeva 2020; Bandyan et al. 2021); ***Aphis cytisorum*** Hartig (Starý 1966c, 1976a; Mackauer & Starý 1967; Kavallieratos et al. 2004); ***Aphis dasiphorae*** Holman & Szelegiewicz (Davidian & Gavrilyuk 2014; Davidian 2016b); ***Aphis epilobii*** Kaltenbach (Starý et al. 1971; Starý 2006); ***Aphis euphorbiae*** Kaltenbach (Starý 1966c, 1967b; Mackauer & Starý 1967; Kavallieratos et al. 2004, 2008a; Talebi et al. 2009; Nazari et al. 2012; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Aphis fabae*** Scopoli (Starý 1966c, 1967b, 1972f, 1976a, 1987a, 2006; Mackauer & Starý 1967; Tremblay 1967a; Düzgüneş et al. 1982; Michelena Saval & Oltra Moscardo 1987; Barczak et al. 1999; Kavallieratos et al. 2001, 2004; Wiackowski et al. 2001; Ölmez

& Ulusoy 2003; Michelena et al. 2004; Uysal et al. 2004; Güz & Kılınçer 2005; Talebi et al. 2009; Laamari et al. 2011, 2012; Nazari et al. 2012; Rakhshani et al. 2012b; Barahoei et al. 2013; Derocles et al. 2014a; Starý et al. 2014a; Ferrer-Suay et al. 2017; Kök et al. 2017; Bayram et al. 2018; Kök & Tomanović 2022; Ismail et al. 2023); ***Aphis fabae cirsiiacanthoidis*** Scopoli (Starý 1986a, 1987a, 1991; Völkl 1989; Kavallieratos et al. 2001, 2004; Uysal et al. 2004; Kos et al. 2009a, 2012; Žikić et al. 2012); ***Aphis farinosa*** Gmelin (Mackauer 1962h; Starý 1966c, 1967b, 1976a, 1977, 1987a, 2006; Mackauer & Starý 1967; Derocles et al. 2012; Mustafayeva 2020); ***Aphis galiiscabri*** Schrank (Güz & Kılınçer 2005); ***Aphis gossypii*** Glover (Dharmadhikari & Ramaseshiah 1970; Shi 1980; Zheng et al. 1985; Luo & Gan 1986; Wang & Liu 1989; Zhang 1992; Yumruktepe & Uygun 1994; Devi et al. 1997; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2002a, 2002b, 2004, 2005b, 2010; Uysal et al. 2004; Lumbierres et al. 2005; Wei et al. 2005; Laamari et al. 2011; Kos et al. 2012; Davidian 2016b; Pons et al. 2018); ***Aphis grossulariae*** Kaltenbach (Starý 1976a; Uysal et al. 2004); ***Aphis hederae*** Kaltenbach (Kavallieratos et al. 2001, 2004; Pons et al. 2018); ***Aphis hillerislambersi*** Nieto Nafría & Mier Durante (Suay Cano & Michelena Saval 1998); ***Aphis idaei*** van der Goot (Starý 1966c, 1967b; Kavallieratos et al. 2001, 2004; Žikić et al. 2012; Barahoei et al. 2014); ***Aphis intybi*** Koch (Kierych 1980; Starý 2006); ***Aphis lichtensteini*** Leclant & Remaudière (Starý et al. 1977a); ***Aphis myrsinitidis*** Petrović-Obradović & Leclant (Kavallieratos et al. 2004; Tomanović et al. 2007a; Žikić et al. 2012); ***Aphis nasturtii*** Kaltenbach (Mackauer 1959b, 1962h; Mackauer & Starý 1967; Fulmek 1968; Starý 1967b, 1977, 1987a, 2006; Gavrilyuk & Novgorodova 2007; Tomanović et al. 2012; Žikić et al. 2012; Kavallieratos et al. 2016; Ferrer-Suay et al. 2017); ***Aphis nerii*** Boyer de Fonscolombe (Talebi et al. 2009); ***Aphis odinae*** (van der Goot) (Devi et al. 1997; Subhrani et al. 2006); ***Aphis paralios*** Hille Ris Lambers [*n. dub.*] (Starý et al. 1971; Starý 1976a); ***Aphis parietariae*** Theobald (Starý et al. 1971; Starý 1976a; Kavallieratos et al. 2001, 2004); ***Aphis pomi*** De Geer (Starý 1979a; Rakhshani 2012; Davidian 2016b); ***Aphis punicae*** Passerini (Ayadi et al. 2017); ***Aphis ruborum*** (Börner) (Starý 1966b, 1966d, 1976a; Mackauer & Starý 1967; Starý et al. 1973, 1975; Michelena Saval & Oltra Moscardo 1987; Müller et al. 1999; Kavallieratos et al. 2001, 2002b, 2004; Uysal et al. 2004; Havelka et al. 2012; Pons et al. 2018); ***Aphis salviae*** Walker (Starý 1966c, 1967b, 2006; Mackauer & Starý 1967; Ferrer-Suay et al. 2017); ***Aphis sambuci*** Linnaeus (Kavallieratos et al. 2001, 2004, 2016); ***Aphis solanella*** Theobald (Kavallieratos et al. 2001, 2004, 2010); ***Aphis spiraecola*** Patch (Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2004, 2005b; Hermoso de Mendoza et al. 2012; Rakhshani 2012); ***Aphis spiraephaga*** Müller (Starý 1966c, 1967b, 1987a, 1995a, 2006; Mackauer & Starý 1967; Kavallieratos et al. 2004); ***Aphis spiraephila*** Patch (Starý & Remaudière 1977); ***Aphis taraxacicola*** (Börner) (González & Michelena 1987); ***Aphis tirucalis*** Hille Ris Lambers (Starý et al. 1971; González & Michelena 1987); ***Aphis tormentillae*** Passerini (Starý et al. 1977a); ***Aphis triglochinis*** Theobald (Tomanović et al. 2012); ***Aphis tripolii*** Liang (Starý et al. 1973); ***Aphis ulmariae*** Schrank (Starý et al. 1971); ***Aphis umbrella*** (Börner) (Mackauer & Starý 1967; Starý 1979a; Starý et al. 2000; Kavallieratos et al. 2001, 2004; Talebi et al. 2009; Nazari et al. 2012); ***Aphis urticata*** Gmelin (Mackauer 1962h; Starý 1966c, 1967b, 1976a, 1979a, 1983f, 1987a, 1995b, 2006; Mackauer & Starý 1967; Starý & Juchnevič 1978; Starý et al. 1971, 1973; Michelena Saval & Oltra Moscardo 1987; Tomanović et al. 1999b; Kavallieratos et al. 2001, 2004; Talebi et al. 2009; Kos et al. 2012; Davidian & Gavrilyuk 2014; Ferrer-Suay et al. 2017; Pons et al. 2018); ***Aphis vallei*** Hille Ris Lambers & Stroyan (Starý 1976a; Düzgüneş et al. 1982; Uysal et al. 2004); ***Aphis viticis*** Ferrari (Kavallieratos et al. 2001, 2004, 2008a); ***Aphis*** spp. (Starý 1967b; Tomanović et al. 1999b; Žikić et al. 2012; Davidian 2016b; Ferrer-Suay et al. 2017); ***Brachycaudus amygdalinus*** (Schouteden) (Starý 1979a); ***Brachycaudus cardui*** (Linnaeus) (Starý 1986a); ***Brachycaudus helichrysi*** (Kaltenbach) (Jafari Ahmadabadi et al. 2011; Jafari Ahmadabadi & Modarres Awal 2012); ***Brachycaudus*** sp. (Starý 1979a); ***Hyadaphis coriandri*** (Das) (Chaouche & Laamari 2015); ***Hyadaphis*** sp. (Žikić et al. 2012); ***Hysteroneura setariae*** (Thomas) (Starý & Juchnevič 1978; Starý 1979a); ***Macrosiphum*** sp. (Bhagat 1984); ***Myzus persicae*** (Sulzer) (Bandyan et al. 2021); ***Phorodon*** sp. (Starý & Bhagat 1978); ***Protaphis*** sp. (Barahoei et al. 2012, 2013); ***Rhopalosiphum padi*** (Linnaeus) (Davidian & Gavrilyuk 2014; Bulman et al. 2021); ***Semiaphis*** sp. (Žikić et al. 2012); ***Shinjia orientalis*** (Mordvilko) (Devi et al. 1997); ***Uhlmannia singularis*** (Börner) (Tomanović et al. 2007a); *Uroleucon sonchi* (Linnaeus) (Quilis-Pérez 1934; Fulmek 1968).

***Distribution.*** **Algeria** (Laamari et al. 2011, 2012; Chaouche & Laamari 2015; Rakhshani et al. 2019; Khaladi et al. 2024); **Andorra** (Sanchis et al. 1999); **Armenia** (Davidian 2016b); **Austria** (Mackauer & Starý 1967); **Azerbaijan** (Mustafayeva 2020); **Bangladesh** (BOLD:ABX2033); **Belarus** (Lazarević et al. 2024); **Belgium** (Ismail et al. 2023); **Bulgaria** (Starý 1976a; Kavallieratos et al. 2004; Todorov 2007, 2014; Lazarević et al. 2024); **Canada** (Starý & Remaudière 1977); **China** (Shi 1980; Zheng et al. 1985; Luo & Gan 1986; Wang & Liu 1989; Lu & Ji 1992; Zhang 1992; Gu et al. 1995); **Czech Republic** (Quilis-Pérez 1934; Starý 1966c, 1967a, 1972f, 1977, 1983f, 1986a, 1987a, 1989a, 1991, 1995a, 1995b, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Tomanović et al. 2012; Davidian 2016b; Ferrer-Suay et al. 2017); **Egypt** (El-Heneidy 1994; Abdel-Rahman et al. 2000; El-Heneidy & Abdel-Samad 2001; El-Heneidy et al. 2001, 2002, 2003, 2004; Rakhshani et al. 2019); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975, 1977a; Starý 1976a; Völkl 1989; Derocles et al. 2012, 2014a; Havelka et al. 2012; Lazarević et al. 2024); **Georgia** (Starý 1976a; Davidian 2016b); **Germany** (Mackauer 1959b; Mackauer & Starý 1967; Fulmek 1968; Boness & Starý 1988; Belokobylskij et al. 2003; Lazarević et al. 2024); **Greece** (Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2002a, 2002b, 2004, 2005b, 2008a, 2010, 2013, 2016; Havelka et al. 2012); **Hungary** (Polgár 1981, 1983); **India** (Dharmadhikari & Ramaseshiah 1970; Starý & Bhagat 1978; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Starý & Ghosh 1983; Bhagat 1984; Devi et al. 1997; Subhrani et al. 2006; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Iran** (Mackauer & Starý 1967; Starý 1979a; Starý et al. 2000; Rakhshani et al. 2005a, 2012b, 2019; Fallahzadeh & Saghaei 2010; Jafari Ahmadabadi et al. 2011; Mossadegh et al. 2011; Barahoei et al. 2012, 2013; Jafari Ahmadabadi & Modarres Awal 2012; Nazari et al. 2012; Rakhshani 2012; Alikhani et al. 2013); **Iraq** (Starý & Kaddou 1971; Starý 1976a; Rakhshani et al. 2019; Bandyan et al. 2021); **Italy** (Starý 1966d, 1976a; Tremblay 1967a; Bergamesco et al. 1995; Havelka et al. 2012); **Kazakhstan** (Starý & Juchnevič 1978; Starý 1979a; Davidian 2016b); **Kyrgyzstan** (Davidian 2016b; Petrović et al. 2021a); **Moldova** (Talitzky & Kuslitzky 1990); **Mongolia** (Takada 1979a; Davidian 2016b); **Montenegro** (Kavallieratos et al. 2004, 2013; Tomanović et al. 2007a; Žikić et al. 2012); **Morocco** (Starý 1976a; Rakhshani et al. 2019); **New Zealand** (Bulman et al. 2021); **Netherlands** (Papp et al. 1996); **Norway** (Artsdatabanken 2026); **Pakistan** (BOLD:ABX2033); **Poland** (Kierych 1980; Olszak 1994; Huflejt 1997; Barczak et al. 1999, 2005; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Portugal** (Cecilio 1995); **Russia** (Starý 1965a; Mackauer & Starý 1967; Davidian 2007, 2016b, 2019b; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a, 1999b, 2007a, 2012; Tomanović & Brajković 2001; Kavallieratos et al. 2004, 2008a, 2013, 2016; Žikić et al. 2012; Lazarević et al. 2024); **Slovakia** (Starý 1977, 1989a; Starý & Lukáš 2009; Ferrer-Suay et al. 2017); **Slovenia** (Kos et al. 2008, 2009a, 2012); **South Korea** (Davidian 2016b); **Spain** (González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Tizado & Núñez-Perez 1991; Tizado Morales et al. 1992; Suay Cano & Michelena Saval 1998; Michelena et al. 2004; Lumbierres et al. 2005; Hermoso de Mendoza et al. 2008; Pons et al. 2011, 2018; Havelka et al. 2012; Hermoso de Mendoza et al. 2012); **Sweden** (Mackauer & Starý 1967); **Tajikistan** (Starý 1979a); **Thailand** (BOLD:ABX2033); **Tunisia** (Ayadi et al. 2017; Rakhshani et al. 2019); **Türkiye** (Starý 1976a; Ölmez & Ulusoy 2003; Uysal et al. 2004; Güz & Kılınçer 2005; Havelka et al. 2012; Akar & Çetin Erdoğan 2017; Kök et al. 2017; Bayram et al. 2018; Rakhshani et al. 2019; Kök & Tomanović 2022; Demirhan & Çetin Erdoğan 2023); **Ukraine** (Kaliuzhna 2013a, 2017b, 2019a, 2019b; Kaliuzhna & Zubenko 2013); **United Arab Emirates** (Starý et al. 2014b); **United Kingdom** (Marshall 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1959b, 1961b; Mackauer & Starý 1967; Müller et al. 1999; Belshaw & Quicke 2002; van Veen et al. 2008; Davidian & Rispin 2016); **Uzbekistan** (Starý 1979a; Daminova et al. 2001; Aripov 2003; Davidian 2016b); **Yemen** (Starý et al. 2014b).

### *Binodoxys achalensis* Starý, 2004

*Binodoxys achalensis* Starý, 2004:579. Holotype ♀ (IECA), paratypes ♀♀ ♂ (IECA, MCNP). – Argentina.

***Host.*** ***Uroleucon bereticum*** (Blanchard) (Delfino & Starý 2004).

***Distribution.*** **Argentina** (Delfino & Starý 2004).

### *Binodoxys acyrthosiphonis* (Starý, 1983)

*Trioxys acyrthosiphonis* Starý, 1983d:41. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Mexico.

***Host.*** ***Acyrthosiphon*** sp. (Starý 1983d).

***Distribution.*** **Mexico** (Starý 1983d; Starý & Remaudière 1988).

### *Binodoxys angelicae* (Haliday, 1833) [Fig. 46B]

*Aphidius angelicae* Haliday, 1833:489. Lectotype ♀ (after Mackauer 1961b) (NHMUK), paralectotype ♀ (NMID). – Ireland.

**Syn.:** *Trioxys placidus* Gautier, 1922; *Trioxys boscai* Quilis, 1931; *Trioxys fumariae* Quilis, 1931; *Trioxys granatensis* Quilis, 1931; *Trioxys obscuriformis* Quilis, 1931; *Trioxys amoplanus* Quilis, 1934; *Trioxys angelicae mediterraneus* Mackauer, 1960; *Trioxys wollastonii* Cabrera, 1962; *Trioxys* (*Binodoxys*) *sikkimensis* Raychaudhuri, Samanta, Pramanik, Tamili & Sarkar, 1990.

***Hosts.*** ***Acyrthosiphon caraganae*** (Cholodkovsky) (Starý 1961b, 1966c, 1974c, 1987a, 2006; Mackauer & Starý 1967); ***Acyrthosiphon ignotum*** Mordvilko (Starý 2006); ***Acyrthosiphon malvae rogersii*** (Theobald) (Quilis-Pérez 1931a; Mackauer & Starý 1967); *Acyrthosiphon pisum* (Harris) (Khan et al. 2012); ***Amphorophora rubi*** (Kaltenbach) (Ataeva 1961; Mackauer & Starý 1967; Fulmek 1968); ***Aphis acetosae*** Linnaeus (Barahoei et al. 2013); ***Aphis affinis*** Del Guercio (Costa & Starý 1988; Mossadegh et al. 2011; Barahoei et al. 2013; Taheri & Rakhshani 2013); ***Aphis arbuti*** Ferrari (Starý et al. 1971, 1973, 1975; Starý 1974c, 1976a); ***Aphis aurantii*** Boyer de Fonscolombe (Starý 1964c, 1966d; Mackauer & Starý 1967; Rosen 1967, 1969; Starý 1967a, 1974c, 1976a; Tremblay 1967a, 1984; Avidov & Harpaz 1969; Roberti 1969; Marsh 1979; Tremblay et al. 1980, 1985; Hussein & Kawar 1984; González & Michelena 1987; Suay Cano et al. 1992; Mescheloff & Rosen 1993; Michelena et al. 1994; Michelena Saval & Sanchis Segovia 1997b; Suay Cano & Michelena Saval 1998; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2004, 2005b; Ben Halima & Ben Hamouda 2005; Boukhris-Bouhachem 2011; Yoldaş et al. 2011; Žikić et al. 2012; Gadallah et al. 2017; Pons et al. 2018; Labdaoui et al. 2026); ***Aphis ballotae*** Passerini (Gagui et al. 2023); ***Aphis brohmeri*** Börner (Mackauer 1962h; Mackauer & Starý 1967); ***Aphis cisticola*** Leclant & Remaudière (Starý et al. 1975; Starý 1976a); ***Aphis citricidus*** (Kirkaldy) (Hermoso de Mendoza et al. 2008); ***Aphis craccae*** Linnaeus (Starý 1974c, 1987a, 2006; Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis craccivora*** Koch (Mackauer 1962h; Starý 1966c, 1967a, 1967b, 1969c, 1976a, 1977, 1987a, 2006; Mackauer & Starý 1967; Tremblay 1967a; Avidov & Harpaz 1969; Starý & Kaddou 1971; Marsh 1979; Tremblay et al. 1980, 1985; Abou-Fakhr 1982; Düzgüneş et al. 1982; González & Michelena 1987; Mescheloff & Rosen 1993; Ragab 1996; Abou-Fakhr & Kawar 1998; Kavallieratos et al. 2001, 2004; 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; Kos et al. 2012; Nazari et al. 2012; Barahoei et al. 2013; Satar et al. 2014, 2021; Kavallieratos et al. 2016; Pons et al. 2018; Mustafayeva 2020); ***Aphis cytisorum*** Hartig (Starý 1961b, 1967b, 1974c, 1987a, 2006; Mackauer & Starý 1967); ***Aphis epilobiaria*** Theobald (Mescheloff & Rosen 1993; Nazari et al. 2012); ***Aphis epilobii*** Kaltenbach (Kavallieratos et al. 2004; Starý 2006; Žikić et al. 2012); ***Aphis fabae*** Scopoli (Mackauer 1959b, 1962c; Starý 1961b, 1963b, 1964d, 1965a, 1966b, 1966c, 1966d, 1967b, 1972f, 1974c, 1976a, 1977, 1987a, 1991, 1995b, 2006; Hodek et al. 1962; Starý & Rupais 1964; Mackauer & Starý 1967; Tremblay 1967a; Roberti 1969; Al-Azawi 1970; Starý et al. 1971, 1973, 1975, 2014a; Vassileva-Sumnalieva 1976; Marsh 1979; Kierych 1980; Tremblay et al. 1980, 1985; Abou-Fakhr 1982; Hussein & Kawar 1984; Al Jassany & Al Adil 1986; Mustata 1986; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Barczak 1988, 1991b; Costa 1988; Costa & Starý 1988; Suay Cano et al. 1992; Völkl 1992; Mescheloff & Rosen 1993; Ben Halima et al. 1994; Cecilio 1996; Wiackowski et al. 1997; Abou-Fakhr & Kawar 1998; Suay Cano & Michelena Saval 1998; Barczak et al. 1999; Tomanović et al. 1999b; Kavallieratos et al. 2001, 2004; Wiackowski et al. 2001; Ölmez & Ulusoy 2003; Michelena et al. 2004; Uysal et al. 2004; Ben Halima & Ben Hamouda 2005; Güz & Kılınçer 2005; Talebi et al. 2009; Laamari et al. 2011, 2012; Mossadegh et al. 2011; Barahoei et al. 2012, 2013; Kos et al. 2012; Nazari et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Taheri & Rakhshani 2013; Derocles et al. 2014a; Davidian 2016b; Ferrer-Suay et al. 2017; Pons et al. 2018; Zouari et al. 2018; Kök et al. 2020; Satar et al. 2021; Ismail et al. 2023); ***Aphis fabae cirsiiacanthoidis*** Scopoli (Starý 1966d, 1986a, 1987a, 1987b,

1991; Völkl 1989; Liepert & Dettner 1993; Völkl & Mackauer 1993; Liepert & Dettner 1996; Kavallieratos et al. 2001, 2004; Aslan et al. 2004; Uysal et al. 2004; Kos et al. 2009a, 2012; Žikić et al. 2012; Schar & Vorburger 2013); ***Aphis fabae evonymi*** Fabricius (Starý 1961b, 1963b, 1964d, 1966c, 1967b, 1974c, 1987a; Ferrer-Suay et al. 2017); ***Aphis farinosa*** Gmelin (Starý 1961b, 1963b, 1964d, 1965a, 1966c, 1967b, 1974c, 1977, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971, 2000; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Ferrer-Suay et al. 2017); ***Aphis frangulae*** Kaltenbach (Starý et al. 1971, 1973; Starý 1976a, 1987a, 2006; Suay Cano et al. 1992; Cecilio 1996; Ferrer-Suay et al. 2017; Pons et al. 2018); ***Aphis gossypii*** Glover (Mimeur 1934; Mackauer 1960f, 1962h; Mackauer & Starý 1967; Rosen 1967, 1969; Avidov & Harpaz 1969; Roberti 1969; Al-Azawi 1970; Starý 1974c, 1976a; Marsh 1979; Tremblay et al. 1980, 1985; Abou-Fakhr 1982; Zeren & Düzgüneş 1983; Hussein & Kawar 1984; González & Michelena 1987; Costa & Starý 1988; Ben Halima & Ben Hamouda 1993; Mescheloff & Rosen 1993; Michelena et al. 1994; Yumruktepe & Uygun 1994; Le Ralec et al. 1996; Michelena Saval & Sanchis Segovia 1997b; Vidal 1997a; Abou-Fakhr & Kawar 1998; Suay Cano & Michelena Saval 1998; Kavallieratos & Lykouressis 1999a; Sanchis et al. 2000; Starý et al. 2000; Kavallieratos et al. 2001, 2002a, 2004, 2005b, 2008b, 2010, 2016; Rabasse et al. 2001; Cecilio & Ilharco 2002; Yoldaş et al. 2002, 2011; Cecilio et al. 2004; Uysal et al. 2004; Laamari et al. 2011, 2012; Mossadegh et al. 2011; Bodlah et al. 2012b; Nazari et al. 2012; Barahoei et al. 2013; Satar et al. 2014, 2021; Ayadi et al. 2017; El-Sharkawy et al. 2017; Pons et al. 2018; Zouari et al. 2018; Kök et al. 2020; Alaserhat et al. 2021; Labdaoui et al. 2026); ***Aphis grossulariae*** Kaltenbach (Rakauskas 1981; Starý 2006); ***Aphis hederae*** Kaltenbach (Mackauer 1959b, 1962h; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975, 2000; Starý 1974c, 1976a, 2006; Abou-Fakhr 1982; Ippolito & Parenzan 1982; Tremblay et al. 1985; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Suay Cano et al. 1992; Mescheloff & Rosen 1993; Abou-Fakhr & Kawar 1998; Kavallieratos et al. 2001, 2004; Cecilio & Ilharco 2002; Lumbierres et al. 2005; Žikić et al. 2012; Pons et al. 2018; Kök et al. 2020); ***Aphis hillerislambersi*** Nieto Nafría & Mier Durante (González & Michelena 1987); ***Aphis idaei*** van der Goot (Markkula & Rautapää 1963; Starý & Rupais 1963; Mackauer & Starý 1967; Rakauskas 1981; Starý 2006; Barahoei et al. 2013; Taheri & Rakhshani 2013); ***Aphis intybi*** Koch (Mescheloff & Rosen 1993; Starý 2006); ***Aphis lichtensteini*** Leclant & Remaudière (Starý et al. 1971; Starý 1974c, 1976a); ***Aphis lupoi*** Barbagallo & Stroyan (Cecilio 1996); ***Aphis medicaginis*** Koch (Starý 1963b); ***Aphis nasturtii*** Kaltenbach (Mackauer 1962c; Mackauer & Starý 1967; Starý 1974c, 1976a, 2006; Starý & Kaddou 1971; Starý et al. 1971; Kos et al. 2012; Mescheloff & Rosen 1993; Satar et al. 2021); ***Aphis nerii*** Boyer de Fonscolombe (Starý 1976a; Starý et al. 1977a; Costa 1988; Costa & Starý 1988; Suay Cano et al. 1992; Mescheloff & Rosen 1993; Ben Halima et al. 1994; Kavallieratos et al. 2001, 2004; Cecilio & Ilharco 2002; Lumbierres et al. 2005; Ben Halima & Ben Hamouda 2005; Talebi et al. 2009; Laamari et al. 2011; Mifsud et al. 2013; Pons et al. 2018; Zouari et al. 2018; Sadat et al. 2019; Kök et al. 2020; Kim 2026); ***Aphis paralios*** Hille Ris Lambers [*n. dub.*] (Starý 1974c, 1976a; Starý et al. 1971); ***Aphis parietariae*** Theobald (Mackauer 1962h; Mackauer & Starý 1967; Starý et al. 1971; Starý 1976a; Mineo et al. 1997; Costa & Starý 1988); ***Aphis polygonata*** (Nevsky) (Mossadegh et al. 2011); ***Aphis pomi*** De Geer (Mackauer 1959b; Starý 1961b, 1963b, 1964d, 1965a, 1966b, 1966c, 1966d, 1967b, 1974c, 1975c, 1976a, 1979a, 1987a, 2006; Wiackowski & Wiackowska 1961; Mackauer 1962h; Starý & Rupais 1963, 1964; Starý et al. 1971, 2000; Cierniewska 1973; Rakauskas 1981; Erkin 1983; Hussein & Kawar 1984; González & Michelena 1987; Radjabi 1989; Mescheloff & Rosen 1993; Michelena et al. 1994, 2004; Wiackowski & Wiackowska 1996; Atanassova 1997; Kolarov 1997; Vidal 1997a; Tomanović et al. 1999b; Wiackowski et al. 2001; Cecilio & Ilharco 2002; Kavallieratos et al. 2004, 2008b, 2016; Uysal et al. 2004; Kos et al. 2012; Rakhshani 2012; Žikić et al. 2012; Davidian 2016b; Ferrer-Suay et al. 2017; Mustafayeva 2020); ***Aphis praeterita*** Walker (Starý et al. 1971; Starý 1974c, 1979a; Starý & Juchnevič 1978); ***Aphis punicae*** Passerini (Starý 1969c, 1974c, 1976a; Al-Azawi 1970; Starý & Kaddou 1971; Michelena Saval & Oltra Moscardo 1987; Mescheloff & Rosen 1993; Kavallieratos et al. 2001, 2004, 2016; Ölmez & Ulusoy 2003; Michelena et al. 2004; Uysal et al. 2004; Laamari et al. 2011, 2012; Farrokhzadeh et al. 2014; Ayadi et al. 2017; Zouari et al. 2018; Hemidi & Laamari 2020; Kök et al. 2020); ***Aphis ruborum*** (Börner) (Starý 1966d, 1974c, 1976a; Mackauer & Starý 1967; Starý et al. 1975; Düzgüneş et al. 1982; Michelena Saval & Oltra Moscardo 1987; Kavallieratos et al. 2001, 2002b, 2004; Aslan et al. 2004; Uysal et al. 2004; Havelka et al. 2012; Žikić et al.

2012); ***Aphis rumicis*** Linnaeus (Mackauer 1960f, 1962h; Mackauer & Starý 1967; Starý et al. 1973; Starý 1976a; Kavallieratos et al. 2004; Talebi et al. 2009; Žikić et al. 2012; Mifsud et al. 2013; Hemidi & Laamari 2020; Kök et al. 2020); ***Aphis salicariae*** Koch (Žikić et al. 2012); ***Aphis salviae*** Walker (Starý 1966c, 1974c, 2006; Mackauer & Starý 1967); ***Aphis sambuci*** Linnaeus (Mackauer 1959b, 1962h; Starý 1961b, 1963b, 1964d, 1965a, 1966c, 1966d, 1967b, 1974c, 1976a, 1987a, 1995b, 2006; Starý & Rupais 1963; Mackauer & Starý 1967; Tremblay 1967a; Starý et al. 1973; Starý & Němec 1986; Barczak et al. 1999; Tomanović et al. 1999b; Kavallieratos et al. 2001, 2004, 2016; Wiackowski et al. 2001; Kos et al. 2012; Žikić et al. 2012; Davidian 2016b; Ferrer-Suay et al. 2017); ***Aphis schneideri*** (Börner) (Mackauer 1962h; Mackauer & Starý 1967; Starý 1974c, 2006; Kierych 1975; Rakauskas 1981); ***Aphis sedi*** Kaltenbach (Starý et al. 1971; Starý 1974c); ***Aphis solanella*** Theobald (Starý & Kaddou 1971; Starý 1974c, 1976a; Kavallieratos et al. 2001, 2004, 2010; Güz & Kılınçer 2005; Barahoei et al. 2012, 2013; Rakhshani 2012; Alikhani et al. 2013; Ayadi et al. 2017; Pons et al. 2018; Kök et al. 2020); ***Aphis spiraecola*** Patch (Starý et al. 1971, 1973, 1975; Starý 1974c, 1976a; Tremblay et al. 1980; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Costa & Starý 1988; Suay Cano et al. 1992; Mescheloff & Rosen 1993; Michelena et al. 1994, 2004; Suay Cano & Michelena Saval 1998; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2004, 2005b; Cecilio et al. 2004; Boukhris-Bouhachem 2011; Yoldaş et al. 2011; Hermoso de Mendoza et al. 2012; Labdaoui & Guenaoui 2018; Zouari et al. 2018; Behi et al. 2019; Pons et al. 2018; Labdaoui et al. 2026); ***Aphis spiraephaga*** Müller (Starý 1963b, 1966c, 1967b, 1974c, 1987a, 1995a, 1995b, 2006; Mackauer & Starý 1967; Kavallieratos et al. 2004; Kos et al. 2012; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Aphis symphyti*** Schrank (Starý 2006); ***Aphis tirucalis*** Hille Ris Lambers (Starý et al. 1971); ***Aphis triglochinis*** Theobald (Starý et al. 1971; Starý 1974c); ***Aphis umbrella*** (Börner) (Mackauer 1962h; Mackauer & Starý 1967; Roberti 1969; Starý et al. 1971, 1975, 2000; Starý 1974c, 1976a, 2006; Abou-Fakhr 1982; Tremblay et al. 1985; Costa 1988; Costa & Starý 1988; Mescheloff & Rosen 1993; Abou-Fakhr & Kawar 1998; Kavallieratos et al. 2001, 2004; Cecilio & Ilharco 2002; Talebi et al. 2009; Laamari et al. 2011, 2012; Mossadegh et al. 2011; Nazari et al. 2012; Pons et al. 2018); ***Aphis urticata*** Gmelin (Kierych 1980; Starý et al. 1973; Kos et al. 2012; Derocles et al. 2012); ***Aphis verbasci*** Schrank (Starý et al. 1971; Starý 1974c); ***Aphis viburni*** Scopoli (Mackauer 1959b; Starý 1961b, 1963b, 1964d, 1966c, 1967b, 1974c, 1977, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971; Barannik 1986; Kavallieratos et al. 2004; Derocles et al. 2012; Žikić et al. 2012; Davidian 2016b; Ferrer-Suay et al. 2017; Pons et al. 2018); ***Aphis viticis*** Ferrari (Starý & Kaddou 1971; Starý 1976a; Kavallieratos et al. 2001, 2004, 2008a; Žikić et al. 2012); ***Aphis*** spp. (Starý 1961b, 1964d, 1966c, 1967b, 1969c, 2006; Alam & Hafiz 1963; Starý et al. 1971; González & Michelena 1987; Costa 1988; Costa & Starý 1988; Kavallieratos et al. 2001, 2004; Tomanović et al. 2012; Davidian 2016b); ***Brachycaudus cardui*** (Linnaeus) (Starý 1986a; Kavallieratos et al. 2001, 2004; Kos et al. 2009a, 2012; Wiackowski et al. 2001); ***Brachycaudus helichrysi*** (Kaltenbach) (Starý 1963b, 1966a, 1966c, 1967b, 1974c, 2006; Mackauer & Starý 1967; Jafari Ahmadabadi et al. 2011; Jafari Ahmadabadi & Modarres Awal 2012; Mescheloff & Rosen 1993; Kavallieratos et al. 2001, 2004; Wiackowski et al. 2001; Mustafayeva 2020); ***Brachycaudus persicae*** Passerini (Tremblay 1967a; Starý et al. 1975; Starý 1976a); ***Brachycaudus prunicola*** (Kaltenbach) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Brachycaudus rumexicolens*** (Patch) (Starý 1961b; Mackauer & Starý 1967); ***Brachycaudus*** spp. (Starý 1961b, 1964d, 1966c, 1967b, 1969a, 2006; Tomanović et al. 1998b; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Brachyunguis tamaricis*** (Lichtenstein) (Kavallieratos et al. 2016); ***Brevicoryne brassicae*** (Linnaeus) (Ataeva 1961; Mackauer & Starý 1967; Mustata 1986; Mescheloff & Rosen 1993; Satar et al. 2021); ***Capitophorus elaeagni*** (Del Guercio) (Laamari et al. 2012; Pons et al. 2018); ***Cavariella archangelicae*** (Scopoli) (Telenga 1950; Mackauer & Starý 1967); ***Ceruraphis eriophori*** (Walker) (Starý 1966c, 1969a, 1974c, 1977, 2006; Mackauer & Starý 1967; Ferrer-Suay et al. 2017); *Chromaphis juglandicola* (Kaltenbach) (Ataeva 1961); ***Cryptomyzus ribis*** (Linnaeus) (Wiackowski & Wiackowska 1996; Wiackowski et al. 2001); ***Dysaphis crataegi*** (Kaltenbach) (Wiackowski et al. 2001); ***Dysaphis devecta*** (Walker) (Starý 1961b, 1963b, 1964d, 1966c, 1967b, 1969a, 1974c, 2006; Mackauer & Starý 1967); ***Dysaphis lappae cynarae*** (Theobald) (Starý 1976a); ***Dysaphis plantaginea*** (Passerini) (Starý 1976a, 2006; Kavallieratos et al. 2001, 2004, 2008b; Pons et al. 2018); ***Dysaphis sorbi*** (Kaltenbach) (Wiackowski et al. 2001); ***Dysaphis*** spp. (Starý 1961b, 1966c, 1969a; Ferrer-Suay et al. 2017); ***Dysaphis*** sp. (Starý 1961b,

2006); ***Greenidea ficicola*** Takahashi (Raychaudhuri et al. 1990; Starý et al. 2010a); ***Hayhurstia atriplicis*** (Linnaeus) (Kök et al. 2020); ***Hyalopterus pruni*** (Geoffroy) (Feraru & Mustata 2004; Aslan & Karaca 2005; Laamari et al. 2012); *Hyperomyzus lactucae* (Linnaeus) (Wiackowski et al. 2001); ***Lipaphis erysimi*** (Kaltenbach) (Satar et al. 2021); ***Lipaphis lepidii*** (Nevsky) (Kavallieratos et al. 2001, 2004); ***Macrosiphum euphorbiae*** (Thomas) (Starý et al. 1977a); ***Melanaphis pyraria*** (Passerini) (Starý et al. 1975; Starý 1976a); ***Myzocallis coryli*** (Goeze) (Torras 1996); ***Myzus cerasi*** (Fabricius) (Pons et al. 2018); ***Myzus persicae*** (Sulzer) (Ataeva 1961; Starý 1963b, 1966a, 1966c, 1967a, 1974c, 1976a, 2006; Mackauer & Starý 1967; Mackauer 1968d; Starý et al. 1973, 1975; Hussein & Kawar 1984; Tremblay et al. 1985; Mescheloff & Rosen 1993; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2004, 2005b; Wiackowski et al. 2001; Laamari et al. 2012; Satar et al. 2014, 2021; Ghelamallah et al. 2018; Zouari et al. 2018; Plećaš et al. 2023); ***Neomariaella lambersi*** (Szelegiewicz) (Starý et al. 1971; Starý 1974c); ***Ovatus insitus*** (Walker) (Kavallieratos et al. 2004, 2008b; Žikić et al. 2012); ***Rhopalosiphum maidis*** (Fitch) (Polgár 1984); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Telenga 1950; Mackauer & Starý 1967); ***Rhopalosiphum padi*** (Linnaeus) (Starý 1963b, 1966a, 1966c, 1967b, 1974c, 1981b, 2006; Mackauer & Starý 1967; Satar et al. 2021); ***Schizaphis*** sp. (Tomanović et al. 2012); ***Sitobion avenae*** (Fabricius) (Starý et al. 1971; Starý 1974c, 1981b); ***Therioaphis tenera*** (Aizenberg) (Davidian 2016b); *Tinocallis saltans* Nevsky (Ataeva 1961); ***Uhlmannia singularis*** (Börner) (Kavallieratos et al. 2004; Žikić et al. 2012); *Uroleucon cirsii* (Linnaeus) (Marshall 1896, 1899; Bignell 1901; Mackauer & Starý 1967).

***Distribution.*** **Algeria** (Starý 1974c, 1976a; Laamari et al. 2011, 2012; Aroun et al. 2016; Ghelamallah et al. 2018; Labdaoui & Guenaoui 2018; Rakhshani et al. 2019; Sadat et al. 2019; Hemidi & Laamari 2020; Gagui et al. 2023; Khaladi et al. 2024; Labdaoui et al. 2026; Taleb et al. 2026); **Andorra** (Sanchis et al. 1999); **Austria** (Mackauer 1959b; Mackauer & Starý 1967); **Azerbaijan** (Starý 1974c, 1976a; Mustafayeva 2020); **Belarus** (Lazarević et al. 2024); **Belgium** (Bribosia et al. 1998; Jansen 2005; Lopes et al. 2016; Ismail et al. 2023; Lazarević et al. 2024); **Bulgaria** (Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997; Kavallieratos et al. 2004, 2013; Todorov 2007, 2014; Lazarević et al. 2024); **Canada** (BOLD:ACB8002 | BOLD:ACD8366); **Canary Islands** (Mackauer 1962b; Mackauer & Starý 1967; Starý 1976a; Báez et al. 2001); **China** (Chen & Shi 2001); **Czech Republic** (Mackauer 1959b; Starý 1961b, 1966c, 1967a, 1972f, 1974c, 1975c, 1977, 1981b, 1986a, 1987a, 1989a, 1991, 1995a, 1995b, 2006; Hodek et al. 1962; Mackauer & Starý 1967; Starý & Němec 1986; Starý & Havelka 2008; Tomanović et al. 2012; Davidian 2016b; Ferrer-Suay et al. 2017); **Cyprus** (Wilkinson 1926; Mackauer & Starý 1967); **Denmark** (Mackauer & Starý 1967); **Egypt** (Mackauer & Starý 1967; Starý 1974c, 1976a; Ragab 1996; El-Gantiry et al. 2014; El-Sharkawy et al. 2017; Gadallah et al. 2017; Rakhshani et al. 2019); **Finland** (Hellén 1966; Mackauer & Starý 1967; Mackauer 1968c; Starý 1974c); **France** (Gautier 1922b; Mackauer 1959b; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975, 1977a; Starý 1974c, 1976a, 1981b; Völkl 1989; Rabasse et al. 2001; Derocles et al. 2012, 2014a; Havelka et al. 2012; Lazarević et al. 2024); **Georgia** (Starý 1974c, 1976a; Davidian 2016b); **Germany** (Mackauer 1959b, 1962c; Mackauer & Starý 1967; Starý 1974c; Boness & Starý 1988; Sorg 1990; Völkl 1992; Belokobylskij & Taeger 2001; Belokobylskij et al. 2003; Lazarević et al. 2024); **Greece** (Starý 1976a; Vidal 1997a; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2002a, 2002b, 2004, 2005b, 2008a, 2008b, 2010, 2013, 2016; Havelka et al. 2012); **Hungary** (Polgár 1981, 1983, 1984); **India** (Raychaudhuri et al. 1990); **Iran** (Mackauer & Starý 1967; Starý 1979a; Starý et al. 2000; Rakhshani et al. 2005a; Fallahzadeh & Saghaei 2010; Jafari Ahmadabadi et al. 2011; Mossadegh et al. 2011; Jafari Ahmadabadi & Modarres Awal 2012; Nazari et al. 2012; Rakhshani 2012; Barahoei et al. 2012, 2013; Alikhani et al. 2013; Taheri & Rakhshani 2013; Farrokhzadeh et al. 2014; Ameri et al. 2019; Rakhshani et al. 2019); **Iraq** (Starý 1969c, 1974c, 1976a; Al-Azawi 1970; Starý & Kaddou 1971; Al Jassany & Al Adil 1986; Rakhshani et al. 2019); **Ireland** (Mackauer 1959b; Mackauer & Starý 1967); **Italy** (Starý 1964c, 1966d, 1967a, 1974c, 1976a; Mackauer & Starý 1967; Tremblay 1967a, 1984; Roberti 1969; Tremblay et al. 1978, 1980; Marullo 1986; Ippolito & Parenzan 1982; Cravedi 1987; Ferrari & Nicoli 1994; Bergamesco et al. 1995; Mineo et al. 1997; Havelka et al. 2012); **Kazakhstan** (Starý 1974c, 1979a; Starý & Juchnevič 1978; Davidian 2016b); **Kyrgyzstan** (Davidian 2016b; Petrović et al. 2021a); **Latvia** (Starý & Rupais 1963, 1964; Starý 1965a; Mackauer & Starý 1967); **Lebanon** (Mackauer & Starý 1967; Starý 1976a; Abou-Fakhr

1982; Tremblay 1984; Hussein & Kawar 1984; Tremblay et al. 1985; Abou-Fakhr & Kawar 1998; Rakhshani et al. 2019); **Lithuania** (Rakauskas 1981, 1985); **Madeira Islands** (Graham 1986; Cecilio et al. 2004; Cecilio et al. 2009); **Malta** (Mifsud et al. 2013; Rakhshani et al. 2015b); **Moldova** (Starý 1974c; Talitzky & Kuslitzky 1990; Davidian 2016b); **Monaco** (Starý 1976a); **Montenegro** (Kavallieratos et al. 2004, 2013, 2016; Žikić et al. 2012); **Morocco** (Mimeur 1934; Mackauer & Starý 1967; Starý 1976a; Rakhshani et al. 2019); **Netherlands** (Snellen van Vollenhoven 1876; Evenhuis 1963; Mackauer & Starý 1967); **Norway** (Westrum et al. 2010; Mjøs et al. 2024); **Pakistan** (Alam & Hafiz 1963; Bodlah et al. 2012b; Khan et al. 2012); **Palestine** (Mackauer 1960f; Rosen 1966, 1967, 1969; Mackauer & Starý 1967; Starý 1967a, 1976a; Avidov & Harpaz 1969; Mescheloff & Rosen 1993); **Poland** (Wiackowski & Wiackowska 1961, 1996, 2000; Mackauer & Starý 1967; Cierniewska 1973; Kierych 1975, 1980; Barczak 1988, 1991b; Olszak 1994; Huflejt 1997; Wiackowski et al. 1997, 2001; Barczak et al. 1999, 2005; Tran & Piekarska-Boniecka 2017); **Portugal** (Costa 1988; Costa & Starý 1988; Cecilio 1996; Cecilio & Ilharco 2002); **Romania** (Mustata 1986; Feraru & Mustata 2004); **Russia** (Starý & Rupais 1963; Starý 1965a, 1974c; Barannik 1986; Davidian 2007, 2016b, 2019b; Davidian & Gavrilyuk 2014; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Saudi Arabia** (Asiry 2015); **Serbia** (Tomanović et al. 1998a, 1998b, 1999b; Žikić et al. 2000, 2012; Tomanović & Brajković 2001; Kavallieratos et al. 2004, 2008a, 2008b, 2013, 2016; Plećaš et al. 2023); **Slovakia** (Starý 1977, 1989a; Ferrer-Suay et al. 2017); **Slovenia** (Kos et al. 2008, 2009a, 2012); **South Korea** (Lee et al. 2018; Kim 2026); **Spain** (Quilis-Pérez 1931b; Ceballos 1956; Mackauer 1960f; Mackauer & Starý 1967; Starý 1974c, 1976a; Michelena Saval & Oltra Moscardo 1987; González & Michelena 1987; Tizado & Núñez-Perez 1991; Tizado Morales et al. 1992; Michelena et al. 1994, 2004; Torras 1996; Sanchis et al. 1995, 2000; Michelena Saval & Sanchis Segovia 1997b; Suay Cano & Michelena Saval 1998; Nieves-Aldrey et al. 2003; Lumbierres et al. 2005; Hermoso de Mendoza et al. 2008; Pons et al. 2011, 2018; Havelka et al. 2012; Hermoso de Mendoza et al. 2012); **Sweden** (Mackauer & Starý 1967; Lazarević et al. 2024); **Switzerland** (Mackauer 1959a; Vidal 1997a; Schar & Vorburger 2013); **Tajikistan** (Ataeva 1961; Fulmek 1968; Starý 1979a); **Tunisia** (Mackauer & Starý 1967; Starý 1976a; Ben Halima & Ben Hamouda 1993, 2005; Ben Halima et al. 1994; Boukhris-Bouhachem 2011; Ayadi et al. 2017; Zouari et al. 2018; Behi et al. 2019; Rakhshani et al. 2019); **Türkiye** (Düzgüneş et al. 1982; Erkin 1983; Zeren & Düzgüneş 1983; Yumruktepe & Uygun 1994; Yasarakinci & Hincal 2000; Ölmez & Ulusoy 2003; Aslan et al. 2004; Uysal et al. 2004; Aslan & Karaca 2005; Güz & Kılınçer 2005; Çetin Erdoğan et al. 2008; Yoldaş et al. 2011; Havelka et al. 2012; Satar et al. 2014, 2021; Akar & Çetin Erdoğan 2017; Rakhshani et al. 2019; Kök et al. 2020; Alaserhat et al. 2021); **Syria** (Abo Kaf & Alrostom 2020); **Ukraine** (Kaliuzhna & Zubenko 2013; Davidian 2016b; Kaliuzhna 2016a, 2019a, 2019b); **United Arab Emirates** (Starý et al. 2014b); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Marshall 1872a, 1896; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1959a, 1961b; Mackauer & Starý 1967; Starý 1974c; Davidian & Rispin 2016); **USA** (BOLD:ACB8002); **Uzbekistan** (Starý 1979a; Aripov 2003).

***Remarks.*** Mackauer (1961b) concluded that the type specimen of *A. angelicae* is the holotype. Under Article 74.6 of the ICZN, the subsequent lectotype designation by Mackauer (1968a) is unnecessary because a paralectotype was found in NMID (van Achterberg 1997a).

### *Binodoxys angolensis* (Starý & van Harten, 1977)

*Trioxys angolensis* Starý & van Harten [in Starý et al.], 1977b:185. Holotype ♂, paratype ♀ (IECA). – Angola.

***Host. Sitobion*** sp. (Starý et al. 1977b).

***Distribution.*** **Angola** (Starý et al. 1977b).

### *Binodoxys basicurvus* (Shuja-Uddin, 1973)

*Trioxys* (*Binodoxys*) *basicurvus* Shuja-Uddin, 1973:9. Holotype ♀, paratypes ♀♂ (ZMAU). – India.

***Hosts. Aphis aurantii*** Boyer de Fonscolombe (Devi et al. 1997); ***Aphis citricidus*** (Kirkaldy) (Paonam & Singh 1986a); ***Aphis craccivora*** Koch (Bodlah et al. 2011); ***Aphis gossypii*** Glover (Paonam & Singh 1986a; Devi et al. 1997; Bodlah et al. 2011; Vignesh & Patil 2020); ***Aphis ruborum*** (Börner) (Shuja-Uddin 1983); ***Myzus persicae*** (Sulzer) (Singh et al. 1995).

***Distribution.*** **India** (Shuja-Uddin 1973; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Shuja-Uddin 1983; Starý & Ghosh 1983; Paonam & Singh 1986a; Raychaudhuri et al. 1990; Singh et al. 1995; Devi et al. 1997; Dey & Akhtar 2007; Ahmad & Wani 2014; Vignesh & Patil 2020; Das & Chakrabarti 2023a); **Pakistan** (Bodlah et al. 2011); **Vietnam** (Tomanović et al. 2026b).

### *Binodoxys basituber* (Starý & Remaudière, 1982)

*Trioxys basituber* Starý & Remaudière, 1982:120. Holotype ♂, paratype ♀ (IECA). – Mexico.

***Host.*** Unknown.

***Distribution.*** **Mexico** (Starý & Remaudière 1982, 1988).

### *Binodoxys benoiti* (Mackauer, 1959)

*Aphidius benoiti* Mackauer, 1959g:307. Holotype ♂ (RMCA). – Congo.

***Host.*** Unknown.

***Distribution.*** **Congo** (Benoit 1955; Mackauer & Starý 1967; Starý et al. 1977a).

### *Binodoxys brevicornis* (Haliday, 1833) [Fig. 46C]

*Aphidius brevicornis* Haliday, 1833:491. Holotype ♀ (after Mackauer 1961b) (NHMUK). – Ireland.

**Syn.:** *Aphidius* (*Trioxys*) *minutus* Haliday, 1833.

***Hosts.*** *Aphis* spp. (Davidian 2016b); ***Brachycorynella asparagi*** (Mordvilko) (Starý 1990a, 1990b, 2006; Daane et al. 1992); ***Cavariella aegopodii*** (Scopoli) (Mackauer 1959a, 1959e; Starý et al. 1971, 2007; Starý 1974b, 1976a, 1990b; Kierych 1980; Starý & Cermeli 1989; Mescheloff & Rosen 1993; Wiackowski et al. 2001; Sampaio et al. 2003; Michelena et al. 2004; Rakhshani et al. 2007b; Talebi et al. 2009; Petermann et al. 2010; Alikhani et al. 2013; Barahoei et al. 2013); ***Cavariella theobaldi*** (Gillette & Bragg) (Mackauer & Starý 1967; Starý 1990b; Baker & Broad 2013); ***Cavariella*** spp. (Starý 1961b, 1963b, 1966c, 1974b, 1977, 1979a, 1987a, 2006; Mackauer & Starý 1967; Tremblay 1975b; Kavallieratos et al. 2004; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Chaitophorus pakistanicus*** Hille Ris Lambers (Bhagat 1984); *Dysaphis anthrisci* Börner (Quilis-Pérez 1934); ***Hyadaphis bupleuri*** Börner (Starý 1963b, 1966c, 1974b, 1990b, 1995b, 2006; Mackauer & Starý 1967); ***Hyadaphis coriandri*** (Das) (Düzgüneş et al. 1982; González & Michelena 1987; Starý 1990b; Mescheloff & Rosen 1993; Uysal et al. 2004; Ayadi et al. 2017); ***Hyadaphis foeniculi*** (Passerini) (Mackauer 1959e; Starý 1963b, 1974b, 1976a; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975, 2007; González & Starý 1990b; Suay Cano et al. 1998; Sanchis et al. 2000; Michelena et al. 2004; Zumoffen et al. 2013; Suay Pons et al. 2018); ***Hyadaphis passerinii*** (Del Guercio) (Pons et al. 2018); ***Hyadaphis*** spp. (Starý 1961b, 1966c, 1990b, 2006; Mackauer & Starý 1967; Güz & Kılınçer 2005; Ferrer-Suay et al. 2017); *Macrosiphum* sp. (Wahlgren 1915); *Myzus cerasi* (Fabricius) (Wimshurst 1925; Mackauer 1959b; Fulmek 1968); *Myzus persicae* (Sulzer) (Sharma & Subba Rao 1964); ***Semiaphis anthrisci*** (Kaltenbach) (Mackauer 1959b, 1959e; Mackauer & Starý 1967; Fulmek 1968); *Semiaphis dauci* (Fabricius) (Wiackowski et al. 2001); ***Staegeriella necopinata*** (Börner) (Starý 1963b; Mackauer & Starý 1967; Starý et al. 1971, 1975; Starý 1974b, 1976a, 1990b; Baker & Broad 2013); ***Uhlmannia singularis*** (Börner) (Kavallieratos et al. 2004; Tomanović et al. 2007a; Žikić et al. 2012).

***Distribution.*** **Algeria** (Starý 1976a, 1990b; Rakhshani et al. 2019); **Andorra** (Sanchis et al. 1999); **Argentina** (Zumoffen et al. 2013); **Armenia** (Davidian 2016b); **Austria** (Mackauer 1959b; Mackauer & Starý 1967); **Brazil** (Sampaio et al. 2003, 2005; Starý et al. 2007); **Bulgaria** (Todorov 2006b); **Canary Islands** (Mackauer 1962b; Mackauer & Starý 1967; Starý 1976a; Báez et al. 2001); **Czech Republic** (Quilis-Pérez 1934; Mackauer 1959b; Starý 1961b, 1966c, 1974b, 1977, 1987a, 1989a, 1990a, 1990b, 1995b; Mackauer & Starý 1967; Ferrer-Suay et al. 2017); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971; Starý 1990b); **France** (Starý et al. 1971, 1973, 1975, 1977a; Starý 1974b, 1976a, 1990b); **Georgia** (Davidian 2016b); **Germany** (Mackauer 1959b; Mackauer & Starý 1967; Boness & Starý 1988; Belokobylskij & Taeger 2001; Belokobylskij et al. 2003; Petermann et al. 2010; Starý 1990b); **Hungary** (Szépligeti 1899; Polgár 1983); **India** (Sharma & Subba Rao 1964; Mackauer & Starý 1967; Agarwala et

al. 1981a; Bhagat 1984; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Das & Chakrabarti 2023a); **Iran** (Starý et al. 2000; Rakhshani et al. 2007b, 2019; Fallahzadeh & Saghaei 2010; Alikhani et al. 2013; Barahoei et al. 2013); **Ireland** (Mackauer 1959b; O'Connor et al. 1999); **Italy** (Fulmek 1968; Bergamesco et al. 1995); **Kazakhstan**, **Kyrgyzstan**, **Lithuania** (Davidian 2016b); **Moldova** (Talitzky & Kuslitzky 1990; Starý 1990b; Davidian 2016b); **Montenegro** (Kavallieratos et al. 2004; Tomanović et al. 2007a; Žikić et al. 2012; Lazarević et al. 2024); **Norway** (Mjøs et al. 2024); **Palestine** (Mackauer 1959e; Mackauer & Starý 1967; Starý 1976a; Mescheloff & Rosen 1993); **Poland** (Kierych 1980; Huflejt 1997; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Romania** (Lacatusu & Panu 1969); **Russia** (Mackauer 1968c; Starý 1974b; Davidian & Gavrilyuk 2014; Davidian 2016b, 2019b; Davidian & Humala 2023; Davidian & Ruchin 2023); **Serbia** (Tomanović et al. 1998a; Kavallieratos et al. 2004); **Slovakia** (Starý 1977, 1989a, 1990b; Ferrer-Suay et al. 2017); **Spain** (Quilis-Pérez 1931b; Mackauer & Starý 1967; González & Michelena 1987; Tizado & Núñez-Perez 1991; Sanchis et al. 1995, 2000; Suay Cano & Michelena Saval 1998; Nieves-Aldrey et al. 2003; Michelena et al. 2004; Pons et al. 2018); **Sweden** (Thomson 1895; Wahlgren 1915; Szépligeti 1904; Mackauer 1959b; Mackauer & Starý 1967; Starý 1990b); **Switzerland** (Starý 1990b); **Tajikistan** (Davidian 2016b); **Tunisia** (Ayadi et al. 2017; Rakhshani et al. 2019); **Türkiye** (Starý 1976a, 1990b; Düzgüneş et al. 1982; Uysal et al. 2004; Güz & Kılınçer 2005; Rakhshani et al. 2019); **Ukraine** (Davidian 2016b; Kaliuzhna 2019b); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Marshall 1872a, 1896; Szépligeti 1904; Wimshurst 1925; Lyle 1933; Kloet & Hincks 1945; Mackauer 1959b, 1961b; Mackauer & Starý 1967; Baker & Broad 2013; Davidian & Rispin 2016); **USA** (Introduced - Daane et al. 1992); **Uzbekistan** (Starý 1979a, 1990b; Davidian 2016b); **Venezuela** (Starý & Cermeli 1989; Starý 1990b); **Vietnam** (Long & van Achterberg 2014).

***Remarks.*** Mackauer (1961b) considered the type specimen to be the holotype, and later (Mackauer 1968a), referred to the same specimen as a lectotype; however, there is no evidence that he was aware of the existence of other type specimens of this species. Therefore, Article 74.6 of the ICZN does not apply, and the lectotype designation cannot be considered valid. The specimen should consequently be treated as the holotype.

### *Binodoxys brunnescens* (Starý & Schlinger, 1967) [Fig. 46D]

*Trioxys brunnescens* Starý & Schlinger, 1967:110. Holotype ♀ (USNM). – Japan.

***Host.*** ***Acyrthosiphon*** sp. (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a).

***Distribution.*** **Japan** (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a).

### *Binodoxys carinatus* (Starý & Schlinger, 1967) [Fig. 46E]

*Trioxys carinatus* Starý & Schlinger, 1967. Holotype ♀ (USNM), paratypes ♀♀ (IECA, USNM). – Taiwan.

***Host.*** ***Microlophium rubiformosanum*** (Takahashi) (Mackauer & Starý 1967; Starý & Schlinger 1967; Liu 1975; Starý 1975a; Chou 1981; Chen et al. 2009).

***Distribution.*** **China** (Mackauer & Starý 1967; Starý & Schlinger 1967; Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); **Russia** (Davidian 2007, 2016b).

### *Binodoxys carolinensis* (Smith, 1944) [Fig. 46F]

*Trioxys carolinensis* Smith, 1944:89. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, NCSU). – USA.

***Hosts.*** ***Aphis ceanothi*** Clarke (Pike et al. 2000, 2004); ***Aphis gossypii*** Glover, ***Aphis nigratibialis*** Robinson (Pike et al. 2000); ***Aphis oenotherae*** Oestlund (Mackauer & Starý 1967; Marsh 1979); ***Aphis pomi*** De Geer (Mackauer & Starý 1967; Marsh 1979); ***Aphis salicariae*** Koch (Pike et al. 2000); ***Aphis varians*** Patch (Pike et al. 1996, 2000); ***Aphis*** sp. (Smith 1944).

***Distribution.*** **Canada** (Mackauer & Starý 1967); **USA** (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Pike et al. 1996, 2000, 2004).

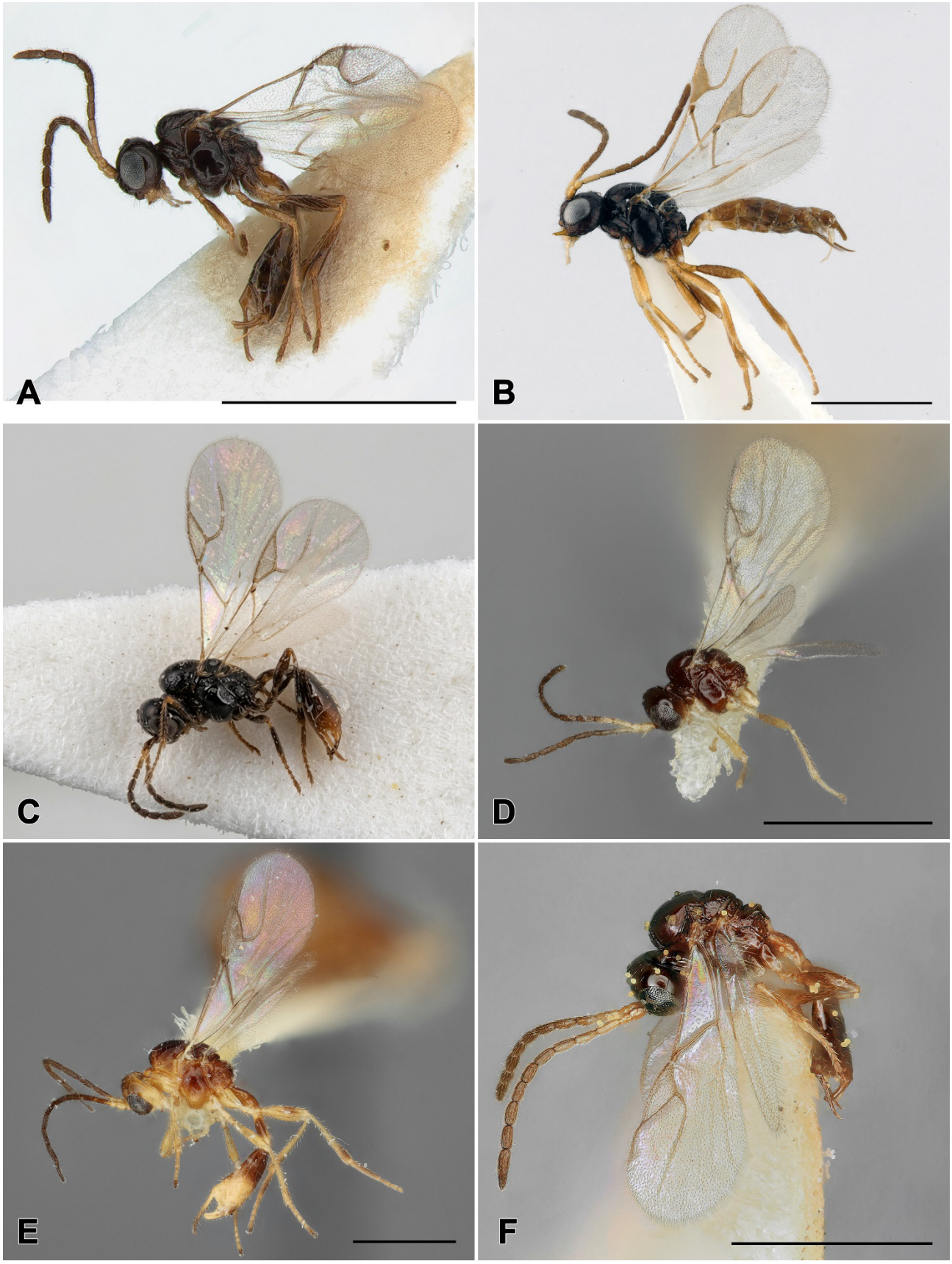



**Figure 46.** Species of the genus *Binodoxys* Mackauer, 1960. **A.** *Binodoxys acalephae* (Marshall, 1896) – RMNH; **B.** *Binodoxys angelicae* (Haliday, 1833) – Iran, DPPZ; **C.** *Binodoxys brevicornis* (Haliday, 1833) – Finland, ZMHF; **D.** *Binodoxys brunnescens* (Starý & Schlinger, 1967) – Holotype, USNM; **E.** *Binodoxys carinatus* (Starý & Schlinger, 1967) – Holotype, USNM; **F.** *Binodoxys carolinensis* (Smith, 1944) – Holotype, USNM. Scale bar: 1 mm.

***Binodoxys centaureae* (Haliday, 1833)** [Fig. 47A]

*Aphidius centaureae* Haliday, 1833:490. Holotype ♀ (after Mackauer 1961b) (NHMUK). – United Kingdom.

**Syn.:** *Binodoxys uroleucon* Takada & Rishi 1980.

***Hosts.*** *Amphorophora rubi* (Kaltenbach) (Ataeva 1961); *Aphis craccae* Linnaeus (Starý 1964d); *Aphis fabae* Scopoli (Mackauer 1959b; Fulmek 1968); *Aphis glycines* Matsumura (Chen & Shi 2001; Wei et al. 2005); *Aphis pomi* De Geer (Fulmek 1968); *Aphis rumicis* Linnaeus (Wilkinson 1926; Watanabe 1949; Mackauer 1959b; Fulmek 1968; Starý 1976a; Chen & Shi 2001); *Brachycaudus helichrysi* (Kaltenbach) (Mackauer 1959b; Fulmek 1968); *Capitophorus elaeagni* (Del Guercio) (Bhagat 1984); *Chromaphis juglandicola* (Kaltenbach) (Ataeva 1961); ***Macrosiphoniella artemisiae*** (Boyer de Fonscolombe) (Starý 1964d, 1966c; Mackauer & Starý 1967; Bhagat 1984; Wiackowski et al. 2001; Tomanović et al. 2003b; Kavallieratos et al. 2004; Žikić et al. 2012); ***Macrosiphoniella millefolii*** (De Geer) (Starý 1961b, 1977, 2006; Mackauer 1962c; Mackauer & Starý 1967; Kos et al. 2009a, 2012; Rakhshani et al. 2011); ***Macrosiphoniella tanacetaria*** (Kaltenbach) (Starý 1966c; Mackauer & Starý 1967); ***Macrosiphoniella*** spp. (Starý & Bhagat 1978; Bhagat 1984, 1986b; Tomanović et al. 1999b, 2003b; Kavallieratos et al. 2004; Žikić et al. 2012); *Metopolophium dirhodum* (Walker) (Ataeva 1961); *Microlophium carnosum* (Buckton) (Starý 1961b, 1964d, 1966c, 1983f, 1987a, 2006; Mackauer & Starý 1967); *Rhopalosiphum padi* (Linnaeus) (Starý 1961b); *Sitobion ibarae* (Matsumura) (Starý & Schlinger 1967); *Sitobion miscanthi* (Takahashi) (Raychaudhuri et al. 1990); ***Uroleucon achilleae*** (Koch) (Starý et al. 1973, 1977a); ***Uroleucon aeneum*** (Hille Ris Lambers) (Starý 1961b, 1964d, 1966c, 2006; Mackauer & Starý 1967; Starý et al. 1971; Völkl & Starý 1988); ***Uroleucon campanulae*** (Kaltenbach) (Starý 1961b, 1964d, 1966c, 1987a, 2006; Mackauer & Starý 1967); ***Uroleucon cichorii*** (Koch) (Starý 1961b, 1964d, 1966c, 1977, 2006; Mackauer & Starý 1967; Starý et al. 1973; Barczak 1993; Kavallieratos et al. 2001, 2004; Tomanović et al. 2003b; Žikić et al. 2012); ***Uroleucon cirsii*** (Linnaeus) (Völkl & Starý 1988; Barczak 1993); ***Uroleucon grossum*** (Hille Ris Lambers) (Tomanović et al. 2003b; Kavallieratos et al. 2004); ***Uroleucon hypochoeridis*** (Fabricius) (Starý et al. 1971; Kierych 1975, 1980); ***Uroleucon jaceae*** (Linnaeus) (Starý 1964d, 1966d, 1976a, 1995b, 2006; Mackauer & Starý 1967; Mustata 1986; Völkl & Starý 1988; Pareja et al. 2008); ***Uroleucon murale*** (Buckton) (Starý 1961b, 1966c, 2006; Mackauer & Starý 1967; Tomanović et al. 1999b, 2003b; Kavallieratos et al. 2004; Žikić et al. 2012); ***Uroleucon obscurum*** (Koch) (Thuneberg 1960; Starý 1961b, 1964d, 1966c, 1977, 2006; Mackauer & Starý 1967; Starý et al. 1971; Tomanović et al. 2008a); ***Uroleucon*** spp. (Starý 1961b, 1965a, 1976d, 1986a, 2006; Takada & Rishi 1980; Das & Chakrabarti 1991a; Derocles et al. 2012, 2014a; Laamari et al. 2012; Žikić et al. 2012).

***Distribution.*** **Algeria** (Starý 1976a; Laamari et al. 2012; Rakhshani et al. 2019); **Andorra** (Sanchis et al. 1999); **Austria** (Mackauer 1959b; Mackauer & Starý 1967); **China** (Watanabe 1949; Dong & Wang 1985; Chen & Shi 2001); **Cyprus** (Wilkinson 1926; Fulmek 1968); **Czech Republic** (Starý 1961b, 1966c, 1977, 1983f, 1986a, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Tomanović et al. 2008a); **Denmark** (Mackauer & Starý 1967); **Finland** (Thuneberg 1960; Mackauer & Starý 1967; Mackauer 1968c; Rakhshani et al. 2011); **France** (Mackauer & Starý 1967; Starý et al. 1971, 1973, 1977a; Derocles et al. 2012, 2014a; Lazarević et al. 2024); **Georgia** (Starý 1976a); **Germany** (Mackauer 1959b, 1962c; Mackauer & Starý 1967; Boness & Starý 1988; Völkl & Starý 1988; Belokobylskij & Taeger 2001; Belokobylskij et al. 2003); **Greece** (Kavallieratos et al. 2001, 2004; Tomanović et al. 2003b); **Hungary** (Polgár 1983); **India** (Takada & Rishi 1980; Agarwala et al. 1981a; Bhagat 1984, 1986b; Starý & Bhagat 1978; Starý & Ghosh 1983; Das & Chakrabarti 1991a, 2023a; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Ahmad & Wani 2014); **Ireland** (Beirne 1942; Mackauer 1959b; Mackauer & Starý 1967; Fulmek 1968; O'Connor et al. 1999); **Italy** (Starý 1966d, 1976a; Bergamesco et al. 1995); **Kazakhstan**, **Lithuania** (Davidian 2016b); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Tomanović et al. 2003b; Kavallieratos et al. 2004); **Netherlands** (Mackauer & Starý 1967); **Norway** (Artsdatabanken 2026; Lazarević et al. 2024); **Poland** (Kierych 1975, 1980; Barczak 1993; Huflejt 1997; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Romania** (Mustata 1986); **Russia** (Starý 1965a; Mackauer 1968c; Davidian 2007, 2016b, 2019b; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Ruchin 2023); **Serbia** (Tomanović et al. 1998a, 1999b, 2003b; Kavallieratos et al. 2004; Žikić et al. 2012; Lazarević et al. 2024); **Slovakia** (Starý 1977, 1989a); **Slovenia** (Kos et al. 2008, 2009a, 2012); **Spain** (Mackauer &

Starý 1967; Tizado & Núñez-Perez 1991); **Sweden** (Mackauer 1959b; Mackauer & Starý 1967); **Switzerland** (Ferrière 1928; Mackauer 1959b; Mackauer & Starý 1967); **Tajikistan** (Fulmek 1968; Starý 1979a); **Ukraine** (Kaliuzhna 2019b, 2026); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Marshall 1872a, 1896, 1899; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1959b, 1961b; Mackauer & Starý 1967; van Veen et al. 2008; Davidian & Rispin 2016; Lazarević et al. 2024); **Uzbekistan** (Starý 1979a; Daminova et al. 2001; Aripov 2003); **Vietnam** (Tomanović et al. 2026b).

***Remarks.*** Mackauer (1961b) considered the type specimen to be the holotype, and later (Mackauer 1968a), designated the same specimen as the lectotype; however, there is no evidence that he was aware of the existence of other type specimens of this species. Therefore, Article 74.6 of the ICZN does not apply, and the lectotype designation should not be considered valid. The specimen should instead be regarded as the holotype. According to the host range and the characters from the re-description (Takada 1968), the records of *Trioxys centaureae* in Japan (Takada 1966a, 1968) belong to *Binodoxys orientalis* (Starý & Schlinger, 1967).

### *Binodoxys ceratovacunae* (Agarwala, Saha & Mahapatra, 1987)

*Trioxys* (*Binodoxys*) *ceratovacunae* Agarwala, Saha & Mahapatra, 1987:329. Holotype ♀, paratypes ♀♂ (CUCE). – India.

***Host.*** ***Ceratovacuna silvestrii*** (Takahashi) (Agarwala et al. 1987).

***Distribution.*** **India** (Agarwala et al. 1987; Dey & Akhtar 2007; Das & Chakrabarti 2023a).

***Remarks.*** The type depository was not indicated in the original description.

### *Binodoxys chilensis* (Starý, 1995)

*Trioxys chilensis* Starý 1995c:128. Holotype ♀ (IECA). – Chile.

***Host.*** Unknown.

***Distribution.*** **Chile** (Starý 1995c).

### *Binodoxys citri* (Liu, 1971) [*nomen nudum*]

*Trioxys citri* Liu [in Tao & Chiu], 1971:12. – Taiwan.

***Host.*** ***Aphis spiraecola*** Patch (Tao & Chiu, 1971; Starý 1975a).

***Distribution.*** **China** (Tao & Chiu, 1971; Starý 1975a).

***Remarks.*** Listed by Starý (1975a:67) as a *nomen nudum*, without providing a description or other act making the name available. Therefore, *Binodoxys citri* should not be used as a valid species name.

### *Binodoxys clydesmithi* Pike & Starý, 1996 [Fig. 47B]

*Binodoxys clydesmithi* Pike & Starý [in Pike et al.], 1996:574. Holotype ♀ (USNM), paratypes ♀♀ ♂ (IECA, WSUJ). – USA.

***Hosts.*** ***Aphis canae*** Williams (Pike et al. 2000); ***Aphis oregonensis*** Wilson (Pike et al. 1996); ***Aphis*** (*Zyxaphis*) sp. (Pike et al. 1997a); ***Artemisaphis artemisicola*** (Williams) (Pike et al. 1997a, 2000); ***Obtusicauda coweni*** (Hunter) (Pike et al. 1996, 1997a, 2000).

***Distribution.*** **USA** (Pike et al. 1996, 1997a, 2000).

### *Binodoxys communis* (Gahan, 1926) [Fig. 47C]

*Trioxys communis* Gahan, 1926:4. Holotype ♀ (after Mackauer 1968a), paratypes ♀♂ (USNM). – Taiwan.

**Syn.:** *Trioxys capitophori* Takada, 1966; *Trioxys glycines* Takada, 1966.

***Hosts.*** ***Aphis glycines*** Matsumura (Takada 1966a, 1968; Tao & Chiu 1971; Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Wei et al. 2005; Miao et al. 2007; Wyckhuys et al. 2007, 2008, 2009; Wyckhuys & Heimpel 2007; Chen et al. 2009; Takada et al. 2011; Tilmon et al. 2011); ***Aphis gossypii*** Glover (Gahan 1926; Sonan 1944; Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1967a, 1975a; Chiu & Liu 1969; Tao & Chiu 1971; Liu 1975; Paik 1976; Marsh 1979; Takada & Yamauchi 1979; Shi 1980, 1984, 1986; Chou

1981; Zheng et al. 1985; Luo & Gan 1986; Zhang 1992; Chen & Shi 2001; Takada 2002; Wei et al. 2005; Chen et al. 2009; Zhang et al. 2012; Yang et al. 2017; Li et al. 2018; Rim et al. 2023; Xia et al. 2025); ***Aphis spiraecola*** Patch (Ng & Starý 1986; Chen et al. 2009); ***Capitophorus hippophaes*** (Walker) (Takada 1966a, 1968; Starý 1975a); ***Melanaphis sacchari*** (Zehntner), ***Myzus persicae*** (Sulzer) (Chen et al. 2009); ***Pentalonia nigronervosa*** Coquerel (Lomerio & Calilung 2008); ***Rhopalosiphum*** sp. (Starý & Schlinger 1967; Tao & Chiu 1971; Starý 1975a).

***Distribution.*** **Bangladesh** (BOLD:AAW3509); **China** (Gahan 1926; Sonan 1944; Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1967a; Chiu & Liu 1969; Liu 1975; Shi 1980, 1985; Chou 1981; Yang & Wu 1981; Dong & Wang 1985, 1993; Zheng et al. 1985; Luo & Gan 1986; Lu & Ji 1992; Zhang 1992; Chen & Shi 2001; He et al. 2004; Miao et al. 2007; Chen et al. 2009; Desneux et al. 2009; Xi et al. 2011); **Indonesia** (Mackauer & Starý 1967; Takada et al. 2011; Yang et al. 2017; Li et al. 2018); **Japan** (Takada 1966a, 1968, 2002; Starý 1967a, 1975a; Takada et al. 2011); **Kenya** (Todorov 2009a); **Malaysia** (Ng & Starý 1986); **Philippines** (Lomerio & Calilung 2008); **Russia** (Davidian 2004); **South Korea** (Paik 1976; Starý & Choi 2000; Rim et al. 2023; Kim 2026); **Tajikistan** (Davidian 2004); **Thailand** (BOLD:AAW3509); **USA** (introduced – Tilmon et al. 2011); **Vietnam** (Tomanović et al. 2026b).

### *Binodoxys conei* Pike & Starý, 1995 [Fig. 47D]

*Binodoxys conei* Pike & Starý, 1995[1996a]:445. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (WSUJ, IECA). – USA.

***Host. Phorodon humuli*** (Schrank) (Pike & Starý 1996a; Pike et al. 1996, 2000).

***Distribution.*** **USA** (Pike & Starý 1996a; Pike et al. 1996, 2000).

### *Binodoxys coruscanigrans* (Gahan, 1911) [Fig. 47E]

*Trioxys coruscanigrans* Gahan, 1911a:195. Lectotype ♀ (after Mackauer 1968a) (USNM). – USA.

***Hosts. Epameibaphis frigidae*** (Oestlund) (Gahan 1911a; Mackauer & Starý 1967; Marsh 1979); ***Obtusicauda coweni*** (Hunter) (Knowlton & Harmston 1939; Smith 1944; Mackauer & Starý 1967; Marsh 1979; Pike et al. 1997a, 2000); ***Obtusicauda dolychosiphon*** (Umarov) (Telenga 1950).

***Distribution.*** **USA** (Gahan 1911a; Knowlton & Harmston 1939; Smith 1944; Telenga 1950; Muesebeck & Walkley 1951; Mackauer 1963a; Mackauer & Starý 1967; Pike et al. 1997a, 2000).

### *Binodoxys crataegi* Davidian, 2022 [Fig. 47F]

*Binodoxys crataegi* Davidian [in Davidian & Belokobylskij], 2022:374. Holotype ♀, paratypes ♀♀ (ZISP). – Russia.

***Host. Aphis pomi*** De Geer (Davidian & Belokobylskij 2022).

***Distribution.*** **Russia** (Davidian & Belokobylskij 2022).

### *Binodoxys crudelis* (Rondani, 1848)

*Misaphidus crudelis* Rondani, 1848:186. Syntype ♂ (uncertain). – Italy.

***Host. Uroleucon sonchi*** (Linnaeus) (Fulmek 1968).

***Distribution.*** **Italy** (Marshall 1896; Szépligeti 1904; Fulmek 1968; Mackauer 1968a).

***Remarks.*** Uncertain species; can be conspecific with *Binodoxys centaureae* (Haliday, 1833).

### *Binodoxys cupressicola* (Gahan, 1919) [Fig. 48A]

*Trioxys cupressicola* Gahan, 1919:116. Holotype ♀, paratypes ♀♂ (USNM). – USA.

***Hosts.*** *Aphis* sp. (Gahan 1919); ***Siphonatrophia cupressi*** (Swain) (Knowlton & Janes 1930; Mackauer & Starý 1967; Marsh 1979; Starý & Remaudière 1982); ***Siphonatrophia*** sp. (Starý 1983d).

***Distribution.*** **Mexico** (Starý & Remaudière 1982; Starý 1983d; Starý & Remaudière 1988); **USA** (Gahan 1919; Knowlton & Janes 1930; Knowlton & Harmston 1939; Muesebeck & Walkley 1951; Mackauer & Starý 1967).

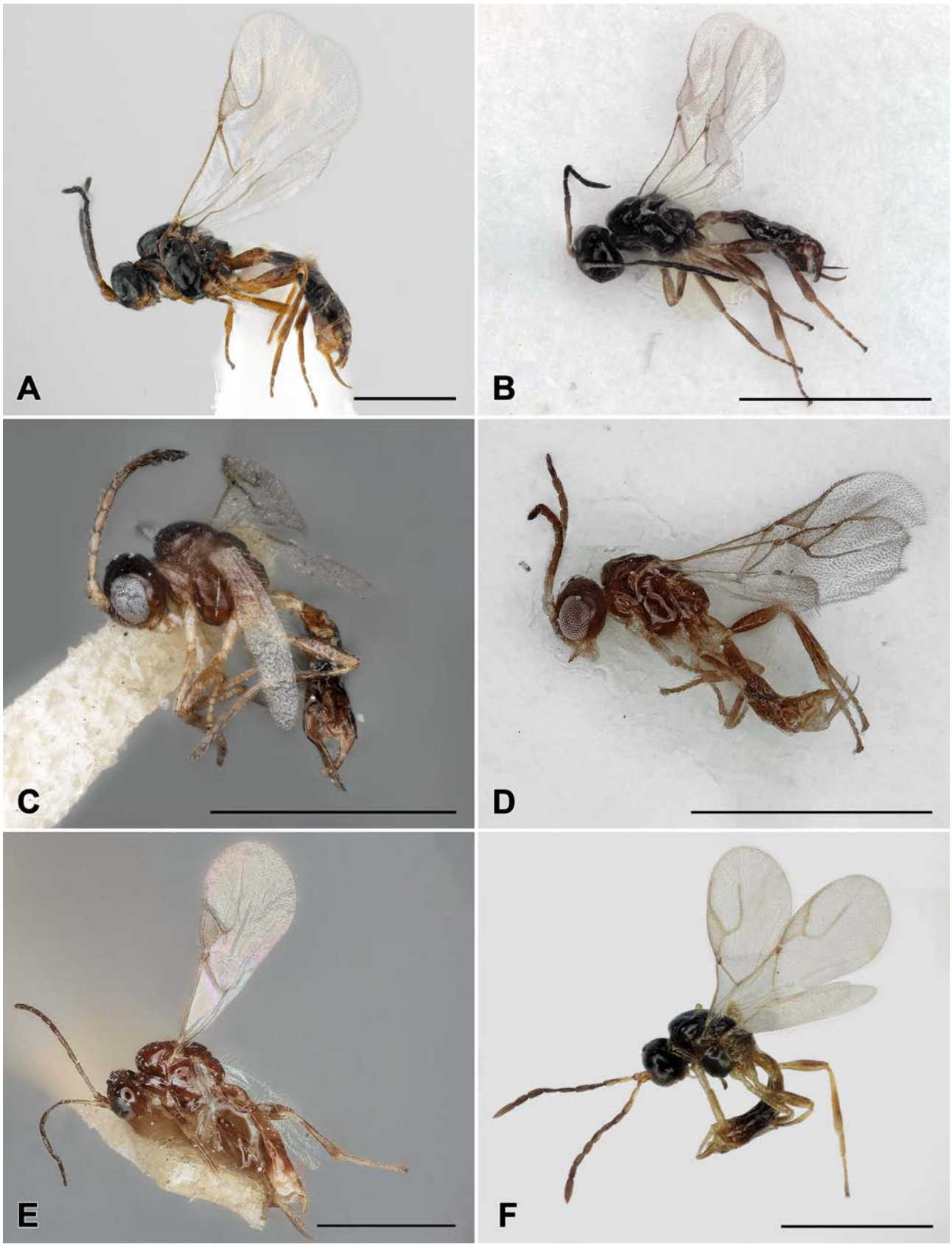



**Figure 47.** Species of the genus *Binodoxys* Mackauer, 1960. **A.** *Binodoxys centaureae* (Haliday, 1833) – Serbia, DPPZ; **B.** *Binodoxys clydesmithi* Pike & Starý, 1996 – Holotype, USNM; **C.** *Binodoxys communis* (Gahan, 1926) – Holotype, USNM; **D.** *Binodoxys conei* Pike & Starý, 1995 – Holotype, USNM; **E.** *Binodoxys coruscanigrans* (Gahan, 1911) – Lectotype, USNM; **F.** *Binodoxys crataegi* Davidian, 2022 – Holotype, ZISP (Davidian & Belokobylskij 2022). Scale bar: 1 mm.

### *Binodoxys ekaterinae* Davidian, 2022

*Binodoxys ekaterinae* Davidian [in Davidian & Belokobylskij], 2022:375. Holotype ♀, paratype ♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian & Belokobylskij 2022).

### *Binodoxys equatus* (Samanta, Tamili & Raychaudhuri, 1985)

*Trioxys* (*Binodoxys*) *equatus* Samanta, Tamili & Raychaudhuri, 1985:118. Holotype ♀ (CUCE). – India.

***Hosts.*** ***Aphis gossypii*** Glover (Samanta et al. 1985; Raychaudhuri et al. 1990); ***Eutrichosiphum raychaudhurii*** (Ghosh) (Raychaudhuri et al. 1990).

***Distribution.*** **India** (Samanta et al. 1985; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Das & Chakrabarti 2023a).

### *Binodoxys eutrichosiphi* (Starý, 1975)

*Trioxys* (*Binodoxys*) *eutrichosiphi* Starý [in Starý & Ghosh], 1975:347. Holotype ♀ (ZSI), paratypes ♀♀ ♂♂ (ZSI, IECA). – India.

***Hosts.*** ***Eutrichosiphum pasaniae*** (Okajima) (Takada & Yamauchi 1979); ***Eutrichosiphum pyri*** Chakrabarti, Ghosh & Raychaudhuri (Raychaudhuri et al. 1990); ***Eutrichosiphum*** spp. (Starý & Ghosh 1975; Starý et al. 2010a).

***Distribution.*** **India** (Starý & Ghosh 1975, 1983; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Starý et al. 2010a; Das & Chakrabarti 2023a); **Japan** (Takada & Yamauchi 1979).

### *Binodoxys formosanus* (Liu, 1971) [*nomen nudum*]

*Trioxys formosanus* Liu [in Tao & Chiu], 1971:20. – Taiwan.

***Host.*** ***Acyrthosiphon pisum*** (Harris) (Tao & Chiu, 1971; Starý 1975a).

***Distribution.*** **China** (Tao & Chiu, 1971; Starý 1975a).

***Remarks.*** Listed by Starý (1975a:67) as a *nomen nudum*, without providing a description or other act making the name available. Therefore, *Binodoxys formosanus* should not be used as a valid species name.

### *Binodoxys genistae* (Mackauer, 1960) [Fig. 48B]

*Binodoxys genistae* Mackauer, 1960f:143. Holotype ♀, paratypes ♀♀ ♂♂ (CNC). – Germany.

***Hosts.*** ***Aphis genistae*** Scopoli (Mackauer 1960f, 1962h; Starý 1964d, 1966c, 1967b; Mackauer & Starý 1967; Starý et al. 1971); ***Rhopalomyzus lonicerae*** (Siebold) (Wiackowski et al. 1997, 2001).

***Distribution.*** **Bulgaria** (Todorov 2008; Todorov & Ivanova 2016); **Czech Republic** (Starý 1966c; Mackauer & Starý 1967); **France** (Starý et al. 1971); **Germany** (Mackauer 1960f; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **Poland** (Wiackowski et al. 1997, 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian 2007, 2016b, 2019b; Davidian & Gavrilyuk 2014; Davidian & Ruchin 2023); **Slovakia** (Starý 1989a); **Switzerland** (Mackauer & Starý 1967).

### *Binodoxys gossypiaphis* Chou & Xiang, 1982

*Binodoxys gossypiaphis* Chou & Xiang, 1982:40. Holotype ♀, paratypes ♀♀ ♂♂ (NWAFU). – China.

***Hosts.*** ***Aphis gossypii*** Glover (Chou & Xiang 1982; Wei et al. 2005); ***Aphis medicaginis*** Koch (Chou & Xiang 1982).

***Distribution.*** **China** (Chou & Xiang 1982; Chen & Shi 2001).

### *Binodoxys grafi* Pike & Starý, 1996 [Fig. 48C]

*Binodoxys grafi* Pike & Starý [in Pike et al.], 1996:576. Holotype ♀ (USNM), paratypes ♀♂ (IECA, WSUJ). – USA.

***Hosts.*** ***Aphis cercocarpi*** Gillette & Palmer, ***Aphis fabae*** Scopoli (Pike et al. 2000); ***Aphis gossypii*** Glover (Pike et al. 1996, 2000); ***Aphis salicariae*** Koch, ***Aphis varians*** Patch (Pike et al. 2000).

***Distribution.*** **USA** (Pike et al. 1996, 2000).

***Binodoxys greenideae* (Starý & van Harten, 1983)** [Fig. 48D]

*Trioxys greenideae* Starý & van Harten, 1983:30. Holotype ♀, paratype ♂ (IECA). – Bangladesh.

***Hosts.*** ***Greenidea ficicola*** Takahashi (Raychaudhuri et al. 1990); ***Greenidea psidii*** van der Goot (Starý & van Harten 1983; Das 1994; Starý et al. 2010a).

***Distribution.*** **Bangladesh** (Starý & van Harten 1983; Starý et al. 2010a); **India** (Agarwala 1984; Raychaudhuri et al. 1990; Das 1994; Dey & Akhtar 2007; Das & Chakrabarti 2023a); **Vietnam** (Tomanović et al. 2026b).

***Binodoxys harinhalai* Starý, 2005** [Fig. 48E]

*Binodoxys harinhalai* Starý, 2005:1713. Holotype ♀ (CASC), paratypes ♀♀ (IECA). – Madagascar.

***Host.*** Unknown.

***Distribution.*** **Madagascar** (Starý 2005; Madl & van Achterberg 2014).

***Binodoxys heraclei* (Haliday, 1833)** [Fig. 48F]

*Aphidius heraclei* Haliday, 1833:490. Lectotype ♀ (after Mackauer 1961b), paralectotypes ♀♀ (NHMUK). – United Kingdom.

**Syn.:** *Aphidius obsoletus* Wesmael, 1835; *Trioxys variegator* Szépligeti, 1898.

***Hosts.*** *Aphis fabae* Scopoli (Mackauer 1959b); *Aphis fabae evonymi* Fabricius (Malaquin & Moitie 1914; Mackauer 1959b); *Aphis rumicis* Linnaeus (Rondani 1876; Mackauer 1959b); *Capitophorus hippophaes* (Walker) (Fulmek 1968); ***Cavariella aegopodii*** (Scopoli) (Mackauer 1959b; Starý et al. 1971; Kavallieratos et al. 2004; Michelena et al. 2004; Lumbierres et al. 2005; Tomanović et al. 2006a; Kos et al. 2009a, 2012; Žikić et al. 2012; Pons et al. 2018); ***Cavariella aquatica*** (Gillette & Bragg) (Starý 1979a); ***Cavariella archangelicae*** (Scopoli) (Starý 2006); ***Cavariella aspidaphoides*** Hille Ris Lambers (Rakhshani et al. 2007b; Talebi et al. 2009; Nazari et al. 2012); ***Cavariella pastinacae*** (Linnaeus) (Mackauer & Starý 1967); ***Cavariella theobaldi*** (Gillette & Bragg) (Mackauer 1959b; Mackauer & Starý 1967; Starý et al. 1971; Starý 1976a; Düzgüneş et al. 1982; Michelena Saval & Oltra Moscardo 1987; Kavallieratos et al. 2004; Uysal et al. 2004; Tomanović et al. 2006a; Žikić et al. 2012; Davidian 2016b); ***Cavariella*** spp. (Tremblay 1975b; Starý 1987a; Žikić et al. 2012; Davidian 2016b); *Cryptomyzus galeopsidis* (Kaltenbach) (Mackauer 1959b); ***Hyadaphis foeniculi*** (Passerini) (Kök & Tomanović 2022); *Pterocomma salicis* (Linnaeus) (Mackauer 1959b); ***Semiaphis*** sp. (Kavallieratos et al. 2004; Žikić et al. 2012); *Uroleucon sonchi* (Linnaeus) (Fulmek 1968).

***Distribution.*** **Andorra** (Sanchis et al. 1999); **Austria** (Mackauer 1959b; Mackauer & Starý 1967); **Belgium** (Wesmael 1835; Kirchner 1867; Lameere 1907; Lopes et al. 2016); **Czech Republic** (Starý 1987a, 1989a, 2006); **Finland** (BOLD:ADT3887); **France** (Dours 1873; Gaulle 1908; Mackauer 1959b; Mackauer & Starý 1967; Starý et al. 1971; Derocles et al. 2014a); **Georgia** (Starý 1976a); **Germany** (Szépligeti 1904; Mackauer 1959b; Mackauer & Starý 1967; Boness & Starý 1988; Belokobylskij & Taeger 2001; Belokobylskij et al. 2003); **Hungary** (Szépligeti 1898, 1904; Polgár 1983); **Iran** (Rakhshani et al. 2007b, 2019; Talebi et al. 2009; Fallahzadeh & Saghaei 2010; Nazari et al. 2012); **Ireland** (Mackauer 1959b); **Italy** (Rondani 1876; Graeffe 1908; Mackauer 1959b; Starý 1976a; Bergamesco et al. 1995); **Kazakhstan**, **Kyrgyzstan**, **Lithuania** (Davidian 2016b); **Montenegro** (Kavallieratos et al. 2004, 2013; Žikić et al. 2012; Lazarević et al. 2024); **Nepal** (Todorov 2009b); **Netherlands** (Snellen van Vollenhoven 1873; Marshall 1896; Szépligeti 1904; Mackauer 1959b; Mackauer & Starý 1967); **Poland** (Huflejt 1997; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2016b, 2019b; Davidian & Humala 2023; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a, 2006a; Kavallieratos et al. 2004, 2013; Žikić et al. 2012); **Slovenia** (Kos et al. 2008, 2012); **Spain** (Quilis-Pérez 1931b; Ceballos 1956; Starý 1976a; Michelena Saval & Oltra Moscardo 1987; Tizado & Núñez-Perez 1991; Michelena et al. 2004; Lumbierres et al. 2005; Michelena Saval & Martínez De Murguía 2012; Pons et al. 2018); **Syria** (Abo Kaf & Alrostom 2020); **Tajikistan** (Starý 1979a; Davidian 2016b); **Türkiye** (Düzgüneş et al. 1982; Uysal et al. 2004; Davidian 2016b; Rakhshani et al. 2019; Kök & Tomanović 2022); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Marshall 1872a, 1896, 1899; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1959b, 1961b; Mackauer & Starý 1967; Davidian & Rispin 2016); **Uzbekistan** (Davidian 2016b).

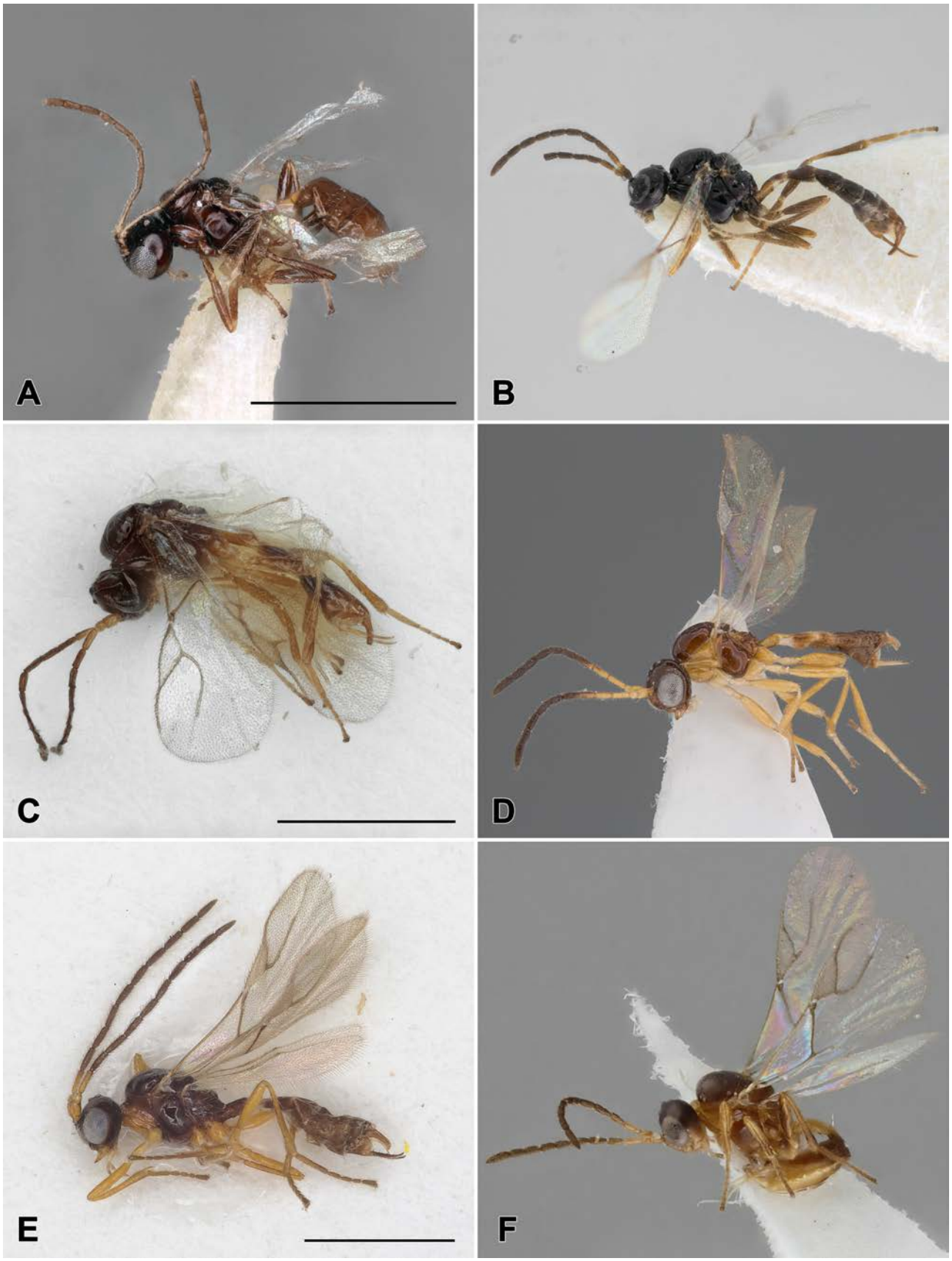



**Figure 48.** Species of the genus *Binodoxys* Mackauer, 1960. **A.** *Binodoxys cupressicola* (Gahan, 1919) – Holotype, USNM; **B.** *Binodoxys genistae* (Mackauer, 1960) – Holotype, CNC; **C.** *Binodoxys grafi* Pike & Starý, 1996 – Holotype, USNM; **D.** *Binodoxys greenideae* (Starý & van Harten, 1983) – Thailand, CUMZ; **E.** *Binodoxys harinhalai* Starý, 2005 – Holotype, CASC; **F.** *Binodoxys heraclei* (Haliday, 1833) – Finland, ZMHF. Scale bar: 1 mm.

### *Binodoxys hirsutus* (Wang & Dong, 1993)

*Trioxys hirsutus* Wang & Dong, 1993:665. Holotype ♀, paratypes ♀ ♂♂ (KIZ). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Dong & Wang 1993; Chen & Shi 2001).

### *Binodoxys hirticaudatus* (Starý, 1983)

*Trioxys hirticaudatus* Starý, 1983d:42. Holotype ♀, paratypes ♂ (IECA). – Mexico.

***Host.*** ***Acyrthosiphon*** sp. (Starý 1983d).

***Distribution.*** **Mexico** (Starý 1983d; Starý & Remaudière 1988).

### *Binodoxys hyperomyzi* (Starý, 1983)

*Trioxys hyperomyzi* Starý, 1983d:44. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Mexico.

***Host.*** ***Hyperomyzus*** sp. (Starý 1983d).

***Distribution.*** **Mexico** (Starý 1983d; Starý & Remaudière 1988).

***Remarks.*** A part of the material was mentioned under *Trioxys* sp. in Starý & Remaudière (1982).

### *Binodoxys impatientini* (Starý & Remaudière, 1983)

*Trioxys impatientini* Starý & Remaudière, 1983:113. Holotype ♀ (IECA). – Mexico.

***Host.*** ***Impatientinum americanum*** Remaudière (Starý & Remaudière 1983).

***Distribution.*** **Mexico** (Starý & Remaudière 1983, 1988).

### *Binodoxys indicus* (Subba Rao & Sharma, 1958) [Fig. 49A]

*Trioxys* (*Trioxys*) *indicus* Subba Rao & Sharma, 1958:199. Holotype ♀, paratype ♂ (NPCI). – India.

***Hosts.*** ***Aphis affinis*** Del Guercio (Bhagat 1984); ***Aphis aurantii*** Boyer de Fonscolombe (Starý & Ghosh 1975, 1983; Agarwala 1983a; Muraleedharan et al. 1988; Radhakrishnan & Muraleedharan 1992, 1997; Devi et al. 1997; Bodlah et al. 2012b); ***Aphis citricidus*** (Kirkaldy) (Starý & Ghosh 1975, 1983); ***Aphis craccivora*** Koch (Starý & Ghosh 1975, 1983; Raychaudhuri et al. 1978; Starý & Bhagat 1978; Sinha & Singh 1979, 1980a, 1980b, 1980c; Ghosh et al. 1981; Tian et al. 1981; Bhagat 1985; Paonam & Singh 1986b; Singh & Tripathi 1987; Singh et al. 1987; Singh & Srivastava 1990; Ahmad & Singh 1992a, 1995b, 1996a, 1996b, 1997; Devi et al. 1997; Wei et al. 2005; Bodlah et al. 2012b); ***Aphis fabae*** Scopoli (Mackauer & Starý 1967; Saha et al. 1982; Agarwala 1983a; Bhagat 1984; Das & Chakrabarti 1990a; Ahmad & Singh 1995b; Starý et al. 1999; Bodlah et al. 2012b; Khan et al. 2012); ***Aphis gossypii*** Glover (Subba Rao & Sharma 1958; Mackauer & Starý 1967; Starý 1967a, 1975a; Starý & Schlinger 1967; Chiu & Liu 1969; Tao & Chiu 1971; Shuja-Uddin 1973; Liu 1975; Starý & Ghosh 1975, 1983; Raychaudhuri et al. 1978; Agarwala et al. 1980; Chou 1981; Tian et al. 1981; Saha et al. 1982; Agarwala 1983a; Zheng et al. 1985; Paonam & Singh 1986b; Singh & Tripathi 1987; Agarwala 1988; Singh & Srivastava 1990; Bhatt & Singh 1991a, 1991c, 1991d; Ahmad & Singh 1992b, 1994a, 1995b, 1996a, 1997; Zhang 1992; Das 1994; Singh et al. 1995; Devi et al. 1997; Singh & Upadhyay 2000; Starý & Choi 2000; Wei et al. 2005; Chen et al. 2009; Rafi et al. 2010; Khan et al. 2012; Xiao et al. 2023); ***Aphis longisetosa*** Basu (Starý & Ghosh 1975, 1983); ***Aphis nasturtii*** Kaltenbach (Starý & Ghosh 1983; Ahmad & Singh 1992a, 1995b, 1996a); ***Aphis nerii*** Boyer de Fonscolombe (Shuja-Uddin 1973; Agarwala 1983a; Singh & Srivastava 1990; Ahmad & Singh 1992b, 1995b, 1996a, 1997); ***Aphis odinae*** (van der Goot) (Starý & Ghosh 1983; Starý & van Harten 1983; Das 1994); ***Aphis pomi*** De Geer (Bhagat 1984); ***Aphis solanella*** Theobald (Starý & Ghosh 1975, 1983; Bhagat 1984; Rafi et al. 2010); ***Aphis spiraecola*** Patch (Starý & Ghosh 1975, 1983; Ahmad & Singh 1995b); ***Brachycaudus helichrysi*** (Kaltenbach) (Starý & Ghosh 1978, 1983; Agarwala 1983a; Das & Chakrabarti 1990a); ***Ceratovacuna silvestrii*** (Takahashi) (Agarwala 1983a; Agarwala et al. 1984); ***Chaitophorus populeti*** (Panzer) (Starý & Choi 2000); ***Eriosoma*** sp. (Bhagat 1984); ***Hysteroneura setariae*** (Thomas) (Starý & Ghosh 1983; Starý & van Harten 1983; Das 1994; Ahmad & Singh 1995b, 2003); ***Lipaphis erysimi*** (Kaltenbach) (Ahmad & Singh 1995b, 1995c); ***Macrosiphoniella pseudoartemisiae*** Shinji (Bhagat 1984); ***Macrosiphoniella yomenae*** (Shinji) (Devi

et al. 1997); ***Macrosiphum euphorbiae*** (Thomas) (Starý & Choi 2000); ***Macrosiphum*** sp. (Bhagat 1984); ***Mindarus japonicus*** Takahashi (Bhagat 1984); ***Myzus obtusirostris*** David, Narayanan & Rajasingh (Starý et al. 1999); ***Myzus persicae*** (Sulzer) (Starý & Ghosh 1975, 1983; Agarwala et al. 1980; Starý & van Harten 1983; Singh & Tripathi 1987; Singh & Srivastava 1990; Ahmad & Singh 1995b; Wijerathna & Edirisinghe 1997); ***Paraphorodon*** sp. (Bhagat 1984); ***Phorodon cannabis*** Passerini (Starý et al. 1999); ***Prociphilus*** sp. (Saha et al. 1982); ***Pseudomegoura magnoliae*** (Essig & Kuwana) (Agarwala et al. 1980); ***Sinomegoura citricola*** (van der Goot) (Starý & Ghosh 1975, 1983); ***Sitobion miscanthi*** (Takahashi) (Starý & Ghosh 1983); ***Sitobion rosaeiformis*** (Das) (Saha et al. 1982).

***Distribution.*** **Bangladesh** (Starý & Ghosh 1983; Starý & van Harten 1983; Das 1994); **China** (Chiu & Liu 1969; Liu 1975; Starý 1967a, 1975a; Starý & Schlinger 1967; Chou 1981; Tian et al. 1981; Yang & Wu 1981; Dong & Wang 1985, 1993; Zheng et al. 1985; Wu et al. 1987; Zhang 1992; Gu et al. 1995; Chen & Shi 2001; Chen et al. 2009; Han et al. 2014; Xiao et al. 2023); **India** (Subba Rao & Sharma 1958; Mackauer & Starý 1967; Rao et al. 1969; Ramaseshiah 1972; Shuja-Uddin 1973; Starý & Ghosh 1975, 1978, 1983; Raychaudhuri et al. 1978, 1990; Starý & Bhagat 1978; Agarwala et al. 1980, 1981a, 1983, 1984; Rishi & Bhagat 1980; Ghosh et al. 1981; Ghosh & Agarwala 1982; Saha et al. 1982; Singh et al. 1982, 1987, 1995; Agarwala 1983a; Singh & Sinha 1983a, 1983b; Bhagat 1984, 1985; Paonam & Singh 1986b; Singh & Tripathi 1987; Agarwala 1988; Das & Chakrabarti 1990a, 2023a; Singh & Srivastava 1990; Ahmad & Singh 1992a, 1992b, 1994a, 1995b, 1996a, 1996b, 1997, 2003; Radhakrishnan & Muraleedharan 1992, 1997; Devi et al. 1997; Singh & Biswas 1997; Dey & Akhtar 2007; Rafi et al. 2010; Rakhshani et al. 2012a; Ahmad & Wani 2014); **Japan** (Davidian 2016b); **Pakistan** (Mackauer & Starý 1967; Starý & Ghosh 1983; Starý et al. 1999; Bodlah et al. 2012b; Khan et al. 2012; Khalil et al. 2019); **Poland** (Tran & Piekarska-Boniecka 2017); **Russia** (Davidian 2016b, 2019b); **Sri Lanka** (Wijerathna & Edirisinghe 1997); **Thailand** (Starý et al. 2010c).

***Remarks.*** Records for the occurrence of *Binodoxys indicus* in South Korea (Chang & Youn, 1983b; Starý & Choi 2000) were due to the misidentification of another species. Similarly, the record of its occurrence in Europe (Poland - Tran & Piekarska-Boniecka 2017) may also be due to a misidentification.

### *Binodoxys jaii* (Bhagat, 1982)

*Trioxys* (*Binodoxys*) *jaii* Bhagat, 1982c:321. Holotype ♀, paratypes ♀♀ (DZKU). – India.

***Hosts.*** ***Aphis craccivora*** Koch, ***Shivaphis celti*** Das (Bhagat 1982c).

***Distribution.*** **India** (Bhagat 1982c; Dey & Akhtar 2007; Ahmad & Wani 2014).

### *Binodoxys joshimathensis* (Das & Chakrabarti, 1989)

*Trioxys* (*Binodoxys*) *joshimathensis* Das & Chakrabarti, 1989a:265. Holotype ♀, paratypes ♀♀ ♂♂ (ZSI). – India.

***Host.*** ***Sitobion miscanthi*** (Takahashi) (Das & Chakrabarti 1989a; Chakrabarti & Chakrabarti 1995).

***Distribution.*** **India** (Das & Chakrabarti 1989a, 2023a; Chakrabarti & Chakrabarti 1995; Dey & Akhtar 2007).

### *Binodoxys kashmirensis* Takada & Rishi, 1980

*Binodoxys kashmirensis* Takada & Rishi, 1980:234. Holotype ♀ (ZSI), paratypes ♀♀♂ (EIHU). – India.

***Host.*** ***Microlophium*** sp. (Takada & Rishi 1980); ***Macrosiphum euphorbiae*** (Thomas) (Khan & Shah 2017).

***Distribution.*** **India** (Takada & Rishi 1980; Agarwala et al. 1981a; Starý & Ghosh 1983; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a).

### *Binodoxys kelloggensis* Pike, Starý & Brewer, 2007 [Fig. 49B]

*Binodoxys kelloggensis* Pike, Starý & Brewer [in Pike et al.], 2007:360. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, IECA, WSUP, MSUC). – USA.

***Host.*** ***Aphis glycines*** Matsumura (Pike et al. 2007; Costamagna et al. 2008; Noma & Brewer 2008).

***Distribution.*** **USA** (Kaiser et al. 2007; Pike et al. 2007; Costamagna et al. 2008; Noma & Brewer 2008; Brewer & Noma 2010).

### *Binodoxys koreanus* Starý, 2009 [Fig. 49C]

*Binodoxys koreanus* Starý [in Desneux et al.], 2009:930. Holotype ♀ (USNM), paratypes ♀♂ (USNM, IECA, NAS). – South Korea.

***Hosts.*** ***Aphis glycines*** Matsumura; Laboratory hosts: *Aphis craccivora* Koch; *Aphis gossypii* Glover, *Aphis monardae* Oestlund, *Aphis nasturtii* Kaltenbach, *Aphis nerii* Boyer de Fonscolombe, *Aphis oestlundi* Gillette, *Aphis rumicis* Linnaeus, *Rhopalosiphum maidis* (Fitch), *Sitobion avenae* (Fabricius) (Desneux et al. 2009).

***Distribution.*** **South Korea** (Desneux et al. 2009; Kim 2026).

### *Binodoxys kumaonensis* (Starý & Raychaudhuri, 1982)

*Trioxys* (*Binodoxys*) *kumaonensis* Starý & Raychaudhuri, 1982:297. Holotype ♀ (CUCE), paratypes ♀ ♂ (CUCE, IECA). – India.

***Host.*** ***Greenidea nipponica*** (Starý & Raychaudhuri 1982; Starý et al. 2010a).

***Distribution.*** **India** (Starý & Raychaudhuri 1982; Starý & Ghosh 1983; Dey & Akhtar 2007; Starý et al. 2010a; Das & Chakrabarti 2023a).

### *Binodoxys letifer* (Haliday, 1833)

*Aphidius (Trioxys) letifer* Haliday, 1833:491. Lectotype ♀ (after van Achterberg 1997a). – United Kingdom.

***Hosts.*** ***Cavariella aegopodii*** (Scopoli) (Mackauer & Starý 1967; Starý et al. 1973); ***Cavariella archangelicae*** (Scopoli) (Mackauer 1960f, 1961b, 1962c; Starý 1965a; Mackauer & Starý 1967); ***Cavariella pastinacae*** (Linnaeus) (Mackauer 1960f, 1961b, 1962c; Mackauer & Starý 1967); ***Cavariella theobaldi*** (Gillette & Bragg) (Starý et al. 1971).

***Distribution.*** **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Starý et al. 1971, 1973); **Germany** (Mackauer 1962c; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Ireland** (O'Connor et al. 1999); **Russia** (Starý 1965a); **Spain** (Mackauer & Starý 1967); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Marshall 1872a; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1960f, 1961b; Mackauer & Starý 1967; Davidian & Rispin 2016).

***Remarks.*** The record of this species from Serbia (Tomanović et al. 1999b) was due to a misidentification of specimens.

### *Binodoxys longipetiolatus* Tomanović & van Achterberg, 2026

*Binodoxys longipetiolatus* Tomanović & van Achterberg [in Tomanović et al.], 2026b:11. Holotype ♀ (RMNH). – Vietnam.

***Host.*** Unknown.

***Distribution.*** **Vietnam** (Tomanović et al. 2026b).

### *Binodoxys longispinus* (Shuja-Uddin, 1983)

*Trioxys* (*Binodoxys*) *longispinus* Shuja-Uddin, 1983:36. Holotype ♀, paratypes ♂♂ (ZMAU). – India.

***Host.*** ***Aphis farinosa*** Gmelin (Shuja-Uddin 1983).

***Distribution.*** **India** (Shuja-Uddin 1983; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a).

### *Binodoxys mackaueri* (Das & Chakrabarti, 1989)

*Trioxys* (*Binodoxys*) *mackaueri* Das & Chakrabarti, 1989a:367. Holotype ♀, paratypes ♀♀ ♂♂ (ZSI). – India.

***Host.*** ***Melanaphis meghalayensis*** Raychaudhuri & Banerjee (Das & Chakrabarti 1989a).

***Distribution.*** **India** (Das & Chakrabarti 1989a, 2023a; Dey & Akhtar 2007).

***Binodoxys madagascariensis* Starý, 2005** [Fig. 49D]

*Binodoxys madagascariensis* Starý, 2005:1713. Holotype ♀ (CASC), paratypes ♀♀ (IECA). – Madagascar.

***Host.*** Unknown.

***Distribution.*** **Madagascar** (Starý 2005; Madl & van Achterberg 2014).

***Binodoxys manipurensis* (Paonam & Singh, 1986)**

*Trioxys manipurensis* Paonam & Singh, 1986c:3. Holotype ♀, paratypes ♀♀ ♂♂ (MANEC). – India.

***Host.*** ***Shivaphis celti*** Das (Paonam & Singh 1986c; Devi et al. 1997).

***Distribution.*** **India** (Paonam & Singh 1986c; Raychaudhuri et al. 1990; Devi et al. 1997; Das & Chakrabarti 2023a).

***Binodoxys micromyzellae* (Starý, 1985)**

*Trioxys micromyzellae* Starý [In Starý et al.], 1985c:139. Holotype ♂, paratypes ♀ ♂ (IECA). – Burundi.

***Host.*** ***Micromyzella anisopappi*** Remaudière (Starý et al. 1985c).

***Distribution.*** **Burundi** (Starý et al. 1985c).

***Binodoxys mongolicus* Takada, 1979**

*Binodoxys mongolicus* Takada, 1979a:201. Holotype ♀ (HNHM). – Mongolia.

***Host.*** Unknown.

***Distribution.*** **Mongolia** (Takada 1979a).

***Binodoxys nearctaphidis* Mackauer, 1965** [Fig. 49E]

*Binodoxys nearctaphidis* Mackauer, 1965b:229. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, CNC). – USA.

***Hosts.*** ***Aphis craccivora*** Koch (Chang & Youn 1983a); ***Nearctaphis bakeri*** (Cowen) (Mackauer 1965b; Mackauer & Starý 1967).

***Distribution.*** **USA** (Mackauer 1965b; Mackauer & Starý 1967).

***Remarks.*** Record of *Binodoxys nearctaphidis* from the Korean Peninsula (Chang & Youn 1983a) was due to a misidentification of specimens.

***Binodoxys nungbaensis* (Paonam & Singh, 1986)**

*Binodoxys nungbaensis* Paonam & Singh, 1986a:5. Holotype ♀ (MANEC). – India.

***Host.*** ***Greenidea*** sp. (Paonam & Singh 1986a; Devi et al. 1997; Starý et al. 2010a).

***Distribution.*** **India** (Paonam & Singh 1986a; Raychaudhuri et al. 1990; Starý et al. 2010a; Das & Chakrabarti 2023a).

***Binodoxys odinae* Paik, 1976** [Fig. 49F]

*Binodoxys odina*e Paik, 1976:8. Holotype ♀, paratypes ♀♀ ♂ (NAS). – South Korea.

***Host.*** ***Aphis odinae*** (van der Goot) (Paik 1976).

***Distribution.*** **South Korea** (Paik 1976; Starý & Choi 2000; Kim 2026).

***Binodoxys oregmae* (Agarwala, Saha & Mahapatra, 1987)**

*Trioxys* (*Binodoxys*) *oregmae* Agarwala, Saha & Mahapatra, 1987:329. Holotype ♀, paratypes ♀♀ ♂ (CUCE). – India.

***Host.*** ***Ceratovacuna perglandulosa*** Basu, Ghosh & Raychaudhuri (Agarwala et al. 1987).

***Distribution.*** **India** (Agarwala et al. 1987; Dey & Akhtar 2007; Das & Chakrabarti 2023a).

***Remarks.*** The type depository was not indicated in the original description.

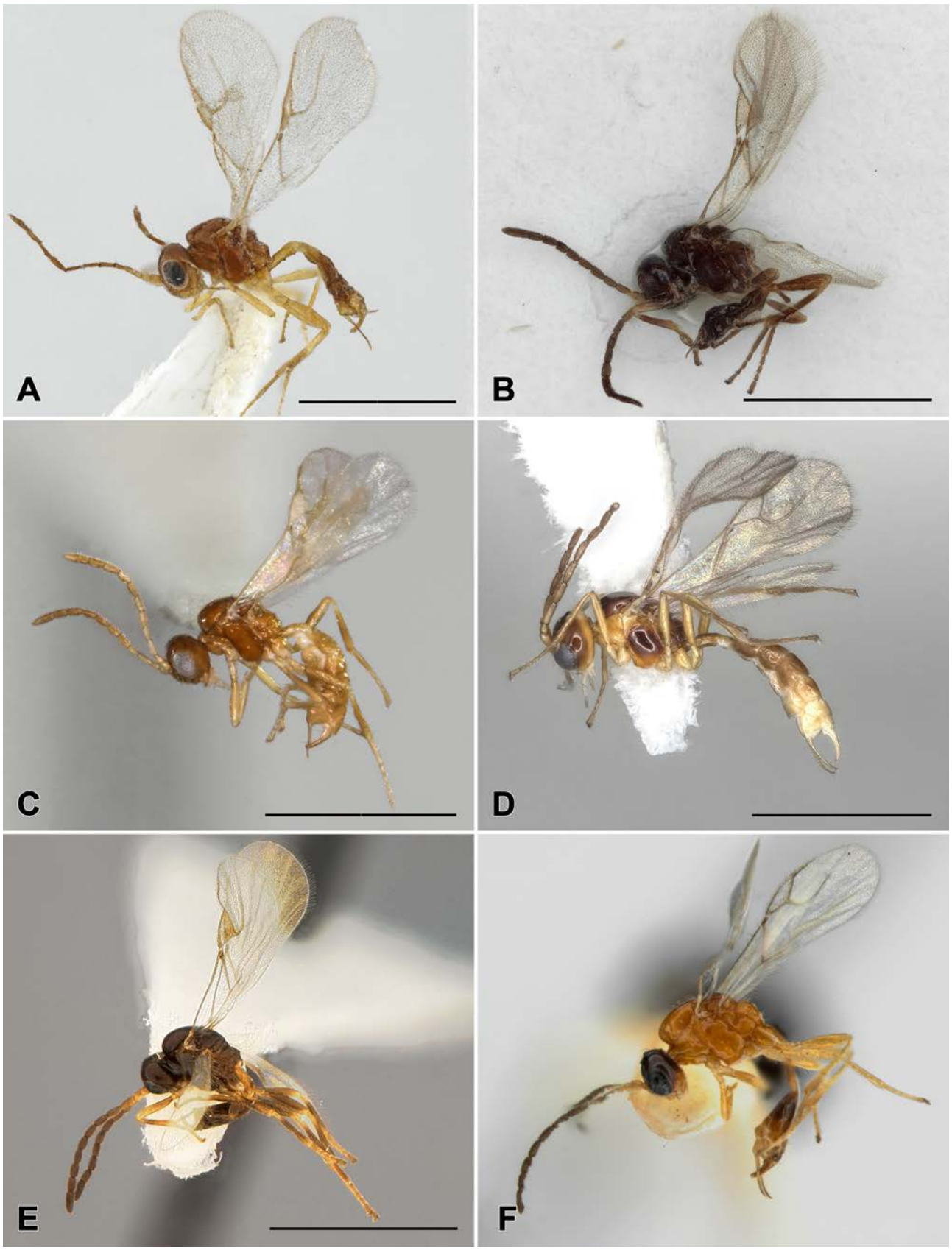



**Figure 49.** Species of the genus *Binodoxys* Mackauer, 1960. **A.** *Binodoxys indicus* (Subba Rao & Sharma, 1958) – India, DPPZ; **B.** *Binodoxys kelloggensis* Pike, Starý & Brewer, 2007 – Holotype, USNM; **C.** *Binodoxys koreanus* Starý, 2009 – Paratype, USNM; **D.** *Binodoxys madagascariensis* Starý, 2005 – Holotype, CASC; **E.** *Binodoxys nearctaphidis* Mackauer, 1965 – Holotype, USNM; **F.** *Binodoxys odinae* Paik, 1976 – South Korea, NAS. Scale bar: 1 mm.

### *Binodoxys orientalis* (Starý & Schlinger, 1967) [Fig. 50A]

*Trioxys* (*Binodoxys*) *orientalis* Starý & Schlinger, 1967:115. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (IECA). – Japan.

***Host.*** ***Sitobion ibarae*** (Matsumura) (Takada 1966a, 1968; Starý 1975a).

***Distribution.*** **Japan** (Takada 1966a, 1968; Starý & Schlinger 1967; Davidian 2016b); **South Korea** (Starý & Schlinger 1967; Starý & Choi 2000; Kim 2026).

***Remarks.*** This species was previously considered a synonym of *Binodoxys centaureae* (Haliday, 1833) by Chen and Shi (2001). However, the holotype (USNM) and paratypes of *B. orientalis* (IECA) are distinctly different from *B. centaureae*. Molecular evidence further confirms *B. orientalis* as a valid species (Kim 2026).

### *Binodoxys palmerae* (Smith, 1944) [Fig. 50B]

*Trioxys palmerae* Smith, 1944:94. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, CSCU, NCSU). – USA.

***Host.*** ***Macrosiphum mentzeliae*** Wilson (Smith 1944; Mackauer & Starý 1967).

***Distribution.*** **USA** (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967).

### *Binodoxys pterastheniae* (Starý & Remaudière, 1977)

*Trioxys pterastheniae* Starý & Remaudière [Starý et al.], 1977b:187. Holotype ♀ (MNHN), paratypes ♀♀ (IECA). – Congo.

***Host.*** ***Pterasthenia shiraensis*** Stroyan (Starý et al. 1977b).

***Distribution.*** Congo (Starý et al. 1977b).

### *Binodoxys rhagii* (Ashmead, 1889) [Fig. 50C]

*Trioxys rhagii* Ashmead, 1889:670. Holotype ♀ (USNM). – USA.

***Hosts.*** ***Uroleucon atripes*** (Gillette & Palmer) (Mackauer & Starý 1967; Marsh 1979); ***Uroleucon russellae*** (Hille Ris Lambers) (Pike et al. 2000).

***Distribution.*** **Canada** (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967); **USA** (Ashmead 1889, 1900a; Szépligeti 1904; Viereck 1910; Gahan 1911a; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Pike et al. 2000).

### *Binodoxys rubicola* (Shuja-Uddin, 1973)

*Trioxys* (*Binodoxys*) *rubicola* Shuja-Uddin, 1973:9. Holotype ♀, paratypes ♀♀ ♂♂ (ZMAU). – India.

***Hosts.*** ***Aphis gossypii*** Glover (Shuja-Uddin 1973; Singh et al. 1995; Devi et al. 1997; Subhrani et al. 2006; Bodlah et al. 2012b); ***Aphis longisetosa*** Basu (Raychaudhuri et al. 1990; Das & Chakrabarti 1991a); ***Aphis odinae*** (van der Goot) (Devi et al. 1997); ***Aphis ruborum*** (Börner) (Shuja-Uddin 1983); ***Aphis spiraecola*** Patch (Devi et al. 1997); ***Brevicoryne brassicae*** (Linnaeus) (Raychaudhuri et al. 1990).

***Distribution.*** **India** (Shuja-Uddin 1973; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Shuja-Uddin 1983; Starý & Ghosh 1983; Raychaudhuri et al. 1990; Das & Chakrabarti 1991a, 2023a; Singh et al. 1995; Devi et al. 1997; Subhrani et al. 2006; Dey & Akhtar 2007; Ahmad & Wani 2014); **Pakistan** (Bodlah et al. 2012b); **Vietnam** (Tomanović et al. 2026b).

### *Binodoxys shillongensis* (Starý, 1978)

*Trioxys* (*Binodoxys*) *shillongensis* Starý [in Starý & Ghosh], 1978:78. Holotype ♀ (ZSI), paratypes ♀ (IECA). – India.

***Hosts.*** *Aphis fabae* Scopoli (Bodlah et al. 2012b); ***Eutrichosiphum pyri*** Chakrabarti, Ghosh & Raychaudhuri (Starý & Ghosh 1983); ***Eutrichosiphum quercifoliae*** Raychaudhuri, Ghosh, Banerjee & Ghosh, ***Eutrichosiphum raychaudhurii*** (Ghosh) (Raychaudhuri et al. 1990); ***Sinomegoura pyri*** Ghosh & Raychaudhuri (Starý & Ghosh 1978; Starý et al. 2010a).

***Distribution.*** **India** (Starý & Ghosh 1978, 1983; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Das & Chakrabarti 2023a); **Pakistan** (Naeem et al. 2005; Bodlah et al. 2012b); **Vietnam** (Tomanović et al. 2026b).

### *Binodoxys silvaticus* (Starý, 1972)

*Trioxys silvaticus* Starý, 1972e:4. Holotype ♀, paratypes ♀♀ ♂ (IECA). – Cuba.

***Host.*** ***Acyrthosiphon*** sp. (Starý 1972e, 1981a; Starý et al. 2014c).

***Distribution.*** **Costa Rica** (Starý et al. 2014c); **Cuba** (Starý 1972e, 1981a; Starý et al. 2014c); **Ecuador** (Starý et al. 2014c).

### *Binodoxys silvicola* (Starý, 1972)

*Trioxys silvicola* Starý, 1972e:319. Holotype ♀, paratypes ♀♀ (IECA). – Cuba.

***Hosts.*** ***Aulacorthum solani*** (Kaltenbach) (Starý 1972e, 1981a; Starý et al. 2014c); ***Sitobion luteum*** (Buckton) (Starý 1972e, 1981a; Starý et al. 2014c).

***Distribution.*** Cuba (Starý 1972e, 1981a; Starý et al. 2014c).

### *Binodoxys similis* (Mackauer, 1959) [Fig. 50D]

*Trioxys similis* Mackauer, 1959g:303. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (CNC, USNM). – France.

***Host.*** ***Myzus persicae*** (Sulzer) (Mackauer 1959g, 1968d; Starý 1974c).

***Distribution.*** **Belgium** (Lazarević et al. 2024); **France** (Mackauer 1959g; Fulmek 1968); **Moldova** (Starý 1974c; Talitzky & Kuslitzky 1990); **Serbia** (Mackauer 1959g; Fulmek 1968).

### *Binodoxys sinensis* Mackauer, 1962 [Fig. 50E]

*Trioxys* (*Binodoxys*) *sinensis* Mackauer, 1962d:40. Holotype ♀(USNM), paratype ♂ (CNC). – Hong Kong.

***Hosts.*** ***Aphis aurantii*** Boyer de Fonscolombe (Raychaudhuri et al. 1990; Chen & Shi 2001); ***Aphis craccivora*** Koch (Mackauer 1962d; Mackauer & Starý 1967; Starý 1975a; Chen & Shi 2001; Wei et al. 2005); ***Aphis gossypii*** Glover (Rao et al. 1969; Haeselbarth 1983); ***Aphis*** spp. (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a); ***Neomyzus circumflexus*** (Buckton), ***Rhopalosiphum padi*** (Linnaeus) (Raychaudhuri et al. 1990).

***Distribution.*** **China** (Mackauer 1962d; Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a; Dong & Wang 1985; Chen & Shi 2001); **India** (Rao et al. 1969; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Das & Chakrabarti 2023a); **Pakistan** (Mackauer 1962d; Starý & Schlinger 1967).

### *Binodoxys solitarius* (Starý, 1983)

*Trioxys solitarius* Starý, 1983d:46. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Mexico.

***Hosts.*** ***Aphis aurantii*** Boyer de Fonscolombe (Zamora-Mejías et al. 2010; Starý et al. 2014c); ***Aphis gossypii*** Glover (Zamora-Mejías et al. 2010; Starý et al. 2014c); ***Aphis solitaria*** (Baker) (Starý 1983d); ***Brachycaudus helichrysi*** (Kaltenbach) (Zamora-Mejías et al. 2010; Starý et al. 2014c); ***Lipaphis erysimi*** (Kaltenbach) (Zamora-Mejías et al. 2010); ***Myzus ornatus*** Laing (Zamora-Mejías et al. 2010; Starý et al. 2014c); ***Myzus persicae*** (Sulzer) (Zamora-Mejías et al. 2010).

***Distribution.*** **Costa Rica** (Starý et al. 2014c; Zamora-Mejías et al. 2010); **Ecuador** (Starý et al. 2014c); **Mexico** (Starý 1983d; Starý & Remaudière 1988; Coronado-Blanco 2011).

### *Binodoxys spiraea* (Dong & Wang, 1993)

*Trioxys spiraea* Dong & Wang, 1993:663. Holotype ♀, paratypes ♀♀ ♂♂ (KIZ). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Dong & Wang 1993; Chen & Shi 2001).

### *Binodoxys staryi* Davidian, 2007

*Binodoxys staryi* Davidian, 2007:251. Holotype ♀, paratypes ♀♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2007, 2016b, 2019b).

### *Binodoxys struma* (Gahan, 1926) [Fig. 50F]

*Trioxys struma* Gahan, 1926:5. Holotype ♀, paratypes ♀ ♂ (USNM). – Japan.

***Hosts.*** ***Aphis aurantii*** Boyer de Fonscolombe (Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Aphis glycines*** Matsumura (Chen & Shi 2001; Wei et al. 2005); ***Greenidea ficicola*** Takahashi (Gahan 1926; Sonan 1944; Chen & Shi 2001); ***Macrosiphoniella pseudoartemisiae*** Shinji (Raychaudhuri et al. 1990); ***Myzus persicae*** (Sulzer) (Chen & Shi 2001); ***Sinomegoura citricola*** (van der Goot) (Gahan 1926; Sonan 1944; Mackauer & Starý 1967; Starý & Schlinger 1967; Chiu & Liu 1969; Tao & Chiu 1971; Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009).

***Distribution.*** **China** (Gahan 1926; Sonan 1944; Mackauer & Starý 1967; Starý & Schlinger 1967; Chiu & Liu 1969; Liu 1975; Starý 1975a; Chou 1981; Dong & Wang 1985; Chen & Shi 2001; Chen et al. 2009); **India** (Raychaudhuri et al. 1990; Das & Chakrabarti 2023a); **Russia** (Davidian 2004).

### *Binodoxys takecallis* (Das & Chakrabarti, 1989)

*Trioxys* (*Binodoxys*) *takecallis* Das & Chakrabarti, 1989a:368. Holotype ♀, paratypes ♀♀ (ZSI). – India.

***Host.*** ***Takecallis affinis*** Ghosh (Das & Chakrabarti 1989a).

***Distribution.*** **India** (Das & Chakrabarti 1989a, 2023a).

### *Binodoxys tamaliae* (Starý & Remaudière, 1983)

*Trioxys tamaliae* Starý & Remaudière, 1983:115. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Mexico.

***Host.*** ***Tamalia*** sp. (Starý & Remaudière 1983).

***Distribution.*** **Mexico** (Starý & Remaudière 1983, 1988).

### *Binodoxys tobiasi* (Davidian, 2004)

*Trioxys* (*Binodoxys*) *tobiasi* Davidian, 2004:163. Holotype ♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2004, 2007, 2016b, 2019b).

### *Binodoxys tomentosae* (Das & Chakrabarti, 1990)

*Trioxys* (*Binodoxys*) *tomentosae* Das & Chakrabarti, 1990a:408. Holotype ♀, paratypes ♀♀ ♂♂ (ZSI). – India.

***Host.*** ***Myzus sorbi*** Bhattacharya & Chakrabarti (Das & Chakrabarti 1990a).

***Distribution.*** **India** (Das & Chakrabarti 1990a, 2023a; Dey & Akhtar 2007).

### *Binodoxys toxopterae* (Takada, 1966)

*Trioxys toxopterae* Takada, 1966a:33. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Host.*** ***Aphis aurantii*** Boyer de Fonscolombe (Takada 1966a, 1968; Tao & Chiu 1971; Liu 1975; Starý 1975a; Chou 1981; Chen et al. 2009).

***Distribution.*** **China** (Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); **Japan** (Takada 1966a, 1968; Starý 1975a); **Russia** (Davidian 2004, 2007, 2016b, 2019b); **Tajikistan** (Davidian 2004, 2016b).

### *Binodoxys trichosiphae* (Samanta & Raychaudhuri, 1990)

*Trioxys trichosiphae* Samanta & Raychaudhuri [in Raychaudhuri et al.], 1990:86. Holotype ♀, paratypes ♀♀ (CUCE). – India.

***Host.*** ***Greenidea psidii*** van der Goot (Raychaudhuri et al. 1990; Starý et al. 2010a).

***Distribution.*** **India** (Raychaudhuri et al. 1990; Starý et al. 2010a; Das & Chakrabarti 2023a).

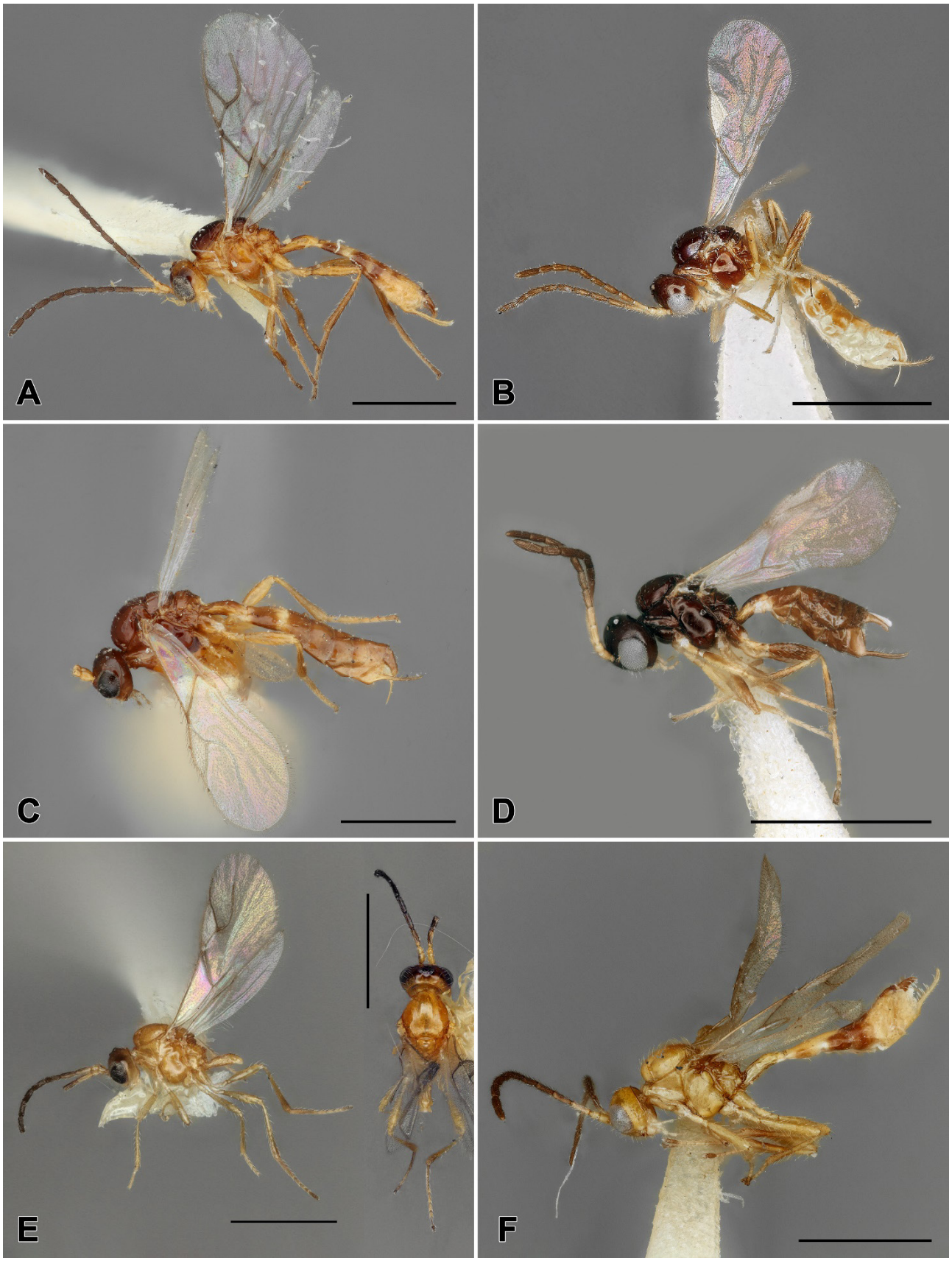



**Figure 50.** Species of the genus *Binodoxys* Mackauer, 1960. **A.** *Binodoxys orientalis* (Starý & Schlinger, 1967) – Holotype, USNM; **B.** *Binodoxys palmerae* (Smith, 1944) – Holotype, USNM; **C.** *Binodoxys rhagii* (Ashmead, 1889) – Holotype, USNM; **D.** *Binodoxys similis* Mackauer, 1959 – Holotype, USNM; **E.** *Binodoxys sinensis* Mackauer, 1962 – Holotype, USNM; **F.** *Binodoxys struma* (Gahan, 1926) - Holotype, USNM. Scale bar: 1 mm.

### *Binodoxys tucumanus* (Starý, 1987)

*Trioxys tucumanus* Starý [in Starý & Delfino], 1987:43. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Argentina.

***Host.*** ***Myzus persicae*** (Sulzer) (Starý & Delfino 1987).

***Distribution.*** **Argentina** (Starý & Delfino 1987).

***Remarks.*** According to the original description (Starý & Delfino 1987), some paratypes (♂♂) are deposited in the collection of M.A. Delfino (CIRPON).

### *Binodoxys yunnanicus* Davidian, 2024

*Binodoxys yunnanicus* Davidian [Davidian & Belokobylskij], 2024:396. Holotype ♀ (ZISP). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Davidian & Belokobylskij 2024).

## Genus *Bioxys* Starý & Schlinger, 1967 [1 species]

*Bioxys* Starý & Schlinger, 1967:32. Type species: *Bioxys japonicus* Starý & Schlinger, 1967.

### *Bioxys japonicus* Starý & Schlinger, 1967 [Figs 51A–B]

*Bioxys japonicus* Starý & Schlinger, 1967:32. Holotype ♀ (USNM), paratypes ♂♂ (IECA). – Japan.

**Syn.:** *Trioxys machilaphidis* Takada, 1968; *Trioxys staryi* Mackauer, 1968.

***Host.*** ***Machilaphis machili*** (Takahashi) (Chen et al. 2009; Chou 1999; Kim et al. 2025c).

***Distribution.*** **China** (Chou 1999; Chen et al. 2009); **Japan** (Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968; Starý 1975a); **South Korea** (Starý & Choi 2000; Kim et al. 2025c; Kim 2026); **Thailand** (Starý et al. 2010c).

## Genus *Cristicaudus* Starý & Remaudière, 1982 [5 species]

*Cristicaudus* Starý & Remaudière, 1982:110. Type species: *Cristicaudus bicolor* Starý & Remaudière, 1982.

### *Cristicaudus bicolor* Starý & Remaudière, 1982

*Cristicaudus bicolor* Starý & Remaudière, 1982:110. Holotype ♀, paratypes ♀♀ (IECA). – Mexico.

***Hosts.*** ***Macrosiphum mesosphaeri*** Tissot (Starý & Remaudière 1988); ***Sitobion*** sp. (Starý & Remaudière 1982).

***Distribution.*** **Mexico** (Starý & Remaudière 1982, 1988).

### *Cristicaudus garhwalensis* Das & Chakrabarti, 1991

*Cristicaudus garhwalensis* Das & Chakrabarti, 1991b:308. Holotype ♀, paratypes ♀ ♂ (ZSI). – India.

***Host.*** ***Capitophorus formosartemisiae*** (Takahashi) (Das & Chakrabarti 1991b).

***Distribution.*** **India** (Das & Chakrabarti 1991b; Dey & Akhtar 2007).

### *Cristicaudus indicus* Das & Chakrabarti, 1991

*Cristicaudus indicus* Das & Chakrabarti, 1991b:305. Holotype ♀, paratypes ♀ ♂ (ZSI). – India.

***Host.*** ***Aphis*** sp. (Das & Chakrabarti 1991b).

***Distribution.*** **India** (Das & Chakrabarti 1991b, 2023a; Dey & Akhtar 2007).

### *Cristicaudus nepalensis* (Takada, 1970)

*Binodoxys nepalensis* Takada, 1970:42. Holotype ♀, paratypes ♀ ♂♂ (EIHU). – Nepal.

***Hosts.*** ***Aphis spiraecola*** Patch (Starý & Ghosh 1979, 1983; Starý et al. 2010a); ***Aphis*** sp. (Takada 1970); ***Greenidea psidii*** van der Goot (Starý et al. 2010a).

***Distribution.*** **India** (Starý & Ghosh 1979, 1983; Agarwala et al. 1981a; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Starý et al. 2010a; Das & Chakrabarti 2023a); **Nepal** (Takada 1970; Starý & Ghosh 1979, 1983).

### *Cristicaudus ninhbinhensis* Tomanović & van Achterberg, 2026 [Fig. 51C]

*Cristicaudus ninhbinhensis* Tomanović & van Achterberg [in Tomanović et al.], 2026b:14. Holotype ♀ (RMNH). – Vietnam.

***Host.*** Unknown.

***Distribution.*** **Vietnam** (Tomanović et al. 2026b).

### Genus *Dactylonotum* Chou & Xiang, 1981 [1 species]

*Dactylonotum* Chou & Xiang, 1981:171. Type species: *Dactylonotum shaanxiense* Chou & Xiang, 1981.

### *Dactylonotum shaanxiense* Chou & Xiang, 1981 [Fig. 51D]

*Dactylonotum shaanxiense* Chou & Xiang, 1981:171. Holotype ♀ (NWAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chou & Xiang 1981; Chen & Shi 2001).

### Genus *Fissicaudus* Starý & Schlinger, 1967 [5 species]

*Fissicaudus* Starý & Schlinger, 1967:112. Type species: *Trioxys (Binodoxys) confucius* Mackauer, 1962.

### *Fissicaudus androensis* (Paonam & Singh, 1988)

*Trioxys* (*Fissicaudus*) *androensis* Paonam & Singh, 1988:4. Holotype ♀ (MANEC). – India.

***Host. Greenidea*** sp. (Paonam & Singh 1988; Devi et al. 1997; Starý et al. 2010a).

***Distribution.*** **India** (Paonam & Singh 1988; Devi et al. 1997).

### *Fissicaudus areolatus* (Samanta, Tamili & Raychaudhuri, 1985)

*Trioxys* (*Fissicaudus*) *areolatus* Samanta, Tamili & Raychaudhuri, 1985:119. Holotype ♀, paratypes ♀♀ (CUCE). – India.

***Host. Greenidea ficicola*** Takahashi (Samanta et al. 1985; Starý et al. 2010a).

***Distribution.*** **India** (Samanta et al. 1985; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Das & Chakrabarti 2023a).

### *Fissicaudus confucius* (Mackauer, 1962) [Fig. 51E]

*Trioxys confucius* Mackauer, 1962d:37. Holotype ♀ (USNM). – Hong Kong.

***Hosts. Greenidea ficicola*** Takahashi (Mackauer & Starý 1967; Starý & Schlinger 1967; Liu 1975; Starý 1975a; Chou 1981; Finlayson 1990; Starý et al. 2010a); ***Greenidea psidii*** van der Goot (Mackauer & Starý 1967; Liu 1975; Chou 1981).

***Distribution.*** **China** (Mackauer 1962d; Mackauer & Starý 1967; Starý & Schlinger 1967; Liu 1975; Starý 1975a; Chou 1981; Finlayson 1990; Chen & Shi 2001); **Japan** (Takada 1966a, 1966c, 1968); **Thailand** (Starý et al. 2008).

### *Fissicaudus hanzhongensis* Chou & Xiang, 1982

*Fissicaudus hanzhongensis* Chou & Xiang, 1982:41. Holotype ♀ (NWAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chou & Xiang 1982; Chen & Shi 2001).

### *Fissicaudus thailandicus* Starý & Rakhshani, 2010

*Fissicaudus thailandicus* Starý & Rakhshani [in Starý et al.], 2010a:312. Holotype ♀ (QSBG), paratypes ♀♀ (QSBG, IECA). – Thailand.

***Host.*** Unknown.

***Distribution.*** **Thailand** (Starý et al. 2010a).

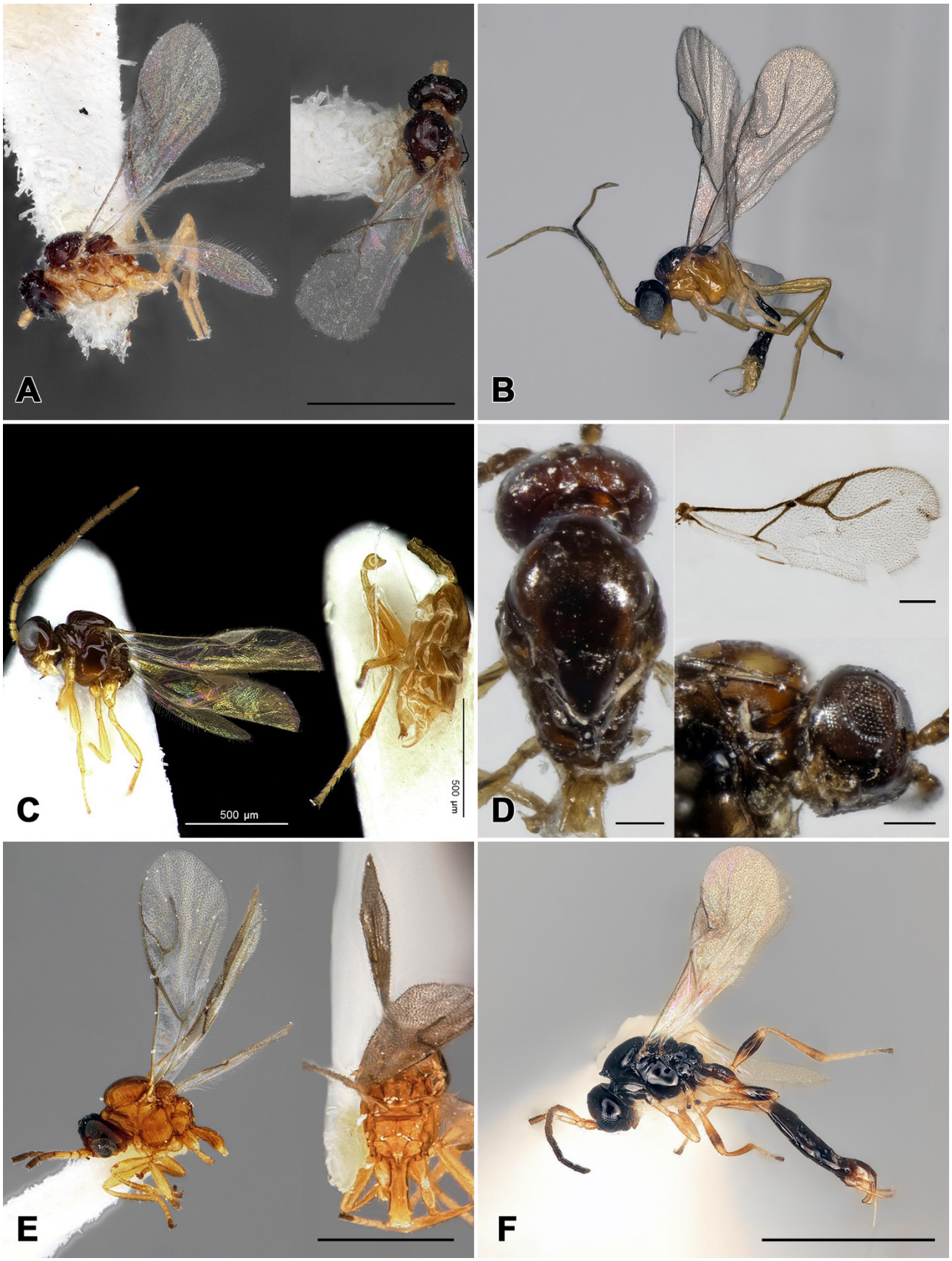



**Figure 51.** Species of the rare genera of the subtribe Trioxina Mackauer. **A–B.** *Bioxys japonicus* Starý & Schlinger, 1967: **A.** Holotype, USNM; **B.** non-type specimen, South Korea, KSNU; **C.** *Cristicaudus ninhbinhensis* Tomanović & van Achterberg, 2026 – Holotype, RMNH; **D.** *Dactylonotum shaanxiense* Chou & Xiang, 1981 – Holotype, NWAFU; **E.** *Fissicaudus confucius* (Mackauer, 1962) – Holotype, USNM; **F.** *Ishtarella thailandica* Martens, 2021 – Holotype, CUMZ (Martens et al. 2021). Scale bar: 1 mm.

### Genus *Ishtarella* Martens, 2021 [1 species]

*Ishtarella* Martens, 2021:2. Type species: *Ishtarella thailandica* Martens, 2021.

#### *Ishtarella thailandica* Martens, 2021 [Fig. 51F]

*Ishtarella thailandica* Martens [in Martens et al.], 2021:2. Holotype ♀ (CUMZ). – Thailand.

***Host.*** Unknown.

***Distribution.*** **Thailand** (Martens et al. 2021).

### Genus *Lipolexis* Förster, 1863 [16 species]

*Lipolexis* Förster, 1863:249. Type species: *Lipolexis gracilis* Förster, 1863.

**Syn.:** *Gynocryptus* Quilis, 1931:28. Type species: *Gynocryptus pieltaini* Quilis-Pérez, 1931.

#### *Lipolexis bengalensis* Tomanović & Kocić, 2020

*Lipolexis bengalensis* Tomanović & Kocić [in Kocić et al.], 2020:8. Holotype ♀ (CNC) and paratype ♀♀ (FBUB). – Bangladesh.

***Host.*** Unknown.

***Distribution.*** Bangladesh (Kocić et al. 2020).

#### *Lipolexis depressiceps* Kim & Kim, 2025 [Fig. 52A]

*Lipolexis depressiceps* Kim & Kim [in Kim et al.], 2025a:330. Holotype ♀ (NIBR). – South Korea.

***Host.*** Unknown.

***Distribution.*** **South Korea** (Kim et al. 2025a; Kim 2026).

#### *Lipolexis gracilis* Förster, 1863 [Fig. 52B]

*Lipolexis gracilis* Förster, 1863:249. Syntype ♀ (ZMHB). – Germany.

**Syn.:** *Gynocryptus pieltaini* Quilis, 1930; *Aphidius palpator* Gautier & Bonnamour, 1931; *Lipolexis chinensis* Chen, 1980.

***Hosts.*** ***Acaudinum longisetosum*** Holman (Starý 1974c); ***Acyrthosiphon loti*** (Theobald) (Starý et al. 1977a); ***Acyrthosiphon rubi*** Narzikulov (Bhagat 1984); ***Anoecia corni*** (Fabricius) (Starý 1966d, 1974c, 1976a, 1981b; Starý et al. 1971); ***Anoecia*** spp. (Starý 1963b, 1964d, 1966c, 1967b; Mackauer & Starý 1967; Starý et al. 1973, 1995b, 2006); ***Aphis affinis*** Del Guercio (Starý et al. 1971; Starý 1974c; Bhagat 1984); ***Aphis arbuti*** Ferrari (Starý et al. 1975; Starý 1976a); ***Aphis aurantii*** Boyer de Fonscolombe (Starý 1964c, 1966b, 1966d, 1967a, 1968b, 1974c, 1975a, 1976a; Mackauer & Starý 1967; Starý & Schlinger 1967; Tremblay 1967a, 1980, 1984; Chiu & Liu 1969; Roberti 1969; Tao & Chiu 1971; Liu 1975; Chou 1981; Michelena Saval & Sanchis Segovia 1997b; Chen & Shi 2001; Chen et al. 2009); ***Aphis bupleuri*** (Börner) (Starý 1963b, 1966c, 1967b, 1974c, 2006; Mackauer & Starý 1967); ***Aphis cisticola*** Leclant & Remaudière (Starý et al. 1971; Starý 1975a, 1976a); ***Aphis citricidus*** (Kirkaldy) (Chou 1981; Chen & Shi 2001; Hermoso de Mendoza et al. 2008); ***Aphis confusa*** Walker (Starý et al. 1971; Starý 1974c, 1976a); ***Aphis craccae*** Linnaeus (Starý 1963b, 1964d, 1967b; Mackauer & Starý 1967; Kaliuzhna 2018); ***Aphis craccivora*** Koch (Starý 1966d, 1967a, 1967b, 1974c, 1975a, 1976a, 2006; Mackauer & Starý 1967; Hozák 1970; Tao & Chiu 1971; Liu 1975; Chou 1981; Chang & Youn 1983a; Bhagat 1984; Zheng et al. 1985; González & Michelena 1987; Tomanović et al. 1999b; Chen & Shi 2001; Kavallieratos et al. 2004, 2016; Chen et al. 2009; Kos et al. 2012; Žikić et al. 2012; Kaliuzhna 2018; Pons et al. 2018; Kök et al. 2020; Mustafayeva 2020); ***Aphis crepidis*** (Börner) (Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis epilobii*** Kaltenbach (Starý 2006); ***Aphis eryngiiglomerata*** Bozhko (Gavrilyuk & Novgorodova 2007); ***Aphis euphorbiae*** Kaltenbach (Starý 1963b, 1964d, 1966c, 1967b, 1974c; Mackauer & Starý 1967); ***Aphis fabae*** Scopoli (Starý 1963b, 1964d, 1966c, 1966d, 1967b, 1972f, 1974c, 1976a, 1977, 1995b, 2006; Roberti 1969; Mackauer & Starý 1967; Starý et al. 1971, 1975, 2014a; Abou-Fakhr 1982; Tremblay et al. 1985; González & Michelena 1987; Abou-

Fakhr & Kawar 1998; Tomanović et al. 1999b; Chen & Shi 2001; Kavallieratos et al. 2004, 2016; Žikić et al. 2012; Ferrer-Suay et al. 2017; Kaliuzhna 2018; Pons et al. 2018; Mustafayeva 2020); ***Aphis fabae cirsiiacanthoidis*** Scopoli (Starý 1986a, 1987b, 1991; Völkl 1989; Kos et al. 2009a, 2012; Žikić et al. 2012); ***Aphis farinosa*** Gmelin (Starý 2006; Derocles et al. 2012); ***Aphis frangulae*** Kaltenbach (Starý et al. 1977a; Pons et al. 2018); ***Aphis glycines*** Matsumura (Tao & Chiu 1971; Liu 1975; Starý 1975a; Chou 1981; Chang et al. 1994; Chen et al. 2009; Takada et al. 2011); ***Aphis gossypii*** Glover (Starý & Schlinger 1967; Starý 1967a, 1974c, 1975a; Chiu & Liu 1969; Tao & Chiu 1971; Liu 1975; Shi 1980; Tremblay et al. 1980, 1985; Chou 1981; Bhagat 1984, 1986b; Zheng et al. 1985; Zhang 1992; Starý et al. 1999; Tomanović et al. 1999b; Chen & Shi 2001; Takada 2002; Kavallieratos et al. 2004; Chen et al. 2009; Žikić et al. 2012; Alaserhat & Canbay 2017; Kök et al. 2017; Pons et al. 2018); ***Aphis grosmannae*** (Börner) (Starý 1967b); ***Aphis grossulariae*** Kaltenbach (Starý 2006); ***Aphis hederae*** Kaltenbach (Starý 1966d, 1974c, 1976a; Kos et al. 2012); ***Aphis helianthemi*** Ferrari (Starý et al. 1971; Starý 1973a, 1974c); ***Aphis hypochoeridis*** (Börner) (Starý 1974c); ***Aphis intybi*** Koch (Starý 1959e, 1963b, 1964d, 1966c, 1967b, 1974c, 1995b, 2006; Mackauer & Starý 1967; Kavallieratos et al. 2004; Kos et al. 2012; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Aphis jacobaeae*** Schrank (Starý 2006; Ferrer-Suay et al. 2017); ***Aphis lichtensteini*** Leclant & Remaudière (Starý et al. 1977a); ***Aphis lupoi*** Barbagallo & Stroyan (Pons et al. 2018); ***Aphis medicaginis*** Koch (Starý 1964d); ***Aphis nasturtii*** Kaltenbach (Starý et al. 1971; Starý 1974c); ***Aphis nerii*** Boyer de Fonscolombe (Chou 1981; Bhagat 1986a; Chen & Shi 2001; Chen et al. 2009; Pons et al. 2018); ***Aphis newtoni*** Theobald (Starý 1963b, 1967b, 1974c, 1987a, 2006; Mackauer & Starý 1967; Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis odinae*** (van der Goot) (Togashi 1987); ***Aphis origani*** Passerini (Starý 1963b, 1964d, 1967b, 1974c, 2006; Mackauer & Starý 1967); ***Aphis plantaginis*** Goeze (Starý 1963b, 1966c, 1967b, 1974c, 2006; Mackauer & Starý 1967; Starý et al. 1971); ***Aphis polygonata*** (Nevsky) (Starý 1963b, 1966c, 1967b, 1974c; Mackauer & Starý 1967; Kos et al. 2012; Ferrer-Suay et al. 2017); ***Aphis pomi*** De Geer (Starý 1966b, 1966d, 1974c, 1976a; Aslan & Karaca 2005; Westrum et al. 2010; Kos et al. 2012; Kavallieratos et al. 2016; Kök et al. 2020); ***Aphis praeterita*** Walker (Starý et al. 1971; Starý 1974c); ***Aphis punicae*** Passerini (González & Michelena 1987; Michelena et al. 1994, 2004; Kavallieratos et al. 2016); ***Aphis ruborum*** (Börner) (Starý 1966b, 1966d, 1974c, 1976a; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Sanchis et al. 2000; Havelka et al. 2012; Pons et al. 2018); ***Aphis rumicis*** Linnaeus (Kos et al. 2012); ***Aphis salviae*** Walker (Starý 1963b, 1964d, 1966c, 1967b, 1974c, 2006; Mackauer & Starý 1967; Alikhani et al. 2013; Barahoei et al. 2013; Ferrer-Suay et al. 2017); ***Aphis sedi*** Kaltenbach (Starý 1966b, 1966d, 1974c, 1976a; Starý et al. 1971; Costa & Starý 1988); ***Aphis serpylli* Koch** (Pons et al. 2018); ***Aphis solanella*** Theobald (Starý 1976a; González & Michelena 1987; Pons et al. 2018); ***Aphis spiraecola*** Patch (Starý & Schlinger 1967; Starý 1967a, 1974c, 1975a; Chiu & Liu 1969; Tao & Chiu 1971; Liu 1975; Yamauchi & Takada 1978; Chou 1981; Suay Cano et al. 1992; Chen & Shi 2001; Chen et al. 2009; Pons et al. 2018); ***Aphis spiraephaga*** Müller (Starý 1995a, 2006); ***Aphis taraxacicola*** (Börner) (Starý 1961d, 1963b, 1964d, 1966c, 1967b, 1974c, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971); ***Aphis teucrii*** (Börner) (Starý et al. 1971; Starý 1974c); ***Aphis tirucalis*** Hille Ris Lambers (Starý et al. 1977a); ***Aphis ulmariae*** Schrank (Starý et al. 1971; Starý 1974c); ***Aphis umbrella*** (Börner) (Abou-Fakhr 1982; Tremblay et al. 1985; González & Michelena 1987; Costa & Starý 1988; Abou-Fakhr & Kawar 1998; Cecilio & Ilharco 2002); ***Aphis urticata*** Gmelin (Starý 1983f, 1995b, 2006; Kavallieratos et al. 2001, 2004; Kos et al. 2012; Žikić et al. 2012); ***Aphis vallei*** Hille Ris Lambers & Stroyan (Starý 1966d, 1974c, 1976a; Starý et al. 1971); ***Aphis verbasci*** Schrank (Starý et al. 1971; Starý 1974c); ***Aphis*** spp. (Starý 1966d, 1973a, 1987a, 2006; Starý et al. 1971; Kos et al. 2009a, 2012; Mifsud & Starý 2012; Žikić et al. 2012); ***Brachycaudus amygdalinus*** (Schouteden) (Starý 1974c, 1976a; Rakhshani et al. 2012b; Mustafayeva 2020); ***Brachycaudus cardui*** (Linnaeus) (Starý 1959e, 1963b, 1964d, 1966a, 1966c, 1967b, 1969a, 1974c, 1976a, 1986a, 2006; Mackauer & Starý 1967; Kaliuzhna 2018; Mustafayeva 2020); ***Brachycaudus helichrysi*** (Kaltenbach) (Starý 1963b, 1964d, 1966a, 1966c, 1967b, 1974c, 2006; Mackauer & Starý 1967); ***Brachycaudus mordvilkoi*** Hille Ris Lambers (Starý 1961d, 1963b, 1964d, 1967b, 1969a, 1974c, 2006; Mackauer & Starý 1967); ***Brachycaudus persicae*** Passerini (Starý et al. 1971; Starý 1974c, 1976a); ***Brachycaudus prunicola*** (Kaltenbach) (Starý et al. 1973, 1975; Starý 1976a); ***Brachycaudus*** spp. (Starý

1964d, 1966c, 1969a, 1987a, 2006); ***Capitophorus pakansus*** Hottes & Frison (Starý et al. 1977a); ***Cryptosiphum*** sp. (Ferrer-Suay et al. 2017); ***Dysaphis apiifolia*** (Theobald) (Kavallieratos et al. 2004); ***Dysaphis plantaginea*** (Passerini) (Bonnemaison 1959; Mackauer & Starý 1967); ***Dysaphis pyri*** (Boyer de Fonscolombe) (Kavallieratos et al. 2001, 2004, 2008b); ***Eriosoma lanigerum*** (Hausmann) (Gautier & Bonnamour 1931; Mackauer & Starý 1967); ***Hyadaphis coriandri*** (Das) (Rafi et al. 2010); ***Hyalopterus pruni*** (Geoffroy) (Kos et al. 2012); ***Liosomaphis himalayensis*** Basu (Takada & Rishi 1980); ***Lipaphis erysimi*** (Kaltenbach) (Sharma & Subba Rao 1964; Mackauer & Starý 1967; Rafi et al. 2010); ***Macchiatiella rhamni*** (Boyer de Fonscolombe) (Starý 1974c); ***Macchiatiella*** sp. (Starý 1966d); ***Melanaphis sacchari*** (Zehntner) (Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Metopeurum fuscoviride*** Stroyan (Kavallieratos et al. 2004; Žikić et al. 2012); ***Myzocallis coryli*** (Goeze) (Torras 1996); ***Myzus cerasi*** (Fabricius) (Starý 1963b, 1964d, 1965a, 1966a, 1966c, 1967b, 1974c, 1976a, 1995b; Mackauer & Starý 1967; Starý et al. 1971; Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997; Tomanović et al. 1998b; Kavallieratos et al. 2001, 2004, 2008b; Žikić et al. 2012; Derocles et al. 2014a; Ferrer-Suay et al. 2017; Mustafayeva 2020); ***Myzus lythri*** (Schrank) (Starý et al. 1971; Starý 1974c); ***Myzus persicae*** (Sulzer) (Starý 1966d, 1967a, 1974c, 1975a; Mackauer & Starý 1967; Mackauer 1968d; Chiu & Liu 1969; Starý et al. 1971; Tao & Chiu 1971; Liu 1975; Chou 1981; Takada & Takenaka 1982; Zheng et al. 1985; Chen & Shi 2001; Takada 2002; Chen et al. 2009; Kos et al. 2012; Alaserhat & Canbay 2017); ***Myzus varians*** Davidson (Arzone & Alma 1986); ***Rhopalosiphum maidis*** (Fitch) (Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Rhopalosiphum padi*** (Linnaeus) (Takada 1968; Starý 1974c, 1975a, 1979a, 1981b; Starý & Juchnevič 1978; Tian et al. 1981; Wei et al. 2005); ***Roepkea marchali*** (Börner) (Starý 1974c); ***Schizaphis scirpi*** (Passerini) (Tomanović et al. 2012; Žikić et al. 2012); ***Semiaphis heraclei*** (Takahashi) (Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Sitobion rosaeiformis*** (Das) (Bhagat 1986b); ***Therioaphis dorycnii*** (Pintera) (Starý 1974c); ***Therioaphis trifolii*** (Monell) (Starý & Ghosh 1983); ***Therioaphis*** sp. (Ferrer-Suay et al. 2017); ***Tricaudatus polygoni*** (Narzikulov) (Bhagat 1986b); *Uroleucon* sp. (Ferrer-Suay et al. 2017).

***Distribution.*** **Algeria** (Starý 1976a; Laamari et al. 2012; Aroun et al. 2016; Rakhshani et al. 2019; Khaladi et al. 2024); **Andorra** (Sanchis et al. 1999); **Armenia** (Davidian 2016b); **Austria** (Mackauer & Starý 1967; Starý 1974c); **Azerbaijan** (Mustafayeva 2020); **Bangladesh** (BOLD:ABX2030); **Bulgaria** (Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997; Todorov 2003, 2007, 2014; Todorov & Ivanova 2016); **China** (Starý 1967a, 1974c, 1975a; Starý & Schlinger 1967; Chiu & Liu 1969; Liu 1975; Shi 1980; Chen 1980a; Chou 1981; Tian et al. 1981; Zheng et al. 1985; Zhang 1992; Chen & Shi 2001; He et al. 2004; Chen et al. 2009); **Czech Republic** (Starý 1959e, 1961d, 1966c, 1967a, 1972f, 1974c, 1977, 1981b, 1983f, 1986a, 1987a, 1989a, 1991, 1995a, 1995b, 2006; Mackauer & Starý 1967; Hozák 1970; Ferrer-Suay et al. 2017); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Gautier & Bonnamour 1931; Mackauer & Starý 1967; Starý et al. 1971, 1975, 1977a; Starý 1973a, 1974c, 1976a, 1981b; Völkl 1989; Derocles et al. 2012); **Georgia** (Starý 1968b, 1974c, 1976a; Davidian 2016b); **Germany** (Kirchner 1867; Starý 1959e; Mackauer & Starý 1967; Belokobylskij & Taeger 2001; Belshaw & Quicke 2002; Belokobylskij et al. 2003); **Greece** (Starý 1976a; Kavallieratos et al. 2001, 2004, 2008b, 2016); **Hungary** (Starý 1974c; Polgár 1983, 1987); **India** (Sharma & Subba Rao 1964; Mackauer & Starý 1967; Takada & Rishi 1980; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Starý & Ghosh 1983; Bhagat 1984, 1986b; Raychaudhuri et al. 1990; Bhagat & Ahmad 1995; Dey & Akhtar 2007; Rafi et al. 2010; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Iran** (Rakhshani et al. 2008c, 2012b, 2019; Alikhani et al. 2013; Barahoei et al. 2013); **Italy** (Starý 1964c, 1966d, 1967a, 1974c, 1976a, 1981b; Mackauer & Starý 1967; Tremblay 1967a, 1984; Roberti 1969; Tremblay et al. 1978, 1980; Arzone & Alma 1986; Bergamesco et al. 1995; Havelka et al. 2012); **Japan** (Starý 1967a, 1974c, 1975a; Starý & Schlinger 1967; Takada 1968, 2002; Yamauchi & Takada 1978; Takada & Takenaka 1982; Togashi 1987; Takada et al. 2011; Davidian 2016b); **Kazakhstan** (Starý 1974c, 1979a, 1981b; Starý & Juchnevič 1978; Davidian 2016b); **Kyrgyzstan** (Davidian 2016b); **Lebanon** (Abou-Fakhr 1982; Tremblay et al. 1985; Abou-Fakhr & Kawar 1998; Rakhshani et al. 2019); **Malta** (Mifsud & Starý 2012; Rakhshani et al. 2015b); **Moldova** (Starý 1974c; Talitzky & Kuslitzky 1990; Davidian 2016b); **Monaco** (Starý 1974c, 1976a); **Montenegro** (Kavallieratos et al. 2004, 2013, 2016; Žikić et al. 2012); **North Korea** (Takada 1976b; Starý & Choi 2000); **Netherlands** (Papp et al. 1996); **Norway** (Westrum et al. 2010); **Pakistan** (Khalil et al. 2019); **Poland** (Olszak 1994; Huflejt 1997; Tran & Piekarska-Boniecka 2017); **Portugal** (Costa & Starý

1988; Cecilio & Ilharco 2002); **Romania** (Lacatusu & Panu 1969); **Russia** (Starý 1965a, 1974c; Starý & Schlinger 1967; Davidian 2007, 2016b, 2019b; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Starý 1974c; Tomanović et al. 1998a, 2012; Tomanović & Brajković 2001; Kavallieratos et al. 2004, 2008b, 2013, 2016; Žikić et al. 2012); **Slovakia** (Starý 1977, 1989a; Starý & Lukáš 2009; Ferrer-Suay et al. 2017); **Slovenia** (Kos et al. 2008, 2009a, 2012); **South Korea** (Paik 1975; Chang & Youn 1983a; Chang et al. 1994; Takada 1976b; Starý & Choi 2000; Davidian 2016b; Kim 2026); **Spain** (Quilis-Pérez 1931a; Ceballos 1956; Mackauer & Starý 1967; Starý 1974c, 1976a; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Tizado & Núñez-Perez 1991; Tizado Morales et al. 1992; Michelena et al. 1994, 2004; Sanchis et al. 1995, 2000; Torras 1996; Michelena Saval & Sanchis Segovia 1997b; Nieves-Aldrey et al. 2003; Hermoso de Mendoza et al. 2008; Lumbierres et al. 2011; Pons et al. 2011, 2018; Havelka et al. 2012; Michelena Saval & Martínez De Murguía 2012); **Suriname** (BOLD:ADB8872); **Sweden** (Starý 1974c); **Thailand** (Starý et al. 2008, 2010c); **Türkiye** (Aslan & Karaca 2005; Rakhshani et al. 2008d, 2019; Tomanović et al. 2008b; Davidian 2016b; Alaserhat & Canbay 2017; Kök et al. 2017; Kök et al. 2020); **Ukraine** (Kaliuzhna 2013a, 2017b, 2018, 2019a, 2019b; Kaliuzhna & Zubenko 2013); **United Kingdom** (BOLD:ACB7514); **Uzbekistan** (Starý 1979a; Davidian 2016b).

***Remarks.*** With the new species descriptions within the genus *Lipolexis* (Kocić et al. 2020; Kerkig et al. 2025; Kim et al. 2025a; Tomanović et al. 2026b), the host list of *L. gracilis* needs to be revised.

### *Lipolexis hirsutus* Tomanović & van Achterberg, 2026

*Lipolexis hirsutus* Tomanović & van Achterberg [in Tomanović et al.], 2026b:22. Holotype ♀, paratypes ♀♀ (RMNH). – Vietnam.

***Host.*** Unknown.

***Distribution.*** **Vietnam** (Tomanović et al. 2026b).

### *Lipolexis khaoyaiensis* Kerkig, Quicke & Butcher, 2025 [Fig. 52C]

*Lipolexis khaoyaiensis* Kerkig, Quicke & Butcher [in Kerkig et al.], 2025:327. Holotype ♀ (CUMZ). – Thailand.

***Host.*** Unknown.

***Distribution.*** **Thailand** (Kerkig et al. 2025).

### *Lipolexis labialis* Tomanović & Kocić, 2020

*Lipolexis labialis* Tomanović & Kocić [in Kocić et al.], 2020:9. Holotype ♀ (FBUB), paratypes ♀♂ (CNC, CNHM, FBUB). – Serbia.

***Hosts.*** ***Anoecia corni*** (Fabricius); ***Dysaphis*** sp., ***Myzus cerasi*** (Fabricius), ***Myzus lythri*** (Schrank), ***Roepkea marchali*** (Börner) (Kocić et al. 2020)**.**

***Distribution.*** **Bulgaria**, **Croatia**, **Montenegro**, **Serbia**, **Slovenia**, **Spain** (Kocić et al. 2020).

### *Lipolexis longipetiolata* Kim & Kim, 2025

*Lipolexis longipetiolata* Kim & Kim [in Kim et al.], 2025a:334. Holotype ♀ (NIBR), paratypes ♀♀ (KSNU). – South Korea.

***Host.*** Unknown.

***Distribution.*** **South Korea** (Kim et al. 2025a; Kim 2026).

### *Lipolexis myzakkaiae* Pramanik & Raychaudhuri, 1984

*Lipolexis myzakkaiae* Pramanik & Raychaudhuri, 1984:3. Holotype ♀ (CUCE). – India.

***Host.*** ***Myzakkaia verbasci*** (Chowdhuri, Basu, Chakrabarti & Raychaudhuri) (Pramanik & Raychaudhuri 1984; Raychaudhuri et al. 1990).

***Distribution.*** **India** (Pramanik & Raychaudhuri 1984; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Das & Chakrabarti 2023a).

***Lipolexis oregmae* (Gahan, 1932)** [Fig. 52D]

*Diaeretus oregmae* Gahan, 1932:736. Holotype ♀ (USNM). – Philippines.

**Syn.:** *Lipolexis scutellaris* Mackauer, 1962 [Fig. 52F].

***Hosts.*** ***Aphis aurantii*** Boyer de Fonscolombe (Chiu & Liu 1969; Dharmadhikari & Ramaseshiah 1970; Tao & Chiu 1971; Liu 1975; Starý & Ghosh 1975, 1983; Starý 1975a; Chou 1981; Paonam & Singh 1986b; Muraleedharan et al. 1988; Radhakrishnan & Muraleedharan 1992, 1997; Chen & Shi 2001; Chen et al. 2009); ***Aphis citricidus*** (Kirkaldy) (Chiu & Liu 1969; Dharmadhikari & Ramaseshiah 1970; Tao & Chiu 1971; Starý & Ghosh 1975; Liu 1975; Starý 1975a; Chou 1981; Paonam & Singh 1986a, 1986b; Chen & Shi 2001; Miller et al. 2002; Walker & Hoy 2003; Chen et al. 2009; Cocco et al. 2009; Zamora-Mejías et al. 2011); ***Aphis craccivora*** Koch (Dharmadhikari & Ramaseshiah 1970; Tao & Chiu 1971; Liu 1975; Starý 1975a; Starý & Bhagat 1978, 1983; Chou 1981; Ghosh et al. 1981; Chang & Youn 1983a; Ng & Starý 1986; Singh & Tripathi 1987; Ahmad & Singh 1992b, 1995b, 1996b; Das 1994; Starý & Choi 2000; Chen & Shi 2001; Miller et al. 2002; Chen et al. 2009; Rafi et al. 2010; Miller 2019); ***Aphis cytisorum*** Hartig (Chiu & Liu 1969; Chen & Shi 2001); ***Aphis fabae*** Scopoli (Agarwala et al. 1980; Rafi et al. 2010); ***Aphis gossypii*** Glover (Mackauer & Starý 1967; Dharmadhikari & Ramaseshiah 1970; Starý & Ghosh 1975, 1983; Starý 1975a; Chou 1981; Starý & Zelený 1983; Ng & Starý 1986; Paonam & Singh 1986a, 1986b; Singh & Tripathi 1987; Singh & Srivastava 1990; Das & Chakrabarti 1991a; Ahmad & Singh 1994a, 1996a, 1997; Chen & Shi 2001; Vuong et al. 2001; Miller et al. 2002; Wei et al. 2005; Miller 2019; Poorani et al. 2026); ***Aphis illinoisensis*** Shimer (Zamora-Mejías et al. 2010); ***Aphis longisetosa*** Basu (Starý & Ghosh 1975, 1983); ***Aphis nasturtii*** Kaltenbach (Ahmad & Singh 1992a, 1995b, 1996a, 1997); ***Aphis nerii*** Boyer de Fonscolombe (Dharmadhikari & Ramaseshiah 1970; Starý & Zelený 1983); ***Aphis odinae*** (van der Goot) (Starý & Ghosh 1979, 1983; Starý & van Harten 1983; Das 1994); ***Aphis solanella*** Theobald (Dharmadhikari & Ramaseshiah 1970); ***Aphis spiraecola*** Patch (Starý & Schlinger 1967; Chiu & Liu 1969; Dharmadhikari & Ramaseshiah 1970; Tao & Chiu 1971; Liu 1975; Starý & Ghosh 1975, 1983; Starý 1975a; Chou 1981; Starý & Zelený 1983; Ng & Starý 1986; Chen & Shi 2001; Miller et al. 2002; Chen et al. 2009); ***Aphis*** sp. (Dharmadhikari & Ramaseshiah 1970); ***Cavariella araliae*** Takahashi (Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Cerataphis*** sp. (Miller 2019); ***Ceratovacuna lanigera*** Zehntner (Gahan 1932; Starý 1960f, 1975a; Mackauer & Starý 1967; Starý & Schlinger 1967; Wei et al. 2005); ***Greenidea psidii*** van der Goot (Dharmadhikari & Ramaseshiah 1970; Starý et al. 2010a); ***Liosomaphis himalayensis*** Basu (Das & Chakrabarti 1991a); ***Myzus persicae*** (Sulzer) (Singh & Tripathi 1987; Singh & Srivastava 1990; Chen et al. 2009; Rafi et al. 2010); ***Pentalonia nigronervosa*** Coquerel (Liu 1975; Chou 1981; Chen & Shi 2001; Miller et al. 2002; Chen et al. 2009); ***Rhopalosiphum maidis*** (Fitch) (Dharmadhikari & Ramaseshiah 1970; Zamora-Mejías et al. 2010); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Starý & Zelený 1983); ***Semiaphis heraclei*** (Takahashi) (Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Sitobion avenae*** (Fabricius) (Singh & Tripathi 1987); *Tuberolachnus salignus* (Gmelin) (Starý & Ghosh 1975, 1983).

***Distribution.*** **Bangladesh** (Starý & Ghosh 1983; Starý & van Harten 1983); **China** (Mackauer 1962d; Mackauer & Starý 1967; Starý & Schlinger 1967; Chiu & Liu 1969; Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); **Costa Rica** (Zamora-Mejías et al. 2010, 2011; Zamora-Mejías & Hanson 2017); **Dominica** (Cocco et al. 2009); **Guam** (Miller et al. 2002; Miller 2019); **India** (Mackauer & Starý 1967; Rao et al. 1969; Dharmadhikari & Ramaseshiah 1970; Starý & Ghosh 1975, 1979, 1983; Rishi 1976; Starý & Bhagat 1978; Agarwala et al. 1980, 1981a; Ghosh et al. 1981; Ghosh & Agarwala 1982; Pramanik & Raychaudhuri 1984; Paonam & Singh 1986a, 1986b; Singh & Tripathi 1987; Raychaudhuri et al. 1990; Das & Chakrabarti 1991a, 2023a; Ahmad & Singh 1992a, 1992b, 1994a, 1995b, 1996a, 1996b, 1997; Radhakrishnan & Muraleedharan 1992, 1997; Singh & Biswas 1997; Dey & Akhtar 2007; Rafi et al. 2010; Starý et al. 2010a; Rakhshani et al. 2012a; Ahmad & Wani 2014; Poorani et al. 2026); **Indonesia** (BOLD:AAJ2061); **Jamaica** (BOLD:AAJ2061); **Madagascar** (BOLD:AAJ2061); **Malaysia** (Ng & Starý 1986; Finlayson 1990); **Mexico** (BOLD:AAJ2061); **Nepal** (Tamrakar & Singh 2000); **Pakistan** (Khalil et al. 2019); **Philippines** (Gahan 1932; Starý 1960f, 1975a; Baltazar 1966; Mackauer & Starý 1967; Starý & Schlinger 1967); **Poland** (Tran & Piekarska-Boniecka 2017); **Sao Tome and Principe** (BOLD:AAJ2061); **Singapore** (Ng & Starý 1986); **South Africa** (BOLD:AAJ2061); **South Korea** (Chang & Youn 1983a; Starý & Choi 2000; Vuong et al. 2001); **Tanzania** (BOLD:AAJ2061); **Thailand** (Starý et al. 2008, 2010c); **Tonga** (Carver et al. 1993); **USA** (Hill & Hoy 2003); **Vietnam** (Starý & Zelený 1983; Tomanović et al. 2026b).

***Remarks.*** The holotype was indicated in the original description (Gahan 1932:737), and thus lectotype designation by Mackauer (1968a) was unnecessary.

### *Lipolexis pakistanica* Tomanović & Kocić, 2020

*Lipolexis pakistanicus* Tomanović & Kocić [in Kocić et al.], 2020:15. Holotype ♀ (CNC), paratypes ♀♂ (FBUB). – Pakistan.

***Host.*** ***Aphis gossypii*** Glover (Kocić et al. 2020).

***Distribution.*** **Bangladesh**, **Moldova**, **Pakistan** (Kocić et al. 2020).

***Remarks.*** Originally described as *Lipolexis pakistanicus* Tomanović & Kocić, 2020. Because *Lipolexis* is feminine and *pakistanicus* is adjectival, the spelling was corrected to *Lipolexis pakistanica* (Kim et al. 2025a) under ICZN Articles 31.2 and 34.2 (suppl. I).

### *Lipolexis pelopsi* Tomanović & Kavallieratos, 2020

*Lipolexis pelopsi* Tomanović & Kavallieratos [in Kocić et al.], 2020:13. Holotype ♀ (FBUB); paratype ♀♂ (FBUB, CNC). – Montenegro.

***Hosts.*** ***Aphis hederae*** Kaltenbach, ***Aphis fabae*** Scopoli, ***Aphis fabae cirsiiacanthoidis*** Scopoli, ***Aphis punicae*** Passerini, ***Aphis ruborum*** (Börner) (Kocić et al. 2020).

***Distribution.*** **Bosnia and Hercegovina**, **Greece**, **Montenegro** (Kocić et al. 2020).

### *Lipolexis peregrina* Tomanović & Kocić, 2020 [Fig. 52E]

*Lipolexis peregrinus* Tomanović & Kocić [in Kocić et al.], 2020:17. Holotype ♀ (FBUB); paratypes ♀♂ (FBUB, CNC). – Spain.

***Hosts.*** ***Aphis aurantii*** Boyer de Fonscolombe, ***Aphis*** sp., ***Melanaphis sacchari*** (Zehntner), ***Myzus persicae*** (Sulzer) (Kocić et al. 2020); ***Pentalonia nigronervosa*** Coquerel (Poorani et al. 2026).

***Distribution.*** **China** (Kocić et al. 2020); **India** (Poorani et al. 2026); **Japan** (Kocić et al. 2020); **Slovenia**, **South Korea** (Kim et al. 2025a; Kim 2026); **Spain** (Kocić et al. 2020).

***Remarks.*** Originally described as *Lipolexis peregrinus* Tomanović & Kocić, 2020. Because *Lipolexis* is feminine and *peregrinus* is adjectival, the spelling was corrected to *Lipolexis peregrina* (Kim et al. 2025a) under ICZN Articles 31.2 and 34.2 (suppl. I).

### *Lipolexis pseudoscutellaris* Pramanik & Raychaudhuri, 1984

*Lipolexis pseudoscutellaris* Pramanik & Raychaudhuri, 1984:1. Holotype ♀ (CUCE). – India.

***Hosts.*** ***Aphis citricidus*** (Kirkaldy) (Paonam & Singh 1986a); ***Aphis gossypii*** Glover (Pramanik & Raychaudhuri 1984; Paonam & Singh 1986a).

***Distribution.*** **India** (Pramanik & Raychaudhuri 1984; Paonam & Singh 1986a; Dey & Akhtar 2007).

### *Lipolexis sulcata* Kim & Kim, 2025

*Lipolexis sulcata* Kim & Kim [in Kim et al.], 2025a:332. Holotype ♀ (NIBR), paratype ♀ (KSNU). – South Korea.

***Host.*** Unknown.

***Distribution.*** **South Korea** (Kim et al. 2025a; Kim 2026).

### *Lipolexis takadai* Tomanović & Kocić, 2020

*Lipolexis takadai* Tomanović & Kocić [in Kocić et al.], 2020:12. Holotype ♀ (CNC), paratypes ♀♀ (FBUB). – China.

***Host.*** ***Aphis gossypii*** Glover.

***Distribution.*** **China**, **Japan** (Kocić et al. 2020).

### *Lipolexis wuyiensis* Chen, 1981

*Lipolexis wuyiensis* Chen, 1981:33. Holotype ♀, paratypes ♀♀ ♂♂ (FAFU). – China.

***Host.*** ***Ceratovacuna lanigera*** Zehntner (Chen 1981; Chen & Shi 2001).

***Distribution.*** **China** (Chen 1981; Chen & Shi 2001).

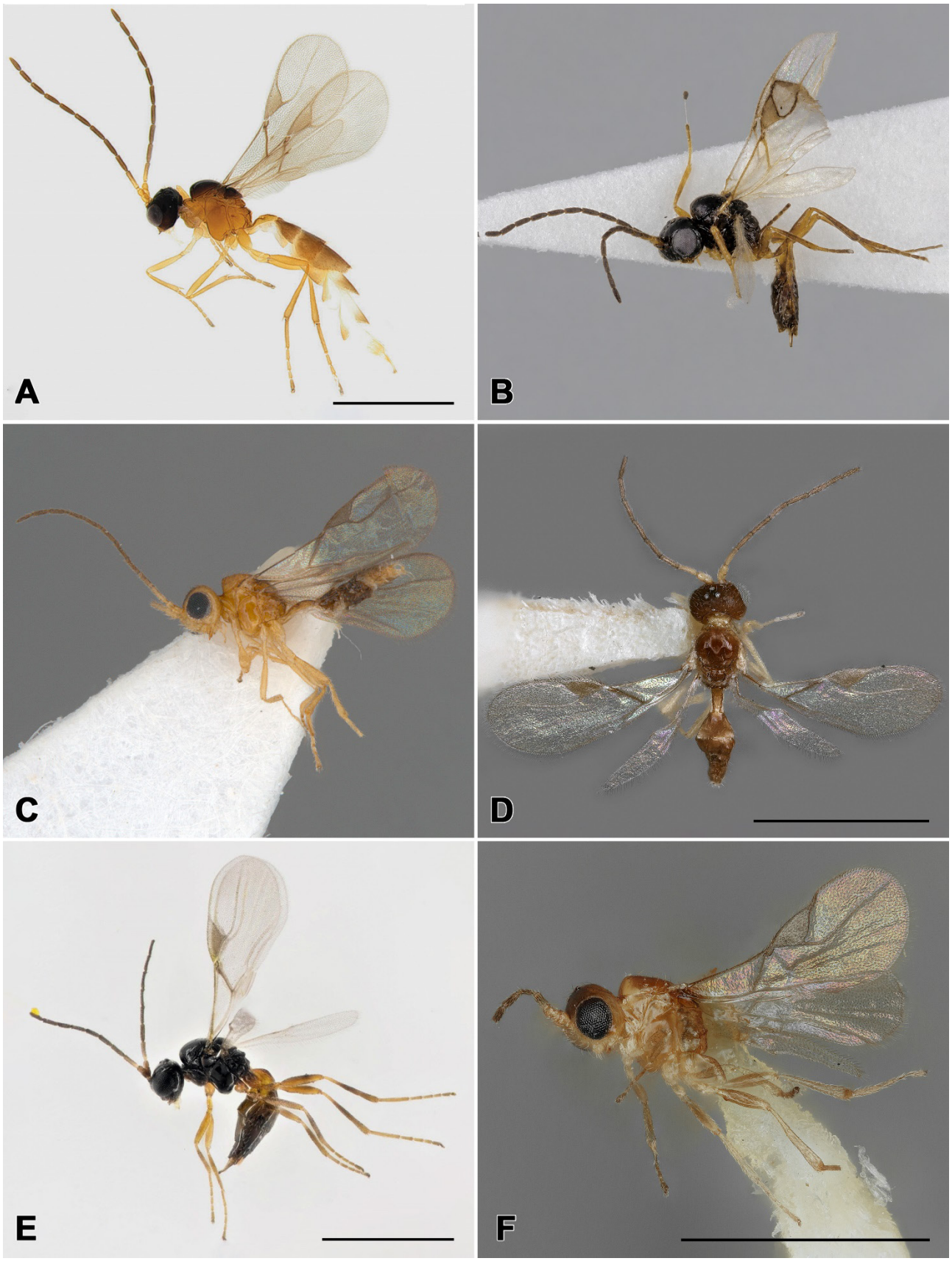



**Figure 52.** Species of the genus *Lipolexis* Förster, 1863. **A.** *Lipolexis depressiceps* Kim & Kim, 2025 – Holotype, NIBR; **B.** *Lipolexis gracilis* Förster, 1863 – Finland, ZMHF; **C.** *Lipolexis khaoyaiensis* Kerkig, Quicke & Butcher, 2025 – Holotype, CUMZ; **D.** *Lipolexis oregmae* (Gahan, 1932) – Holotype, USNM; **E.** *Lipolexis peregrina* Tomanović & Kocić, 2020 – Netherlands, RMNH; **F.** *Lipolexis scutellaris* Mackauer, 1962 – Holotype ( = *Lipolexis oregmae* (Gahan, 1932)), USNM. Scale bar: 1 mm.

**Genus *Palaeoxys* Mackauer, 1961** [2 species]

*Palaeoxys* Mackauer, 1961:290. Type species: *Trioxys primigenius* Quilis, 1940.

***Palaeoxys fuscus* (Quilis, 1940)** [Fossil]

*Diaeretus fuscus* Quilis, 1940:53. Holotype ♀ (lost). – France.

***Host.*** Unknown.

***Distribution.*** **France** (Quilis-Pérez 1940; Starý 1970a, 1973b).

***Palaeoxys primigenius* (Quilis, 1940)** [Fossil]

*Trioxys primigenius* Quilis, 1940:57. Holotype ♀ (MNHN). – France.

***Host.*** Unknown.

***Distribution.*** **France** (Quilis-Pérez 1940; Starý 1970a, 1973b).

**Genus *Papilloma* Wang, 1989** [1 species]

*Papilloma* Wang, 1989:111. Type species: *Papilloma luteum* Wang, 1989.

**Syn.:** *Sinoaphidius* Shi & Chen, 2001:124. Type species: *Sinoaphidius zhejiangense* Shi & Chen, 2001.

***Papilloma luteum* Wang, 1989** [Fig. 53A]

*Papilloma luteum* Wang, 1989:111. Holotype ♀ (SNUC). – China.

**Syn.:** *Sinoaphidius zhejiangensis* Shi & Chen, 2001.

***Host.*** ***Kurisakia querciphila*** Takahashi (Wang 1989; Chen & Shi 2001; Wei et al. 2005; Takada 2014).

***Distribution.*** **China** (Wang 1989; Chen & Shi 2001; He et al. 2004); **Japan** (Takada 2014); **South Korea** (Kim 2026).

**Genus *Parabioxys* Shi & Chen, 2001** [1 species]

*Parabioxys* Shi & Chen, 2001:122. Type species: *Parabioxys songbaiensis* Shi & Chen, 2001.

***Parabioxys songbaiensis* Shi & Chen, 2001** [Fig. 53B]

*Parabioxys songbaiensis* Shi & Chen, 2001:122. Holotype ♀ (FAFU). – China.

***Host.*** ***Greenidea kuwanai*** (Pergande) (Starý et al. 2010a; Kim et al. 2025c).

***Distribution.*** **China** (Chen & Shi 2001); **North Korea** (Starý et al. 2010a; Kim et al. 2025c); **South Korea** (Kim et al. 2025c; Kim 2026); **Thailand** (Starý et al. 2010c).

**Genus *Sergeyoxys* Davidian, 2016** [1 species]

*Sergeyoxys* Davidian, 2016a:476. Type species: *Sergeyoxys monoceratus* Davidian, 2016.

***Sergeyoxys monoceratus* Davidian, 2016** [Fig. 53C]

*Sergeyoxys monoceratus* Davidian, 2016a:478. Holotype ♀, paratype ♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2016a, 2016b, 2019b).

**Genus *Trioxys* Haliday, 1833** [83 species]

*Trioxys* Haliday, 1833:488. Type species: *Aphidius* (*Trioxys*) *cirsii* Curtis, 1831.

**Syn.:** *Nevropenes* Provancher, 1886:153. Type species: *Nevropenes ovalis* Provancher, 1886.

***Trioxys acericola* Starý & Mackauer, 1971**

*Trioxys acericola* Starý & Mackauer, 1971:885. Holotype ♀, paratype ♂ (IECA). – France.

***Hosts.*** ***Drepanosiphoniella fugans*** Remaudière & Leclant (Starý & Mackauer 1971; Starý et al. 1971; Starý

1976a, 1978a, 1988b); ***Drepanosiphum oregonense*** Granovsky, ***Drepanosiphum platanoidis*** (Schrank) (Kavallieratos et al. 2016).

***Distribution.*** **Croatia** (Kavallieratos et al. 2016); **France** (Starý & Mackauer 1971; Starý et al. 1971; Starý 1976a, 1978a); **Serbia** (Kavallieratos et al. 2016).

***Remarks.*** According to the original description (Starý & Mackauer 1971), two paratypes (♀♀) are deposited in the collection of M. Mackauer, which may be transferred to other institutes.

### *Trioxys ademuzi* Michelena & Sanchis, 1994

*Trioxys ademuzi* Michelena & Sanchis, 1994:28. Holotype ♀, paratypes ♂♂ (ICBiBE). – Spain.

***Hosts.*** ***Aphis grossulariae*** Kaltenbach (Davidian 2023); ***Myzaphis rosarum*** (Kaltenbach) (Michelena & Sanchis 1994).

***Distribution.*** **France**, **Kazakhstan** (Davidian 2016b); **Russia** (Davidian 2023); **Spain** (Michelena & Sanchis 1994).

### *Trioxys ameraceris* Smith, 1944 [Fig. 54A]

*Trioxys ameraceris* Smith, 1944:87. Holotype ♀ (USNM), paratypes ♀♀ ♂ (USNM, FAES, NCSU). – USA.

***Hosts.*** ***Drepanaphis acerifoliae*** (Thomas) (Smith 1944; Mackauer & Starý 1967); ***Drepanaphis carolinensis*** Smith (Starý & Remaudière 1977); ***Drepanaphis monelli*** (Davis) (Smith 1944; Mackauer & Starý 1967); ***Drepanaphis sabrinae*** Miller (Starý & Remaudière 1977); ***Drepanaphis simpsoni*** Smith (Starý & Remaudière 1977).

***Distribution.*** **Canada** (Mackauer & Starý 1967; Fulbright et al. 2007); **USA** (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Starý & Remaudière 1977; Fulbright et al. 2007).

### *Trioxys annae* Davidian, 2005

*Trioxys annae* Davidian, 2005:669. Holotype ♀, paratypes ♀♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **South Korea** (Davidian 2020b); **Russia** (Davidian 2005a, 2007, 2016b, 2019b).

### *Trioxys apterus* Gärdenfors, 1990 [Fig. 54B]

*Trioxys apterus* Gärdenfors, 1990:67. Holotype ♀, paratype ♀ (MZLU). – Ecuador.

***Host.*** Unknown

***Distribution.*** **Ecuador** (Gärdenfors 1990; Starý et al. 2014c).

### *Trioxys artemisiarum* Pike & Starý, 1997 [Fig. 54C]

*Trioxys artemisiarum* Pike & Starý [in Pike et al.], 1997a:148. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (IECA, WSUJ). – USA.

***Hosts.*** ***Aphis canae*** Williams (Pike et al. 2000); ***Macrosiphoniella artemisiae*** (Boyer de Fonscolombe) (Pike et al. 2000); ***Macrosiphoniella ludovicianae*** (Oestlund) (Pike et al. 1997a, 2000).

***Distribution.*** **USA** (Pike et al. 1997a, 2000; Fulbright et al. 2007).

### *Trioxys artistigma* Takada, 1966

*Trioxys artistigma* Takada, 1966a:29. Holotype ♀, paratypes ♀♀ (EIHU). – Japan.

**Syn.:** *Trioxys aniva* Davidian, 2005.

***Host.*** Unknown.

***Distribution.*** **Japan** (Takada 1966a, 1968; Starý 1975a; Konishi & Maetô 2000); **Russia** (Davidian 2005a, 2007, 2016b, 2019b).




**Figure 53.** Species of the rare genera of the subtribe Trioxina Mackauer. **A.** *Papilloma luteum* Wang, 1989 – South Korea, KSNU; **B.** *Parabioxys songbaiensis* Shi & Chen, 2001 – South Korea, HNIBR; **C.** *Sergeyoxys monoceratus* Davidian, 2016 – Holotype, ZISP. Scale bar: 1 mm.

### *Trioxys asiaticus* Telenga, 1953

*Trioxys asiaticus* Telenga, 1953:170. Syntype ♀ (SIZK?). – Uzbekistan.

**Syn.:** *Trioxys vandenboschi* Mackauer, 1960 [Fig. 54E].

***Hosts.*** ***Acyrthosiphon gossypii*** Mordvilko (Mackauer 1960d; Starý 1965a, 1979a; Mackauer & Starý 1967; Starý & González 1978; Zheng et al. 1985; Starý et al. 2000; Davidian 2005a; Wei et al. 2005; Rakhshani et al. 2008c; Talebi et al. 2009; Alikhani et al. 2013; Barahoei et al. 2013); ***Acyrthosiphon pisum*** (Harris) (Barahoei et al. 2013); *Aphis craccivora* Koch (Luzhetski 1960; Ataeva 1961; Zheng et al. 1985; Wei et al. 2005); *Aphis gossypii* Glover (Davidian 2016b).

***Distribution.*** **Armenia** (Davidian 2005a, 2016b); **China** (Zheng et al. 1985; Chen & Shi 2001; Zhao et al. 2013); **Iran** (Mackauer 1960d; Mackauer & Starý 1967; Starý 1979a; Starý et al. 2000; Talebi et al. 2009; Fallahzadeh & Saghaei 2010; Alikhani et al. 2013; Barahoei et al. 2013; Rakhshani et al. 2019); **Kazakhstan** (Starý 1979a; Davidian 2005a, 2016b); **Kyrgyzstan** (Davidian 2016b); **Mongolia** (Takada 1979a; Davidian 2016b); **Russia** (Starý & Schlinger 1967; Davidian 2005a, 2007; Davidian & Gavrilyuk 2014; Davidian 2016b); **Tajikistan** (Ataeva 1961; Starý 1979a; Davidian 2005a, 2016b); **Turkmenistan** (Starý 1979a); **Uzbekistan** (Telenga 1953; Luzhetski 1960; Starý 1965a, 1975a; Mackauer 1968a; Starý & González 1978; Daminova et al. 2001; Aripov 2003).

***Remarks.*** Records for the occurrence and host association of *Trioxys asiaticus* in South Korea (Starý & Choi 2000), are suspicious and were due to misidentification.

### *Trioxys asyae* Davidian, 2005

*Trioxys asyae* Davidian, 2005a:668. Holotype ♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2005a, 2007, 2016b, 2019b).

### *Trioxys atriplecis* Ivanov, 1925

*Trioxys atriplecis* Ivanov, 1925:6. Syntypes ♀ ♂ – Ukraine.

***Host.*** Unknown.

***Distribution.*** **Ukraine** (Ivanov 1927; Kaliuzhna 2019b).

***Remarks.*** In the original description, the author mentioned that it is close to *Trioxys brevicornis* (= *Binodoxys brevicornis*), so it may actually belong to the genus *Binodoxys* or even represent *B. brevicornis* itself. No information exists on whether the type specimen is still available or where it might be deposited (M. Kaliuzhna, pers. comm.)

### *Trioxys auctus* (Haliday, 1833) [Fig. 54D]

*Aphidius* (*Trioxys*) *auctus* Haliday, 1833:489. Lectotype ♀ (after Mackauer 1961b), paralectotypes ♀♀ (NHMUK). – Ireland.

**Syn.:** *Trioxys flaviceps* Szépligeti, 1898.

***Hosts.*** ***Acyrthosiphon gossypii*** Mordvilko (Wei et al. 2005); ***Aphis craccivora*** Koch (Ataeva 1961; Mackauer & Starý 1967); ***Aphis fabae*** Scopoli (Malaquin & Moitie 1914; Mackauer & Starý 1967); ***Aphis fabae evonymi*** Fabricius (Malaquin & Moitie 1914; Mackauer 1959b; Takada 1968); ***Aphis frangulae*** Kaltenbach (Mackauer 1959b; Mackauer & Starý 1967; Takada 1968); ***Aphis gossypii*** Glover (Meyer 1934; Mackauer 1959b; Takada 1968); ***Aphis*** spp. (Giraud & Laboulbène 1877); ***Macrosiphum rosae*** (Linnaeus) (Hubert & van Achterberg 2023); ***Myzus persicae*** (Sulzer) (Takada & Takenaka 1982); ***Rhopalosiphum maidis*** (Fitch) (Dharmadhikari & Ramaseshiah 1970); ***Rhopalosiphum oxyacanthae*** (Schrank) (Starý 1966c, 1967b, 1976a, 1981b; Mackauer & Starý 1967); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Mackauer & Starý 1967; Tao & Chiu 1971; Starý 1975a; Starý & Remaudière 1977; Chou 1981; Chen et al. 2009; Petrović et al. 2009; Tomanović et al. 2012; Žikić et al. 2012); ***Rhopalosiphum padi*** (Linnaeus) (Takada 1966a; Tao & Chiu 1971; Starý et al. 1971; Starý 1975a, 1976a, 1981b, 2006; Chou 1981; Höller et al. 1993; Chen et al. 2009); ***Rhopalosiphum*** sp. (Kos et al. 2012); ***Schizaphis scirpi*** (Passerini) (Petrović et al. 2009; Tomanović et al. 2012); ***Sitobion avenae*** (Fabricius) (Pankanin-Franczyk 1983, 1986).

***Distribution.*** **Azerbaijan** (Davidian 2024); **Belgium** (Lopes et al. 2016); **Canada** (Starý & Remaudière 1977; Fulbright et al. 2007); **Canary Islands** (Guerrero & Koponen 2000; Báez et al. 2001); **China** (Fahringer 1935; Mackauer & Starý 1967; Starý 1975a, 1979a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); **Czech Republic** (Starý 1961b, 1966c, 1989a, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Davidian 2016b); **Faroe Islands** (Roman 1925; Kryger & Schmiedeknecht 1938); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Malaquin & Moitie 1914; Mackauer 1959b; Mackauer & Starý 1967; Fulmek 1968; Starý et al. 1971; Derocles et al. 2014a); **Germany** (Mackauer 1959b; Mackauer & Starý 1967; Höller et al. 1993; Belokobylskij & Taeger 2001; Belokobylskij et al. 2003); **Hungary** (Szépligeti 1898, 1899, 1904; Mackauer & Starý 1967); **India** (Dharmadhikari & Ramaseshiah 1970; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Starý & Ghosh 1983; Dey & Akhtar 2007; Das & Chakrabarti 2023a); **Ireland** (Mackauer 1959b; Hubert & van Achterberg 2023); **Italy** (Vidano 1959; Mackauer & Starý 1967; Starý 1976a, 1981b; Bergamesco et al. 1995; Tomanović et al. 2012); **Japan** (Takada 1966a, 1968; Starý 1975a; Takada & Takenaka 1982); **Lithuania** (Davidian 2005a, 2016b); **Netherlands** (Snellen van Vollenhoven 1873; Marshall 1896; Mackauer 1959b; Mackauer & Starý 1967; Mackauer 1968c); **Norway** (Starý 1981b; Westrum et al. 2010; Mjøs et al. 2024); **Poland** (Niezabitowski 1910; Mackauer & Starý 1967; Kierych 1975; Pankanin-Franczyk 1983; Pankanin-Franczyk et al. 1986; Huflejt 1997; Tran & Piekarska-Boniecka 2017); **Russia** (Mackauer & Starý 1967; Mackauer 1968c; Krotova 1993; Davidian 2005a, 2016b, 2019b, 2024; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Manukyan 2024; Shpanev 2025); **Serbia** (Petrović et al. 2009; Tomanović et al. 2012; Žikić et al. 2012); **Slovenia** (Kos et al. 2012); **Spain** (Quilis-Pérez 1931b); **Sweden** (Thomson 1895; Szépligeti 1904; Mackauer 1959b; Mackauer & Starý 1967; Rusch et al. 2013); **Tajikistan** (Ataeva 1961); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Marshall 1872a, 1896, 1899; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1959b, 1961b; Davidian & Rispin 2016); **Uzbekistan** (Starý 1979a; Aripov 2003).

### *Trioxys bajariae* (Györfi, 1958)

*Aphidius bajariae* Györfi, 1958:132. Holotype ♂ (HNHM). – Bosnia and Hercegovina.

***Host.*** Unknown.

***Distribution.*** **Bosnia and Hercegovina** (Györfi 1958); **Hungary** (Mackauer & Starý 1967; Polgár 1983).

***Remarks.*** *Species inquirenda* (see Starý 1961e).

### *Trioxys belokobylskiji* Davidian, 2005

*Trioxys belokobylskiji* Davidian, 2005a:672. Holotype ♀, paratypes ♀♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2005a, 2007, 2016b, 2019b).

### *Trioxys betulae* Marshall, 1896

*Trioxys betulae* Marshall, 1896:553. Holotype ♀ (NHMUK). – United Kingdom.

**Syn.:** *Trioxys betulae* subsp. *solani* Ivanov, 1925; *Trioxys hincksi* Mackauer, 1960.

***Hosts.*** ***Calaphis arctica*** Hille Ris Lambers (Mackauer 1965b; Mackauer & Starý 1967); ***Calaphis betulicola*** (Kaltenbach) (Bignell 1901; Mackauer 1959b); ***Calaphis betulaecolens*** (Fitch) (Mackauer 1965b; Mackauer & Starý 1967; Marsh 1979); ***Calaphis flava*** Mordvilko (Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); ***Clethrobius comes*** (Walker) (Mackauer 1961b; Mackauer & Starý 1967; Starý 1977, 1978a, 1988b, 2006); ***Eucallipterus tiliae*** (Linnaeus) (Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); ***Euceraphis*** sp. (Davidian 2005a, 2016b); ***Symydobius oblongus*** (von Heyden) (Mackauer 1961b; Starý 1964d, 1966c, 1977, 1978a, 1979a, 1980, 2006; Mackauer & Starý 1967; Kierych 1975, 1980; Starý & Juchnevič 1978; Marsh 1979; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004, 2016; Gavrilyuk & Novgorodova 2007; Žikić et al. 2012).

***Distribution.*** **Austria** (Mackauer & Starý 1967; Mackauer 1968a); **Bulgaria** (Todorov 2008); **Canada** (Mackauer 1965b; Mackauer & Starý 1967; Fulbright et al. 2007); **China** (Fahringer 1935; Mackauer &

Starý 1967; Starý 1979a; Chen & Shi 2001); **Czech Republic** (Starý 1966c, 1977, 1978a, 1988b, 1989a, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Davidian 2016b); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967; Mackauer 1968a); **Finland** (Mackauer & Starý 1967; Hellén 1971; Mackauer 1968c; Starý 1978a); **France** (Starý et al. 1971); **Germany** (Mackauer & Starý 1967; Mackauer 1968a; Belokobylskij et al. 2003); **Kazakhstan** (Starý & Juchnevič 1978; Starý 1979a); **Netherlands** (Mackauer & Starý 1967; Mackauer 1968a); **Poland** (Kierych 1975, 1980; Huflejt 1997); **Russia** (Mackauer 1968c; Davidian 2005a, 2007, 2016b, 2019b; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Ruchin 2023); **Serbia** (Tomanović et al. 1998a; Žikić et al. 2000, 2012; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004, 2016); **Slovakia** (Starý 1977); **South Korea** (Davidian 2020b); **Spain** (Quilis-Pérez 1931b); **Switzerland** (Mackauer & Starý 1967; Mackauer 1968a); **Ukraine** (Ivanov 1927; Kaliuzhna 2019b); **United Kingdom** (Bignell 1901; Marshall 1896; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1959b, 1960f, 1961b; Mackauer & Starý 1967; Davidian & Rispin 2016); **USA** (Mackauer 1965b; Mackauer & Starý 1967; Fulbright et al. 2007).

### *Trioxys bicuspis* Mackauer, 1960

*Trioxys bicuspis* Mackauer, 1960f:149. Holotype ♀ (NHMW), paratypes ♂ (NHMW, CNC). – Austria.

***Host.*** Unknown.

***Distribution.*** **Austria** (Mackauer 1960f; Mackauer & Starý 1967); **Czech Republic** (Starý 2006); **Poland** (Ulrich 2001); **Russia** (Davidian 2005a, 2016b, 2019b; Davidian & Ruchin 2023).

### *Trioxys bonnevillensis* Smith, 1944 [Fig. 54F]

*Trioxys bonnevillensis* Smith, 1944:88. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, USU, NCSU). – USA.

***Hosts.*** ***Aphis canae*** Williams (Pike et al. 1997a, 2000); ***Artemisaphis artemisicola*** (Williams) (Pike et al. 2000); ***Epameibaphis atricornis*** Gillette & Palmer (Starý & Remaudière 1982; Pike et al. 1997a, 2000); ***Epameibaphis utahensis*** Knowlton & Smith, ***Flabellomicrosiphum knowltoni*** Smith (Pike et al. 1997a, 2000); ***Flabellomicrosiphum tridentatae*** (Wilson) (Pike et al. 2000); ***Microsiphoniella acophorum*** (Smith & Knowlton), ***Obtusicauda artemisiphilus*** (Knowlton & Allen), ***Obtusicauda coweni*** (Hunter), ***Obtusicauda filifoliae*** (Gillette & Palmer) (Pike et al. 1997a, 2000); ***Pleotrichophorus glandulosus*** (Kaltenbach) (Smith 1944; Marsh 1979); ***Pleotrichophorus heterohirsutus*** (Gillette & Palmer) (Smith 1944; Mackauer & Starý 1967; Marsh 1979); ***Pleotrichophorus oestlundi*** (Knowlton) (Smith 1944); ***Pleotrichophorus pseudoglandulosus*** (Palmer) (Mackauer & Starý 1967; Marsh 1979); ***Pleotrichophorus pycnorhysus*** (Knowlton & Smith) (Hollingbery et al. 2012); ***Pleotrichophorus quadritrichus*** (Knowlton & Smith) (Pike et al. 2000); ***Pseudoepameibaphis essigi*** Knowlton & Smith (Pike et al. 1997a, 2000); ***Pseudoepameibaphis glauca*** Gillette & Palmer (Smith 1944; Mackauer & Starý 1967; Marsh 1979); ***Pseudoepameibaphis tridentatae*** (Wilson) (Pike et al. 1997a, 2000).

***Distribution.*** **Mexico** (Starý & Remaudière 1982, 1988); **USA** (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Pike et al. 1997a, 2000; Fulbright et al. 2007; Hollingbery et al. 2012).

### *Trioxys breviflagellaris* Tomanović & van Achterberg, 2026

*Trioxys breviflagellaris* Tomanović & van Achterberg [in Tomanović et al.], 2026b:34. Holotype ♀, paratype ♀ (RMNH). – Vietnam.

***Host.*** Unknown.

***Distribution.*** **Vietnam** (Tomanović et al. 2026b).

### *Trioxys brevipalpus* Takada, 1966

*Trioxys brevipalpus* Takada, 1966a:25. Holotype ♀, paratypes ♂♂ (EIHU). – Japan.

***Host.*** ***Tuberocephalus momonis*** (Matsumura) (Takada 1966a, 1968; Starý 1975a).

***Distribution.*** **Japan** (Takada 1966a, 1968; Starý 1975a).

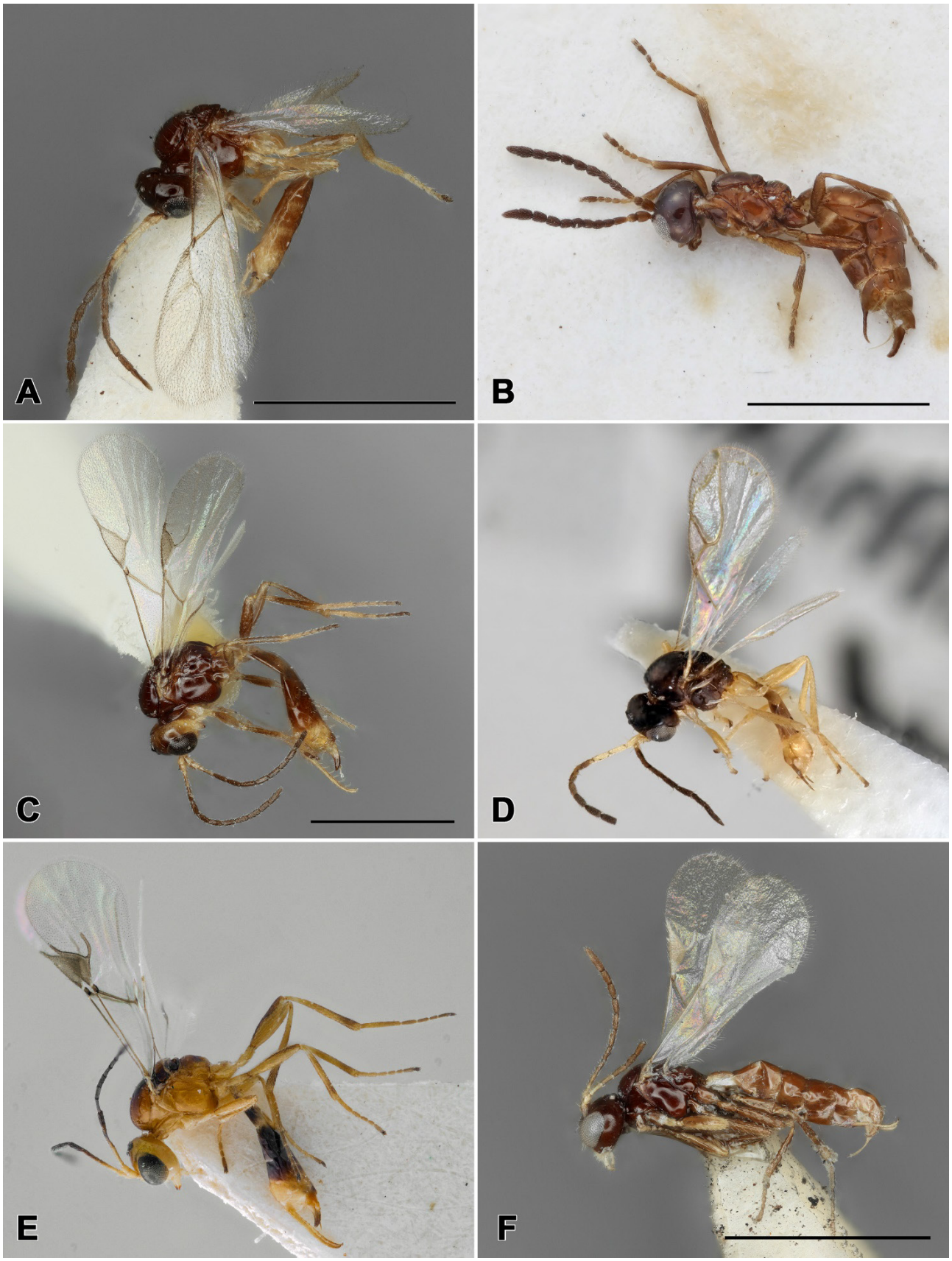



**Figure 54.** Species of the genus *Trioxys* Haliday, 1833. **A.** *Trioxys ameraceris* Smith, 1944 – Holotype, USNM; **B.** *Trioxys apterus* Gärdenfors, 1990 – Holotype, MZLU; **C.** *Trioxys artemisiarum* Pike & Starý, 1997 – Holotype, USNM; **D.** *Trioxys auctus* (Haliday, 1833) – Finland, ZMHF; **E.** *Trioxys asiaticus* Telenga, 1953 – Holotype of *Trioxys vandenboschi* Mackauer, 1960, CNC; **F.** *Trioxys bonnevillensis* Smith, 1944 – Holotype, USNM. Scale bar: 1 mm.

### *Trioxys californicus* Starý & Zuparko, 1995 [Fig. 55A]

*Trioxys californicus* Starý & Zuparko, 1995:173. Holotype ♀ (EMEC). – USA.

***Host.*** ***Eucallipterus tiliae*** (Linnaeus) (Starý & Zuparko 1995).

***Distribution.*** **USA** (Starý & Zuparko 1995; Fulbright et al. 2007).

### *Trioxys chaetosiphonis* Starý, 1971

*Trioxys chaetosiphonis* Starý [in Starý et al.], 1971:38. Holotype ♀ (MNHN), paratypes ♀♀ (IECA). – France.

***Hosts.*** ***Aphis grossulariae*** Kaltenbach (Davidian 2016b); ***Chaetosiphon chaetosiphon montanum*** Hille Ris Lambers (Starý et al. 1971); ***Coloradoa heinzei*** (Börner) (Tobias & Chiriac 1986); ***Longicaudus trirhodus*** (Walker) (Starý et al. 1977a; Tomanović 2000; Kavallieratos & Tomanović 2001; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004; Tomanović et al. 2007a; Žikić et al. 2012).

***Distribution.*** **France** (Starý et al. 1971, 1977a); **Russia** (Davidian 2005a, 2016b, 2019b, 2023; Davidian & Gavrilyuk 2014; Davidian & Ruchin 2023); **Serbia** (Tomanović 2000; Kavallieratos & Tomanović 2001; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004; Tomanović et al. 2007a; Žikić et al. 2012); **Spain** (Tizado & Núñez-Perez 1991).

***Remarks.*** According to the original description (Starý et al. 1971), some paratypes are also deposited in the collections of G. Remaudière, which may be transferred to other collections.

### *Trioxys chaitaphidis* Mackauer, 1962

*Trioxys chaitaphidis* Mackauer, 1962c:651. Holotype ♀ (SMF), paratypes ♀♀ ♂♂ (CNC, SMF). – Austria.

***Hosts.*** ***Chaitaphis*** sp. (Mackauer 1962c); ***Coloradoa heinzei*** (Börner) (Mackauer & Starý 1967).

***Distribution.*** **Austria** (Mackauer 1962c; Mackauer & Starý 1967).

### *Trioxys chasanicus* Davidian, 2005

*Trioxys chasanicus* Davidian, 2005a:671. Holotype ♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2005a, 2007, 2016b, 2019b).

### *Trioxys cirsii* (Curtis, 1831) [Fig. 55B]

*Aphidius cirsii* Curtis, 1831:Pl.383, Syntype ♀ (lost). – United Kingdom.

*Trioxys cirsii*: Mackauer 1959b:159. Neotype ♀ (NHMUK). – United Kingdom.

**Syn.:** *Aphidius* (*Trioxys*) *aceris* Haliday, 1833.

***Hosts.*** *Aphis fabae* Scopoli (Wiackowski et al. 1997, 2001); *Aphis nasturtii* Kaltenbach (Wiackowski et al. 2001); *Aphis pomi* De Geer (Fulmek 1968); *Aphis* sp. (Ferrière & Voukassovitch 1928; Tomanović et al. 1999b); ***Drepanosiphum oregonense*** Granovsky (Mackauer & Starý 1967; Starý 1978a, 1988b; Suay Cano & Michelena Saval 1998; Sanchis et al. 2000); ***Drepanosiphum platanoidis*** (Schrank) (Mackauer 1959b; Starý 1961b, 1964d, 1965a, 1966c, 1970b, 1977, 1978a, 1987a, 1988b, 1995b, 2006; Starý & Rupais 1963, 1964; Mackauer & Heie 1965; Mackauer & Starý 1967; Carver & Starý 1974; Hamilton 1974; Kierych 1975, 1980; Pike et al. 1996, 2000; Mancini & Tremblay 1996a; Babaee et al. 2000; Starý et al. 2000; Wiackowski & Wiackowska 2000; Kavallieratos et al. 2004, 2016; Tomanović & Kavallieratos 2002a; Rakhshani et al. 2008c; Žikić et al. 2012); ***Drepanosiphum*** spp. (Starý 2006; Ferrer-Suay et al. 2017); ***Periphyllus aceris*** (Linnaeus) (Gahan 1910); ***Periphyllus*** sp. (Starý 1966d); *Rhopalomyzus lonicerae* (Siebold) (Wiackowski et al. 1997, 2001); *Tuberculatus annulatus* (Hartig) (Evans 1939; Miller 1947); *Uroleucon cirsii* (Linnaeus) (Curtis 1831).

***Distribution.*** **Australia** (Evans 1939; Carver & Starý 1974; Starý 1988b); **Czech Republic** (Starý 1961b, 1966c, 1970b, 1977, 1978a, 1987a, 1988b, 1989a, 1995b, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Ferrer-Suay et al. 2017); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Mackauer & Starý 1967); **Germany**

(Mackauer 1959b; Mackauer & Starý 1967; Fulmek 1968; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **Iran** (Babaee et al. 2000; Starý et al. 2000; Fallahzadeh & Saghaei 2010; Rakhshani et al. 2008c, 2019); **Ireland** (Mackauer 1959b; van Achterberg 1997a; O'Connor et al. 1999); **Italy** (Starý 1966d; Mancini & Tremblay 1996b); **Latvia** (Starý & Rupais 1963, 1964; Starý 1965a, 1978a; Mackauer & Starý 1967); **Moldova** (Talitzky & Kuslitzky 1990); **Netherlands** (Snellen van Vollenhoven 1873; Marshall 1896; Mackauer 1959b; Mackauer & Starý 1967); **Norway** (Mjøs et al. 2024); **Poland** (Kierych 1975, 1980; Huflejt 1997; Wiackowski et al. 1997, 2001; Wiackowski & Wiackowska 2000; Tran & Piekarska-Boniecka 2017); **Romania** (Lacatusu & Panu 1969); **Russia** (Starý & Rupais 1963; Starý 1965a, 1978a; Mackauer & Starý 1967; Davidian & Manukyan 2024); **Serbia** (Ferrière & Voukassovitch 1928; Tomanović et al. 1998a; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); **Slovakia** (Starý 1977, 1989a); **Spain** (Michelena Saval & González Funes 1988b; Tizado & Núñez-Perez 1991; Suay Cano & Michelena Saval 1998; Sanchis et al. 2000); **Tajikistan** (Starý 1979a); **Ukraine** (Kaliuzhna 2013a, 2019a, 2019b); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Marshall 1872a, 1896; Szépligeti 1904; Lyle 1933; Callan 1940; Kloet & Hincks 1945; Mackauer 1959b, 1961b; Mackauer & Starý 1967; Hamilton 1974; Starý 1978a; Davidian & Rispin 2016); **USA** (Gahan 1910, 1911a; Pike et al. 1996, 2000; Fulbright et al. 2007).

### *Trioxys complanatus* Quilis, 1931 [Fig. 55C]

*Trioxys complanatus* Quilis, 1931a:78. Holotype ♀, paratype(s) ♂ (IVIA). – Spain.

**Syn.:** *Trioxys utilis* Muesebeck, 1956.

***Hosts.*** *Acyrthosiphon pisum* (Harris) (Bhagat 1984; French et al. 2001); *Pleotrichophorus elongatus* (Knowlton), *Pleotrichophorus oestlundi* (Knowlton) (Hollingbery et al. 2012); *Pterocallis maculatus* (von Heyden) (Davidian 2005a, 2016b); ***Therioaphis alatina*** Hille Ris Lambers & van Den Bosch (Starý et al. 1971); ***Therioaphis bonjeaniae*** Hille Ris Lambers & van Den Bosch (Mackauer & Starý 1967); ***Therioaphis brachytricha*** Hille Ris Lambers & van Den Bosch (Mackauer & Starý 1967); ***Therioaphis khayami*** Remaudière (Starý et al. 2000); ***Therioaphis langloisi*** Remaudière & Leclant (Starý et al. 1971; Starý 1976a); ***Therioaphis litoralis*** Hille Ris Lambers & van Den Bosch (Mackauer & Starý 1967; Starý et al. 1973, 1975; Starý 1976a); ***Therioaphis luteola*** (Börner) (Mackauer & Starý 1967); ***Therioaphis obscura*** Hille Ris Lambers & van Den Bosch (Mackauer & Starý 1967); ***Therioaphis riehmi*** (Börner) (Mackauer & Starý 1967; Muesebeck 1967; Starý et al. 1971, 1975; Starý 1976a; Marsh 1979; Pike et al. 2000); ***Therioaphis trifolii*** (Monell) (Muesebeck 1956; van den Bosch 1957; Mackauer 1959b; Schlinger & Hall 1959; van den Bosch et al. 1959a, 1959b; Farahbakhsh 1961; Nielson & Barnes 1961; Force & Messenger 1964a, 1964b; Mackauer & Starý 1967; Avidov & Harpaz 1969; Al-Azawi 1970; Starý 1976a, 1979a, 1987a; Marsh 1979; Flint 1980a, 1980b; Aeschlimann 1981; Monajemi & Esmaili 1981; Düzgüneş et al. 1982; Starý & Erdelen 1982; Wilson et al. 1982; Mitchell 1984; Tremblay et al. 1985; Gordon et al. 1987; Finlayson 1990; Mescheloff & Rosen 1993; Milne 1997; Tomanović et al. 1999b; Starý et al. 2000, 2014b; French et al. 2001; Uysal et al. 2004; Rakhshani et al. 2006a, 2008c, 2012b; Laamari et al. 2012; Nazari et al. 2012; Žikić et al. 2012; Barahoei et al. 2013); ***Therioaphis*** spp. (Mackauer 1962c; Starý 1965a, 1976a; Muesebeck 1967; Starý et al. 1971, 1973, 1975, 2000; Marsh 1979; Bhagat 1984, 1986b; Mescheloff & Rosen 1993; Pike et al. 2000); *Uroleucon erigeronense* (Thomas) (Hollingbery et al. 2012).

***Distribution.*** **Algeria** (Laamari et al. 2012; Rakhshani et al. 2019); **Andorra** (Sanchis et al. 1999); **Australia** (Evans 1939; Walters & Dominick 1984; Hughes et al. 1987; Milne 1988; Carver 1992; Ward 2026); **Austria** (Mackauer 1959b); **Bulgaria** (Todorov 2007); **Canada** (Mackauer & Starý 1967; Fulbright et al. 2007); **Czech Republic** (Starý 1987a, 1989a, 2006); **Finland** (Mackauer 1968c; Hellén 1971); **France** (Muesebeck 1956, 1958a; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975, 1977a; Starý 1976a; Aeschlimann 1981; Derocles et al. 2014a); **Germany** (Mackauer 1959b, 1962c; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Greece** (Aeschlimann 1981; Kavallieratos et al. 2001, 2004); **India** (Bhagat 1984, 1986b); **Iran** (van den Bosch 1957; Farahbakhsh 1961; Mackauer & Starý 1967; Muesebeck 1967; Starý 1979a; Monajemi & Esmaili 1981; Starý et al. 2000; Rakhshani et al. 2006a, 2012b, 2019; Fallahzadeh & Saghaei 2010; Nazari et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Ghotbi Ravandi et al. 2017; Ameri et al. 2019); **Iraq** (van den Bosch 1957; Muesebeck 1967; Al-Azawi 1970; Starý 1976a; Rakhshani et al. 2019); **Italy** (Muesebeck 1956, 1958a; Mackauer 1959b; Mackauer & Starý 1967; Starý 1976a; Pennacchio & Tremblay 1988; Tremblay & Pennacchio 1988a; Bergamesco et al. 1995); **Kazakhstan**

(Davidian 2016b); **Lebanon** (Tremblay et al. 1985; Rakhshani et al. 2019); **Mexico** (Padilla & Young 1959; Schlinger & Hall 1961; Mackauer & Starý 1967; Muesebeck 1967; Starý & Remaudière 1988; Coronado-Blanco et al. 2004); **Moldova** (Talitzky & Kuslitzky 1990); **Mongolia** (Takada 1979a); **Morocco** (Starý 1976a; Rakhshani et al. 2019); **New Zealand** (Purposeful introduction – Valentine & Walker 1991; Bulman et al. 2021; Ward 2026); **Palestine** (Mackauer & Starý 1967; Muesebeck 1967; Starý 1976a; Mescheloff & Rosen 1993); **Russia** (Davidian 2005a, 2007, 2016b, 2019b; Davidian & Gavrilyuk 2014; Davidian & Ruchin 2023); **Serbia** (Ferrière & Voukassovitch 1928; Tomanović et al. 1998a, 1999b; Tomanović & Brajković 2001; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004; Žikić et al. 2000, 2012); **Spain** (Quilis-Pérez 1931b; Ceballos 1956; Mackauer & Starý 1967; Starý 1976a; Michelena Saval & Oltra Moscardo 1987; Tizado & Núñez-Perez 1991; Suay Cano & Michelena Saval 1998; Pons et al. 2011, 2013); **Sudan** (El Abjar & Bashir 1989); **Sweden** (Mackauer 1959b); **Tajikistan** (Davidian 2016b); **Türkiye** (van den Bosch 1957; Mackauer & Starý 1967; Muesebeck 1967; Avidov & Harpaz 1969; Starý 1976a; Düzgüneş et al. 1982; Uysal et al. 2004; Davidian 2005a, 2016b; Rakhshani et al. 2019); **United Arab Emirates** (Starý et al. 2014b; Rakhshani et al. 2019); **United Kingdom** (Mackauer 1959b); **USA** (Curtis 1831; Muesebeck 1956, 1958a, 1967; van den Bosch et al. 1957; Hagen et al. 1958; Mackauer 1959b; van den Bosch et al. 1959a, 1959b; Schlinger & Hall 1960a; Nielson & Barnes 1961; Schlinger & Hall 1961; Mackauer & Starý 1967; Angalet 1970; Gutierrez & van den Bosch 1970; Gordon et al. 1987; Finlayson 1990; Pike et al. 2000; French et al. 2001; Whitfield & Lewis 2001; Fulbright et al. 2007; Hollingbery et al. 2012; Davidian 2016b); **Uzbekistan** (Starý 1965a, 1979a; Daminova et al. 2001; Aripov 2003; Davidian 2016b); **Yemen** (Starý & Erdelen 1982; Starý et al. 2014b; Rakhshani et al. 2019).

***Remarks.*** *Trioxys complanatus* is a specific parasitoid of *Therioaphis* aphids, and other host records should be taken with caution.

### *Trioxys curvicaudus* Mackauer, 1967 [Fig. 55D]

*Trioxys curvicaudus* Mackauer, 1967a:144. Holotype ♀, paratypes ♀♀ ♂ (CNC). – France.

***Hosts. Eucallipterus tiliae*** (Linnaeus) (Mackauer 1967a; Mackauer & Starý 1967; Starý & Remaudière 1973; Starý 1976a, 1977, 1978a, 1987a, 1988b, 1995b, 2006; Vassileva-Sumnalieva 1976; Olkowski et al. 1982a, 1982c; Zuparko 1983; Daane et al. 1990; Zuparko & Dahlsten 1994, 1995; Atanassova 1997; Kolarov 1997; Dahlsten et al. 1999; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004, 2016; Davidian 2005a, 2016b; Lumbierres et al. 2005; Rakhshani et al. 2008c; Žikić et al. 2012; Ferrer-Suay et al. 2017; Pons et al. 2018); ***Hoplocallis picta*** (Ferrari) (Lumbierres et al. 2005; Pons et al. 2018; Sadat et al. 2019); ***Leomyzocallis walshii*** (Monell) (Starý 2006; Havelka & Starý 2007; Pons et al. 2018); ***Mesocallis sawashibae*** (Matsumura) (Paik 1976); ***Monelliopsis caryae*** (Monell) (Pons et al. 2018); ***Myzocallis carpini*** (Koch) (Starý 2006); ***Myzocallis coryli*** (Goeze) (Starý 1988b, 2006); ***Myzocallis komareki*** (Pašek) (Kavallieratos et al. 2001, 2004); ***Tinocallis platani*** (Kaltenbach) (Starý 1988b, 2006); ***Tinocallis zelkowae*** (Takahashi) (Paik 1976); ***Tuberculatus annulatus*** (Hartig) (Starý 1988b); ***Tuberculatus*** sp. (Starý 1978a, 1987a, 2006).

***Distribution.*** **Algeria** (Sadat et al. 2019); **Bulgaria** (Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997); **Canada** (Mackauer & Starý 1967; Fulbright et al. 2007); **Czech Republic** (Starý 1977, 1978a, 1987a, 1988b, 1989a, 1995b, 2006; Havelka & Starý 2007; Starý & Havelka 2008); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971; Starý 1978a); **France** (Mackauer 1967a; Mackauer & Starý 1967; Starý et al. 1977a; Derocles et al. 2014a); **Germany** (Mackauer & Starý 1967; Boness & Starý 1988; Belokobylskij et al. 2003); **Greece** (Kavallieratos et al. 2001, 2004); **Iran** (Rakhshani et al. 2008c); **Italy** (Bergamesco et al. 1995; Lozzia 1999); **Lithuania** (Starý 1978a; Davidian 2005a, 2016b); **Russia** (Starý 1978a; Davidian 2005a, 2016b, 2019b; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); **Slovakia** (Starý 1977, 1989a); **Spain** (Starý & Remaudière 1973; Starý 1976a, 1978a; Tizado & Núñez-Perez 1991; Lumbierres et al. 2005; Pons et al. 2018); **Ukraine** (Kaliuzhna 2013a, 2014, 2019a, 2019b); **United Kingdom** (Starý 1978a; Davidian & Rispin 2016); **USA** (Olkowski et al. 1982a, 1982c; Zuparko 1983; Daane et al. 1990; Zuparko & Dahlsten 1994, 1995; Dahlsten et al. 1999).

***Remarks.*** The record of the occurrence of *Trioxys curvicaudus* from South Korea (Paik 1976; Starý & Choi 2000) was due to a misidentification.

### *Trioxys depressus* Petrović & Tomanović, 2021

*Trioxys depressus* Petrović & Tomanović [in Petrović et al.], 2021a:227. Holotype ♀ (OÖLM); paratype ♀ (FBUB). – Kyrgyzstan.

***Host.*** Unknown.

***Distribution.*** **Kyrgyzstan** (Petrović et al. 2021a).

### *Trioxys euceraphis* Takada, 1966

*Trioxys euceraphis* Takada, 1966a:28. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Host. Euceraphis punctipennis*** (Zetterstedt) (Takada 1966a, 1968, 1973; Starý 1975a).

***Distribution.*** **Japan** (Takada 1966a, 1968, 1973; Starý 1975a).

### *Trioxys exareolatus* (Viereck, 1917) [Fig. 55E]

*Aphidius exareolatus* Viereck, 1917:260. Holotype ♀ (after Mackauer 1968a) (USNM). – USA.

***Host. Macrosiphum rosae*** (Linnaeus) (Mackauer & Starý 1967; Marsh 1979).

***Distribution.*** **USA** (Viereck 1917; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Fulbright et al. 2007).

### *Trioxys falcatus* Mackauer, 1959 [Fig. 55F]

*Trioxys falcatus* Mackauer, 1959b:164. Holotype ♀ (SMF). – Germany.

***Hosts. Drepanosiphum oregonense*** Granovsky (Kavallieratos et al. 2016); ***Drepanosiphum platanoidis*** (Schrank) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Periphyllus acericola*** (Walker) (Starý 1972c, 2006; Baker & Broad 2009); ***Periphyllus aceris*** (Linnaeus) (Starý 1961b, 1972c, 2006; Starý & Rupais 1964; Baker & Broad 2009); ***Periphyllus coracinus*** (Koch) (Starý 1972c, 1987a, 2006); ***Periphyllus hirticornis*** (Walker) (Starý 1972c, 1977, 2006); ***Periphyllus lyropictus*** (Kessler) (Starý 1972c, 1987a, 2006; Baker & Broad 2009; Pons et al. 2018); ***Periphyllus obscurus*** Mamontova (Starý 1972c, 2006); ***Periphyllus testudinaceus*** (Fernie) (Starý 1966c, 1972c, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Baker & Broad 2009); ***Periphyllus*** spp. (Starý 1964d, 1977, 1995b; Mackauer & Starý 1967; Kierych 1980; Starý et al. 1971; Halme 1977; Tomanović et al. 1999b; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012; Ferrer-Suay et al. 2017).

***Distribution.*** **Austria** (Mackauer & Starý 1967); **Czech Republic** (Starý 1961b, 1966c, 1972c, 1977, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Ferrer-Suay et al. 2017); **Finland** (Halme 1977); **France** (Starý et al. 1971, 1977a); **Georgia** (Starý 1976a); **Germany** (Mackauer 1959b; Starý 1961b; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **Italy** (Starý 1976a; Bergamesco et al. 1995); **Latvia** (Starý & Rupais 1964; Mackauer & Starý 1967); **Lithuania** (Starý & Rupais 1964); **Poland** (Kierych 1980; Huflejt 1997; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian 2005a, 2016b, 2019b; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a, 1999b; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); **Slovakia** (Starý 1977); **United Kingdom** (Baker & Broad 2009; Davidian & Rispin 2016).

### *Trioxys flavus* Chou & Xiang, 1982

*Trioxys flavus* Chou & Xiang, 1982:45. Holotype ♀, paratype ♀ (NWAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chou & Xiang 1982; Lu & Ji 1992; Gu et al. 1995; Chen & Shi 2001).

### *Trioxys gahani* Smith, 1944 [Fig. 56A]

*Trioxys gahani* Smith, 1944:92. Holotype ♀ (USNM), paratypes ♀♀ ♂ (USNM, NCSU). – USA.

***Hosts.*** *Aphis forbesi* Weed (Smith 1944; Mackauer & Starý 1967); *Capitophorus* sp. (Shands et al. 1965; Mackauer & Starý 1967); ***Uroleucon erigeronense*** (Thomas) (Hollingbery et al. 2012).

***Distribution.*** **USA** (Smith 1944; Muesebeck & Walkley 1951; Shands et al. 1965; Mackauer & Starý 1967; Fulbright et al. 2007; Raworth et al. 2008; Hollingbery et al. 2012).

***Remarks.*** According to Mackauer & Starý (1967), the host range of *Trioxys gahani* is likely restricted to *Chaetosiphon* aphids. They considered records from other aphid hosts to be doubtful, as these were probably the result of the occurrence of mixed aphid colonies.

### *Trioxys galiobii* Starý, 1974

*Trioxys galiobii* Starý, 1974:76. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Czech Republic.

***Host.*** ***Myzus langei*** (Börner) (Starý 1974b, 2006; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004; Tomanović et al. 2007a; Žikić et al. 2012).

***Distribution.*** **Czech Republic** (Starý 1974b, 1989a, 2006); **Montenegro** (Tomanović et al. 2026a); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2016b, 2019b); **Serbia** (Tomanović et al. 1998a, 2007a; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004; Žikić et al. 2012).

### *Trioxys glaber* Starý, 1967

*Trioxys glaber* Starý, 1967:663. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Slovakia.

***Host.*** ***Aphis galiiscabri*** Schrank (Starý 1966c, 1967b, 1974b; Mackauer & Starý 1967).

***Distribution.*** **Czech Republic** (Starý 1966c, 1967b, 1974b; Mackauer & Starý 1967); **Hungary** (Polgár 1983); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2016b, 2019b, 2024); **Slovakia** (Mackauer 1968a; Starý 1989a).

### *Trioxys glabrirostris* Tomanović & van Achterberg, 2026

*Trioxys glabrirostris* Tomanović & van Achterberg [in Tomanović et al.], 2026b:36. Holotype ♀ (RMNH). – Vietnam.

***Host.*** Unknown.

***Distribution.*** **Vietnam** (Tomanović et al. 2026b).

### *Trioxys hokkaidensis* Takada, 1968

*Trioxys hokkaidensis* Takada, 1968:114. Holotype ♀, paratypes ♀♀ (EIHU). – Japan.

***Hosts.*** ***Aphis craccivora*** Koch (Chang & Youn 1983a; Starý & Choi 2000); ***Chaitophorus saliniger*** Shinji, ***Myzus persicae*** (Sulzer), ***Tuberocephalus momonis*** (Matsumura) (Starý & Choi 2000).

***Distribution.*** **Japan** (Takada 1968; Starý 1975a); **Russia** (Davidian 2005a, 2007, 2016b, 2019b).

***Remarks.*** The record of the occurrence of *Trioxys hokkaidensis* from South Korea (Paik 1976; Starý & Choi 2000) was due to a misidentification.

### *Trioxys humuli* Mackauer, 1960

*Trioxys humuli* Mackauer, 1960f:152. Holotype ♂ (SMF), paratypes ♂♂ (CNC, SMF). – Germany.

***Hosts.*** ***Phorodon cannabis*** Passerini (Starý 1976a); ***Phorodon humuli*** (Schrank) (Mackauer 1960f; 1961b, 1963b, 1964d, 1966a, 1966c, 1976a, 2006; Mackauer & Starý 1967; Starý et al. 1973, 1975; Pike & Starý 1996a; Tomanović et al. 1999b; Tomanović & Kavallieratos 2002a; Žikić et al. 2012).

***Distribution.*** **Czech Republic** (Mackauer 1960f; Starý 1961b, 1966c, 1989a, 2006; Mackauer & Starý 1967; Pike & Starý 1996a); **Finland** (BOLD:ACS6454 | BOLD:ACU8138); **France** (Starý et al. 1973, 1975; Starý 1976a; Pike & Starý 1996a); **Georgia** (Starý 1976a); **Germany** (Mackauer 1960f; Starý 1961b; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **India** (Agarwala et al. 1981a; Dey & Akhtar 2007); **Russia** (Davidian 2016b, 2019b); **Serbia** (Tomanović et al. 1998a, 1999b; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004; Žikić et al. 2012); **Türkiye** (Davidian 2016b); **United Kingdom** (Davidian & Rispin 2016).

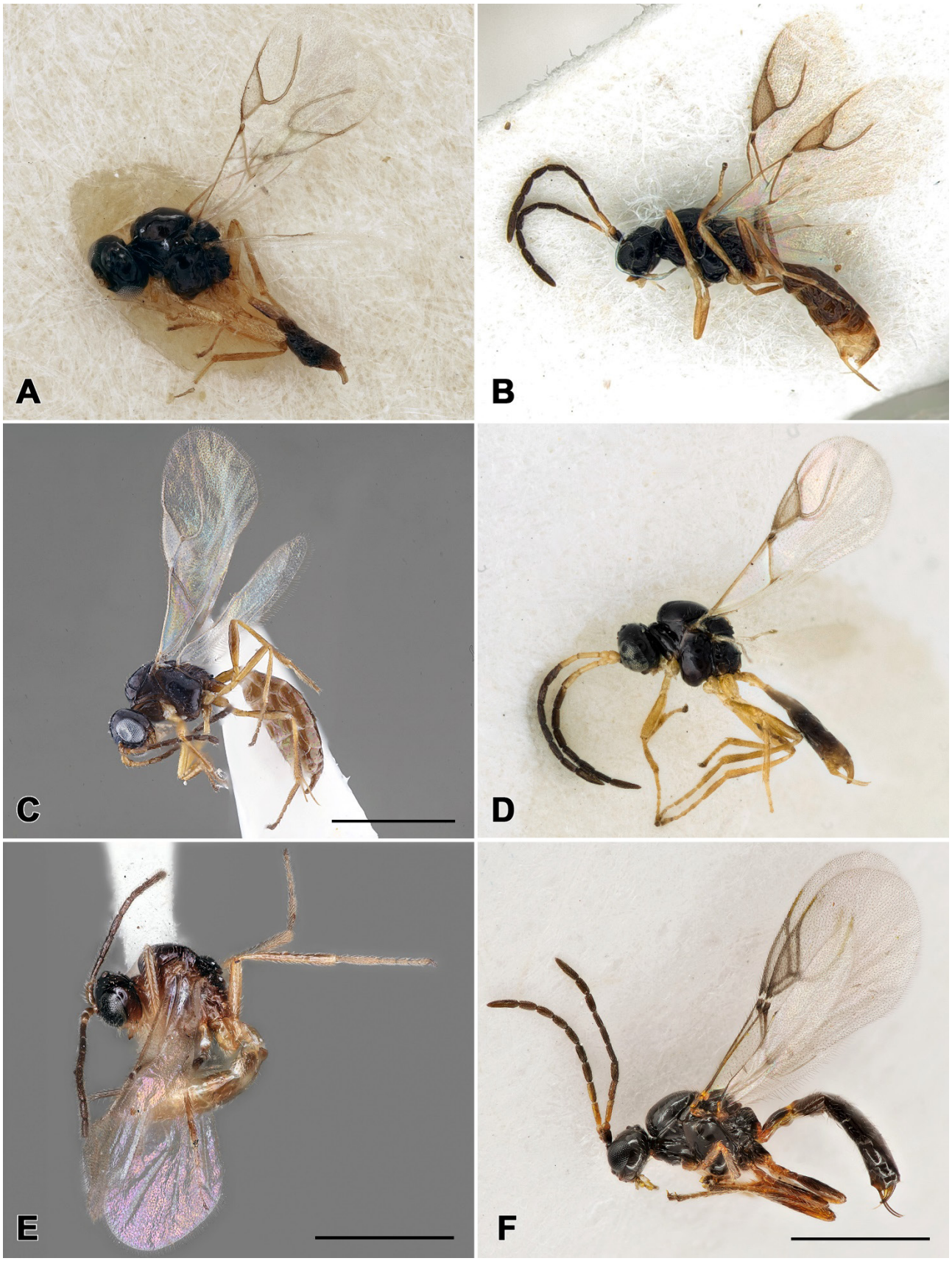



**Figure 55.** Species of the genus *Trioxys* Haliday, 1833. **A.** *Trioxys californicus* Starý & Zuparko, 1995 – Holotype, EMEC; **B.** *Trioxys cirsii* (Curtis, 1831) – Italy, RMNH; **C.** *Trioxys complanatus* Quilis, 1931 – Iran, DPPZ; **D.** *Trioxys curvicaudus* Mackauer, 1967 – Holotype, CNC; **E.** *Trioxys exareolatus* (Viereck, 1917) – Holotype, USNM; **F.** *Trioxys falcatus* Mackauer, 1959 – Netherlands, RMNH. Scale bar: 1 mm.

### *Trioxys ibis* Mackauer, 1961

*Trioxys ibis* Mackauer, 1961c:288. Holotype ♀ (MMUE), paratype ♀ (CNC, MMUE). – United Kingdom.

***Host. Betulaphis quadrituberculata*** (Kaltenbach) (Varty 1964; Mackauer 1965b; Mackauer & Starý 1967; Marsh 1979; Starý 1988b).

***Distribution.*** **Canada** (Mackauer 1965b; Mackauer & Starý 1967; Fulbright et al. 2007); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **United Kingdom** (Mackauer 1961c; Mackauer & Starý 1967; Davidian & Rispin 2016).

### *Trioxys imphalensis* Paonam & Singh, 1988

*Trioxys imphalensis* Paonam & Singh, 1988:6. Holotype ♀ (MANEC). – India.

***Host. Rhopalosiphum nymphaeae*** (Linnaeus) (Paonam & Singh 1988; Devi et al. 1997).

***Distribution.*** **India** (Paonam & Singh 1988; Devi et al. 1997; Das & Chakrabarti 2023a).

### *Trioxys infrequens* Smith, 1944 [Fig. 56B]

*Trioxys infrequens* Smith, 1944:93. Holotype ♀ (USNM). – USA.

***Host.*** Unknown.

***Distribution.*** **Canada** (Mackauer & Starý 1967; Fulbright et al. 2007); **USA** (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Fulbright et al. 2007).

### *Trioxys inulaecola* Starý & Remaudière, 1987

*Trioxys inulaecola* Starý & Remaudière, 1987:49. Holotype ♀ (MNHN), paratypes ♀♀ (IECA). – France.

***Hosts. Capitophorus inulae*** (Passerini) (Starý & Remaudière 1987); ***Capitophorus*** sp. (Davidian 2019c).

***Distribution.*** **France** (Starý & Remaudière 1987); **Russia** (Davidian 2005a, 2007, 2016b, 2019b, 2019c, 2020b; Davidian & Ruchin 2023).

### *Trioxys iziphyae* Mackauer, 1967 [Fig. 56C]

*Trioxys iziphyae* Mackauer, 1967a:145. Holotype ♀, paratypes ♂ (CNC). – Germany.

***Host. Iziphya memorialis*** Börner (Mackauer 1967a).

***Distribution.*** **Finland** (Mackauer 1968c; Hellén 1971); **France** (Mackauer & Starý 1967; Starý et al. 1971); **Germany** (Mackauer 1967a; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Russia** (Davidian 2016b, 2019b, 2023; Davidian & Ruchin 2023).

### *Trioxys japonicus* Takada, 1966

*Trioxys japonicus* Takada, 1966a:30. Holotype ♀, paratypes ♀♀ (EIHU). – Japan.

***Host.*** Unknown.

***Distribution.*** **Japan** (Takada 1966a, 1968; Starý 1975a; Davidian 2005a, 2016b); **Russia** (Davidian 2005a, 2007, 2016b, 2019b).

### *Trioxys kasparyani* Davidian, 2014

*Trioxys kasparyani* Davidian, 2014:158. Holotype ♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2014, 2019b).

### *Trioxys lambersi* Mackauer, 1960 [Fig. 56D]

*Trioxys lambersi* Mackauer, 1960b:294. Holotype ♀, paratypes ♀♀ (CNC). – Netherlands.

***Host. Diuraphis holci*** (Hille Ris Lambers) (Mackauer 1960b; Mackauer & Starý 1967).

***Distribution.*** **Bulgaria** (Todorov & Ivanova 2016); **Finland** (Mackauer & Starý 1967; Mackauer 1968c;

Hellén 1971); **Germany** (Mackauer & Starý 1967; Boness & Starý 1988; Belokobylskij et al. 2003); **Netherlands** (Mackauer 1960b; Mackauer & Starý 1967); **Russia** (Davidian 2005a, 2016b; Davidian & Ruchin 2023); **United Kingdom** (Davidian 2016b; Davidian & Rispin 2016).

### *Trioxys latgei* Starý & Remaudière, 1977

*Trioxys latgei* Starý & Remaudière, 1977:671. Holotype ♀ (IECA), paratypes ♀♀ ♂♂ (IECA, USNM). – USA.

***Host.*** ***Sanbornia juniperi*** Pergande (Starý & Remaudière 1977).

***Distribution.*** **USA** (Starý & Remaudière 1977; Fulbright et al. 2007).

***Remarks.*** According to the original description, some paratypes are also deposited in the collections of G. Remaudière, which may be transferred to other collections.

### *Trioxys liui* Chou & Chou, 1993 [Fig. 56E]

*Trioxys liui* Chou & Chou, 1993:376. Holotype ♀, paratypes ♀♀ ♂♂ (TARI). – Taiwan.

**Syn.:** *Trioxys bambusa* Liu, 1975 [*nomen nudum*].

***Hosts.*** ***Cranaphis formosana*** (Takahashi) (Chou 1981; Chou & Chou 1993; Chen et al. 2009); ***Phyllaphoides bambusicola*** Takahashi (Chou & Chou 1993; Chen et al. 2009); ***Takecallis arundinariae*** (Essig) (Rakhshani et al. 2020; Kim et al. 2024b); ***Takecallis taiwana*** (Takahashi) (Rakhshani et al. 2020; Kim et al. 2024b).

***Distribution.*** **China** (Chou 1981; Chou & Chou 1993; Chen & Shi 2001; Chen et al. 2009); **Russia** (Davidian 2005a, 2007, 2016b, 2019b); **South Korea** (Yu et al. 2023; Kim et al. 2024b; Kim 2026); **Spain** (Rakhshani et al. 2020).

### *Trioxys longicaudi* Starý, 1978

*Trioxys longicaudi* Starý [in Starý & Juchnevič], 1978:530. Holotype ♀ (IECA). – Kazakhstan.

***Host.*** ***Longicaudus trirhodus*** (Walker) (Starý & Juchnevič 1978; Starý 1979a).

***Distribution.*** **Kazakhstan** (Starý & Juchnevič 1978; Starý 1979a; Davidian 2005a, 2016b); **Kyrgyzstan** (Davidian 2016b); **Russia** (Davidian 2023; Davidian & Ruchin 2023).

### *Trioxys macroceratus* Starý, 1960

*Trioxys* (*Trioxys*) *macroceratus* Starý, 1960a:22. Holotype ♀ (MMUE). – United Kingdom.

***Hosts.*** *Aphis podagrariae* Schrank (Starý 1961b, 1966c, 1967b); ***Subsaltusaphis flava*** (Hille Ris Lambers) (Mackauer & Starý 1967; Mackauer 1968a; Davidian & Rispin 2016).

***Distribution.*** **Czech Republic** (Starý 1961b, 1966c, 1989a; Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **Hungary** (Polgár 1983, 1987); **Russia** (Davidian 2005a; Davidian & Ruchin 2023); **Sweden** (Mackauer & Starý 1967); **United Kingdom** (Mackauer 1960f; Starý 1960a, 1961b; Mackauer & Starý 1967; Davidian & Rispin 2016).

### *Trioxys metacarpalis* Rakhshani & Starý, 2012

*Trioxys metacarpalis* Rakhshani & Starý [in Rakhshani et al.], 2012b:6. Holotype ♀ (IECA), paratypes (IECA, DPPZ). – Iran.

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

***Distribution.*** **Iran** (Rakhshani et al. 2012b, 2019).

### *Trioxys mexicanus* Starý & Remaudière, 1982

*Trioxys mexicanus* Starý & Remaudière, 1982:124. Holotype ♀, paratypes ♀♀ (IECA). – Mexico.

***Host.*** ***Leomyzocallis walshii*** (Monell) (Starý & Remaudière 1982).

***Distribution.*** **Mexico** (Starý & Remaudière 1982, 1988; Fulbright et al. 2007).

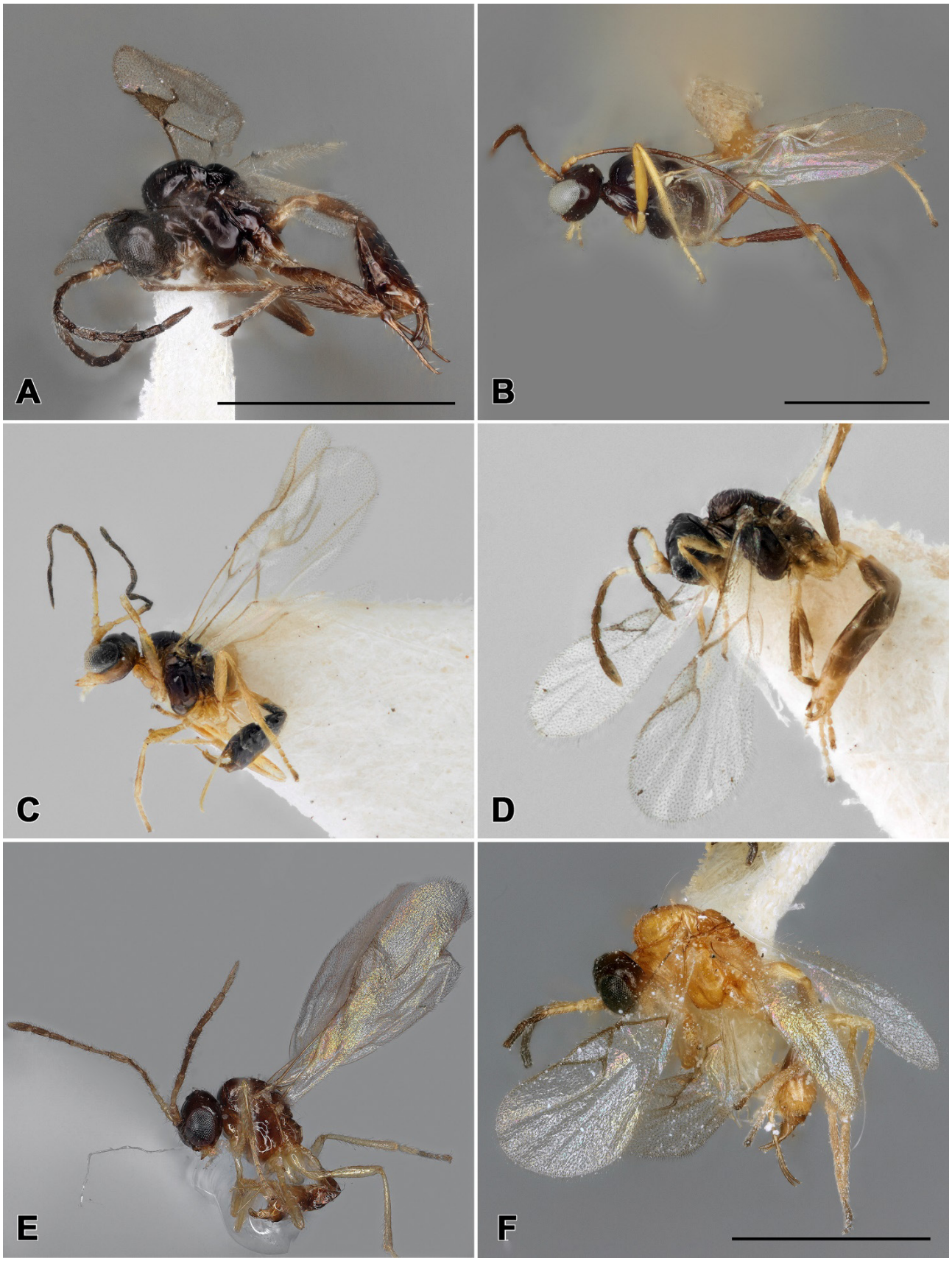



**Figure 56.** Species of the genus *Trioxys* Haliday, 1833. **A.** *Trioxys gahani* Smith, 1944 – Holotype, USNM. **B.** *Trioxys infrequens* Smith, 1944 – Holotype, USNM; **C.** *Trioxys iziphyae* Mackauer, 1967 – Holotype, CNC; **D.** *Trioxys lambersi* Mackauer, 1960 – Holotype, CNC; **E.** *Trioxys liui* Chou & Chou, 1993 – South Korea, KSNU; **F.** *Trioxys luteolus* Starý & Schlinger, 1967 – Holotype, USNM (= *Trioxys shivaphis* Takada, 1966). Scale bar: 1 mm.

### *Trioxys microceratus* Mackauer, 1968 [Fig. 57A]

*Trioxys microceratus* Mackauer, 1968c:27. Holotype ♀ (ZMHF). – Finland.

***Host.*** Unknown.

***Distribution.*** **Bulgaria** (Todorov & Ivanova 2016); **Finland** (Hellén 1971; Mackauer 1968c); **Russia** (Davidian 2005a, 2016b, 2019b, 2023; Davidian & Humala 2023; Davidian & Ruchin 2023).

### *Trioxys monelliopsis* Starý & Marsh, 1982 [Fig. 57B]

*Trioxys monelliopsis* Starý & Marsh, 1982:726. Holotype ♀, paratypes ♀♀ (USNM). – USA.

***Host.*** ***Monelliopsis nigropunctata*** (Granovsky) (Starý & Marsh 1982).

***Distribution.*** **USA** (Starý & Marsh 1982; Fulbright et al. 2007).

### *Trioxys moshei* Mescheloff & Rosen, 1993

*Trioxys moshei* Mescheloff & Rosen, 1993:36. Holotype ♀, paratypes ♀♀ ♂♂ (AROV). – Palestine.

***Host.*** ***Hoplocallis picta*** (Ferrari) (Mescheloff & Rosen 1993).

***Distribution.*** **Palestine** (Mescheloff & Rosen 1993); **Spain** (Michelena Saval 2017).

### *Trioxys mutilus* Mackauer, 1961 [Fig. 57C]

*Trioxys mutilus* Mackauer, 1961c:285. Holotype ♀, paratype ♂ (CNC). – Netherlands.

***Host.*** ***Monaphis antennata*** (Kaltenbach) (Mackauer 1961c; Mackauer & Starý 1967; Starý 1978a, 1988b).

***Distribution.*** **Netherlands** (Mackauer 1961c; Mackauer & Starý 1967).

### *Trioxys myzocallis* Takada, 1968

*Trioxys myzocallis* Takada, 1968:114. Holotype ♀, paratypes ♀ ♂♂ (EIHU). – Japan.

***Host.*** ***Tuberculatus pilosus*** (Takahashi) (Takada 1968, 1973; Starý 1975a).

***Distribution.*** **Japan** (Takada 1968, 1973; Starý 1975a; Konishi & Maetô 2000).

### *Trioxys ovalis* (Provancher, 1886)

*Nevropenes* [sic!] *ovalis* Provancher, 1886:153. Syntypes ♀ ♂ (ULQC - Lost). – Canada.

***Host.*** Unknown.

***Distribution.*** **Canada** (Provancher 1886; Muesebeck & Walkley 1951; Fulbright et al. 2007); **USA** (Nason 1905).

### *Trioxys pallidus* (Haliday, 1833) [Fig. 57D]

*Aphidius* (*Trioxys*) *pallidus* Haliday, 1833:489. Holotype ♀ (after Mackauer 1961b) (NHMUK). – Ireland.

**Syn.:** *Aphidius resolutus* Nees von Esenbeck, 1834; *Aphidius callipteri* Marshall, 1896; *Trioxys pulcher* Gautier & Bonnamour 1924.

***Hosts.*** ***Agrioaphis castanicola*** Baker (Starý et al. 1971, 1973; Starý 1978a, 1988b); ***Chromaphis juglandicola*** (Kaltenbach) (Fisher et al. 1959; Schlinger 1960b; Schlinger et al. 1960a, 1960b; van den Bosch et al. 1962; Starý 1964d, 1965a, 1966c, 1976a, 1977, 1978a, 1979a, 1987a, 1988b, 1995b, 2006; Mackauer & Starý 1967; van den Bosch et al. 1970; Starý & Kaddou 1971; van den Bosch & Messenger 1973; Marsh 1979; Shuja-Uddin 1982; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Starý & Sekkat 1987; Hoy & Cave 1989b; Finlayson 1990; Pike et al. 1996, 2000; Tomanović et al. 1999b; Mohammadbeigi 2000; Starý et al. 2000; Kavallieratos et al. 2001, 2004; Rakhshani et al. 2001, 2004a, 2004b, 2008c, 2012b; Tomanović & Kavallieratos 2002a; Ölmez & Ulusoy 2003; Aslan et al. 2004; Michelena et al. 2004; Uysal et al. 2004; Talebi et al. 2009; Laamari et al. 2011, 2012; Barahoei et al. 2012, 2013; Kos et al. 2012; Nazari et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Taheri & Rakhshani 2013; Pons et al. 2018); ***Eucallipterus tiliae*** (Linnaeus) (Starý & Rupais 1963; Starý 1964d, 1965a, 1966c, 1976a, 1977, 1978a, 2006; Mackauer & Starý 1967; Marsh 1979, 1987a, 1988b; Zuparko & Dahlsten 1995; Wiackowski et al. 1997, 2001; Pike et al.

2000; Wiackowski & Wiackowska 2000; Davidian 2005a, 2016b; Kavallieratos et al. 2016; Ferrer-Suay et al. 2017; Pons et al. 2018); ***Hoplocallis picta*** (Ferrari) (Mackauer & Starý 1967; Starý et al. 1973; Starý 1976a, 1978a, 1988b; Sanchis et al. 2000; Lumbierres et al. 2005; Pons et al. 2006, 2018; Rakhshani et al. 2008c, 2015b); ***Hoplocallis ruperti*** Pintera (Ferrer-Suay et al. 2017); ***Leomyzocallis multisetis*** (Boudreaux & Tissot) (Pike et al. 2000); ***Leomyzocallis walshii*** (Monell) (Pons et al. 2006, 2018; Starý 2006; Havelka & Starý 2007); ***Monellia caryella*** (Fitch) (Mansour 1988; Mescheloff & Rosen 1993; Apak & Akşit 2016); ***Monelliopsis caryae*** (Monell) (Pike et al. 1996, 2000; Pons et al. 2018); ***Myzocallis boerneri*** Stroyan (Žikić et al. 2012); ***Myzocallis carpini*** (Koch) (Starý 1964d, 1966c, 1976a, 1978a, 1987a, 1988b, 2006; Mackauer & Starý 1967; Starý et al. 1973; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004; Žikić et al. 2012; Derocles et al. 2014a; Ferrer-Suay et al. 2017); ***Myzocallis coryli*** (Goeze) (Starý & Rupais 1963; Starý 1965a, 1966d, 1976a, 1978a, 2006; Mackauer & Starý 1967; Starý et al. 1975; Marsh 1979; Messing 1988; Starý 1988b; Pike et al. 2000; Olsen 2002; Michelena et al. 2004; Davidian 2005a, 2016b; Derocles et al. 2014a); ***Myzocallis komareki*** (Pašek) (Kavallieratos et al. 2001, 2004, 2016); ***Myzocallis schreiberi*** Hille Ris Lambers & Stroyan (Mackauer & Starý 1967; Starý 1978a, 1988b); ***Myzocallis*** spp. (González & Michelena 1987; Pike et al. 1996; Žikić et al. 2012; Kavallieratos et al. 2016); ***Panaphis juglandis*** (Goeze) (Pike et al. 1996, 2000; Wiackowski & Wiackowska 1996; Wiackowski et al. 2001; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004; Žikić et al. 2012); ***Pterocallis alni*** (De Geer) (Starý & Rupais 1964; Starý 1978a, 1988b, 2006; Tomanović et al. 1999b; Starý et al. 2000; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); ***Pterocallis*** sp. (Pons et al. 2018); ***Thelaxes dryophila*** (Schrank) (Davidian 2016b); ***Thelaxes suberi*** (Del Guercio) (Pons et al. 2006, 2018); *Therioaphis riehmi* (Börner) (van den Bosch 1957; Mackauer 1959e); *Therioaphis trifolii* (Monell) (Mackauer 1959e); ***Tinocallis platani*** (Kaltenbach) (Starý 1977, 1978a, 1987a, 1988b, 2006); ***Tinocallis saltans*** (Nevsky) (Starý & Rupais 1963; Starý 1965a, 1979a; Davidian 2005a, 2016b; Lumbierres et al. 2005; Pons et al. 2006, 2018); ***Tinocallis takachionensis*** Higuchi (Pons et al. 2018); ***Tuberculatus albosiphonatus*** Hille Ris Lambers (Starý 1976a); ***Tuberculatus annulatus*** (Hartig) (Nees von Esenbeck 1834b; Marshall 1896; Mackauer 1962c; Starý & Rupais 1963, 1964; Starý 1965a, 1966c, 1966d, 1976a, 1978a, 1987a, 1988b, 2006; Mackauer & Starý 1967; Carver & Starý 1974; Vassileva-Sumnalieva 1976; Marsh 1979; Barczak 1994; Atanassova 1997; Kolarov 1997; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Ferrer-Suay et al. 2017); ***Tuberculatus eggleri*** Börner (Mackauer & Starý 1967; Starý 1978a; Pons et al. 2006, 2018); ***Tuberculatus moerickei*** Hille Ris Lambers (Starý 1976a; Kök & Tomanović 2022); ***Tuberculatus*** spp. (Starý 1966d, 1969b, 1969d, 2006; Starý & Kaddou 1971; Michelena Saval & Oltra Moscardo 1987; Derocles et al. 2012; Kavallieratos et al. 2016); *Uroleucon sonchi* (Linnaeus) (Fulmek 1968).

***Distribution.*** **Algeria** (Laamari et al. 2011, 2012; Rakhshani et al. 2019); **Andorra** (Sanchis et al. 1999); **Armenia** (Davidian 2005a, 2016b); **Australia** (Tasmania – Evans 1939; Mackauer & Starý 1967); **Austria** (Mackauer & Starý 1967); **Belarus** (BOLD:ABA8091); **Bulgaria** (Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997; Todorov 2007); **Canada** (BOLD:ABA8091); **China** (Gu et al. 1995; Chen & Shi 2001); **Czech Republic** (Starý 1966c, 1977, 1978a, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Zeman & Vanek 2001; Havelka & Starý 2007; Starý & Havelka 2008; Ferrer-Suay et al. 2017); **Egypt** (Mahmoud et al. 2009); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971; Starý 1978a); **France** (Gautier & Bonnamour 1924; Schlinger et al. 1960b; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975, 1977a; Starý 1976a, 1978a; Andrei Ruiz & Villemant 1999; Derocles et al. 2012, 2014a); **Georgia** (Starý 1976a, 1978a; Davidian 2016b); **Germany** (Nees von Esenbeck 1834a; Marshall 1896; Szépligeti 1904; Mackauer 1962c; Starý 1978a; Boness & Starý 1988; Belokobylskij et al. 2003); **Greece** (Kavallieratos et al. 2001, 2004); **Hungary** (Polgár 1983); **India** (Agarwala et al. 1981a; Ghosh & Agarwala 1982; Shuja-Uddin 1982; Starý & Ghosh 1983; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Iran** (van den Bosch 1957; Mackauer 1959e; van den Bosch et al. 1970; van den Bosch & Messenger 1973; Starý 1979a; Mohammadbeigi 2000; Starý et al. 2000; Rakhshani et al. 2001, 2004a, 2004b, 2019; Fallahzadeh & Saghaei 2010; Barahoei et al. 2012, 2013; Nazari et al. 2012; Alikhani et al. 2013; Taheri & Rakhshani 2013); **Iraq** (Starý 1969d, 1976a; Starý & Kaddou 1971; Rakhshani et al. 2019); **Ireland** (Haliday 1833); **Italy** (Mackauer & Starý 1967; Starý 1966d, 1976a, 1978a; Bergamesco et al. 1995; Davidian 2016b); **Kazakhstan** (Davidian 2005a, 2016b); **Latvia** (Starý & Rupais 1964; Mackauer & Starý 1967; Starý 1978a); **Lebanon** (BOLD:ACM1888); **Lithuania** (Starý & Rupais 1964); **Madeira Islands** (van Achterberg & Aguiar 2009); **Malta**

(Rakhshani et al. 2015b); **Moldova** (Starý 1978a; Talitzky & Kuslitzky 1990); **Montenegro** (Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004; Žikić et al. 2012; Davidian 2016b); **Morocco** (Starý & Sekkat 1987; Rakhshani et al. 2019); **Netherlands** (Mackauer & Starý 1967); **Norway** (Mjøs et al. 2024; Artsdatabanken 2026); **Palestine** (Mackauer 1959e; Mansour 1988; Mescheloff & Rosen 1993); **Poland** (Kierych 1980; Barczak 1994; Huflejt 1997; Wiackowski & Wiackowska 1996, 2000; Wiackowski et al. 1997, 2001; Tran & Piekarska-Boniecka 2017); **Portugal** (BOLD:ABA8091); **Russia** (Starý & Rupais 1963; Starý 1965a, 1978a; Mackauer & Starý 1967; Davidian 2005a, 2016b, 2019b; Davidian & Gavrilyuk 2014; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a, 1999b; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); **Slovakia** (Starý 1977, 1989a; Ferrer-Suay et al. 2017); **Slovenia** (Kos et al. 2012); **Spain** (Mackauer & Starý 1967; Starý 1976a; González & Michelena 1987; Michelena Saval & Oltra Moscardo 1987; Tizado & Núñez-Perez 1991; Sanchis et al. 1995, 2000; Nieves-Aldrey et al. 2003; Michelena et al. 2004; Lumbierres et al. 2005; Pons et al. 2006, 2018; Michelena Saval & Martínez De Murguía 2012); **Sweden** (Thomson 1895; Mackauer & Starý 1967); **Switzerland** (Mackauer & Starý 1967); **Tajikistan** (Starý 1965a, 1979a; Davidian 2016b); **Türkiye** (Starý 1976a; Ölmez & Ulusoy 2003; Aslan et al. 2004; Uysal et al. 2004; Apak & Akşit 2016; Kök & Tomanović 2022); **Ukraine** (Kaliuzhna 2019a, 2026); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Marshall 1872a, 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1959b; Mackauer & Starý 1967; Starý 1978a; Belshaw & Quicke 2002; van Veen et al. 2008); **USA** (Fisher et al. 1959; Schlinger et al. 1960a; van den Bosch et al. 1962; Mackauer & Starý 1967; van den Bosch et al. 1970; Messing & AliNiazee 1988; Hoy & Cave 1989a; Hoy et al. 1989b; Messing & AliNiazee 1989; Finlayson 1990; Vail et al. 1991; Zuparko & Dahlsten 1995; Pike et al. 1996, 2000; Olsen 2002; Fulbright et al. 2007; Hougardy & Mills 2009); **Uzbekistan** (Starý 1979a; Daminova et al. 2001; Aripov 2003; Daminova 2007).

***Remarks.*** Mackauer (1961b) regarded the type specimen as the holotype, and later (Mackauer 1968a), referred to the same specimen as a lectotype; however, there is no evidence that he was aware of the existence of other type specimens of this species. Therefore, Article 74.6 of the ICZN should not be applied to validate the lectotype designation, and the specimen should continue to be regarded as the holotype.

### *Trioxys pampas* Tomanović & Kocić, 2025

*Trioxys pampas* Tomanović & Kocić [in Tomanović et al.], 2025:318. Holotype ♀ (MACN), paratype ♀ (NHMB). – Argentina.

***Host.*** Unknown.

***Distribution.*** **Argentina** (Tomanović et al. 2025).

### *Trioxys pannonicus* Starý, 1960 [Fig. 57E]

*Trioxys pannonicus* Starý, 1960h:93. Holotype ♀ (IECA), paratypes ♀♀ (IECA, HNHM). – Slovakia.

***Hosts.*** ***Macrosiphoniella tuberculata*** (Nevsky) (Starý 1979a; Starý et al. 2000; Rakhshani et al. 2011); ***Macrosiphoniella*** spp. (Kierych 1980; Bhagat 1984; Starý 1987a, 1995b, 2006; Rakhshani et al. 2008c; Talebi et al. 2009); ***Titanosiphon artemisiae*** (Koch) (Starý 1960h, 1961b, 1964d, 1966c, 1976a, 1977; Mackauer 1962c; Mackauer & Starý 1967; Tremblay 1972); ***Titanosiphon neoartemisiae*** (Takahashi) (Starý et al. 1999; Barahoei et al. 2014); ***Titanosiphon*** spp. (Tomanović & Kavallieratos 2002a; Žikić et al. 2012).

***Distribution.*** **Canary Islands** (Mackauer 1962b; Starý 1976a; Báez et al. 2001); **Czech Republic** (Starý 1961b, 1966c, 1977, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **Germany** (Mackauer 1962c; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Starý 1960h; Mackauer & Starý 1967; Polgár 1983, 1987); **India** (Bhagat 1984); **Iran** (Starý 1979a; Starý et al. 2000; Talebi et al. 2009; Fallahzadeh & Saghaei 2010; Barahoei et al. 2014); **Italy** (Tremblay 1972; Starý 1976a; Bergamesco et al. 1995); **Kazakhstan** (Starý 1979a; Davidian 2005a, 2016b); **Moldova** (Talitzky & Kuslitzky 1990); **Mongolia** (Starý 1979a; Davidian 2016b); **Montenegro** (Tomanović et al. 2026a); **Pakistan** (Starý et al. 1999); **Poland** (Kierych 1980; Huflejt 1997); **Russia** (Davidian 2005a, 2007, 2016b, 2019b, 2020b); **Serbia** (Tomanović & Kavallieratos 2002a; Žikić et al. 2012); **Slovakia** (Starý 1960h, 1977, 1989a); **Spain** (Tizado & Núñez-Perez 1991); **Tajikistan** (Davidian 2016b).

### *Trioxys pappi* Takada, 1979

*Trioxys pappi* Takada, 1979a:197. Holotype ♀ (HNHM). – Mongolia.

**Syn.:** *Trioxys persicus* Davidian, 2005.

***Host.*** Unknown.

***Distribution.*** **Iran** (Davidian 2005a; Rakhshani et al. 2019); **Mongolia** (Takada 1979a).

### *Trioxys parauctus* Starý, 1960 [Fig. 57F]

*Trioxys parauctus* Starý, 1960g:367. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Czech Republic.

***Hosts. Aphis*** spp. (Starý 1960g, 1961b; Mackauer & Starý 1967); *Cinara juniperi* (De Geer) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Hyadaphis*** spp. (Starý 1964d, 1966c; Mackauer & Starý 1967); ***Hydaphias hofmanni*** Börner (Starý 1974b); ***Hydaphias molluginis*** Börner (Tomanović et al. 2021); ***Hydaphias*** spp. (Starý 1960g, 1961b, 1963b, 1977, 2006); ***Myzus langei*** (Börner) (Mackauer 1962c).

***Distribution.*** **Czech Republic** (Starý 1960g, 1961b, 1966c, 1974b, 1977, 1989a, 2006; Mackauer & Starý 1967); **Germany** (Mackauer 1962c; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Poland** (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian 2005a, 2007, 2016b, 2019b, 2024; Davidian & Ruchin 2023); **Serbia** (Tomanović et al. 2021); **Slovakia** (Starý 1977, 1989a).

### *Trioxys peniculatus* Agarwala, Saha & Mahapatra, 1985

*Trioxys* (*Trioxys*) *peniculatus* Agarwala, Saha & Mahapatra, 1985:103. Holotype ♀, paratypes ♀ ♂♂ (CUCE). – India.

***Host. Cervaphis schouteniae*** van der Goot (Agarwala et al. 1985; Starý et al. 2010a).

***Distribution.*** **India** (Agarwala et al. 1985; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Starý et al. 2010a; Das & Chakrabarti 2023a).

### *Trioxys phyllaphidis* Mackauer, 1961

*Trioxys phyllaphidis* Mackauer, 1961c:286. Holotype ♀ (CNC). – Netherlands.

***Hosts. Phyllaphis fagi*** (Linnaeus) (Mackauer 1961c; Starý 1966c, 1976a, 1978a, 1987a, 1988b, 2006; Mackauer & Starý 1967; Tomanović 2000; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004, 2016; Davidian 2005a, 2016b; Žikić et al. 2012; Pons et al. 2018); ***Therioaphis tenera*** (Aizenberg) (Davidian 2005a).

***Distribution.*** **Czech Republic** (Starý 1966c, 1978a, 1987a, 1988b, 1989a, 2006; Mackauer & Starý 1967); **Georgia** (Starý 1976a, 1978a; Davidian 2016b); **Hungary** (Polgár 1983); **Montenegro** (Tomanović 2000; Tomanović & Kavallieratos 2002a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); **Netherlands** (Mackauer 1961c; Mackauer & Starý 1967; Fulmek 1968); **Russia** (Davidian 2005a, 2016b, 2019b, 2020b; Davidian & Gavrilyuk 2014; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Spain** (Pons et al. 2018); **Tajikistan** (Davidian 2005a).

### *Trioxys populi* Gu & Zhao, 1997

*Trioxys populi* Gu & Zhao, 1997:207. Holotype ♀, paratypes ♀♀ ♂ (SAUT). – China.

***Host. Chaitophorus populeti*** (Panzer) (Gu et al. 1997; Wei et al. 2005).

***Distribution.*** **China** (Gu et al. 1995, 1997; Chen & Shi 2001).

### *Trioxys quercicola* Starý, 1969

*Trioxys quercicola* Starý, 1969d:289. Holotype ♀, paratypes ♀ ♂ (IECA). – Iraq.

***Host. Thelaxes suberi*** (Del Guercio) (Starý 1969d, 1976a; Starý & Kaddou 1971).

***Distribution.*** **Iraq** (Starý 1969d, 1976a; Starý & Kaddou 1971; Rakhshani et al. 2019).

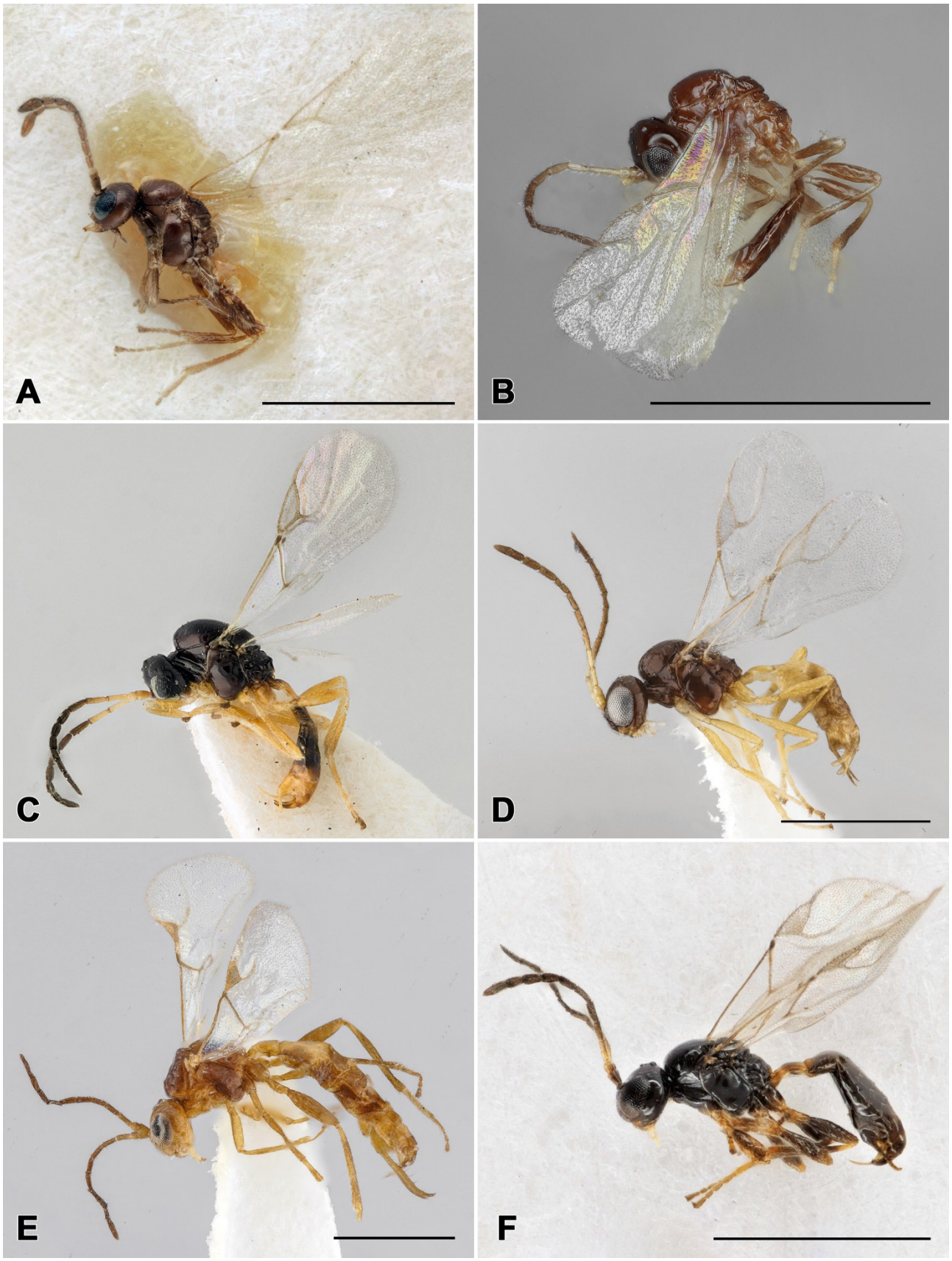



**Figure 57.** Species of the genus *Trioxys* Haliday, 1833. **A.** *Trioxys microceratus* Mackauer, 1968 - Holotype, ZMHF; **B.** *Trioxys monelliopsis* Starý & Marsh, 1982 – Holotype, USNM; **C.** *Trioxys mutilus* Mackauer, 1961 – Holotype, CNC; **D.** *Trioxys pallidus* (Haliday, 1833) – Iran, DPPZ; **E.** *Trioxys pannonicus* Starý, 1960 – Iran, DPPZ; **F.** *Trioxys parauctus* Starý, 1960 – Netherlands, RMNH. Scale bar: 1 mm.

### *Trioxys raychaudhurii* Bhagat, 1990

*Trioxys raychaudhurii* Bhagat [in Raychaudhuri et al.], 1990:88. Holotype ♀, paratypes ♀ (CUCE). – India.

***Host.*** ***Taoia indica*** (Ghosh & Raychaudhuri) (Raychaudhuri et al. 1990).

***Distribution.*** **India** (Raychaudhuri et al. 1990).

### *Trioxys remaudierei* Starý & Rakhshani, 2017 [Fig. 58A]

*Trioxys Remaudièrei* Starý & Rakhshani, 2017:1239. Holotype ♀, paratype ♀ (IECA). – France.

***Hosts.*** ***Takecallis arundinariae*** (Essig) (Rakhshani et al. 2017a; Pons et al. 2018); ***Takecallis taiwana*** (Takahashi) (Rakhshani et al. 2017a).

***Distribution.*** **France**, **Spain** (Rakhshani et al. 2017a; Pons et al. 2018); **South Korea** (Kim et al. 2024b; Kim 2026).

### *Trioxys rishii* Starý & Bhagat, 1978

*Trioxys* (*Trioxys*) *rishii* Starý & Bhagat, 1978:390. Holotype ♀ (ZSI), paratypes ♀♀ ♂♂ (IECA, DZKU). – India.

***Hosts.*** ***Aphis craccivora*** Koch (Bhagat 1984, 1985); ***Aphis pomi*** De Geer (Bhagat 1984); ***Brachycaudus*** sp. (Starý & Bhagat 1978); ***Capitophorus elaeagni*** (Del Guercio) (Bhagat 1984); ***Diuraphis calamagrostis*** (Ossiannilsson) (Bhagat & Masoodi 1988); ***Phorodon cannabis*** Passerini (Bhagat 1984).

***Distribution.*** **India** (Starý & Bhagat 1978; Agarwala et al. 1981a; Starý & Ghosh 1983; Bhagat 1984, 1985; Bhagat & Masoodi 1988; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a).

### *Trioxys robiniae* Dong & Wang, 1993

*Trioxys robiniae* Dong & Wang, 1993:665. Holotype ♀, paratypes ♀ ♂♂ (KIZ). – China.

***Host.*** ***Aphis craccivora*** Koch (Chen & Shi 2001).

***Distribution.*** **China** (Dong & Wang 1993; Chen & Shi 2001).

### *Trioxys rokkoensis* Davidian, 2007

*Trioxys rokkoensis* Davidian, 2007:243. Holotype ♀ (ZISP). – Japan.

***Host.*** Unknown.

***Distribution.*** **Japan** (Davidian 2007); **Russia** (Davidian 2020b).

### *Trioxys rosae* Pike & Starý, 1996 [Fig. 58C]

*Trioxys rosae* Pike & Starý [in Pike et al.], 1996:586. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (IECA, WSUJ). – USA.

***Hosts.*** ***Macrosiphum pallidum*** (Oestlund) (Pike et al. 2000); ***Macrosiphum rosae*** (Linnaeus) (Pike et al. 1996, 2000); ***Pleotrichophorus oestlundi*** (Knowlton), ***Uroleucon erigeronense*** (Thomas) (Hollingbery et al. 2012).

***Distribution.*** **USA** (Pike et al. 1996, 2000; Fulbright et al. 2007; Hollingbery et al. 2012).

### *Trioxys rosaecola* Bhagat, 1982

*Trioxys* (*Trioxys*) *rosaecola* Bhagat, 1982c:323. Holotype ♀, paratype ♀ (DZKU). – India.

***Host.*** ***Myzaphis rosarum*** (Kaltenbach) (Bhagat 1982c).

***Distribution.*** **India** (Bhagat 1982c; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a).

### *Trioxys setaceus* Pike & Starý, 2000 [Fig. 58D]

*Trioxys setaceus* Pike & Starý [in Pike et al.], 2000:731. Holotype ♀ (USNM), paratypes ♀♀ ♂ (WSUJ). – USA.

***Host.*** ***Acyrthosiphon macrosiphum*** (Wilson) (Pike et al. 2000).

***Distribution.*** **USA** (Pike et al. 2000; Fulbright et al. 2007).

### *Trioxys shivaphis* Takada, 1966

*Trioxys shivaphis* Takada, 1966a:26. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

**Syn.:** *Trioxys luteolus* Starý & Schlinger, 1967 [Fig. 56F].

***Hosts.*** ***Shivaphis celti*** Das (Takada 1966a, 1968, 1973; Mackauer & Starý 1967; Liu 1975; Starý 1975a; Chou 1981; Bhagat 1984, 1985; Chen et al. 2009); ***Shivaphis*** sp. (Starý & Schlinger 1967; Starý 1975a); ***Tinocallis ulmiparvifoliae*** Matsumura (Mackauer & Starý 1967; Starý 1975a; Chou 1981); ***Tinocallis viridis*** (Takahashi) (Starý & Schlinger 1967; Liu 1975; Chen et al. 2009).

***Distribution.*** **China** (Mackauer & Starý 1967; Starý & Schlinger 1967; Liu 1975; Chou 1981; Dong & Wang 1993; Chen & Shi 2001; Chen et al. 2009); **India** (Bhagat 1984, 1985); **Japan** (Takada 1966a, 1968, 1973; Davidian 2005a).

### *Trioxys soporensis* Shuja-Uddin, 1982

*Trioxys* (*Trioxys*) *soporensis* Shuja-Uddin, 1982:146. Holotype ♀, paratypes ♀♂ (ZMAU). – India.

***Host.*** ***Shivaphis*** sp. (Shuja-Uddin 1982).

***Distribution.*** **India** (Shuja-Uddin 1982; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a).

### *Trioxys spinosus* Starý, 1963

*Trioxys spinosus* Starý, 1963b:212. Holotype ♀, paratypes ♀♀ ♂ (IECA). – Slovakia.

***Hosts.*** ***Semiaphis dauci seselii*** Börner (Starý 1963b, 1966c; Mackauer & Starý 1967); ***Staticobium caucasicum*** Bozhko (Starý et al. 1971).

***Distribution.*** **Czech Republic** (Starý 1966c; Mackauer & Starý 1967); **France** (Starý et al. 1971); **Hungary** (Polgár 1983); **Slovakia** (Starý 1963b, 1989a).

### *Trioxys sunnysidensis* Fulbright & Pike, 2007 [Fig. 58E]

*Trioxys sunnysidensis* Fulbright & Pike, 2007:543. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, IECA). – USA.

***Host.*** ***Rhopalosiphum padi*** (Linnaeus) (Fulbright & Pike 2007; Čkrkić et al. 2019b).

***Distribution.*** **Austria** (BOLD:AAU8585); **Belarus** (BOLD:AAU8585); **Canada** (Čkrkić et al. 2019b); **Czech Republic** (BOLD:AAU8585); **Germany** (Čkrkić et al. 2019b); **Iraq** (GBMNE65953-22); **New Zealand** (Accidental introduction – Čkrkić et al. 2019b; Bulman et al. 2021; Ward 2026); **Norway** (Čkrkić et al. 2019b; Mjøs et al. 2024); **United Kingdom** (Čkrkić et al. 2019b); **USA** (Fulbright & Pike 2007; Fulbright et al. 2007).

### *Trioxys tamarae* Davidian, 2005

*Trioxys tamarae* Davidian, 2005:667. Holotype ♀, paratypes ♀♀ (ZISP). – Japan.

***Host.*** Unknown.

***Distribution.*** **Japan** (Davidian 2005a, 2016b); **Russia** (Davidian 2005a, 2007, 2016b, 2019b); **South Korea** (Davidian 2020b).

### *Trioxys tanaceticola* Starý, 1971

*Trioxys tanaceticola* Starý, 1971:42. Holotype ♀, paratypes ♀♀ (IECA). – France.

***Hosts.*** *Coloradoa absinthii* (Lichtenstein) (Talebi et al. 2009); *Coloradoa heinzei* (Börner) (Starý 1979a; Starý et al. 2000; Davidian 2016b); *Coloradoa* sp. (Barahoei et al. 2014); ***Metopeurum fuscoviride*** Stroyan (Starý et al. 1971; Tomanović et al. 2021); *Titanosiphon neoartemisiae* (Takahashi) (Rakhshani et al. 2008c; Talebi et al. 2009).

***Distribution.*** **France** (Starý et al. 1971); **Iran** (Starý 1979a; Starý et al. 2000; Fallahzadeh & Saghaei 2010; Rakhshani et al. 2008c, 2019; Talebi et al. 2009; Barahoei et al. 2014); **Kazakhstan** (Davidian 2005a,

2016b); **Mongolia** (Davidian 2016b); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2016b, 2019b; Davidian & Ruchin 2023); **Serbia** (Tomanović et al. 2021); **Ukraine** (Kaliuzhna 2014, 2019b).

### *Trioxys tatianae* Davidian, 2020

*Trioxys tatianae* Davidian, 2020a:1030. Holotype ♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2020a; Davidian & Ruchin 2023).

### *Trioxys tenuicaudus* Starý, 1978 [Fig. 58F]

*Trioxys tenuicaudus* Starý, 1978a:170. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Czech Republic.

***Hosts.*** ***Agrioaphis castanicola*** Baker (Carver & Starý 1974; Kavallieratos et al. 2001, 2004); ***Aphis*** sp. (Davidian 2019c); ***Eucallipterus tiliae*** (Linnaeus) (Starý 1978a, 1987a, 1988b, 2006; Zuparko & Dahlsten 1995; Pike et al. 2000; Davidian 2005a, 2016b; Baker & Broad 2013; Ferrer-Suay et al. 2017; Pons et al. 2018); ***Leomyzocallis walshii*** (Monell) (Pons et al. 2006, 2018; Starý 2006; Havelka & Starý 2007); ***Myzocallis carpini*** (Koch) (Starý 1988b, 2006); ***Myzocallis coryli*** (Goeze) (Starý 1978a, 1987a, 1988b, 2006; Ferrer-Suay et al. 2017); ***Tinocallis platani*** (Kaltenbach) (Starý 1978a, 1987a, 1988b, 1995b, 2006; Olkowski et al. 1982c); ***Tinocallis*** sp. (Ferrer-Suay et al. 2017); ***Tuberculatus annulatus*** (Hartig) (Carver & Starý 1974; Starý 1978a, 1987a, 1988b, 2006); ***Tuberculatus*** sp. (Ferrer-Suay et al. 2017).

***Distribution.*** **Australia** (Carver & Starý 1974; Ward et al. 2021b); **Bulgaria** (Todorov 2006b); **China** (Chen & Shi 2001); **Czech Republic** (Starý 1978a, 1987a, 1988b, 1989a, 1995b, 2006; Havelka & Starý 2007; Starý & Havelka 2008; Ferrer-Suay et al. 2017); **Finland** (BOLD: ABA1075); **Georgia** (Davidian 2016b); **Greece** (Kavallieratos et al. 2001, 2004); **Italy** (Bergamesco et al. 1995); **Latvia** (Starý 1978a); **Norway** (Mjøs et al. 2024); **Poland** (Huflejt 1997); **Russia** (Davidian 2005a, 2016b, 2019b, 2019c); **Spain** (Tizado & Núñez-Perez 1991; Pons et al. 2006, 2018); **United Kingdom** (Baker & Broad 2013); **USA** (Olkowski et al. 1982c; Hajek 1986; Zuparko & Dahlsten 1995; Pike et al. 2000; Fulbright et al. 2007).

### *Trioxys udalovi* Davidian, 2005

*Trioxys udalovi* Davidian, 2005a:651. Holotype ♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian 2005a, 2007, 2016b, 2019b).

### *Trioxys ulmi* Čkrkić & Tomanović, 2021

*Trioxys ulmi* Čkrkić & Tomanović [in Čkrkić et al.], 2021:147. Holotype ♀ (FBUB), paratypes ♀♂ (FBUB, MNHN). – Serbia.

***Host.*** ***Tinocallis takachihoensis*** Higuchi (Čkrkić et al. 2021).

***Distribution.*** **Canada**, **Germany**, **Serbia** (Čkrkić et al. 2021).

## Tribe EPHEDRINI Mackauer, 1961 [6 genera, 76 species (including 7 fossils)]

Ephedrini sensu Mackauer, 1961:798. Type genus: *Ephedrus* Haliday, 1833.

### Genus *Archephedrus* Ortega-Blanco, Bennett, Delclòs & Engel, 2009 [Fossil] [1 species]

*Archephedrus* Ortega-Blanco et al., 2009:277. Type species: *Archephedrus stolamissus* Ortega-Blanco, Bennett, Delclòs & Engel, 2009.

### *Archephedrus stolamissus* Ortega-Blanco, Bennett, Delclòs & Engel, 2009 [Fossil]

*Archephedrus stolamissus* Ortega-Blanco, Bennett, Delclòs & Engel, 2009:278. Holotype ♂ (MCNA). – Spain.

***Host.*** Unknown.

***Distribution.*** **Spain** (Ortega-Blanco et al. 2009).

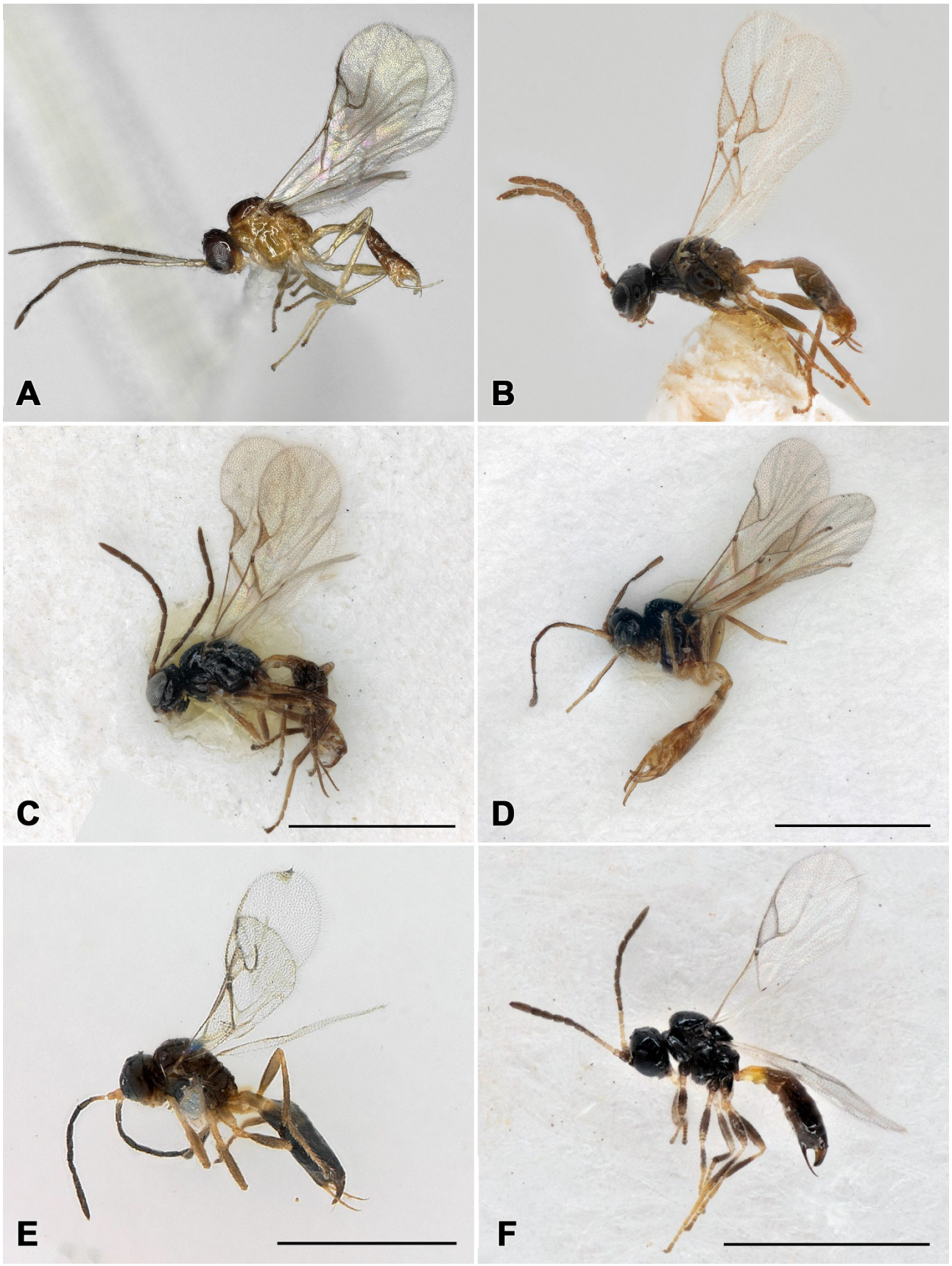



**Figure 58.** Species of the genus *Trioxys* Haliday, 1833. **A.** *Trioxys remaudierei* Starý & Rakhshani, 2017 – South Korea, KSNU; **B.** *Trioxys rietscheli* Mackauer, 1959 – Holotype (= *Binodoxys acalephae*), CNC; **C.** *Trioxys rosae* Pike & Starý, 1996 – Holotype, USNM; **D.** *Trioxys setaceus* Pike & Starý, 2000 – Holotype, USNM; **E.** *Trioxys sunnysidensis* Fulbright & Pike, 2007 – Holotype, USNM; **F.** *Trioxys tenuicaudus* Starý, 1978 – Netherlands, RMNH. Scale bar: 1 mm.

## Genus *Ephedrus* Haliday, 1833 [56 species]

*Ephedrus* Haliday, 1833:261. Type species: *Bracon plagiator* Nees, 1811.

**Syn.:** *Elassus* Wesmael, 1835:248. Type species: *Aphidius parcicornis* Nees, 1834; *Scotioneurus* Provancher, 1886:152. Type species: *Scotioneurus dives* Provancher, 1886; *Lysephedrus* Starý, 1958:64. Type species: *Ephedrus validus* Haliday, 1833.

### *Ephedrus angustithoracicus* Chiriac, 1977

*Ephedrus angustithoracicus* Chiriac, 1977:56. Holotype ♀, paratypes ♀♂♂ (ASM). – Moldova.

***Host.*** ***Rhopalosiphum nymphaeae*** (Linnaeus) (Chiriac 1977; Talitzky & Kuslitzky 1990).

***Distribution.*** **Moldova** (Chiriac 1977; Talitzky & Kuslitzky 1990).

### *Ephedrus antennalis* Tomanović, 2020

*Ephedrus antennalis* Tomanović [in Tomanović et al.], 2020:169. Holotype ♀ (OÖLM). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Tomanović et al. 2020).

### *Ephedrus borealis* Kocić & Tomanović, 2024

*Ephedrus borealis* Kocić & Tomanović [in Kocić et al.], 2024b:11. Holotype ♀, paratypes ♀♂ (FBUB). – Norway.

***Host.*** Unknown.

***Distribution.*** **Norway** (Kocić et al. 2024b).

### *Ephedrus brevis* Stelfox, 1941

*Ephedrus brevis* Stelfox, 1941:140. Holotype ♀, paratype ♂ (NMID). – Ireland.

**Syn.:** *Ephedrus picticornis* Stelfox, 1941 [Fig. 59A].

***Host.*** ***Myzus persicae*** (Sulzer) (Paonam et al. 2011).

***Distribution.*** **Belarus** (Davidian 2018c); **Canada** (Mackauer & Starý 1967; Gärdenfors 1986); **Czech Republic** (Starý 1966c, 1989a, 2006; Starý & Havelka 2008; Davidian 2018c); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971; Koponen & Vikberg 1984b; Koponen & Halme 1993; Gärdenfors 1986); **Hungary** (Polgár 1983); **India** (Paonam et al. 2011; Das & Chakrabarti 2023a); **Ireland** (Stelfox 1941, 1944; Gärdenfors 1986; O'Connor et al. 1999); **Japan** (Takada 1968; Starý 1975a); **Mongolia** (Takada 1979a); **Netherlands** (Gärdenfors 1986); **Russia** (Davidian 2007, 2018c, 2019b, 2020b; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Ruchin 2023); **Sweden** (Mackauer & Starý 1967; Gärdenfors 1986); **United Kingdom** (Stelfox 1941; Hincks 1945; Kloet & Hincks 1945; Hincks 1948; Starý 1958, 1978a; Gärdenfors 1986); **USA** (Mackauer & Starý 1967).

### *Ephedrus brevistigmus* Tomanović & van Achterberg, 2026

*Ephedrus brevistigmus* Tomanović & van Achterberg [in Tomanović et al.], 2026b:16. Holotype ♀, paratypes ♀♀ (RMNH). – Vietnam.

***Host.*** Unknown.

***Distribution.*** **Vietnam** (Tomanović et al. 2026b).

### *Ephedrus californicus* Baker, 1909 [Fig. 59B]

*Ephedrus californicus* Baker, 1909:23. Lectotype ♀ (after Mackauer 1963a) (CASC). – USA.

**Syn.:** *Ephedrus nigricornis* Gahan, 1911 [Fig. 61C]; *Ephedrus aestivalis* Viereck, 1915.

***Hosts.*** ***Acyrthosiphon lactucae*** (Passerini) (Pike et al. 1996, 2000); ***Acyrthosiphon pisum*** (Harris) (Campbell 1926; Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Marsh 1979; Cohen & Mackauer 1987; Stadler & Mackauer 1996); ***Acyrthosiphon*** sp. (Starý 1983d); ***Aphis cercocarpi*** Gillette

& Palmer, ***Aphis fabae*** Scopoli, ***Aphis gossypii*** Glover, ***Aphis varians*** Patch (Pike et al. 2000); ***Aphthargelia symphoricarpi*** (Thomas) (Pike et al. 1996, 2000); ***Brachycaudus helichrysi*** (Kaltenbach), ***Braggia eriogoni*** (Cowen), ***Brevicoryne brassicae*** (Linnaeus), ***Capitophorus elaeagni*** (Del Guercio), ***Cavariella aegopodii*** (Scopoli), ***Cavariella pastinacae*** (Linnaeus) (Pike et al. 2000); ***Chaetosiphon fragaefolii*** (Cockerell) (Pike et al. 1996, 2000); ***Chaetosiphon tetrarhodum*** (Walker), ***Diuraphis noxia*** (Mordvilko) (Pike et al. 2000); ***Ericaphis wakibae*** (Hottes) (Pike et al. 1996, 2000); ***Hyperomyzus lactucae*** (Linnaeus), ***Hyperomyzus nigricornis*** (Knowlton), ***Hyperomyzus*** sp. (Pike et al. 2000); ***Macrosiphoniella artemisiae*** (Boyer de Fonscolombe) (Mackauer & Starý 1967); ***Macrosiphoniella ludovicianae*** (Oestlund) (Pike et al. 1997a, 2000); ***Macrosiphoniella tanacetaria*** (Kaltenbach) (Pike et al. 2000); ***Macrosiphum agrimoniellum*** (Cockerell) (Mackauer & Starý 1967; Marsh 1979); ***Macrosiphum albifrons*** Essig (Cohen & Mackauer 1986; Pike et al. 2000; Mackauer & Chow 2012); ***Macrosiphum californicum*** (Clarke), ***Macrosiphum creelii*** Davis (Pike et al. 2000); ***Macrosiphum euphorbiae*** (Thomas) (Sullivan & van den Bosch 1971; Marsh 1979; Starý & Remaudière 1982; Trumble & Oatman 1984; Pike et al. 1996, 2000; Bulman et al. 2021); ***Macrosiphum gaurae*** (Williams), ***Macrosiphum pallidum*** (Oestlund) (Pike et al. 2000); ***Macrosiphum rosae*** (Linnaeus) (Smith 1944; Muesebeck & Walkley 1951; Schlinger & Hall 1960a; Mackauer & Starý 1967; Marsh 1979; Finlayson 1990; Pike et al. 1996, 2000); ***Macrosiphum valerianiae*** (Clarke), ***Metopolophium dirhodum*** (Walker), ***Myzus cerasi*** (Fabricius) (Pike et al. 2000); ***Myzus persicae*** (Sulzer) (Trumble & Oatman 1984; Pike et al. 2000); ***Nasonovia ribisnigri*** (Mosley), ***Nasonovia*** sp. (Pike et al. 2000); ***Obtusicauda artemisiphilus*** (Knowlton & Allen), ***Obtusicauda coweni*** (Hunter), ***Pleotrichophorus pseudoglandulosus*** (Palmer) (Pike et al. 1997a, 2000); ***Pleotrichophorus pycnorhysus*** (Knowlton & Smith) (Hollingbery et al. 2012); ***Rhopalomyzus grabhami*** (Cockerell) (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Marsh 1979); ***Rhopalosiphum maidis*** (Fitch), ***Rhopalosiphum oxyacanthae*** (Schrank), ***Rhopalosiphum padi*** (Linnaeus), ***Sitobion avenae*** (Fabricius) (Pike et al. 2000); ***Sitobion*** sp. (Starý 1983d); ***Uroleucon ambrosiae*** (Thomas) (Schlinger & Hall 1960a; Mackauer & Starý 1967); ***Uroleucon*** spp. (Smith 1944; Muesebeck & Walkley 1951; Schlinger & Hall 1960a; Marsh 1979; Starý & Remaudière 1982; Starý 1983d; Finlayson 1990; Pike et al. 1996, 2000; Hollingbery et al. 2012); ***Wahlgreniella nervata*** (Gillette) (Pike et al. 2000).

***Distribution.*** **Canada** (Schlinger & Hall 1960a; Mackauer & Finlayson 1967; Mackauer & Starý 1967; Muesebeck 1967; Cohen & Mackauer 1986; Finlayson 1990; Mackauer 1996; Mackauer & Chow 2012); **Mexico** (Starý & Remaudière 1982; Starý 1983d; Starý & Remaudière 1988; Alonso-Hernandez et al. 2014; Sánchez-García et al. 2015); **New Zealand** (Bulman et al. 2021); **USA** (Baker 1909; Gahan 1911a; Viereck 1915; Campbell 1926; Smith 1944; Muesebeck & Walkley 1951; Schlinger & Hall 1960a; Mackauer 1963a, 1968a; Mackauer & Finlayson 1967; Mackauer & Starý 1967; Sullivan & van den Bosch 1971; Trumble & Oatman 1984; Horn 1988; Perring et al. 1988; Finlayson 1990; Pike et al. 1996, 1997a, 2000; Hollingbery et al. 2012); **United Kingdom** (BOLD:AEW6809 | BOLD:AAI5339).

### *Ephedrus carinatus* Tomanović, 2020

*Ephedrus carinatus* Tomanović [in Tomanović et al.], 2020:169. Holotype 1 ♀ (OÖLM). – Austria.

***Host.*** Unknown.

***Distribution.*** **Austria** (Tomanović et al. 2020).

### *Ephedrus carsteni* Davidian, 2023 [Fossil]

*Ephedrus carsteni* Davidian [in Davidian et al.], 2023a:1. Holotype ♀ (GPIH). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** – Upper Eocene (Davidian et al. 2023a).

### *Ephedrus cavariellae* Takada, 1968

*Ephedrus cavariellae* Takada, 1968:71. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Host.*** ***Cavariella*** sp. (Takada 1968; Starý 1975a); *Macrosiphum rosae* (Linnaeus) (Samanta & Raychaudhuri

1984a); *Nippolachnus piri* Matsumura (Raychaudhuri et al. 1990); *Rhopalosiphum nymphaeae* (Linnaeus) (Raychaudhuri et al. 1990); *Rhopalosiphum padi* (Linnaeus) (Samanta & Raychaudhuri 1984a).

***Distribution.*** **India** (Samanta & Raychaudhuri 1984a; Raychaudhuri et al. 1990; Das & Chakrabarti 2023a); **Japan** (Takada 1968; Starý 1975a; Gärdenfors 1986).

### *Ephedrus cerasicola* Starý, 1962 [Fig. 59C]

*Ephedrus cerasicola* Starý, 1962e:91. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Czech Republic.

**Syn.:** *Ephedrus dysaphidis* Tomanović, Kavallieratos & Starý, 2005.

***Hosts.*** ***Aphis gossypii*** Glover (Subhrani et al. 2006); ***Aphis spiraecola*** Patch (Paonam et al. 2011); ***Brachycaudus helichrysi*** (Kaltenbach) (Kavallieratos et al. 2004; Tomanović et al. 2009c; Žikić et al. 2012); ***Brachycaudus prunicola*** (Kaltenbach) (Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014); ***Capitophorus inulae*** (Passerini) (Starý et al. 1971; Starý 1976a; Starý & Remaudière 1987; Starý & Stechmann 1990); ***Cryptomyzus galeopsidis*** (Kaltenbach) (Starý & Remaudière 1977; Starý et al. 1977a; Starý & Stechmann 1990; Starý 2006); ***Cryptomyzus*** sp. (Starý 2006); ***Dysaphis devecta*** (Walker) (Starý 2006); ***Dysaphis plantaginea*** (Passerini) (Starý 2006; Rakhshani 2012; Barahoei et al. 2013; Ferrer-Suay et al. 2017); ***Dysaphis sorbi*** (Kaltenbach) (Starý 2006); ***Dysaphis*** spp. (Chiriac 1977; Starý & Stechmann 1990; Tomić et al. 2005; Starý 2006; Kavallieratos et al. 2008b; Tomanović et al. 2009c; Ferrer-Suay et al. 2017); ***Hyperomyzus lactucae*** (Linnaeus) (Halme 1977; Gärdenfors 1986; Starý & Stechmann 1990); ***Hyperomyzus pallidus*** Hille Ris Lambers (Halme 1977); ***Hyperomyzus rhinanthi*** (Schouteden) (Halme 1977; Starý & Stechmann 1990); ***Hyperomyzus*** sp. (Starý 2006); ***Myzus cerasi*** (Fabricius) (Starý 1962e, 1963b, 1964d, 1966a, 1966c, 1987a, 2006; Vassileva-Sumnalieva 1976; Rakauskas 1981; Gärdenfors 1986; Starý & Stechmann 1990; Atanassova 1997; Kolarov 1997; Tomanović et al. 1998b, 2009c; Kavallieratos et al. 2004, 2008b; Rakhshani 2012; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Myzus ligustri*** (Mosley) (Gärdenfors 1986; Starý & Stechmann 1990); ***Myzus persicae*** (Sulzer) (Mackauer & Starý 1967; Starý et al. 1973, 1975; Starý 1976a, 1987a, 2006; Düzgüneş et al. 1982; Hofsvang & Høgvar 1983b; Gärdenfors 1986; Høgvar & Hofsvang 1987; Starý & Stechmann 1990; Høgvar 1991; Stufkens & Farrell 1994; Le Ralec et al. 1996; Uysal et al. 2004; Rakhshani 2012; Ferrer-Suay et al. 2017); ***Myzus varians*** Davidson (Arzone & Alma 1986); ***Nasonovia ribisnigri*** (Mosley) (Gärdenfors 1986); ***Ovatus crataegarius*** (Walker) (Gärdenfors 1986; Starý & Stechmann 1990); ***Phorodon humuli*** (Schrank) (Tomanović et al. 1998b, 2009c; Starý et al. 2000; Kavallieratos et al. 2004, 2008b; Žikić et al. 2012); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Starý et al. 2000); ***Rhopalosiphum oxyacanthae*** (Schrank) (Ferrer-Suay et al. 2017).

***Distribution.*** **Belgium** (Dassonville et al. 2013; Thielemans et al. 2013; Lopes et al. 2016); **Bulgaria** (Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997; Todorov 2009c, 2014); **Czech Republic** (Starý 1962e, 1966c, 1987a, 1989a, 2006; Mackauer & Starý 1967; Halme 1977; Gärdenfors 1986; Starý & Stechmann 1990; Koponen & Halme 1993; Tomić et al. 2005; Ferrer-Suay et al. 2017); **France** (Starý et al. 1971, 1973, 1975, 1977a; Starý 1976a; Starý & Stechmann 1990); **Germany** (Mackauer & Starý 1967; Starý & Stechmann 1990; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **India** (Subhrani et al. 2006; Paonam et al. 2011; Das & Chakrabarti 2023a); **Iran** (Starý et al. 2000; Fallahzadeh & Saghaei 2010; Rakhshani 2012; Barahoei et al. 2013; Rakhshani et al. 2019); **Italy** (Arzone & Alma 1986); **Kyrgyzstan** (Petrović et al. 2021a); **Lithuania** (Rakauskas 1981, 1985); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Kavallieratos et al. 2004; Tomanović et al. 2009c; Žikić et al. 2012); **Netherlands** (Starý & Stechmann 1990; Papp et al. 1996; Gärdenfors 1986); **New Zealand** (Stufkens & Farrell 1994); **Norway** (Hofsvang & Høgvar 1983b; Gärdenfors 1986; Mjøs et al. 2024); **Poland** (Olszak 1994); **Russia** (Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian 2018c, 2019b); **Serbia** (Tomanović et al. 1998a, 1998b; Žikić et al. 2000, 2012; Kavallieratos et al. 2004, 2008b; Tomanović et al. 2009c; Davidian 2018c; Davidian & Manukyan 2024); **Slovakia** (Starý 1989a; Ferrer-Suay et al. 2017); **Slovenia** (Gärdenfors 1986); **Spain** (Starý & Stechmann 1990; Tizado & Núñez-Perez 1991); **Sweden** (Gärdenfors 1986; Starý & Stechmann 1990); **Türkiye** (Düzgüneş et al. 1982; Starý & Stechmann 1990; Uysal et al. 2004; Rakhshani et al. 2019); **Ukraine** (Kaliuzhna 2013a, 2014, 2016a, 2019a, 2019b); **United Kingdom** (van Veen et al. 2008); **USA** (Starý & Remaudière 1977).

### *Ephedrus chaitophori* Gärdenfors, 1986 [Fig. 59D]

*Ephedrus chaitophori* Gärdenfors, 1986:49. Holotype ♀, paratypes ♀♀ ♂♂ (MZLU). – Sweden.

***Hosts.*** ***Chaitophorus leucomelas*** Koch (Starý 2006; Tomanović et al. 2009c; Žikić et al. 2012); ***Chaitophorus nigricantis*** Pintera (Gärdenfors 1986); ***Chaitophorus populeti*** (Panzer) (Rakhshani et al. 2007b); ***Chaitophorus populialbae*** (Boyer de Fonscolombe) (Lumbierres et al. 2005; Pons et al. 2018); ***Chaitophorus populifolii*** (Essig) (Pike et al. 2000); ***Chaitophorus salijaponicus*** Essig & Kuwana (González & Michelena 1987); ***Chaitophorus tremulae*** Koch (Gärdenfors 1986); ***Chaitophorus*** spp. (Gärdenfors 1986; Tomanović & Brajković 2000; Kavallieratos et al. 2004; Tomanović et al. 2006a; Žikić et al. 2012, 2013).

***Distribution.*** **Belarus** (BOLD:ACR0760); **Czech Republic** (Starý 2006); **Finland** (Koponen & Halme 1993; Silfverberg 1996); **France** (BOLD:ACR0760); **Germany** (Gärdenfors 1986; Belokobylskij et al. 2003); **Iran** (Rakhshani et al. 2007b, 2019; Fallahzadeh & Saghaei 2010); **Montenegro** (Tomanović et al. 2026a); **Norway** (BOLD:ACR0760); **Russia** (Davidian 2018c, 2019b); **Serbia** (Tomanović & Brajković 2000; Kavallieratos et al. 2004; Tomanović et al. 2006a, 2009c; Žikić et al. 2012, 2013); **Spain** (González & Michelena 1987; Tizado & Núñez-Perez 1991; Lumbierres et al. 2005; Pons et al. 2018); **Sweden** (Gärdenfors 1986); **USA** (Pike et al. 2000).

### *Ephedrus cheni* Shi & Chen, 2001

*Ephedrus cheni* Shi & Chen [in Chen & Shi], 2001:204. Holotype ♀ (FAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chen & Shi 2001).

### *Ephedrus clavicornis* Pike & Starý, 1999 [Fig. 59E]

*Ephedrus clavicornis* Pike & Starý [in Pike et al.], 1999b:11. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (IECA, WSUJ, WSUP). – USA.

***Hosts.*** ***Aphis gossypii*** Glover (Pike et al. 1999b, 2000); ***Aphis oenotherae*** Oestlund (Pike et al. 1999b); ***Aphis varians*** Patch, ***Aphthargelia symphoricarpi*** (Thomas), ***Dysaphis plantaginea*** (Passerini), ***Illinoia maxima*** (Mason), ***Prociphilus*** sp., ***Sitobion avenae*** (Fabricius) (Pike et al. 1999b, 2000).

***Distribution.*** **Canada**, **USA** (Pike et al. 1999b, 2000).

### *Ephedrus curtus* Chen, 2001

*Ephedrus curtus* Chen [in Chen & Shi], 2001:204. Holotype ♀, paratypes ♀♀ ♂♂ (FAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chen & Shi 2001).

### *Ephedrus dioscoreae* Bhagat, 1982

*Ephedrus dioscoreae* Bhagat, 1982b:113. Holotype ♀, paratype ♀ (DZKU). – India.

***Hosts.*** ***Acyrthosiphon pisum*** (Harris) (Paonam & Singh 1986a); ***Aphis*** sp. (Bhagat 1982b); ***Liosomaphis himalayensis*** Basu, ***Macrosiphoniella sanborni*** (Gillette) (Raychaudhuri et al. 1990).

***Distribution.*** **India** (Bhagat 1982b; Paonam & Singh 1986a; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a).

### *Ephedrus gardenforsi* Kocić & Tomanović, 2024

*Ephedrus gardenforsi* Kocić & Tomanović [in Kocić et al.], 2024b:10. Holotype ♀ (FBUB). – Norway.

***Host.*** Unknown.

***Distribution.*** **Norway** (Kocić et al. 2024b).

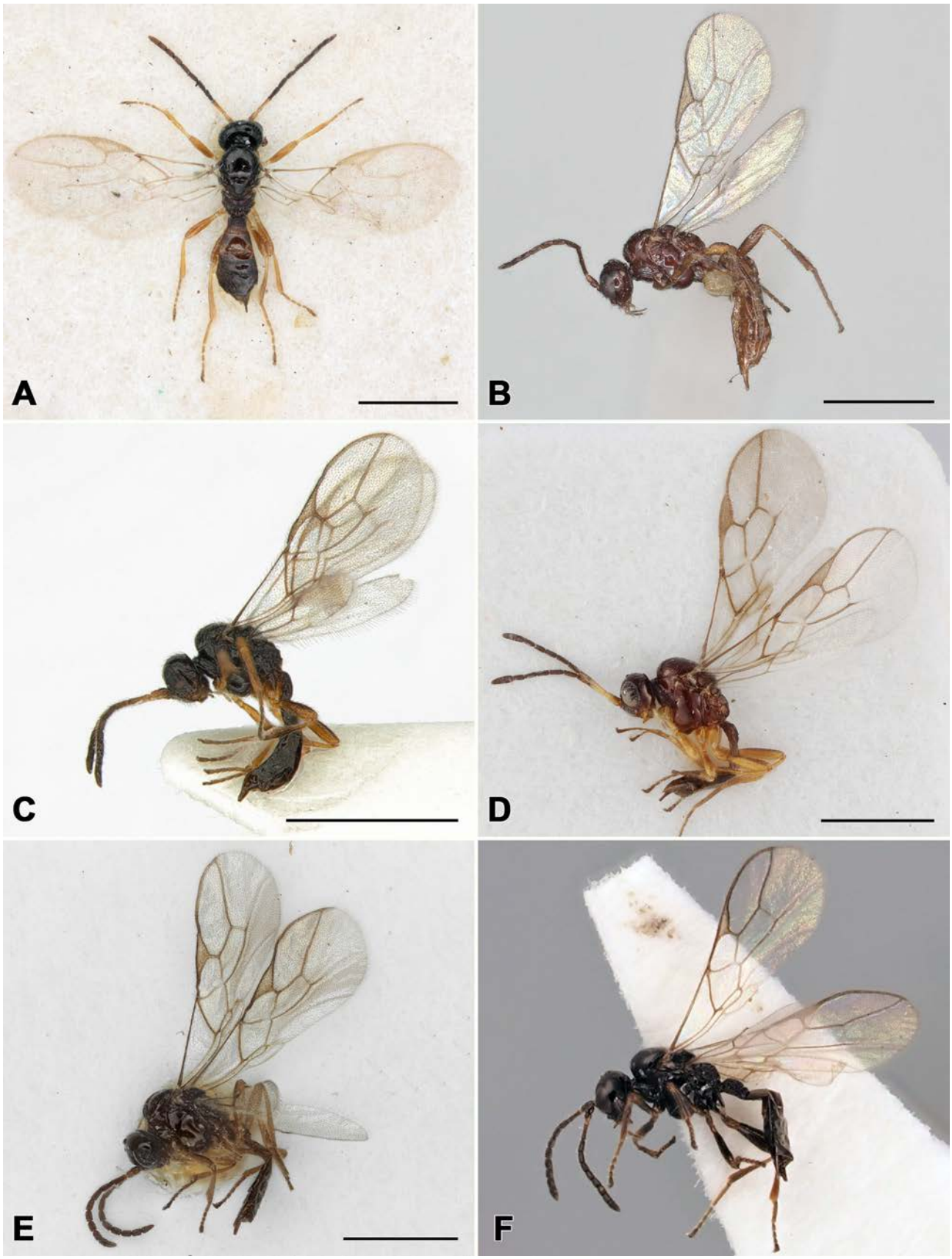



**Figure 59.** Species of the genus *Ephedrus* Haliday, 1833. **A.** *Ephedrus brevis* Stelfox, 1941 – Holotype of *Ephedrus picticornis* Stelfox, 1941, USNM; **B.** *Ephedrus californicus* Baker, 1909 – Lectotype, CASC; **C.** *Ephedrus cerasicola* Starý, 1962 – RMNH, Netherlands; **D.** *Ephedrus chaitophori* Gärdenfors, 1986 – Holotype, MZLU; **E.** *Ephedrus clavicornis* Pike & Starý 1999 – Holotype, USNM; **F.** *Ephedrus helleni* Mackauer, 1968 – Finland, ZMHF. Scale bar: 1 mm.

### *Ephedrus helleni* Mackauer, 1968 [Fig. 59F]

*Ephedrus helleni* Mackauer, 1968c:6. Holotype ♀ (ZMHF). – Finland.

**Syn.:** *Ephedrus salicicola* Takada, 1968.

***Hosts.*** ***Cavariella aegopodii*** (Scopoli) (Starý et al. 1977a; Bhagat 1985; Kavallieratos et al. 2004; Tomanović et al. 2006a, 2009c; Žikić et al. 2012); ***Cavariella aquatica*** (Gillette & Bragg) (Starý et al. 1977a, 2000; Starý 1979a; Rakhshani et al. 2007b; Talebi et al. 2009); ***Cavariella archangelicae*** (Scopoli) (Gärdenfors 1986); ***Cavariella pastinacae*** (Linnaeus) (Gärdenfors 1986; Derocles et al. 2014a); ***Cavariella salicicola*** (Matsumura) (Takada 1968, 1973; Starý 1975a; Gärdenfors 1986); ***Cavariella theobaldi*** (Gillette & Bragg) (Starý et al. 1977a; Gärdenfors 1986; Kavallieratos et al. 2004; Tomanović et al. 2006a, 2009c; Žikić et al. 2012; Baker & Broad 2013; Derocles et al. 2014a); ***Cavariella*** spp. (Bhagat 1984; Gärdenfors 1986; Tomanović et al. 1999b; Starý 2006; Derocles et al. 2012; Ferrer-Suay et al. 2017; Davidian 2018c); ***Eumyzus*** sp. (Bhagat 1984); ***Hayhurstia atriplicis*** (Linnaeus) (Bhagat 1984; Barahoei et al. 2014).

***Distribution.*** **Canada** (BOLD:ACB8339); **Czech Republic** (Starý 1989a, 2006; Starý & Havelka 2008; Ferrer-Suay et al. 2017; Davidian 2018c); **Finland** (Mackauer 1968c; Hellén 1971; Koponen & Vikberg 1984b; Gärdenfors 1986; Koponen & Halme 1993); **France** (Starý et al. 1977a; Derocles et al. 2012, 2014a); **India** (Bhagat 1984, 1985; Raychaudhuri et al. 1990; Das & Chakrabarti 2023a); **Iran** (Starý 1979a; Starý et al. 2000; Rakhshani et al. 2007b, 2019; Talebi et al. 2009; Fallahzadeh & Saghaei 2010; Barahoei et al. 2014); **Kyrgyzstan** (Davidian 2018c); **Japan** (Takada 1968, 1973; Starý 1975a; Gärdenfors 1986); **Moldova** (Davidian 2018c); **Montenegro** (Tomanović et al. 2009c; Žikić et al. 2012); **Norway** (Mjøs et al. 2024); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2018c, 2019b); **Serbia** (Tomanović et al. 1998a, 1999b; Kavallieratos et al. 2004; Tomanović et al. 2006a, 2009c; Žikić et al. 2012); **Sweden** (Gärdenfors 1986); **Tajikistan** (Davidian 2018c); **United Kingdom** (Baker & Broad 2013).

***Remarks.*** According to the original description (Mackauer 1968c), some paratypes (♀♀) are deposited in the collection of M. Mackauer, which may be transferred to other institutes.

### *Ephedrus himalayensis* Gärdenfors, 1986

*Ephedrus himalayensis* Gärdenfors, 1986:87. Holotype ♀, paratypes ♀ ♂♂ (MZLU). – Nepal.

***Host.*** Unknown.

***Distribution.*** **Nepal** (Gärdenfors 1986).

### *Ephedrus hyadaphidis* Kocić & Tomanović, 2019

*Ephedrus hyadaphidis* Kocić & Tomanović [in Kocić et al.], 2019:8. Holotype ♀ (FBUB), paratypes ♀ ♂ (FBUB, CNHM). – Montenegro.

***Host.*** ***Hyadaphis foeniculi*** (Passerini) (Kocić et al. 2019).

***Distribution.*** **Croatia**, **Montenegro** (Kocić et al. 2019); **Serbia** (Tomanović et al. 2021).

### *Ephedrus hyaloptericolus* Chiriac, 1977

*Ephedrus hyaloptericolus* Chiriac, 1977:59. Holotype ♀ (ASM). – Moldova.

***Host.*** ***Hyalopterus pruni*** (Geoffroy) (Chiriac 1977; Talitzky & Kuslitzky 1990).

***Distribution.*** **Moldova** (Chiriac 1977; Talitzky & Kuslitzky 1990).

### *Ephedrus incompletus* (Provancher, 1886) [Fig. 60A]

*Perilitus incompletus* Provancher, 1886:126. Lectotype ♂ (after Gahan & Rohwer 1918) (ULQC). – Canada.

**Syn.:** *Scotioneurus dives* Provancher, 1886; *Ephedrus rosae* Withington, 1909.

***Hosts.*** ***Aphis nasturtii*** Kaltenbach (Shands et al. 1965; Mackauer & Starý 1967; Marsh 1979); ***Aphis viburniphila*** Patch (Batulla & Robinson 1984); ***Aulacorthum solani*** (Kaltenbach) (Starý 1981a); ***Chaitophorus nigrae*** Oestlund, ***Chaitophorus nudus*** Richards, ***Chaitophorus populicola*** Thomas,

***Chaitophorus viminalis*** Monell (Batulla & Robinson 1984); ***Illinoia liriodendri*** (Monell) (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Marsh 1979); ***Lipaphis erysimi*** (Kaltenbach) (Wheeler 1923; Mackauer & Starý 1967; Marsh 1979); ***Macrosiphum agrimoniellum*** (Cockerell) (MacGillivray & Spicer 1953; Muesebeck 1967; Marsh 1979); ***Macrosiphum carpinicolens*** Patch (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Marsh 1979); ***Macrosiphum euphorbiae*** (Thomas) (Smith 1944; Muesebeck & Walkley 1951; Shands et al. 1965; Marsh 1979); ***Macrosiphum rosae*** (Linnaeus) (Gahan 1910; Muesebeck 1928; Smith 1944; Muesebeck & Walkley 1951; Beardsley 1961; Mackauer & Starý 1967; Marsh 1979); ***Macrosiphum salviae*** Bartholomew (Starý 1981a; Starý et al. 2014c); ***Metopolophium dirhodum*** (Walker) (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Marsh 1979); ***Microparsus olivei*** Smith & Tuatay (Starý 1981a; Starý et al. 2014c); ***Microparsus variabilis*** Patch (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Marsh 1979; Finlayson 1990); ***Myzus cerasi*** (Fabricius) (Gahan 1910; Muesebeck 1928; Mackauer & Starý 1967; Marsh 1979); ***Myzus certus*** (Walker) (Mackauer & Starý 1967; Marsh 1979); ***Myzus persicae*** (Sulzer) (Wheeler 1923; Mackauer & Starý 1967; Marsh 1979); ***Ovatus crataegarius*** (Walker) (Pike et al. 2000); ***Uroleucon erigeronense*** (Thomas) (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Marsh 1979); ***Uroleucon illini*** (Hottes & Frison) (Smith 1944; Muesebeck & Walkley 1951; Marsh 1979); ***Uroleucon nigrotuberculatum*** (Olive) (Batulla & Robinson 1984); ***Uroleucon rudbeckiae*** (Fitch) (Muesebeck 1928; Mackauer & Starý 1967; Marsh 1979).

***Distribution.*** **Canada** (Provancher 1886; Muesebeck & Walkley 1951; MacGillivray & Spicer 1953; Mackauer & Starý 1967; Shenefelt 1968; Muesebeck 1967; Batulla & Robinson 1984); **Cuba** (Starý 1981a; Starý et al. 2014c); **Trinidad & Tobago** (Urich 1893); **USA** (Nason 1905; Withington 1909; Gahan 1910, 1911a; Timberlake 1918; Muesebeck 1928; Smith 1944; Muesebeck & Walkley 1951; Shands et al. 1965; Mackauer & Starý 1967; Finlayson 1990; Pike et al. 2000; Kula 2013).

### *Ephedrus jiangsuensis* Chen, 2001

*Ephedrus jiangsuensis* Chen [in Chen & Shi], 2001:204. Holotype ♀ (FAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chen & Shi 2001).

### *Ephedrus koponeni* Halme, 1992 [Fig. 60B]

*Ephedrus koponeni* Halme, 1992:113. Holotype ♀ (ZMHF), paratypes ♀♀ ♂♂ (JHPC). – Finland.

***Host. Elatobium abietinum*** (Walker) (Halme 1992; Tomanović et al. 2021).

***Distribution.*** **Finland** (Halme 1992; Koponen & Halme 1993; Silfverberg 1996); **Germany** (BOLD:ACJ0484); **Norway** (Mjøs et al. 2024); **Russia** (Davidian 2018c, 2019b); **Serbia** (Tomanović et al. 2021); **Sweden** (BOLD:ACJ0484); **United Kingdom** (BOLD:ACJ0484).

### *Ephedrus lacertosus* (Haliday, 1833) [Fig. 60C]

*Aphidius lacertosus* Haliday, 1833:486. Lectotype ♀ (after Mackauer 1968a), paralectotype ♂ (NHMUK). – Ireland.

**Syn.:** *Ephedrus muesebecki* Smith, 1944 [Fig. 60F].

***Hosts.*** ***Acyrthosiphon malvae*** (Mosley) (Starý et al. 1977a; Tomanović et al. 2009c; Žikić et al. 2012); ***Acyrthosiphon pisum*** (Harris) (Starý 1972f, 1974a, 2006); ***Amphorophora agathonica*** Hottes (Marsh 1979); ***Amphorophora idaei*** (Börner) (Gärdenfors 1986); ***Amphorophora rubi*** (Kaltenbach) (Narzykulov & Ataeva 1961; Mackauer & Starý 1967; Starý et al. 1971; Starý 1974a, 1987a, 2006; Tomanović et al. 2009c; Žikić et al. 2012; Derocles et al. 2014a); ***Amphorophora rubitoxica*** Knowlton (Starý 1974a); ***Aphis fabae*** Scopoli (Voukassovitch 1928; Fulmek 1968); ***Aphis pomi*** De Geer (Telenga 1950; Ataeva 1961; Wiackowski & Wiackowska 1961); ***Aphis rumicis*** Linnaeus (Fulmek 1968); ***Aspidophorodon*** sp. (Pike et al. 2000); ***Aulacorthum majanthemi*** Müller (Mackauer 1962c; Mackauer & Starý 1967); ***Aulacorthum*** sp. (Starý et al. 1973); ***Brachysiphoniella montana*** (van der Goot) (Paonam & Singh 1986a); *Chaitophorus populialbae* (Boyer de Fonscolombe) (Ataeva 1961); *Cinara juniperi* (De Geer) (Wiackowski & Wiackowska

2000; Wiackowski et al. 2001); *Cinara mordvilkoi* (Pašek) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Cryptomyzus ribis*** (Linnaeus) (Dobrovljansky 1913; Meyer 1927); ***Dysaphis crataegi*** (Kaltenbach) (Meyer 1929; Fulmek 1968); ***Dysaphis plantaginea*** (Passerini) (Fulmek 1968); ***Dysaphis pyri*** (Boyer de Fonscolombe) (Savary 1953; Börner & Heinze 1957); ***Ericaphis gentneri*** (Mason) (Pike et al. 2000); ***Hyalopteroides humilis*** (Walker) (Starý et al. 1973; Starý 1974a); *Hyalopterus pruni* (Geoffroy) (Dill 1937; Ataeva 1961; Wiackowski & Wiackowska 1961); ***Illinoia maxima*** (Mason) (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Starý 1974a; Marsh 1979); ***Impatientinum asiaticum dalhousiensis*** Verma (Chakrabarti & Debnath 2009); ***Impatientinum balsamines*** (Kaltenbach) (Starý 1970d, 1974a, 1975a, 2006; Starý et al. 2014a); ***Impatientinum impatiens*** (Shinji) (Starý 1975a); ***Macromyzus woodwardiae*** (Takahashi) (Starý & Schlinger 1967; Starý 1974a, 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Macrosiphoniella absinthii*** (Linnaeus) (Ferrière & Voukassovitch 1928; Börner & Heinze 1957; Mackauer & Starý 1967; Marsh 1979; Dong & Wang 1985; Tomanović et al. 1999b; Chen & Shi 2001); ***Macrosiphoniella usquertensis*** Hille Ris Lambers (Kierych 1975); ***Macrosiphum agrimoniellum*** (Cockerell) (Mackauer & Starý 1967; Starý 1974a; Marsh 1979); ***Macrosiphum albifrons*** Essig (Pike et al. 2000); ***Macrosiphum cholodkovskyi*** (Mordvilko) (Kavallieratos et al. 2004; Tomanović et al. 2009c; Žikić et al. 2012); ***Macrosiphum equiseti*** (Holman) (Gärdenfors 1986); ***Macrosiphum euphorbiae*** (Thomas) (Pike et al. 2000); ***Macrosiphum funestum*** (Macchiati) (Starý 1974a, 2006); ***Macrosiphum gei*** (Koch) (Gärdenfors 1986); ***Macrosiphum lisae*** Heie (Gärdenfors 1986); ***Macrosiphum minatii*** (Das, Raychaudhuri & Raychaudhuri) (Saha et al. 1982); ***Macrosiphum polanense*** Pašek (Starý 2006); ***Macrosiphum rosae*** (Linnaeus) (Starý 1958, 1962e, 1966c, 1974a, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1973; Marsh 1979; Gärdenfors 1986; Wiackowski et al. 1997, 2001; Kavallieratos et al. 2004; Tomanović et al. 2009c; Žikić et al. 2012); ***Macrosiphum rubiarctici*** Heikenheimo (Starý 1974a); ***Metopolophium*** sp. (Pike et al. 2000); ***Microlophium carnosum*** (Buckton) (Mackauer & Starý 1967; Starý 1974a, 1983f, 1987a, 2006; Kierych 1980; Derocles et al. 2012); ***Macrosiphum*** sp. (Pike et al. 2000); ***Myzus cerasi*** (Fabricius) (Marshall 1891, 1899; Bignell 1901; Rudow 1915; Wimshurst 1925; Fahringer 1934; Börner & Heinze 1957; Kierych 1975; Dong & Wang 1985; Chen & Shi 2001); ***Myzus persicae*** (Sulzer), ***Neomyzus circumflexus*** (Buckton) (Chakrabarti & Debnath 2009); ***Ovatus crataegarius*** (Walker) (Dobrovljansky 1913); ***Rhopalosiphoninus*** sp. (Starý 1962e, 1963b, 1964d, 1966c, 1974a, 1977, 2006; Mackauer & Starý 1967; Ferrer-Suay et al. 2017); ***Rhopalosiphum oxyacanthae*** (Schrank) (Dobrovljansky 1913; Fulmek 1968); ***Rhopalosiphum padi*** (Linnaeus) (Meyer 1927; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Sitobion avenae*** (Fabricius) (Chen & Shi 2001; Wei et al. 2005); ***Sitobion miscanthi*** (Takahashi) (Saha et al. 1982; Starý & Ghosh 1983); ***Sitobion*** sp. (Pike et al. 2000); ***Takecallis affinis*** Ghosh (Das & Chakrabarti 1989); ***Tetraneura ulmi*** (Linnaeus) (Wiackowski et al. 2001); ***Toxopterina vandergooti*** (Börner) (Paonam & Singh 1986a); ***Uroleucon gravicorne*** (Patch) (Zamora-Mejías et al. 2010; Starý et al. 2014c); ***Uroleucon jaceae*** (Linnaeus) (Mustata 1986); ***Uroleucon simlaense*** Chakrabarti, Ghosh & Raychaudhuri (Chakrabarti & Debnath 2009).

***Distribution.*** **Austria** (Mackauer & Starý 1967); **Belarus** (Davidian 2018c); **Belgium** (Lopes et al. 2016); **Bulgaria** (Gärdenfors 1986; Todorov 2008); **Canada** (Mackauer & Starý 1967; Starý 1974a; Gärdenfors 1986); **China** (Provancher 1886; Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1974a, 1975a; Chou 1981; Dong & Wang 1985; Chen & Shi 2001; Chen et al. 2009); **Costa Rica** (Zamora-Mejías et al. 2010; Starý et al. 2014c; Zamora-Mejías & Hanson 2017); **Cyprus** (Gärdenfors 1986); **Czech Republic** (Starý 1958, 1962e, 1966c, 1970d, 1972f, 1977, 1983f, 1987a, 1989a, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Ferrer-Suay et al. 2017; Davidian 2018c); **Denmark** (Mackauer & Starý 1967); **Ecuador** (Starý et al. 2014c); **Faroe Islands** (Roman 1917; Kryger & Schmiedeknecht 1938; Mackauer & Starý 1967); **Finland** (Krogerus 1927; Hellén 1931; Krogerus 1932; Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971; Koponen & Vikberg 1984b; Gärdenfors 1986; Koponen & Halme 1993); **France** (Starý et al. 1971, 1973, 1977a; Gärdenfors 1986; Derocles et al. 2012, 2014a); **Germany** (Börner & Heinze 1957; Mackauer 1962c; Mackauer & Starý 1967; Boness & Starý 1988; Belokobylskij et al. 2003); **Guatemala** (Starý et al. 2014c); **Hungary** (Györfi 1941; Polgár 1983); **Iceland** (Petersen 1956; Mackauer & Starý 1967; Starý 1974a); **India** (Subba Rao & Sharma 1960; Sharma & Subba Rao 1964; Mackauer & Starý 1967; Rao et al. 1969; Starý 1974a; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Saha et al. 1982; Starý & Ghosh

1983; Bhagat 1984, 1985; Paonam & Singh 1986a; Das & Chakrabarti 1989a, 2023a; Raychaudhuri et al. 1990; Dey & Akhtar 2007); **Iran** (Gadallah et al. 2022); **Ireland** (Stelfox 1941; Mackauer & Starý 1967; Gärdenfors 1986; O'Connor et al. 1999); **Italy** (Fulmek 1968); **Japan** (Takada 1968; Starý 1974a, 1975a; Gärdenfors 1986; Davidian 2018c); **Kazakhstan** (Starý 1979a; Davidian 2018c); **Kyrgyzstan** (Starý 1979a; Davidian 2018c); **Lithuania** (Davidian 2018c); **Mexico** (Starý & Remaudière 1988); **Moldova** (Starý 1972f; Talitzky & Kuslitzky 1990); **Mongolia** (Takada 1979a); **Montenegro** (Tomanović et al. 2009c; Žikić et al. 2012); **Netherlands** (Gärdenfors 1986); **Norway** (Mackauer & Starý 1967; Gärdenfors 1986; Mjøs et al. 2024); **Poland** (Wiackowski & Wiackowska 1961, 2000; Mackauer & Starý 1967; Kierych 1975, 1980; Olszak 1994; Huflejt 1997; Wiackowski et al. 1997, 2001; Tran & Piekarska-Boniecka 2017); **Romania** (Mustata 1986); **Russia** (Dobrovljansky 1913; Meyer 1927, 1929; Mackauer & Starý 1967; Mackauer 1968c; Davidian 2007, 2018c, 2019b; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Ruchin 2023); **Serbia** (Ferrière & Voukassovitch 1928; Mackauer & Starý 1967; Kavallieratos et al. 2004; Tomanović et al. 1998a, 1999b, 2009c; Žikić et al. 2012); **Slovakia** (Starý 1958, 1977, 1989a); **Slovenia** (Gärdenfors 1986); **Spain** (Starý 1976a; Tizado & Núñez-Perez 1991; Michelena Saval & Martínez De Murguía 2012); **Sweden** (Thomson 1895; Szépligeti 1904; Gärdenfors 1986); **Switzerland** (Dill 1937; Savary 1953; Mackauer & Starý 1967; Gärdenfors 1986); **Tajikistan** (Fulmek 1968; Starý 1979a); **Thailand** (Starý et al. 2010c); **Türkiye** (Tomanović et al. 2008b; Rakhshani et al. 2019); **Ukraine** (Meyer 1927; Kaliuzhna 2019a, 2019b); **United Kingdom** (Curtis 1837; Smith 1853; Marshall 1872a, 1891, 1896, 1899; Bignell 1901; Szépligeti 1904; Wimshurst 1925; Lyle 1933; Stelfox 1944; Kloet & Hincks 1945; Börner & Heinze 1957; Starý 1958; Mackauer 1961b; Mackauer & Starý 1967; Gärdenfors 1986; van Veen et al. 2008; Davidian & Rispin 2016); **USA** (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Starý 1974a; Gärdenfors 1986; Finlayson 1990; Pike et al. 2000; Kula 2013); **Uzbekistan** (Starý 1979a; Aripov 2003; Davidian 2018c).

***Remarks.*** The record of *Ephedrus lacertosus* from South Korea (Kim et al. 2022a) was due to an incomplete identification. It morphologically corresponds to *E. lacertosus*, while the DNA sequences (COI) did not match *Ephedrus lacertosus*; however, it falls into the *Ephedrus lacertosus* group.

### *Ephedrus laevicollis* (Thomson, 1895) [Fig. 60D]

*Aphidius* (*Elassus*) *laevicollis* Thomson, 1895:2332. Lectotype ♀ (after Gärdenfors 1986) (MZLU). – Sweden.

**Syn.:** *Aphidius brevicornis* Nees von Esenbeck, 1834; *Ephedrus crassicornis* Stelfox, 1941; *Ephedrus minor* Stelfox, 1941.

***Hosts.*** ***Brachycaudus helichrysi*** (Kaltenbach) (Fulmek 1968); ***Cavariella aegopodii*** (Scopoli) (Starý et al. 1971; Das & Chakrabarti 1991a); ***Cavariella aquatica*** (Gillette & Bragg) (Starý et al. 1971); ***Cavariella pastinacae*** (Linnaeus) (Kierych 1980); ***Cavaraiellia*** spp. (Starý 1962e, 1963b; Mackauer & Starý 1967; Takada & Rishi 1980); ***Chaetosiphon chaetosiphon*** (Nevsky) (Tomić et al. 2005); ***Chaetosiphon tetrarhodum*** (Walker) (Starý 1962e, 1963b, 1964d, 1966c, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971; Chiriac 1977; Rakauskas 1981; Gärdenfors 1986; Kavallieratos et al. 2004; Tomanović et al. 2009c; Žikić et al. 2012); ***Chaetosiphon*** (*Pentatrichopus*) sp. (Vassileva-Sumnalieva 1976; Kolarov 1997); ***Lipaphis erysimi*** (Kaltenbach) (Subhrani et al. 2006); ***Longicaudus trirhodus*** (Walker) (Starý et al. 1971; Starý & Juchnevič 1978; Starý 1979a; Rakauskas 1981; Kavallieratos et al. 2004; Tomanović et al. 2009c; Žikić et al. 2012); ***Macrosiphum rosae*** (Linnaeus) (Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997; Wiackowski et al. 1997, 2001; Ferrer-Suay et al. 2017); ***Myzaphis bucktoni*** Jacob (Gärdenfors 1986); ***Myzaphis rosarum*** (Kaltenbach) (Starý 1962e, 1963b, 1964d, 1966c, 1977, 1987a, 2006; Mackauer & Starý 1967; Gärdenfors 1986; Ferrer-Suay et al. 2017); ***Myzaphis*** sp. (Baker & Broad 2013); ***Uroleucon sonchi*** (Linnaeus) (Singh et al. 1995).

***Distribution.*** **Austria** (Fulmek 1968); **Bulgaria** (Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997); **Canada** (BOLD:ACP7424); **Czech Republic** (Starý 1962e, 1966c, 1977, 1987a, 1989a, 2006; Mackauer & Starý 1967; Ferrer-Suay et al. 2017); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971; Koponen & Halme 1993); **France** (Starý et al. 1971); **Germany** (Nees von Esenbeck 1834a; Kirchner 1867; Marshall 1896; Szépligeti 1904; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **India** (Takada & Rishi 1980; Agarwala et al. 1981a; Starý & Ghosh 1983; Das &

Chakrabarti 1991a, 2023a; Singh et al. 1995; Subhrani et al. 2006; Dey & Akhtar 2007; Ahmad & Wani 2014); **Iran** (Fallahzadeh & Saghaei 2010); **Ireland** (Stelfox 1941, 1944; Mackauer & Starý 1967; O'Connor et al. 1999); **Kazakhstan** (Starý & Juchnevič 1978; Starý 1979a; Davidian 2018c); **Kyrgyzstan** (Petrović et al. 2021a); **Lithuania** (Rakauskas 1981, 1985); **Moldova** (Talitzky & Kuslitzky 1990); **Mongolia** (Takada 1979a); **Montenegro** (Kavallieratos et al. 2004; Tomanović et al. 2009c; Žikić et al. 2012); **Netherlands** (Mackauer & Starý 1967; Gärdenfors 1986); **Norway** (BOLD:ACP7424); **Poland** (Kierych 1980; Huflejt 1997; Wiackowski et al. 1997, 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian 2018c, 2019b); **Serbia** (Tomanović et al. 1998a, 2009c; Kavallieratos et al. 2004, 2013; Tomić et al. 2005; Žikić et al. 2012); **Slovakia** (Starý 1977, 1989a; Ferrer-Suay et al. 2017); **South Korea** (Davidian 2018c); **Spain** (Starý 1976a; Tizado & Núñez-Perez 1991); **Sweden** (Thomson 1895; Szépligeti 1904; Mackauer & Starý 1967; Gärdenfors 1986); **Switzerland** (Mackauer 1968c); **United Kingdom** (Kloet & Hincks 1945; Starý 1958; Mackauer & Starý 1967; Gärdenfors 1986; Baker & Broad 2013; Davidian & Rispin 2016).

***Remarks***. The older name *Aphidius brevicornis* Nees, 1834 is not available because it is a junior homonym of *A. brevicornis* Haliday, 1833.

### *Ephedrus longiarticulatus* Rakhshani & Tomanović, 2012

*Ephedrus longiarticulatus* Rakhshani & Tomanović [in Rakhshani et al.], 2012a:49. Holotype ♀ (FBUB), paratypes ♀ ♂♂ (FBUB, DPPZ). – India.

***Host.*** Unknown.

***Distribution.*** **India** (Rakhshani et al. 2012a; Das & Chakrabarti 2023a).

### *Ephedrus longistigmus* Gärdenfors, 1986 [Fig. 60E]

*Ephedrus longistigmus* Gärdenfors, 1986:84. Holotype ♀ (MZLU), paratypes ♀♀ ♂♂ (MZLU, EIHU). – China.

**Syn.:** *Fovephedrus longus* Chen, 1986.

***Host.*** ***Myzus*** sp. (Chen 1986).

***Distribution.*** **China** (Chen 1986; Gärdenfors 1986; Chen & Shi 2001); **Finland** (Koponen & Halme 1993; Silfverberg 1996); **Germany** (BOLD:ADB7998); **Iran** (Davidian 2018c); **Japan** (Gärdenfors 1986); **Russia** (Davidian 2007, 2018c; Davidian & Gavrilyuk 2014; Davidian & Humala 2023); **United Kingdom** (Davidian & Rispin 2016; Davidian 2018c, 2019b); **USA** (Gärdenfors 1986).

### *Ephedrus lonicerae* Tomanović, Kavallieratos & Starý, 2009

*Ephedrus lonicerae* Tomanović, Kavallieratos & Starý, 2009:7. Holotype ♀ (BNHM), paratypes ♀♀ ♂♂ (BNHM, IECA). – Montenegro.

***Hosts.*** ***Hyadaphis coriandri*** (Das) (Žikić et al. 2009); ***Hyadaphis foeniculi*** (Passerini) (Tomanović et al. 2009c; Žikić et al. 2009, 2012).

***Distribution.*** **Czech Republic**, **Kazakhstan** (Žikić et al. 2009); **Montenegro** (Tomanović et al. 2009c; Žikić et al. 2012).

### *Ephedrus mandjuriensis* Chiriac, 1977

*Ephedrus mandjuriensis* Chiriac, 1977:59. Holotype ♀ (ASM). – Moldova.

***Host.*** ***Sitobion avenae*** (Fabricius) (Chiriac 1977).

***Distribution.*** **Moldova** (Chiriac 1977).

### *Ephedrus meliarhizophagi* Starý, 1983

*Ephedrus meliarhizophagi* Starý, 1983d:39. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Mexico.

***Host.*** ***Prociphilus*** (*Meliarhizophagus*) sp. (Starý 1983d).

***Distribution.*** **Mexico** (Starý 1983d; Starý & Remaudière 1988).

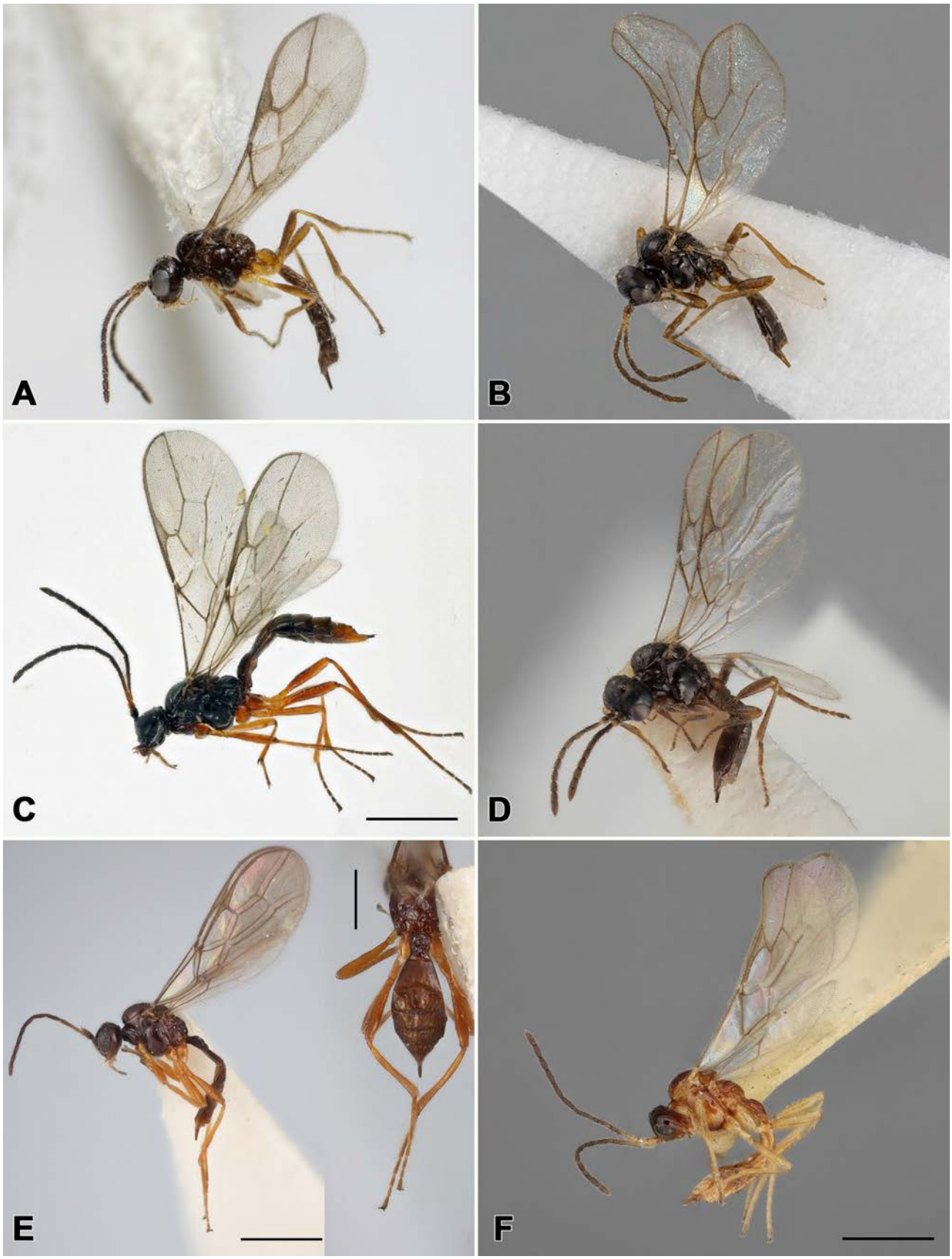



**Figure 60.** Species of the genus *Ephedrus* Haliday, 1833. **A.** *Ephedrus incompletus* (Provancher, 1886) – USA, BOLD:ACH1175; **B.** *Ephedrus koponeni* Halme, 1992 – Finland, ZMHF; **C.** *Ephedrus lacertosus* (Haliday, 1833) – Netherlands, RMNH; **D.** *Ephedrus laevicollis* (Thomson, 1895) – Finland, ZMHF; **E.** *Ephedrus longistigmus* Gärdenfors, 1986 – Paratype, MZLU; **F.** *Ephedrus muesebecki* Smith, 1944 – Holotype (= *Ephedrus lacertosus*), USNM. Scale bar: 1 mm.

### *Ephedrus mirabilis* Timon-David, 1944 [Fossil]

*Ephedrus mirabilis* Timon-David, 1944:40. Holotype ♀ (lost). – France.

***Host.*** Unknown.

***Distribution.*** **France** – Early Oligocene (Timon-David 1944; Starý 1958, 1970a, 1973b).

### *Ephedrus nacheri* Quilis, 1934 [Fig. 61A]

*Ephedrus nacheri* Quilis, 1934:17. Holotype ♀, paratype ♂ (IVIA, lost). – Czech Republic.

*Ephedrus nacheri*: Starý 1962e:93. Neotype ♀ (IECA). – Czech Republic.

***Hosts.*** ***Acyrthosiphon kondoi*** Shinji, ***Acyrthosiphon pisum*** (Harris) (González et al. 1979); ***Amphicercidus japonicus*** (Hori) (Takada 1968; Starý 1975a); ***Aphis bupleuri*** (Börner) (Davidian & Gavrilyuk 2014); ***Aphis cadiva*** Walker (Starý 1976a); ***Aphis craccivora*** Koch (Takada 1968; Starý 1975a; Samanta & Raychaudhuri 1984a; Chen & Shi 2001); ***Aphis fabae*** Scopoli (Gärdenfors 1986; Starý 2006; Derocles et al. 2014a; Ferrer-Suay et al. 2017); ***Aphis gossypii*** Glover (Zheng et al. 1985; Takada 2002; Paonam et al. 2011); ***Aphis spiraecola*** Patch (Takada 1968; Starý 1975a); ***Aphis*** sp., ***Brachycaudus*** sp. (Gärdenfors 1986); ***Brevicoryne brassicae*** (Linnaeus) (Starý et al. 1971; Starý 1974b); ***Cavariella salicicola*** (Matsumura), ***Coloradoa artemisicola*** Takahashi (Takada 1968; Starý 1975a); ***Coloradoa rufomaculata*** (Wilson) (Takada 1968); ***Coloradoa*** sp. (Ferrer-Suay et al. 2017); ***Cryptosiphum artemisiae*** Buckton (Starý 1962e, 1964d, 1966c, 1967b, 1974b, 1977, 1995b, 2006; Mackauer & Starý 1967; Gärdenfors 1986; Starý & Choi 2000; Chen & Shi 2001; Davidian 2019c); ***Cryptosiphum*** sp. (Ferrer-Suay et al. 2017); ***Hayhurstia atriplicis*** (Linnaeus) (Quilis-Pérez 1934; Starý 1958, 1962e, 1963b, 1964d, 1966c, 1966d, 1967b, 1974b, 1976a, 1977, 1987a; Mackauer & Starý 1967; Kierych 1975; Düzgüneş et al. 1982; Gärdenfors 1986; Das & Chakrabarti 1990a, 2023a; Starý & González 1991; Chen & Shi 2001; Kavallieratos et al. 2004; Uysal et al. 2004; Tomanović et al. 2009c; Derocles et al. 2012; Žikić et al. 2012); ***Hyadaphis foeniculi*** (Passerini) (Gärdenfors 1986); ***Hyalopterus pruni*** (Geoffroy) (Takada 1968, 1973; Starý 1975a; Gärdenfors 1986; Starý & Choi 2000); ***Hyperomyzus lactucae*** (Linnaeus) (Takada 1968; Starý 1975a; Chen & Shi 2001); ***Hyperomyzus rhinanthi*** (Schouteden) (Koponen & Halme 1993); ***Lipaphis erysimi*** (Kaltenbach) (Starý 1974b, 2006; Ferrer-Suay et al. 2017); ***Macrosiphoniella sanborni*** (Gillette) (Gärdenfors 1986); ***Macrosiphum rosae*** (Linnaeus) (Samanta & Raychaudhuri 1984a); ***Melanaphis arundinariae*** (Tissot) (Das & Chakrabarti 1990a); ***Myzus persicae*** (Sulzer) (Watanabe & Takada 1967; Takada 1968, 2002; Starý 1975a; Zheng et al. 1985; Chen & Shi 2001); ***Pleotrichophorus glandulosus*** (Kaltenbach) (Takada 1968; Starý 1975a); ***Prociphilus konoi*** Hori (Takada 1968; Starý 1975a); ***Rhopalosiphoninus deutzifoliae*** Shinji (Takada 1968, 1973; Starý 1975a); ***Rhopalosiphum padi*** (Linnaeus) (Takada 1968; Dong & Wang 1985; Chen & Shi 2001); ***Rhopalosiphum rufiabdominale*** (Sasaki) (Takada 1968); ***Schizaphis graminum*** (Rondani) (Zheng et al. 1985); ***Semiaphis anthrisci*** (Kaltenbach) (Fulmek 1968); ***Sitobion avenae*** (Fabricius) (Takada 1968; Starý 1975a; Dong & Wang 1985; Zheng et al. 1985; Chen & Shi 2001; Wei et al. 2005); ***Sitobion ibarae*** (Matsumura) (Takada 1968; Starý 1975a); ***Staegeriella necopinata*** (Börner) (Starý et al. 1971; Starý 1974b); ***Trichosiphonaphis lonicerae*** (Uye) (Takada 1968; Starý 1975a); *Uroleucon sonchi* (Linnaeus) (Paonam et al. 2011).

***Distribution.*** **Belarus** (BOLD:AAH7430); **Bulgaria** (Gärdenfors 1986); **Canada** (BOLD:AAH7430); **China** (Liu 1968; Chu et al. 1978; Chou 1981; Dong & Wang 1985, 1993; Zheng et al. 1985, 1987; Lu & Ji 1992; Chen & Shi 2001; He et al. 2004; Tursun et al. 2006); **Czech Republic** (Quilis-Pérez 1934; Starý 1958, 1962e, 1966c, 1974b, 1977, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Starý et al. 1971; Starý & González 1991; Starý & Havelka 2008; Ferrer-Suay et al. 2017); **Denmark** (Starý 1974b); **Finland** (Gärdenfors 1986; Koponen & Halme 1993); **France** (Starý et al. 1971, 1977a; Starý 1974b, 1976a; Gärdenfors 1986; Derocles et al. 2012); **Georgia** (Starý 1976a; Davidian 2018c); **Germany** (Mackauer & Starý 1967; Starý 1974b; Belokobylskij et al. 2003); **Greece** (Gärdenfors 1986); **Hungary** (Starý 1974b; Polgár 1983); **India** (Liu 1968; Gärdenfors 1986; Das & Chakrabarti 1990a, 2023a; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Paonam et al. 2011); **Italy** (Starý 1966d, 1974b, 1976a; Gärdenfors 1986; Bergamesco et al. 1995); **Japan** (Watanabe & Takada 1967; Takada 1968, 1973, 2002; Starý 1975a; Gärdenfors 1986; Davidian 2018c); **Moldova** (Talitzky & Kuslitzky 1990); **Nepal**, **Netherlands** (Gärdenfors 1986); **Pakistan** (BOLD: AAH7430); **Poland** (Kierych 1975; Huflejt 1997); **Russia** (Starý 1974b; Krotova 1993; Gavrilyuk & Novgorodova 2007; Davidian

& Gavrilyuk 2014; Davidian 2018c, 2019b, 2019c; Davidian & Humala 2023; Davidian & Ruchin 2023); **Serbia** (Tomanović et al. 1998a, 2009c; Kavallieratos et al. 2004; Žikić et al. 2012); **Slovakia** (Starý 1977); **South Korea** (Paik 1975; Starý & Choi 2000; Kim 2026); **Spain** (Tizado & Núñez-Perez 1991); **Sweden** (Gärdenfors 1986); **Türkiye** (Davidian 2018c); **United Kingdom** (BOLD:AAH7430); **Vietnam** (Tomanović et al. 2026b).

### *Ephedrus nelumbus* Dong & Wang, 1996

*Ephedrus nelumbus* Dong & Wang, 1996:196. Holotype ♀, paratypes ♀ ♂ (KIZ). – China.

***Hosts.*** ***Hyadaphis foeniculi*** (Passerini) (Dong & Wang 1996; Wei et al. 2005); ***Rhopalosiphum*** sp. (Dong & Wang 1996).

***Distribution.*** **China** (Dong & Wang 1996; Chen & Shi 2001).

### *Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929 [Fig. 61B]

*Ephedrus plagiator* var. *nigra* Gautier, Bonnamour & Gaumont, 1929:200. Syntype ♀ (MCL?). – France.

**Syn.:** *Alysia aphidivora* Rondani, 1848; *Ephedrus campestris* Starý, 1962.

***Hosts.*** *Acyrthosiphon pisum* (Harris) (Starý et al. 1973); *Aphis fabae* Scopoli (Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian 2018c); *Aphis sambuci* Linnaeus (Starý 1976a); *Capitophorus inulae* (Passerini) (Hemidi & Laamari 2020); *Dysaphis* sp. (Tremblay 1976); *Hyperomyzus lactucae* (Linnaeus) (Aeschlimann & Vitou 1985); ***Macrosiphoniella abrotani*** (Walker) (Mackauer & Starý 1967; Starý 1987a, 2006; Starý et al. 2000; Rakhshani et al. 2011); ***Macrosiphoniella absinthii*** (Linnaeus) (Starý 1962e, 1964d, 1965a, 1966c, 1977, 2006; Mackauer & Starý 1967; Starý et al. 1977a); ***Macrosiphoniella artemisiae*** (Boyer de Fonscolombe) (Starý et al. 1971, 1973; Chiriac 1977; Starý 1977, 1976a; Michelena et al. 1998); ***Macrosiphoniella chamaemelifoliae*** Remaudière & Leclant (Starý et al. 1971); ***Macrosiphoniella helichrysi*** Remaudière (Starý et al. 1973, 1975; Starý 1976a); ***Macrosiphoniella millefolii*** (De Geer) (Starý 1962e, 1964d, 1966c, 1976a, 1977, 1987a, 1995b, 2006; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975; Kierych 1980; Gärdenfors 1986; Michelena et al. 1998); ***Macrosiphoniella papillata*** Holman (Starý et al. 1973); ***Macrosiphoniella pulvera*** (Walker) (Mackauer & Starý 1967; Starý et al. 1973; Starý 1976a, 1979a); ***Macrosiphoniella sanborni*** (Gillette) (Gautier et al. 1929; Starý 1966d, 1975a, 1976a, 1979a; Mackauer & Starý 1967; Starý & Schlinger 1967; Starý & Ghosh 1975; Starý & Ghosh 1983; Finlayson 1990; Starý et al. 2000; Wei et al. 2005; Rakhshani et al. 2011; Alikhani et al. 2013; Barahoei et al. 2013); ***Macrosiphoniella tanacetaria*** (Kaltenbach) (Chiriac 1977; Gärdenfors 1986; Starý 2006; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian 2018c); ***Macrosiphoniella yomogifoliae*** (Shinji) (Starý & Schlinger 1967; Starý 1975a); ***Macrosiphoniella*** spp. (Starý 1979a; Bhagat 1986b; Sanchis et al. 2000; Starý et al. 2000); *Macrosiphum rosae* (Linnaeus) (Mescheloff & Rosen 1988); *Megoura viciae* Buckton (Starý & Schlinger 1967; Starý 1975a; Tomanović et al. 2003b, 2009c; Kavallieratos et al. 2004; Žikić et al. 2012); ***Metopeurum fuscoviride*** Stroyan (Starý 2006); ***Microsiphoniella artemisiae*** (Gillette) (Gärdenfors 1986); *Myzus persicae* (Sulzer) (Samanta & Raychaudhuri 1984a); *Ovatus inulae* (Walker) (Hemidi & Laamari 2020); ***Titanosiphon dracunculi*** Nevsky (Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014); ***Uroleucon achilleae*** (Koch) (Starý et al. 1973; Kierych 1975; Starý 1976a); ***Uroleucon acroptilidis*** Kadyrbekov, Renxin & Shao (Nazari et al. 2012; Barahoei et al. 2013); ***Uroleucon aeneum*** (Hille Ris Lambers) (Starý 1962e, 1964d, 1977; Mackauer & Starý 1967; Völkl & Starý 1988); ***Uroleucon bielawskii*** (Szelegiewicz) (Nazari et al. 2012; Barahoei et al. 2013); ***Uroleucon campanulae*** (Kaltenbach) (Mackauer & Starý 1967; Gärdenfors 1986); ***Uroleucon chondrillae*** (Nevsky) (Alikhani et al. 2013); ***Uroleucon cichorii*** (Koch) (Starý 1962b, 1962e, 1964d, 1976a, 1977, 2006; Mackauer & Starý 1967; Starý et al. 1971, 1973, 2000; Kierych 1975; Atanassova 1997; Kolarov 1997; Tomanović et al. 2003b, 2009c; Kavallieratos et al. 2004; Barahoei et al. 2012, 2013; Žikić et al. 2012); ***Uroleucon cirsii*** (Linnaeus) (Starý et al. 1977a; Völkl & Starý 1988; Barczak 1993); ***Uroleucon erigeronense*** (Thomas) (Starý et al. 1971, 2000; Kierych 1980; Starý 1987a, 2006; Talebi et al. 2009; Nazari et al. 2012); ***Uroleucon formosanum*** (Takahashi) (Liu 1968; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Uroleucon gobonis*** (Matsumura) (Chen & Shi 2001; Chakrabarti & Debnath 2009); ***Uroleucon hypochoeridis*** (Fabricius) (Mackauer & Starý 1967; Starý et al. 1973; Starý 1976a); ***Uroleucon inulae*** (Ferrari) (Starý 1966d; Starý et al. 1971, 1975; Tremblay 1976; Gärdenfors 1986;

Mescheloff & Rosen 1988; Kavallieratos et al. 2001, 2004; Cecilio & Ilharco 2002; Tomanović et al. 2003b; Pons et al. 2018); ***Uroleucon inulicola*** (Hille Ris Lambers) (Pennacchio et al. 1988); ***Uroleucon jaceae*** (Linnaeus) (Starý 1962e, 1964d, 1966c, 1966d, 1977, 1995b, 2006; Mackauer & Starý 1967; Starý et al. 1971, 2000; Kierych 1980; Gärdenfors 1986; Aguirre Segura & Tizado Morales 1993; Talebi et al. 2009; Rakhshani et al. 2011, 2012b; Barahoei et al. 2012, 2013; Nazari et al. 2012); ***Uroleucon murale*** (Buckton) (Starý 1962e, 1964d; Mackauer & Starý 1967; Kierych 1980; Tomanović et al. 2003b, 2009c; Kavallieratos et al. 2004; Žikić et al. 2012); ***Uroleucon nigrocampanulae*** (Theobald) (Chiriac 1977); ***Uroleucon obscurum*** (Koch) (Starý 1962e, 1964d, 1966c, 2006; Mackauer & Starý 1967; Starý et al. 1973; Gärdenfors 1986; Tomanović et al. 2008a); ***Uroleucon picridis*** (Fabricius) (Starý 1962e, 1964d, 1966c; Mackauer & Starý 1967); ***Uroleucon pseudotanaceti*** (Verma) (Starý & Ghosh 1975, 1983); ***Uroleucon solidaginis*** (Fabricius) (Starý et al. 1977a); ***Uroleucon sonchi*** (Linnaeus) (Starý 1962b, 1966c, 1976a, 1977; Mackauer & Starý 1967; Kierych 1980; Aeschlimann & Vitou 1985; Atanassova 1997; Kolarov 1997; Talebi et al. 2009; Paonam et al. 2011; Barahoei et al. 2012, 2013; Nazari et al. 2012; Rakhshani et al. 2012b; Taheri & Rakhshani 2013); ***Uroleucon tanaceti*** (Linnaeus) (Starý & Ghosh 1975); ***Uroleucon*** spp. (Starý 1962e, 1966c, 1979a, 1986a, 2006; Starý et al. 1975, 2000; González & Michelena 1987; Tomanović et al. 1999b, 2009c; Žikić et al. 2012).

***Distribution.*** **Algeria** (Gärdenfors 1986; Laamari et al. 2011; Rakhshani et al. 2019); **Andorra** (Sanchis et al. 1999); **Azerbaijan** (Starý 1965a); **Bulgaria** (Starý 1962b, 1976a; Mackauer & Starý 1967; Atanassova 1997; Kolarov 1997; Todorov & Ivanova 2016); **Canary Islands** (Guerrero & Koponen 2000); **China** (Liu 1968; Starý 1975a; Chou 1981; Gärdenfors 1986; Lu & Ji 1992; Chen & Shi 2001; Chen et al. 2009); **Czech Republic** (Starý 1962e, 1966c, 1977, 1986a, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Tomanović et al. 2008a); **Finland** (Mackauer 1968c; Hellén 1971; Koponen & Halme 1993; Rakhshani et al. 2011); **France** (Gautier et al. 1929; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975, 1977a; Starý 1976a; Aeschlimann & Vitou 1985; Gärdenfors 1986; Derocles et al. 2014a); **Georgia** (Starý 1976a); **Germany** (Mackauer 1962c; Mackauer & Starý 1967; Boness & Starý 1988; Völkl & Starý 1988; Belokobylskij et al. 2003; Rakhshani et al. 2011); **Greece** (Gärdenfors 1986; Kavallieratos et al. 2001, 2004; Tomanović et al. 2003b); **Hungary** (Polgár 1981, 1983; Rakhshani et al. 2011); **India** (Starý & Ghosh 1975, 1983; Rishi 1976; Shuja-Uddin 1978b; Takada & Rishi 1980; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Bhagat 1986b; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Iran** (Mackauer & Starý 1967; Starý 1979a; Starý et al. 2000; Talebi et al. 2009; Fallahzadeh & Saghaei 2010; Rakhshani et al. 2011, 2012b, 2019; Barahoei et al. 2012, 2013; Nazari et al. 2012; Alikhani et al. 2013; Taheri & Rakhshani 2013); **Italy** (Marshall 1896; Szépligeti 1904; Starý 1966d, 1976a; Tremblay 1976; Pennacchio et al. 1988; Bergamesco et al. 1995); **Kyrgyzstan** (Petrović et al. 2021a); **Moldova** (Talitzky & Kuslitzky 1990); **Monaco** (Starý 1976a); **Mongolia** (Takada 1979a); **Montenegro** (Tomanović et al. 2003b, 2009c; Kavallieratos et al. 2004; Žikić et al. 2012); **Netherlands** (Papp et al. 1996); **Norway** (Mjøs et al. 2024); **Palestine** (Mescheloff & Rosen 1988); **Poland** (Kierych 1975, 1980; Barczak 1993; Huflejt 1997); **Portugal** (Cecilio & Ilharco 2002); **Russia** (Starý 1962e, 1965a; Mackauer & Starý 1967; Mackauer 1968c; Davidian 2007, 2018c, 2019b; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Ruchin 2023); **Serbia** (Gärdenfors 1986; Tomanović et al. 1998a, 1999b, 2003b, 2009c; Kavallieratos et al. 2004; Žikić et al. 2012); **Slovakia** (Starý 1977, 1989a); **South Korea** (Starý & Schlinger 1967; Starý 1975a; Finlayson 1990; Starý & Choi 2000); **Spain** (Gärdenfors 1986; González & Michelena 1987; Tizado & Núñez-Perez 1991; Aguirre Segura & Tizado Morales 1993; Michelena et al. 1998; Sanchis et al. 2000; Pons et al. 2018); **Sweden** (Gärdenfors 1986); **Tajikistan** (Starý 1979a); **Ukraine** (Kaliuzhna 2013a, 2016a, 2019a, 2019b, 2026); **United Kingdom** (van Veen et al. 2008; Baker & Broad 2009; Davidian & Rispin 2016).

***Remarks.*** The older name *Alysia aphidivora* Rondani, 1848 is not used because the type series is lost and the original description does not allow a reliable identification.

### *Ephedrus orientalis* Starý & Schlinger, 1967 [Fig. 61E]

*Ephedrus orientalis* Starý & Schlinger, 1967:52. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (IECA, CASC). – Taiwan.

***Hosts.*** ***Hyalopterus pruni*** (Geoffroy) (Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Hyperomyzus carduellinus*** (Theobald) (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a; Chou 1981; Chen et al. 2009); ***Hyperomyzus lactucae*** (Linnaeus), ***Tinocallis viridis*** (Takahashi) (Chen &

Shi 2001); ***Uroleucon cichorii cichorii*** (Koch) (Paonam & Singh 1986b); ***Uroleucon sonchi*** (Linnaeus) (Paonam et al. 2011).

***Distribution.*** **China** (Mackauer & Starý 1967; Starý & Schlinger 1967; Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); **India** (Paonam & Singh 1986b; Raychaudhuri et al. 1990; Paonam et al. 2011; Das & Chakrabarti 2023a); **Russia** (Davidian 2007, 2018c, 2019b).

### *Ephedrus perillae* Tamili & Raychaudhuri, 1984

*Ephedrus perillae* Tamili & Raychaudhuri, 1984:1. Holotype ♀ (CUCE). – India.

***Host.*** ***Aulacorthum perillae*** (Shinji) (Tamili & Raychaudhuri 1984; Raychaudhuri et al. 1990).

***Distribution.*** **India** (Tamili & Raychaudhuri 1984; Raychaudhuri et al. 1990; Das & Chakrabarti 2023a).

### *Ephedrus persicae* Froggatt, 1904 [Fig. 61F]

*Ephedrus persicae* Froggatt, 1904:611. Lectotype ♀ (after Starý & Schlinger 1967) (ASCT, lost). – Australia.

**Syn.:** *Ephedrus nevadensis* Baker, 1909; *Ephedrus nitidus* Gahan, 1917 [Fig. 61D]; *Ephedrus vidali* Quilis, 1931; *Ephedrus interstitialis* Watanabe, 1941; *Ephedrus pulchellus* Stelfox, 1941 [Fig. 62C]; *Ephedrus impressus* Granger, 1949; *Ephedrus holmani* Starý, 1958; *Ephedrus palaestinensis* Mackauer, 1959.

***Hosts.*** ***Acyrthosiphon malvae*** (Mosley) (Laamari et al. 2011, 2012); ***Acyrthosiphon pisum*** (Harris) (Chen et al. 2009; Laamari et al. 2011); ***Allocotaphis quaestionis*** (Börner) (Starý 1962a, 1962e, 1964d, 1966c, 1967b, 1969a, 1974c, 2006; Mackauer 1963b; Mackauer & Starý 1967; Starý et al. 1971); ***Anuraphis farfarae*** (Koch) (Mackauer 1963b; Mackauer & Starý 1967); ***Aphis affinis*** Del Guercio (Talebi et al. 2009; Tomanović et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013); ***Aphis aurantii*** Boyer de Fonscolombe (Mackauer 1963b; Mackauer & Starý 1967; Rosen 1967, 1969; Starý 1967a, 1974c, 1976a; Tremblay 1967a, 1980, 1984; Avidov & Harpaz 1969; Roberti 1969; Marsh 1979; Hussein & Kawar 1984; Tremblay et al. 1985; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2004, 2005b, 2008a; Boukhris-Bouhachem 2011; Yoldaş et al. 2011); ***Aphis brunnea*** Ferrari (Mescheloff & Rosen 1988; Aguirre Segura & Tizado Morales 1993); ***Aphis chloris*** Koch (Mescheloff & Rosen 1988); ***Aphis craccivora*** Koch (Mackauer 1963b; Mackauer & Starý 1967; Starý 1967a, 1974c, 1976a, 1979a; Avidov & Harpaz 1969; Tremblay 1976; Starý & Bhagat 1978; Marsh 1979; Düzgüneş et al. 1982; Starý & Ghosh 1983; Mescheloff & Rosen 1988; Pennacchio et al. 1988; Suay Cano et al. 1992; Aguirre Segura & Tizado Morales 1993; Starý et al. 2000; Chen & Shi 2001; 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; Kavallieratos et al. 2016; Ferrer-Suay et al. 2017; Pons et al. 2018; Satar et al. 2021); ***Aphis epilobiaria*** Theobald (Mescheloff & Rosen 1988); ***Aphis euphorbiae*** Kaltenbach (Kavallieratos et al. 2001, 2004, 2008a); ***Aphis fabae*** Scopoli (Starý 1958, 1962a, 1962e, 1966c, 1967b, 1972f, 1974c, 1976a, 1979a, 1987a, 2006; Mackauer 1959e, 1963b; Mackauer & Starý 1967; Tremblay 1967a, 1976; Al-Azawi 1970; Marsh 1979; Düzgüneş et al. 1982; Tremblay et al. 1985; Al Jassany & Al Adil 1986; Barczak 1988, 1991b; Costa & Starý 1988; Mescheloff & Rosen 1988; Barczak et al. 1999; Chen & Shi 2001; Kavallieratos et al. 2001, 2004; Uysal et al. 2004; Žikić et al. 2009; Laamari et al. 2011, 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Satar et al. 2021); ***Aphis fabae cirsiiacanthoidis*** Scopoli (Kavallieratos et al. 2001; Uysal et al. 2004); ***Aphis frangulae*** Kaltenbach (Starý 1976a); ***Aphis glycines*** Matsumura (Chang et al. 1994); ***Aphis gossypii*** Glover (Schlinger & Hall 1960a; Mackauer 1963b; Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1967a, 1974c, 1975a, 1976a; Chiu & Liu 1969; Al-Azawi 1970; Tao & Chiu 1971; Marsh 1979; Chou 1981; Abou-Fakhr 1982; Düzgüneş et al. 1982; Starý & Ghosh 1983; Zeren & Düzgüneş 1983; Tremblay et al. 1985; Paonam & Singh 1986b; Mescheloff & Rosen 1988; Abou-Fakhr & Kawar 1998; Kavallieratos & Lykouressis 1999a; Chen & Shi 2001; Kavallieratos et al. 2001, 2002a, 2004, 2005b; Uysal et al. 2004; Lumbierres et al. 2005; Wei et al. 2005; Chen et al. 2009; Laamari et al. 2011, 2012; Yoldaş et al. 2011; Barahoei et al. 2013; Satar et al. 2014, 2021; Ayadi et al. 2017; Pons et al. 2018; Zouari et al. 2018); ***Aphis hederae*** Kaltenbach (Starý 1976a; González & Michelena 1987; Mescheloff & Rosen 1988; Suay Cano et al. 1992); ***Aphis idaei*** van der Goot (Starý 1962a, 1966c, 1967b, 1974c, 2006; Mackauer 1963b; Mackauer & Starý 1967); ***Aphis intybi*** Koch (Mescheloff & Rosen 1988); ***Aphis lichtensteini*** Leclant & Remaudière (Starý et al. 1971, 1973, 1975; Starý 1974c, 1976a; Costa & Starý

1988; Suay Cano & Michelena Saval 1998); ***Aphis longisetosa*** Basu (Starý & Ghosh 1983); ***Aphis medicaginis*** Koch (Mackauer 1963b; Starý 1974c, 1976a); ***Aphis nasturtii*** Kaltenbach (Mescheloff & Rosen 1988); ***Aphis nerii*** Boyer de Fonscolombe (Talebi et al. 2009; Barahoei et al. 2014); ***Aphis parietariae*** Theobald (Gärdenfors 1986; Costa & Starý 1988; Mineo et al. 1997; Petrović et al. 2016); ***Aphis pomi*** De Geer (Evenhuis 1963; Starý 1965a, 1974c, 1975c, 1979a; Mackauer & Starý 1967; Marsh 1979; González & Michelena 1987; Michelena et al. 1994; Tomanović et al. 1999b, 2009c; Starý et al. 2000; Wiackowski et al. 2001; Feraru & Mustata 2004; Kavallieratos et al. 2004, 2008b, 2016; Laamari et al. 2011, 2012; Žikić et al. 2012; Gagui et al. 2023); ***Aphis praeterita*** Walker (Starý et al. 1971; Starý 1974c); ***Aphis punicae*** Passerini (Mackauer 1963b; Mackauer & Starý 1967; Starý & Sekkat 1987; Mescheloff & Rosen 1988; Starý et al. 2000; Laamari et al. 2011, 2012; Farrokhzadeh et al. 2014; Petrović et al. 2016); ***Aphis ruborum*** (Börner) (Mackauer 1959e, 1963b; Mackauer & Starý 1967; Starý 1976a; Düzgüneş et al. 1982; Pennacchio et al. 1988; Uysal et al. 2004; Havelka et al. 2012); ***Aphis schneideri*** (Börner) (Wiackowski et al. 2001); ***Aphis solanella*** Theobald (Tremblay et al. 1985; Kavallieratos et al. 2001, 2004, 2010; Starý et al. 2007); ***Aphis spiraecola*** Patch (Starý 1967a, 1974c, 1975a; Starý & Schlinger 1967; Chiu & Liu 1969; Tao & Chiu 1971; Takada 1973; Liu 1975; Chou 1981; Suay Cano et al. 1992; Chen & Shi 2001; Chen et al. 2009); ***Aphis spiraephaga*** Müller (Starý 1995a, 2006); ***Aphis umbrella*** (Börner) (Mackauer 1963b; Mackauer & Starý 1967, 1976a; Starý et al. 1975; Abou-Fakhr 1982; Tremblay et al. 1985; Abou-Fakhr & Kawar 1998; Kavallieratos et al. 2001, 2004); ***Aphis vallei*** Hille Ris Lambers & Stroyan (Kök et al. 2020); ***Aphis verbasci*** Schrank (Mescheloff & Rosen 1988); ***Aphis viticis*** Ferrari (Gärdenfors 1986; Mitrovski-Bogdanović et al. 2009; Tomanović et al. 2009c; Žikić et al. 2012); ***Aphis*** spp. (Schlinger & Hall 1960a; Gärdenfors 1986; Kavallieratos et al. 2004, 2008a; Tomanović et al. 2009c); ***Brachycaudus amygdalinus*** (Schouteden) (Bodenheimer & Swirski 1957; Mackauer 1959e, 1963b; Mackauer & Starý 1967; Avidov & Harpaz 1969; Roberti 1969; Starý et al. 1973; Starý 1976a; Düzgüneş et al. 1982; González & Michelena 1987; Starý & Sekkat 1987; Mescheloff & Rosen 1988; Aguirre Segura & Tizado Morales 1993; Michelena et al. 1994, 2004; Cecilio 1996; Kavallieratos et al. 2001, 2004, 2008b; Cecilio & Ilharco 2002; Uysal et al. 2004; Talebi et al. 2009; Žikić et al. 2009; Jafari Ahmadabadi et al. 2011; Laamari et al. 2011; Jafari Ahmadabadi & Modarres Awal 2012; Nazari et al. 2012; Rakhshani 2012; Rakhshani et al. 2012b; Alikhani et al. 2013; Kök & Tomanović 2022); ***Brachycaudus cardui*** (Linnaeus) (Starý 1962e, 1974c, 1976a; Mackauer 1963b; Starý & Rupais 1963; Mackauer & Starý 1967; Starý et al. 1971; Marsh 1979; Rakauskas 1981; Düzgüneş et al. 1982; Tomanović et al. 1998b, 2009c; Pike et al. 2000; Kavallieratos et al. 2001, 2004, 2008b; Uysal et al. 2004; Aslan & Karaca 2005; Žikić et al. 2009, 2012; Kos et al. 2012; Petrović et al. 2016); ***Brachycaudus cerinthis*** Bozhko (Starý et al. 1971; Starý 1974c); ***Brachycaudus helichrysi*** (Kaltenbach) (Starý 1958, 1962a, 1962e, 1964d, 1966a, 1966c, 1967b, 1969a, 1974c, 1976a, 1977, 1979a, 1987a, 1995c, 2006; Mackauer 1959e, 1963b; Mackauer & Starý 1967; Roberti 1969; Marsh 1979; Rakauskas 1981; Erkin 1983; Gärdenfors 1986; González & Michelena 1987; Costa 1988; Costa & Starý 1988; Mescheloff & Rosen 1988; Aguirre Segura & Tizado Morales 1993; Michelena et al. 1994, 2004; Cecilio 1996; Tomanović et al. 1998b, 1999b, 2008a, 2009c; Pike et al. 2000; Starý et al. 2000, 2007; Cecilio & Ilharco 2002; Kavallieratos et al. 2004, 2008b; Uysal et al. 2004; Žikić et al. 2009, 2012; Laamari et al. 2011; Nazari et al. 2012; Rakhshani 2012; Alikhani et al. 2013; Barahoei et al. 2013; Satar et al. 2014; Petrović et al. 2016; Davidian 2018c; Kök et al. 2020; Mustafayeva 2020); ***Brachycaudus klugkisti*** (Börner) (Mackauer 1963b; Thuneberg 1963; Mackauer & Starý 1967; Starý et al. 1971, 1973; Starý 1974c; Mitrovski-Bogdanović et al. 2009); ***Brachycaudus lychnidis*** (Linnaeus) (Starý 1958, 1962e, 1966c, 1974c, 2006; Mackauer & Starý 1967); ***Brachycaudus persicae*** Passerini (Froggatt 1904; Mackauer 1963b; De Santis & Esquivel 1966; Mackauer & Starý 1967; Starý et al. 1971, 1973; Carver & Starý 1974; Starý 1975, 1976a); ***Brachycaudus prunicola*** (Kaltenbach) (Tomanović et al. 1998b, 2009c; Kavallieratos et al. 2004, 2008b; Žikić et al. 2012); ***Brachycaudus rumexicolens*** (Patch) (Starý et al. 1971; Starý 1974c; Kavallieratos et al. 2001, 2004); ***Brachycaudus schwartzi*** (Börner) (De Santis & Esquivel 1966; Starý 1995c); ***Brachycaudus*** spp. (Starý 1962a, 1962e, 1964d, 1966c, 1966d, 1969a, 1987a, 1995b, 2006; Mackauer & Starý 1967; Tomanović et al. 1999b; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Brachyunguis tamaricis*** (Lichtenstein) (Starý et al. 1973, 2000; Starý 1976a, 1979a; Sanchis et al. 2000; Lumbierres et al. 2005; Kos et al. 2012; Laamari et al. 2012; Pons et al. 2018); ***Brachyunguis tamaricophilus*** (Nevsky) (Starý 1974c, 1979a); ***Brachyunguis*** spp. (Starý 1974c; Gärdenfors 1986); ***Brevicoryne brassicae*** (Linnaeus) (Gahan 1917; Muesebeck 1928; Mackauer 1963b; Mackauer & Starý 1967; Liu 1975; Marsh

1979; Chou 1981; Mustata 1986; Chen & Shi 2001; Chen et al. 2009; Satar et al. 2021); ***Capitophorus elaeagni*** (Del Guercio) (Takada 1968; Starý 1975a); ***Capitophorus hippophaes*** (Walker) (Takada 1968, 1973; Starý 1975a); ***Capitophorus*** spp. (Starý & Schlinger 1967; Takada 1968, 1973; Starý 1975a); ***Cavariella aegopodii*** (Scopoli) (Düzgüneş et al. 1982; Uysal et al. 2004); ***Cavariella theobaldi*** (Gillette & Bragg) (Düzgüneş et al. 1982; Uysal et al. 2004); ***Chaitophorus leucomelas*** Koch (Starý et al. 1971); ***Chaitophorus populeti*** (Panzer) (Bhagat 1984, 1985); ***Chaitophorus truncatus*** (Hausmann) (Starý et al. 1977a); ***Diuraphis calamagrostis*** (Ossiannilsson) (Chiu & Liu 1969; Chen & Shi 2001); ***Diuraphis noxia*** (Mordvilko) (Starý et al. 1999, 2000); ***Drepanosiphum*** sp. (Starý 1977); ***Dysaphis affinis*** Del Guercio (Davidian 2018c); ***Dysaphis anthrisci*** Börner (Cierniewska 1973; Starý et al. 1971; Starý 1974c); ***Dysaphis apiifolia*** (Theobald) (Kavallieratos et al. 2001, 2004); ***Dysaphis ariae*** (Börner) (Starý et al. 1973); ***Dysaphis crataegi*** (Kaltenbach) (Talhouk 1961; Mackauer 1963b; Starý 1965a, 1969a, 1974c, 1976a, 1979a; Mackauer & Starý 1967; Marsh 1979; Gärdenfors 1986; Starý et al. 2000; Wiackowski et al. 2001); ***Dysaphis devecta*** (Walker) (Starý 1958, 1962a, 1962e, 1964d, 1966c, 1967b, 1969a, 1974c, 1987a, 2006; Mackauer 1959e, 1963b; Mackauer & Starý 1967; Vidal 1997a; Aslan et al. 2004; Uysal et al. 2004; Aslan & Karaca 2005; Žikić et al. 2009, 2012; Alikhani et al. 2013; Petrović et al. 2016; Mustafayeva 2020); ***Dysaphis foeniculus*** (Theobald) (Kavallieratos et al. 2001, 2004; Talebi et al. 2009); ***Dysaphis plantaginea*** (Passerini) (Starý 1958, 1967, 1969a, 1974c, 1975c, 1976a, 1977, 1987a, 1995b; Mackauer 1959e, 1962c, 1963b; Evenhuis 1964; Mackauer & Tremblay 1967a; Roberti 1969; Starý et al. 1971, 1973; Cierniewska 1973; Cierniewska 1976; Chiriac 1977; Marsh 1979; Düzgüneş et al. 1982; Erkin 1983; Hussein & Kawar 1984; Gärdenfors 1986; Michelena et al. 1994, 2004; Sacco & Girolami 1995; Kavallieratos et al. 2001, 2004, 2008b; Bribosia et al. 2004; Uysal et al. 2004; Aslan & Karaca 2005; Bribosia et al. 2005b; Peusens et al. 2006; Mitrovski-Bogdanović et al. 2009; Tomanović et al. 2009c; Westrum et al. 2010; Laamari et al. 2011, 2012; Nazari et al. 2012; Rakhshani 2012; Žikić et al. 2012; Barahoei et al. 2013; Petrović et al. 2016; Ferrer-Suay et al. 2017; Davidian 2018c; Pons et al. 2018; Kök et al. 2020); ***Dysaphis pyri*** (Boyer de Fonscolombe) (Mackauer 1963b; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975, 2000; Starý 1976a; Erkin 1983; Gärdenfors 1986; Vidal 1997a; Kavallieratos et al. 2004, 2008b; Uysal et al. 2004; Tomanović et al. 2009c; Žikić et al. 2009, 2012; Rakhshani 2012); ***Dysaphis radicola*** (Mordvilko) (Cierniewska 1973; Starý 1975c); ***Dysaphis reaumuri*** (Mordvilko) (Starý 1974c, 1976a, 1979a; Chiriac 1977; Kavallieratos et al. 2004, 2008b; Tomanović et al. 2009c; Rakhshani 2012; Žikić et al. 2012; Barahoei et al. 2013; Davidian 2018c; Mustafayeva 2020); ***Dysaphis sorbi*** (Kaltenbach) (Starý 1962e, 1966b, 1966c, 1966d, 1969a, 1976a, 1977, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971, 1973; Bribosia et al. 2005b; Kos et al. 2012); ***Dysaphis sorbiarum*** (Narzikulov) (Starý 1965a, 1974c, 1979a; Mackauer & Starý 1967); ***Dysaphis*** spp. (Starý 1962a, 1962e, 1964d, 1966c, 1966d, 1969a, 1974c, 1987a, 1995b; Starý et al. 1971; Gärdenfors 1986; Tomanović et al. 1999b; Kavallieratos et al. 2008b; Ferrer-Suay et al. 2017; Davidian 2018c); ***Eriosoma*** sp. (Petrović et al. 2016); ***Eulachnus tuberculostemmata*** (Theobald) (Mescheloff & Rosen 1988); ***Hayhurstia atriplicis*** (Linnaeus) (Mescheloff & Rosen 1988; Barahoei et al. 2013); ***Hayhurstia tataricae*** (Aizenberg) (Starý 1974c); ***Hyadaphis coriandri*** (Das) (Starý 1965a, 1979a; Mackauer & Starý 1967; Chiriac 1977; Starý & Juchnevič 1978; Barannik 1986; Barahoei et al. 2014); ***Hyadaphis foeniculi*** (Passerini) (Starý 1963b, 1966c, 1967b, 1974c, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971; Marsh 1979; Mescheloff & Rosen 1988; Wiackowski et al. 2001; Žikić et al. 2012); ***Hyadaphis passerinii*** (Del Guercio) (Barannik 1986); ***Hyalopterus amygdali*** (Blanchard) (Ölmez & Ulusoy 2003; Aslan et al. 2004; Uysal et al. 2004; Wei et al. 2005; Jafari Ahmadabadi et al. 2011; Jafari Ahmadabadi & Modarres Awal 2012; Rakhshani 2012; Barahoei et al. 2013); ***Hyalopterus pruni*** (Geoffroy) (Tao & Chiu 1971; Starý 1974c, 1975a, 1976a; Chou 1981; Düzgüneş et al. 1982; Erkin 1983; Mescheloff & Rosen 1988; Aguirre Segura & Tizado Morales 1993; Wiackowski & Wiackowska 1996; Chen & Shi 2001; Wiackowski et al. 2001; Feraru & Mustata 2004; Michelena et al. 2004; Uysal et al. 2004; Aslan & Karaca 2005; Chen et al. 2009; Kos et al. 2012); ***Hyperomyzus lactucae*** (Linnaeus) (Starý & Ghosh 1983; Wiackowski et al. 2001); ***Lipaphis erysimi*** (Kaltenbach) (Liu 1968, 1975; Chiu & Liu 1969; Tao & Chiu 1971; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Macrosiphum*** sp. (Starý et al. 2000); ***Macchiatiella rhamni*** (Boyer de Fonscolombe) (Abou-Fakhr 1982; Abou-Fakhr & Kawar 1998); ***Macrosiphum euphorbiae*** (Thomas) (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Marsh 1979); ***Melanaphis donacis*** (Passerini) (Bhagat 1984; Gärdenfors 1986; González & Michelena 1987; Mescheloff & Rosen 1988; Mifsud & Starý 2011, 2012; Tomanović et al. 2012); ***Melanaphis pyraria*** (Passerini) (Mackauer 1963b; Starý et al. 1971,

1973; Starý 1974c, 1976a, 2006; Kavallieratos et al. 2004, 2008b; Tomanović et al. 1999b, 2009c; Žikić et al. 2012); ***Metopolophium dirhodum*** (Walker) (Starý et al. 2000; Rakhshani et al. 2008b); ***Myzus cerasi*** (Fabricius) (Muesebeck 1958a; Starý 1958, 1962a, 1962e, 1963b, 1964d, 1965a, 1966a, 1966c, 1966d, 1967b, 1974c, 1977, 1987a, 2006; Mackauer 1959e, 1963b; Gilmore 1960; Akhvlediani 1964; Starý & Rupais 1964; Mackauer & Starý 1967; Kierych 1980; Rakauskas 1981; Erkin 1983; Hofsvang & Høgvar 1983b; Gärdenfors 1986; Barczak 1988; Mescheloff & Rosen 1988; Finlayson 1990; Atanassova 1997; Kolarov 1997; Tomanović et al. 1998b, 1999b, 2009c; Kavallieratos et al. 2001, 2004, 2008b; Aslan et al. 2004; Michelena et al. 2004; Uysal et al. 2004; Žikić et al. 2009, 2012; Westrum et al. 2010; Rakhshani 2012; Petrović et al. 2016; Ferrer-Suay et al. 2017; Pons et al. 2018); ***Myzus ligustri*** (Mosley) (Starý 1962a, 1962e, 1963b, 1964d, 1966c, 1974c; Mackauer 1963b; Mackauer & Starý 1967; Marsh 1979); ***Myzus lythri*** (Schrank) (Akhvlediani 1964; Starý et al. 1971; Starý 1974c); ***Myzus mumecola*** (Matsumura) (Watanabe 1941c; Mackauer 1963b; Mackauer & Starý 1967; Takada 1968; Starý 1975a); ***Myzus mushaensis*** Takahashi (Togashi 1996); ***Myzus ornatus*** Laing (Starý 1995c; Starý et al. 2007); ***Myzus padellus*** Hille Ris Lambers & Rogerson (Barannik 1986); ***Myzus persicae*** (Sulzer) (Ward 1934; McLeod 1938; Smith 1944; Muesebeck & Walkley 1951; Schlinger & Hall 1960a; Mackauer 1963b, 1968d; Mackauer & Starý 1967; Starý 1967a, 1974c, 1975a, 1976a, 1995c; Starý & Schlinger 1967; Watanabe & Takada 1967; Liu 1968, 1975; Takada 1968; Chiu & Liu 1969; Starý et al. 1971, 1975; Tao & Chiu 1971; Carver & Starý 1974; Marsh 1979; Chou 1981; Erkin 1983; Starý & Ghosh 1983; Zeren & Düzgüneş 1983; Karaat & Goven 1986; Finlayson 1990; Carver 1992; Tomanović et al. 1998b, 1999b, 2007c, 2009c; Chen & Shi 2001; Kavallieratos et al. 2004, 2008b; Michelena et al. 2004; Uysal et al. 2004; Chen et al. 2009; Talebi et al. 2009; Žikić et al. 2009; Boukhris-Bouhachem 2011; Laamari et al. 2011, 2012; Yoldaş et al. 2011; Nazari et al. 2012; Rakhshani 2012; Žikić et al. 2012; Barahoei et al. 2013; Hasan 2016; Aparicio et al. 2019; Mustafayeva 2020; Satar et al. 2021; Plećaš et al. 2023); ***Myzus sorbi*** Bhattacharya & Chakrabarti (Das & Chakrabarti 1990a); ***Myzus varians*** Davidson (Yasumatsu & Moritsu 1947; Mackauer & Starý 1967; Takada 1968; Starý 1975a; Marsh 1979); ***Nasonovia brachycyclica*** Holman (Starý et al. 1973); ***Nasonovia ribisnigri*** (Mosley) (Starý et al. 1977a); ***Ovatus malisuctus*** (Matsumura) (Starý & Schlinger 1967; Starý 1975a); ***Phorodon humuli*** (Schrank) (Starý 1962a, 1962e, 1963b, 1964d, 1966a, 1966c, 1967b, 1974c, 1977, 1995b; Mackauer 1963b; Mackauer & Starý 1967; Starý et al. 1971; Marsh 1979; Rakauskas 1981; Pike & Starý 1996a; Tomanović et al. 1998b, 1999b, 2009c; Kavallieratos et al. 2004, 2008b; Starý 2006; Rakhshani 2012; Žikić et al. 2012; Barahoei et al. 2013; Ferrer-Suay et al. 2017; Pons et al. 2018); ***Protaphis hirsuta*** (Nevsky) (Davidian 2018c); ***Rhopalomyzus lonicerae*** (Siebold) (Starý 1974c, 1979a; Starý & Juchnevič 1978); ***Rhopalomyzus poae*** (Gillette) (Starý et al. 1971; Starý 1974c); ***Rhopalosiphoninus deutzifoliae*** Shinji (Takada 1968; Starý 1975a); ***Rhopalosiphum maidis*** (Fitch) (Mackauer 1959e, 1963b; Mackauer & Starý 1967; Avidov & Harpaz 1969; Starý 1976a, 1979a; Marsh 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 nymphaeae*** (Linnaeus) (Tomanović et al. 1998b, 1999b, 2009c; Kavallieratos et al. 2004, 2008b; Žikić et al. 2012); ***Rhopalosiphum oxyacanthae*** (Schrank) (Evenhuis 1968; Starý et al. 1971; Starý 1974c, 1975c, 1977, 1981b, 2006); ***Rhopalosiphum padi*** (Linnaeus) (Mackauer 1959e; Starý 1962a, 1962e, 1964d, 1966a, 1966c, 1967b, 1974c, 1976a, 1981b, 1987a, 2006; Mackauer 1963b; Mackauer & Starý 1967; Marsh 1979; Starý et al. 2000; Satar et al. 2021); ***Roepkea marchali*** (Börner) (Starý 1962a, 1962e, 1965a, 1966a, 1966c, 1967b, 1969a, 1974c, 1976a, 1987a, 1995b, 2006; Mackauer 1963b; Mackauer & Starý 1967; Starý et al. 1971); ***Sappaphis*** sp. (Starý 1962a, 1962e; Ferrer-Suay 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, 2012b; Mitrovski-Bogdanović et al. 2009; Žikić et al. 2009; Alikhani et al. 2013); ***Sipha maydis*** Passerini (Starý et al. 2000); ***Siphonatrophia cupressi*** (Swain) (Laamari et al. 2016a; Pons et al. 2018); ***Sitobion avenae*** (Fabricius) (Takada 1968, 1973; Starý 1975a; Starý et al. 2000; Chen & Shi 2001; El-Heneidy et al. 2001, 2002; Barahoei et al. 2013; Gadallah et al. 2017); ***Tetraneura*** sp. (Bhagat 1984); ***Tinocallis ulmiparvifoliae*** Matsumura (Chiu & Liu 1969; Tao & Chiu 1971; Starý 1974c, 1975a; Chou 1981; Chen & Shi 2001); ***Tinocallis viridis*** (Takahashi) (Starý & Schlinger 1967; Starý 1975a; Chou 1981; Chen & Shi 2001); ***Trichosiphonaphis lonicerae*** (Uye) (Takada 1968; Starý 1975a); ***Tuberocephalus momonis*** (Matsumura) (Watanabe 1941c; Mackauer 1963b; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968; Starý 1974c, 1975a; Chou 1981; Gärdenfors 1986; Chen & Shi 2001; Wei et al. 2005; Chen et al. 2009); ***Tuberocephalus*** sp. (Takada 1973); ***Uroleucon inulae*** (Ferrari) (Pons et al.

2018); ***Uroleucon solidaginis*** (Fabricius) (Kavallieratos et al. 2004; Tomanović et al. 2009c; Žikić et al. 2012); ***Uroleucon sonchi*** (Linnaeus) (Paonam & Singh 1986c); ***Vesiculaphis caricis*** (Fullaway) (Starý & Schlinger 1967; Starý 1975a; Marsh 1979); ***Xerobion*** sp. (Mescheloff & Rosen 1988).

***Distribution.*** **Algeria** (Starý 1976a; Gärdenfors 1986; Laamari et al. 2011, 2012, 2016a; Chehma & Laamari 2014; Aroun et al. 2016; Rakhshani et al. 2019; Gagui et al. 2023); **Andorra** (Sanchis et al. 1999); **Argentina** (De Santis 1967); **Armenia** (Davidian 2018c); **Australia** (Froggatt 1904; Ward 1934; Mackauer 1963b; Mackauer & Starý 1967; Carver & Starý 1974; Carver 1992; Ward et al. 2021b); **Austria** (Mackauer & Starý 1967); **Azerbaijan** (Mustafayeva 2020); **Belgium** (Bribosia et al. 2004; Bribosia et al. 2005b; Žikić et al. 2009, 2010; Lopes et al. 2016; Petrović et al. 2016); **Brazil** (Tavares 1996; Starý et al. 2007); **Bulgaria** (Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997; Todorov 2007, 2014); **Canada** (McLeod 1938; Smith 1944; Muesebeck & Walkley 1951; Muesebeck 1958a; Mackauer 1963b; Mackauer & Starý 1967; Gärdenfors 1986; Finlayson 1990); **Canary Islands** (Mackauer 1962b; Mackauer & Starý 1967; Starý 1976a; Gärdenfors 1986; Báez et al. 2001); **Chile** (Starý 1995c; Žikić et al. 2010); **China** (Starý 1967a, 1974c, 1975a; Starý & Schlinger 1967; Liu 1968, 1975; Chiu & Liu 1969; Chu et al. 1978; Chou 1981; Yang & Wu 1981; Dong & Wang 1985, 1993; Chen 1986; Gärdenfors 1986; Wu et al. 1987; Zheng et al. 1987; Lu & Ji 1992; Gu et al. 1995; Chen & Shi 2001, 2002; He et al. 2004; Chen et al. 2009; Žikić et al. 2009); **Cyprus** (Mackauer 1963b; Wood 1963; Mackauer & Starý 1967; Starý 1967a, 1974c, 1976a); **Czech Republic** (Starý 1958, 1962a, 1962e, 1966c, 1972f, 1974c, 1975c, 1977, 1981b, 1987a, 1989a, 1991, 1995a, 1995b, 2006; Mackauer 1963b; Mackauer & Starý 1967; Gärdenfors 1986; Pike & Starý 1996a; Tomanović et al. 2007c, 2008a; Starý & Havelka 2008; Ferrer-Suay et al. 2017); **Denmark** (Mackauer & Starý 1967); **Egypt** (Gärdenfors 1986; El-Heneidy & Abdel-Samad 2001; El-Heneidy et al. 2001, 2002, 2003; El-Gantiry et al. 2014; El-Ghiet et al. 2014; Saleh & Khedr 2014; Rakhshani et al. 2019); **Finland** (Mackauer 1963b, 1968c; Thuneberg 1963; Hellén 1966; Mackauer & Starý 1967; Koponen & Halme 1993); **France** (Starý et al. 1971, 1973, 1975, 1977a; Starý 1974c, 1976a, 1981b; Tomanović et al. 2007c; Žikić et al. 2009, 2010); **Georgia** (Akhvlediani 1964; Starý 1965a, 1974c, 1976a; Davidian 2018c); **Germany** (Mackauer 1962c, 1963b; Mackauer & Starý 1967; Starý 1974c; Boness & Starý 1988; Belokobylskij et al. 2003); **Greece** (Starý 1976a; Gärdenfors 1986; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2002a, 2004, 2005b, 2008a, 2008b, 2010, 2016; Žikić et al. 2009, 2010; Tomanović et al. 2012); **Hungary** (Starý 1974c; Polgár 1983); **India** (Rishi 1976; Starý & Bhagat 1978; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Saha et al. 1982; Starý & Ghosh 1983; Bhagat 1984, 1985; Paonam & Singh 1986b; Das & Chakrabarti 1990a, 2023a; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Ahmad & Wani 2014); **Iran** (Mackauer 1963b; Mackauer & Starý 1967; Starý 1979a; Starý et al. 2000; Rakhshani et al. 2005a, 2006a, 2008a, 2012b, 2019; Rakhshani 2012; Tomanović et al. 2007c; Mitrovski-Bogdanović et al. 2009; Žikić et al. 2009, 2010; Fallahzadeh & Saghaei 2010; Jafari Ahmadabadi et al. 2011; Mossadegh et al. 2011; Barahoei et al. 2012, 2013; Jafari Ahmadabadi & Modarres Awal 2012; Nazari et al. 2012; Tomanović et al. 2012; Alikhani et al. 2013; Taheri & Rakhshani 2013; Farrokhzadeh et al. 2014; Ameri et al. 2019); **Iraq** (Mackauer & Starý 1967; Starý 1974c, 1976a; Al-Azawi 1970; Al Jassany & Al Adil 1986; Žikić et al. 2009, 2010; Rakhshani et al. 2019); **Ireland** (Stelfox 1941, 1944; Mackauer & Starý 1967; Gärdenfors 1986; O'Connor et al. 1999); **Italy** (Starý 1966d, 1974c, 1976a; Tremblay 1967a, 1976; Roberti 1969; Tremblay et al. 1978, 1980; Cravedi 1987; Pennacchio et al. 1988; Fontanari et al. 1993; Bergamesco et al. 1995; Sacco & Girolami 1995; Mineo et al. 1997); **Japan** (Watanabe 1941c; Yasumatsu & Moritsu 1947; Mackauer & Starý 1967; Starý 1967a, 1974c, 1975a; Starý & Schlinger 1967; Takada 1968, 1973, 2002; Gärdenfors 1986; Togashi 1996; Tomanović et al. 2007c; Žikić et al. 2009, 2010); **Jordan** (Mackauer 1963b; Mackauer & Starý 1967); **Kazakhstan** (Starý 1974c, 1979a; Starý & Juchnevič 1978; Davidian 2018c); **Kyrgyzstan** (Starý 1979a; Davidian 2018c); **Latvia** (Starý & Rupais 1964; Mackauer & Starý 1967); **Lebanon** (Talhouk 1961; Mackauer & Starý 1967; Starý 1976a; Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay 1984; Tremblay et al. 1985; Abou-Fakhr & Kawar 1998; Rakhshani et al. 2019); **Libya** (Starý 1976a; Petrović et al. 2016; Rakhshani et al. 2019); **Lithuania** (Rakauskas 1981, 1985; Pike & Starý 1996a); **Madagascar** (Granger 1949; Mackauer & Starý 1967; Madl & van Achterberg 2014); **Malta** (Mifsud & Starý 2011, 2012; Rakhshani et al. 2015b); **Moldova** (Starý 1974c; Talitzky & Kuslitzky 1990; Davidian 2018c); **Mongolia** (Starý 1979a; Takada 1979a; Davidian 2018c); **Montenegro** (Kavallieratos et al. 2004, 2008a, 2013, 2016; Tomanović et al. 2009c; Žikić et al. 2012; Petrović et al. 2016); **Morocco** (Starý & Sekkat 1987; Rakhshani et al. 2019); **Netherlands** (Evenhuis 1964; Mackauer & Starý 1967; Evenhuis

1968; Gärdenfors 1986; Papp et al. 1996); **Norway** (Mackauer 1968c; Hofsvang & Høgvar 1983b; Westrum et al. 2010; Mjøs et al. 2024); **Pakistan** (Starý et al. 1999); **Palestine** (Bodenheimer & Swirski 1957; Mackauer 1959e, 1963b; Rosen 1966, 1967, 1969; Mackauer & Starý 1967; Starý 1967a, 1974c, 1976a; Avidov & Harpaz 1969; Gärdenfors 1986; Mescheloff & Rosen 1988; Havelka et al. 2012; Davidian 2018c); **Poland** (Cierniewska 1973; Kierych 1975, 1980; Barczak 1988, 1991b; Olszak 1994; Wiackowski & Wiackowska 1996; Huflejt 1997; Barczak et al. 1999, 2005; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Portugal** (Costa 1988; Costa & Starý 1988; Cecilio 1996; Cecilio & Ilharco 2002); **Romania** (Mustata 1986; Feraru & Mustata 2004); **Russia** (Starý & Rupais 1963; Starý 1965a, 1974c; Mackauer & Starý 1967; Krotova 1993; Davidian 2007, 2018c, 2019b; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Saudi Arabia** (Asiry 2015); **Serbia** (Starý 1974c; Tomanović et al. 1998a, 1998b, 1999b, 2007c, 2009c; Žikić et al. 2000, 2009, 2010, 2012; Tomanović & Brajković 2001; Kavallieratos et al. 2004, 2008b, 2013; Mitrovski-Bogdanović et al. 2009; Petrović et al. 2016; Plećaš et al. 2023); **Slovakia** (Starý 1958, 1977, 1989a; Pike & Starý 1996a; Mitrovski-Bogdanović et al. 2009; Žikić et al. 2009, 2010; Ferrer-Suay et al. 2017); **Slovenia** (Kos et al. 2012; Petrović et al. 2016); **South Africa** (Mackauer & Starý 1967; Gärdenfors 1986); **South Korea** (Starý & Schlinger 1967; Starý 1967a, 1974c, 1975a; Paik 1975; Chang et al. 1994; Starý & Choi 2000; Kim 2026); **Spain** (Quilis-Pérez 1931a, 1931b; Ceballos 1956; Mackauer 1963b; Mackauer & Starý 1967; Starý 1974c, 1976a; González & Michelena 1987; Tizado & Núñez-Perez 1991; Aguirre Segura & Tizado Morales 1993; Michelena et al. 1994, 2004; Sanchis et al. 1995, 2000; Suay Cano & Michelena Saval 1998; Nieves-Aldrey et al. 2003; Lumbierres et al. 2005; Havelka et al. 2012; Pons et al. 2018; Aparicio et al. 2019); **Sweden** (Gärdenfors 1986; Petrović et al. 2016); **Switzerland** (Mackauer & Starý 1967; Vidal 1997a); **Syria** (Starý 1974c, 1976a; Rakhshani et al. 2019); **Tajikistan** (Starý 1965a, 1967a, 1974c, 1979a; Davidian 2018c); **Tunisia** (Boukhris-Bouhachem 2011; Ayadi et al. 2017); **Türkiye** (Düzgüneş et al. 1982; Erkin 1983; Zeren & Düzgüneş 1983; Karaat & Goven 1986; Özder & Toros 1999; Ölmez & Ulusoy 2003; Aslan et al. 2004; Uysal et al. 2004; Aslan & Karaca 2005; Žikić et al. 2009, 2010; Çetin Erdoğan et al. 2010; Guncan et al. 2010; Yoldaş et al. 2011; Havelka et al. 2012; Satar et al. 2014, 2021; Aslan 2015; Akar & Çetin Erdoğan 2017; Davidian 2018c; Rakhshani et al. 2019; Kök et al. 2020; Kök & Tomanović 2022); **United Arab Emirates** (Starý et al. 2014b; Rakhshani et al. 2019); **United Kingdom** (Kloet & Hincks 1945; Mackauer & Starý 1967; Starý 1974c; Belshaw & Quicke 2002; Davidian & Rispin 2016); **Ukraine** (Kaliuzhna 2013a, 2017b, 2019a, 2019b; Davidian 2018c); **USA** (Baker 1909; Gahan 1917; Nicolay 1919; Smith 1944; Muesebeck & Walkley 1951; Gilmore 1960; Schlinger & Hall 1960a; Mackauer 1963a, 1963b; Mackauer & Starý 1967; Starý & Schlinger 1967; Gärdenfors 1986; Finlayson 1990; Pike et al. 2000; Tomanović et al. 2007c; Davidian 2018c); **Uzbekistan** (Starý 1965a, 1974c, 1979a; Daminova et al. 2001; Aripov 2003; Davidian 2018c); **Yemen** (Starý et al. 2014b; Rakhshani et al. 2019).

***Remarks.*** Records of associations with *Chaitophorus* species (Starý et al. 1971, 1977a; Bhagat 1984, 1985), most probably refer to *Ephedrus chaitophori* Gärdenfors, 1986.

### *Ephedrus plagiator* (Nees, 1811) [Fig. 62A]

*Bracon plagiator* Nees von Esenbeck, 1811:17. Syntypes ♀ ♂ (Lost). – Germany.
*Ephedrus plagiator*: Starý 1962e:95. Neotype ♀ (IECA). – Czech Republic.

**Syn.:** *Aphidius parcicornis* Nees, 1834; *Ephedrus japonicus* Ashmead, 1906; *Ephedrus homostigma* Fahringer, 1935; *Ephedrus blattnyi* Starý, 1973.

***Hosts. Acyrthosiphon caraganae*** (Cholodkovsky) (Meyer 1927; Ivanova-Kasas 1956; Starý 1962e, 1963b, 1964d, 1966c, 1967b, 1974c, 1977, 1987a, 2006; Mackauer & Starý 1967; Ferrer-Suay et al. 2017); ***Acyrthosiphon chelidonii*** (Kaltenbach) (Starý 1966c, 1974c, 2006; Mackauer & Starý 1967); ***Acyrthosiphon kondoi*** Shinji (Carver 1992); ***Acyrthosiphon nigripes*** Hille Ris Lambers (Starý 2006); ***Acyrthosiphon pisum*** (Harris) (Starý 1962e, 1964d, 1966c, 1974c, 1975a, 1976a, 2006; Mackauer & Starý 1967; Chiu & Liu 1969; Tao & Chiu 1971; Liu 1975; Agarwala et al. 1980; Aeschlimann 1981; Chou 1981; Düzgüneş et al. 1982; Haeselbarth 1983; Starý & Ghosh 1983; Chen & Shi 2001; Kavallieratos et al. 2004; Uysal et al. 2004; Subhrani et al. 2006; Starý et al. 2007; Chen et al. 2009; Tomanović et al. 2009c; Kos et al. 2012; Žikić et al. 2012); ***Acyrthosiphon*** spp. (Starý 1987a, 2006; Tomanović et al. 2009c; Žikić et al.

2012); ***Amphicercidus japonicus*** (Hori) (Watanabe 1941c; Mackauer & Starý 1967; Takada 1968; Starý 1975a); ***Anoecia corni*** (Fabricius) (Starý 1981b); ***Anoecia*** sp. (Starý 2006); ***Anuraphis farfarae*** (Koch) (Starý & Rupais 1964; Starý 1969a, 1974c); ***Aphis aurantii*** Boyer de Fonscolombe (Takada 1968; Liu 1975; Starý 1975a; Tremblay et al. 1980; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Aphis bupleuri*** (Börner) (Starý et al. 1971; Starý 1974c, 1976a); ***Aphis chloris*** Koch (Starý et al. 1971; Starý 1974c); ***Aphis craccae*** Linnaeus (Mackauer & Starý 1967; Starý 1962e, 1964d, 1966c, 1974c, 1976a, 2006; Starý et al. 1975); ***Aphis craccivora*** Koch (Telenga 1950; Mackauer & Starý 1967; Starý 1967a, 1967b, 1974c, 1975a, 2006; Takada 1968; Starý et al. 1973; Ghosh & Agarwala 1982; Dong & Wang 1985, 1987a; Chen & Shi 2001; Chen et al. 2009; Ferrer-Suay et al. 2017); ***Aphis cytisorum*** Hartig (Watanabe 1941c); ***Aphis epilobii*** Kaltenbach (Tomanović et al. 2009c; Žikić et al. 2012); ***Aphis equiseticola*** Ossiannilsson (Gärdenfors 1986); ***Aphis fabae*** Scopoli (Quilis-Pérez 1934; Starý 1958, 1962e, 1963b, 1964d, 1966c, 1966d, 1967b, 1972f; 1974c, 1976a, 1977, 1987a, 1991, 2006; Hodek et al. 1962; Mackauer 1962c; Mackauer & Starý 1967; Tremblay 1967a, 1976; Rao et al. 1969; Starý et al. 1971, 1973, 1975, 2014a; Saha et al. 1982; Gärdenfors 1986; Barczak 1988, 1991b; Pennacchio et al. 1988; Barczak et al. 1999; Tomanović et al. 1999b, 2009c; Kavallieratos et al. 2001, 2004; Tomić et al. 2005; Kos et al. 2012; Žikić et al. 2012; Ferrer-Suay et al. 2017; Davidian 2018c; Mustafayeva 2020); ***Aphis fabae cirsiiacanthoidis*** Scopoli (Starý 1986a, 1987a, 1987b, 1991; Völkl 1989); ***Aphis fabae evonymi*** Fabricius (Quilis-Pérez 1934; Starý 1958); ***Aphis farinosa*** Gmelin (Starý 1962e, 1964d, 1966c, 1967b, 1974c, 1987a, 2006; Mackauer & Starý 1967); ***Aphis frangulae*** Kaltenbach (Starý et al. 1971; Starý 1974c; Derocles et al. 2012); ***Aphis glycines*** Matsumura (Chang et al. 1994); ***Aphis gossypii*** Glover (Telenga 1950; Starý & Schlinger 1967; Starý 1967a, 1974c, 1975a; Chiu & Liu 1969; Tao & Chiu 1971; Rogers et al. 1972; Liu 1975; Starý & Ghosh 1978, 1983; Chou 1981; Ahmad & Singh 1994a, 1995b; Singh et al. 1995; Chen & Shi 2001; Takada 2002; Chen et al. 2009); ***Aphis grossulariae*** Kaltenbach, ***Aphis hederae*** Kaltenbach (Starý 2006); ***Aphis idaei*** van der Goot (Starý 1962e, 1963b, 1964d, 1966c, 1967b, 1974c, 2006; Starý & Rupais 1964; Mackauer & Starý 1967; Starý et al. 1971; Kavallieratos et al. 2004; Tomanović et al. 2009c; Žikić et al. 2012); ***Aphis lichtensteini*** Leclant & Remaudière (Starý et al. 1971, 1975; Starý 1974c, 1976a); ***Aphis medicaginis*** Koch (Telenga 1950; Dong & Wang 1985; Chen & Shi 2001); ***Aphis nasturtii*** Kaltenbach (Mackauer 1962c; Starý 1966c, 1974c, 2006; Mackauer & Starý 1967; Wiackowski et al. 2001); ***Aphis nerii*** Boyer de Fonscolombe (Takada & Sugimoto 1994); ***Aphis odinae*** (van der Goot) (Starý & Schlinger 1967; Takada 1968, 1973; Chiu & Liu 1969; Tao & Chiu 1971; Starý 1974c, 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Aphis parietariae*** Theobald (Starý et al. 1971; Starý 1974c, 1976a); ***Aphis polygonata*** (Nevsky) (Starý et al. 1971; Starý 1974c); ***Aphis pomi*** De Geer (Regnier 1923; Starý & Rupais 1964; Starý 1966c, 1967b, 1974c, 1975a, 1975c, 1976a, 1987a, 2006; Mackauer & Starý 1967; Starý & Schlinger 1967; Starý et al. 1971; Cierniewska 1973; Rakauskas 1981; Düzgüneş et al. 1982; Uysal et al. 2004; Tomić et al. 2005; Kos et al. 2012; Mustafayeva 2020); ***Aphis rumicis*** Linnaeus (Gahan 1926; Watanabe 1941c; Sonan 1944; Starý et al. 1973; Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009; Ferrer-Suay et al. 2017); ***Aphis salicariae*** Koch (Kavallieratos et al. 2004; Tomić et al. 2005; Tomanović et al. 2007a, 2009c; Žikić et al. 2012); ***Aphis salviae*** Walker (Starý 1974c, 1979a; Starý & Juchnevič 1978); ***Aphis sambuci*** Linnaeus (Starý & Němec 1986; Barczak et al. 1999; Starý 2006; Kavallieratos et al. 2016); ***Aphis schneideri*** (Börner) (Kavallieratos et al. 2004; Tomanović et al. 2009c; Žikić et al. 2012); ***Aphis solanella*** Theobald (Starý & Ghosh 1983); ***Aphis spiraecola*** Patch (Starý & Schlinger 1967; Starý 1967a, 1974c, 1976a; Takada 1968, 1973; Chiu & Liu 1969; Starý et al. 1971, 1975; Tao & Chiu 1971; Liu 1975; Starý & Ghosh 1975, 1978; Chou 1981; Starý & Ghosh 1983; Chen & Shi 2001; Chen et al. 2009); ***Aphis spiraephaga*** Müller (Starý 1966c, 1967b, 1974c, 1987a, 1995a, 2006; Mackauer & Starý 1967; Wiackowski et al. 2001; Kavallieratos et al. 2004; Tomić et al. 2005; Tomanović et al. 2009c; Žikić et al. 2012); ***Aphis triglochinis*** Theobald (Starý et al. 1971; Starý 1974c); ***Aphis tripolii*** Liang (Starý et al. 1973); ***Aphis urticata*** Gmelin (Starý 1966c, 1967b, 1974c, 1983f, 1987a, 2006; Mackauer & Starý 1967); ***Aphis viburni*** Scopoli (Starý & Rupais 1964; Mackauer & Starý 1967; Starý 1974c; Gärdenfors 1986); ***Aphis*** spp. (Starý 1962e, 1964d, 1965a, 1966c, 1974c, 1995b, 2006; Gärdenfors 1986; Žikić et al. 2012); ***Aulacorthum muradachi*** (Shinji) (Takada 1968; Starý 1975a); ***Aulacorthum solani*** (Kaltenbach) (Kos et al. 2009a, 2012); ***Aulacorthum*** spp. (Watanabe 1941c; Starý 1962e, 1964d, 1966c, 2006; Takada 1968, 1973); ***Brachycaudus amygdalinus***

(Schouteden) (Mackauer & Starý 1967; Mustafayeva 2020); ***Brachycaudus cardui*** (Linnaeus) (Starý 1962e, 1963b, 1964d, 1966c, 1967b, 1969a, 1974c, 1987a, 2006; Starý & Rupais 1963; Mackauer & Starý 1967; Starý et al. 2000; Mustafayeva 2020); ***Brachycaudus helichrysi*** (Kaltenbach) (Roberti 1969; Starý 1969a, 1974c, 1976a, 1977, 1987a, 2006; Starý & Ghosh 1978, 1983; Gärdenfors 1986; Tomanović et al. 1998b, 1999b, 2008a, 2009c; Kavallieratos et al. 2004; Rakhshani 2012; Žikić et al. 2012; Mustafayeva 2020); ***Brachycaudus prunicola*** (Kaltenbach) (Starý 2006); ***Brachycaudus rumexicolens*** (Patch) (Starý 1974c, 1976a; Starý et al. 1971); ***Brachycaudus schwartzi*** (Börner), ***Brachycaudus spiraeae*** Börner (Starý 1974c); ***Brachycaudus*** spp. (Starý 1965a, 1966c, 1969a, 1974c, 1987a, 1995b, 2006; Mackauer & Starý 1967); ***Brachycorynella asparagi*** (Mordvilko) (Starý 2006); ***Brachysiphoniella montana*** (van der Goot) (Gahan 1926; Watanabe 1941c; Sonan 1944; Mackauer & Starý 1967; Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Brachyunguis tamaricis*** (Lichtenstein) (Kavallieratos et al. 2016); ***Brevicoryne brassicae*** L. (Devi et al. 1996); ***Capitophorus inulae*** (Passerini) (Tremblay 1967a); ***Capitophorus*** sp. (Starý & Schlinger 1967; Starý 1974c, 1975a, 1976a; Ghosh & Agarwala 1982; Kavallieratos et al. 2004; Tomanović et al. 2009c; Žikić et al. 2012); ***Cavariella aegopodii*** (Scopoli) (Mackauer & Starý 1967; Kos et al. 2012); ***Cavariella araliae*** Takahashi (Starý & Schlinger 1967; Starý 1974c, 1975a; Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Ceratovacuna silvestrii*** (Takahashi) (Raychaudhuri et al. 1979; Starý & Ghosh 1983); ***Ceruraphis eriophori*** (Walker) (Mackauer 1962c; Starý 1962e, 1963b, 1964d, 1966c, 1967b, 1969a, 1974c, 1977, 1987a, 2006; Mackauer & Starý 1967; Ferrer-Suay et al. 2017); ***Chaitophorus*** sp. (Mackauer & Starý 1967; Starý 1974c); *Chromaphis juglandicola* (Kaltenbach) (Ataeva 1961; Mackauer & Starý 1967); ***Corylobium avellanae*** (Schrank) (Starý 1974c, 1976a, 1977, 1987a, 2006; Düzgüneş et al. 1982; Gärdenfors 1986; Starý et al. 1971, 1975; Kavallieratos et al. 2004; Uysal et al. 2004; Tomić et al. 2005; Tomanović et al. 2009c; Žikić et al. 2012); ***Cryptomyzus galeopsidis*** (Kaltenbach) (Wiackowski et al. 2001); ***Cryptomyzus korschelti*** Börner (Starý 1974c); ***Cryptomyzus ribis*** (Linnaeus) (Tomanović et al. 2009c; Žikić et al. 2012); ***Cryptomyzus*** sp. (Starý 1958); ***Cryptosiphum artemisiae*** Buckton (Mackauer 1962c); ***Diuraphis calamagrostis*** (Ossiannilsson) (Watanabe 1941c); ***Diuraphis noxia*** (Mordvilko) (Starý 1999b, 2006); ***Dysaphis crataegi*** (Kaltenbach) (Mackauer & Starý 1967; Starý 1969a, 1974c, 1976a; Düzgüneş et al. 1982; Starý et al. 2000; Wiackowski et al. 2001; Uysal et al. 2004; Davidian & Gavrilyuk 2014; Davidian 2018c); ***Dysaphis devecta*** (Walker) (Starý 1958, 1962e, 1962f, 1964d, 1965a, 1966c, 1969a, 1974c, 1976a, 1987a; Mackauer & Starý 1967; Düzgüneş et al. 1982; Uysal et al. 2004; Žikić et al. 2012); ***Dysaphis plantaginea*** (Passerini) (Bonnemaison 1959; Mackauer & Starý 1967; Starý 1973a, 1974c, 1975c, 1976a; Düzgüneş et al. 1982; Michelena et al. 2004; Uysal et al. 2004; Žikić et al. 2012); ***Dysaphis pyri*** (Boyer de Fonscolombe) (Starý 1976a; Kavallieratos et al. 2001, 2004, 2008b; Tomanović et al. 2009c; Rakhshani 2012; Žikić et al. 2012); ***Dysaphis radicola*** (Mordvilko) (Starý 1975c); ***Dysaphis sorbi*** (Kaltenbach) (Thuneberg 1960; Starý 1962e, 1964d, 1966c, 1969a, 1977, 1987a; Mackauer & Starý 1967; Gärdenfors 1986; Wiackowski et al. 2001; Tomić et al. 2005); ***Dysaphis sorbiarum*** (Narzikulov) (Ataeva 1961; Mackauer & Starý 1967); ***Dysaphis*** spp. (Starý 1964d, 1966c, 1967b, 1969a, 1979a, 1987a, 1995b; Mackauer & Starý 1967; Tomanović et al. 1999b, 2009c; Kavallieratos et al. 2004, 2008b; Tomić et al. 2005; Žikić et al. 2012); ***Elatobium abietinum*** (Walker) (Mackauer & Starý 1967; Gärdenfors 1986); ***Eriosoma ulmi*** (Linnaeus) (Starý 1958, 1964d, 1966c, 1967b, 1987a, 2006; Gärdenfors 1986); ***Hayhurstia atriplicis*** (Linnaeus) (Mackauer 1962c); ***Hyadaphis foeniculi*** (Passerini) (Starý 1966d, 1974c; Starý et al. 1971; Žikić et al. 2012); ***Hyadaphis*** spp. (Starý 1974c, 1976a, 2006; Tomanović et al. 2009c; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Hyalopteroides humilis*** (Walker) (Starý 1974c; Starý et al. 1971); ***Hyalopterus phragmitidicola*** (Oestlund) [*n. dub.*] (Watanabe 1941c); ***Hyalopterus pruni*** (Geoffroy) (Telenga 1950; Benoit 1955; Starý 1958, 1965a, 1965b, 1966a, 1966c, 1966d, 1967b, 1974c, 1975a, 1976a, 1977, 1987a, 2006; Wiackowski & Wiackowska 1961; Starý & Rupais 1963, 1964; Mackauer & Starý 1967; Liu 1975; Edland 1976; Chiriac 1977; Chou 1981; Düzgüneş et al. 1982; Hussein & Kawar 1984; Gärdenfors 1986; Chen & Shi 2001; Uysal et al. 2004; Feraru & Mustata 2004; Kavallieratos et al. 2004, 2008b; Tomanović et al. 2009c, 2012; Chen et al. 2009; Kos et al. 2012; Žikić et al. 2012; Barczak et al. 2013; Ferrer-Suay et al. 2017; Davidian 2018c; Mustafayeva 2020); ***Hyperomyzus carduellinus*** (Theobald) (Saha et al. 1982; Starý & Ghosh 1983; Chen et al. 2009); ***Hyperomyzus lactucae*** (Linnaeus) (Starý 1958; Starý 1962e, 1963b, 1964d, 1966c, 1967b, 1974c, 1975a, 1987a, 2006; Mackauer 1962h; Mackauer & Starý

1967; Starý & Schlinger 1967; Chiu & Liu 1969; Tao & Chiu 1971; Liu 1975; Chou 1981; Wiackowski & Wiackowska 1996; Chen & Shi 2001; Wiackowski et al. 2001; Chen et al. 2009); ***Hyperomyzus picridis*** (Börner) (Mackauer 1962c; Mackauer & Starý 1967; Starý 1987a); ***Hyperomyzus*** spp. (Starý 1958; Ferrer-Suay et al. 2017); ***Hysteroneura setariae*** (Thomas) (Starý 1976a); ***Impatientinum asiaticum*** Nevsky (Gärdenfors 1986; Starý 2006; Starý et al. 2014a); ***Impatientinum balsamines*** (Kaltenbach) (Starý 2006; Starý et al. 2014a); ***Liosomaphis berberidis*** (Kaltenbach) (Starý 1962e, 1963b, 1964d, 1966c, 1974c, 1976a; Mackauer & Starý 1967); ***Lipaphis erysimi*** (Kaltenbach) (Sonan 1944; Liu 1975; Chou 1981; Paonam & Singh 1986d; Chen & Shi 2001; Subhrani et al. 2006; Chen et al. 2009); ***Macromyzus woodwardiae*** (Takahashi) (Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Macrosiphoniella absinthii*** (Linnaeus) (Starý 1958); ***Macrosiphoniella sanborni*** (Gillette) (Gautier et al. 1929; Ghosh & Agarwala 1982); ***Macrosiphum cholodkovskyi*** (Mordvilko) (Starý et al. 1973; Kavallieratos et al. 2004; Tomanović et al. 2007a, 2009c; Žikić et al. 2012); ***Macrosiphum doronicicola*** Leclant (Starý et al. 1973; Starý 1976a); ***Macrosiphum equiseti*** (Holman) (Starý 1966c, 1977, 2006; Mackauer & Starý 1967; Gärdenfors 1986); ***Macrosiphum euphorbiae*** (Thomas) (Starý et al. 1971, 1975; Starý 1974c, 1976a, 1987a, 2006; Aeschlimann & Vitou 1985; Tomanović et al. 2009c; Žikić et al. 2012); ***Macrosiphum gei*** (Koch) (Starý et al. 1971; Starý 1974c); ***Macrosiphum holmani*** Leclant (Starý et al. 1975; Starý 1976a); ***Macrosiphum knautiae*** Holman (Starý et al. 1977a); ***Macrosiphum laseri*** Holman (Starý et al. 1971; Starý 1974c); ***Macrosiphum pachysiphon*** Hille Ris Lambers (Ghosh & Agarwala 1982); ***Macrosiphum prenanthidis*** Börner (Starý 1962e, 1964d, 1966c, 1974c, 2006; Mackauer & Starý 1967; Starý et al. 1971; Tomanović et al. 2009c; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Macrosiphum rosae*** (Linnaeus) (Watanabe 1941c, 1957; Starý 1962e, 1964d, 1966c, 1967b, 1974c, 1975a, 1987a; Starý & Rupais 1964; Mackauer & Starý 1967; Starý et al. 1971; Raychaudhuri et al. 1978; Marsh 1979; Rakauskas 1981; Starý & Ghosh 1983; Gärdenfors 1986; Wiackowski et al. 1997, 2001; Tomanović et al. 1999b; Kavallieratos et al. 2004; Barjadze & Gratiashvili 2010; Derocles et al. 2012; Kos et al. 2012; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Macrosiphum weberi*** Börner (Starý 1974c); ***Macrosiphum*** spp. (Starý et al. 1971; Starý 1974c, 1975a; Gärdenfors 1986; Kavallieratos et al. 2004; Uysal et al. 2004; Tomanović et al. 2009c; Žikić et al. 2012); ***Melanaphis bambusae*** (Fullaway) (Takada 1968, 1973; Starý 1975a); ***Melanaphis donacis*** (Passerini) (Alam & Hafiz 1963; Mackauer & Starý 1967); ***Melanaphis sacchari*** (Zehntner) (Dong & Wang 1985; Chen & Shi 2001); ***Metopolophium dirhodum*** (Walker) (Dean 1974; Starý 1979a, 1981b, 1987a, 1993b, 1995c, 2006; Dean et al. 1981; Powell 1982; Polgár 1984; Plewka & Pankanin-Franczyk 1989; Höller et al. 1993; Tomanović et al. 1999b, 1999c, 2009c; Wiackowski et al. 2001; Kavallieratos et al. 2004, 2005b; Starý et al. 2007; Žikić et al. 2012); ***Metopolophium festucae cerealium*** Stroyan (Starý 1993b, 1995c; Starý et al. 1994b); ***Muscaphis escherichi drepanosiphoides*** (MacGillivray & Bradley) (Starý 1977); ***Myzaphis rosarum*** (Kaltenbach) (Gärdenfors 1986; Ferrer-Suay et al. 2017); ***Myzocallis coryli*** (Goeze) (Starý 1962e, 1964d, 1966c, 1974c, 1978a, 2006; Mackauer & Starý 1967; Wiackowski & Wiackowska 1996; Wiackowski et al. 2001; Derocles et al. 2014a); ***Myzus cerasi*** (Fabricius) (Wiackowski & Wiackowska 1961; Starý 1962e, 1963b, 1964d, 1966a, 1966c, 1974c, 1976a, 1987a, 2006; Starý & Rupais 1964; Mackauer & Starý 1967; Gärdenfors 1986; Tomanović et al. 1998b, 1999b, 2009c; Starý et al. 2000; Wiackowski et al. 2001; Kavallieratos et al. 2004, 2008b; Westrum et al. 2010; Kos et al. 2012; Žikić et al. 2012; Derocles et al. 2014a); ***Myzus ligustri*** (Mosley) (Mackauer & Starý 1967; Starý 1987a, 2006; Kavallieratos et al. 2004; Tomanović et al. 2009c; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Myzus ornatus*** (Laing) (Ghosh & Agarwala 1982); ***Myzus padellus*** Hille Ris Lambers & Rogerson (Gärdenfors 1986); ***Myzus persicae*** (Sulzer) (Watanabe 1941c; Ataeva 1961; Mackauer & Starý 1967; Starý 1967a, 1974c, 1975a; Starý & Schlinger 1967; Watanabe & Takada 1967; Takada 1968, 2002; Chiu & Liu 1969; Starý et al. 1971; Tao & Chiu 1971; Liu 1975; Starý & Ghosh 1978, 1983; Marsh 1979; Raychaudhuri et al. 1979; Agarwala et al. 1980; Chou 1981; Agarwala 1983b; Dong & Wang 1985; Singh et al. 1995; Devi et al. 1999; Chen & Shi 2001; Starý 2006; Chen et al. 2009; Kos et al. 2009a; Tomanović et al. 2009c, 2012; Aparicio et al. 2019); ***Myzus varians*** Davidson (Starý et al. 1971, 1975; Starý 1976a, 1987a, 2006; Arzone & Alma 1986; Ferrer-Suay et al. 2017); ***Nasonovia ribisnigri*** (Mosley) (Gärdenfors 1986); ***Neomyzus circumflexus*** (Buckton) (Starý 1974c); ***Neorhopalomyzus lonicericola*** (Takahashi) (Starý & Schlinger 1967; Starý 1974c, 1975a); ***Ovatus crataegarius*** (Walker) (Starý 1987a, 2006); ***Ovatus*** sp. (Ferrer-Suay et

al. 2017); ***Pachypappa tremulae*** (Linnaeus) (Starý 1961d, 1974c; Mackauer & Starý 1967); *Panaphis juglandis* (Goeze) (Chakrabarti & Debnath 2009); ***Parachaitophorus spiraea*** (Takahashi) (Starý & Schlinger 1967; Starý 1974c, 1975a); ***Pemphigus populinigrae*** (Schrank) (Starý 1974c, 2006; Yegorenkova et al. 2007); ***Phorodon humuli*** (Schrank) (Telenga 1950; Starý 1962e, 1963b, 1964d, 1966a, 1966c, 1974c, 1977, 2006; Mackauer & Starý 1967; Pike & Starý 1996a; Tomanović et al. 1998b, 1999b, 2009c; Kavallieratos et al. 2004, 2008b; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Pleotrichophorus duponti*** Hille Ris Lambers (Starý et al. 1971; Starý 1974c); ***Prociphilus fraxini*** (Fabricius) (Starý 1963b, 1964d, 1966c, 1967b, 1974c, 1977; Mackauer & Starý 1967); ***Prociphilus konoi*** Hori (Mackauer & Starý 1967; Starý 1975a); ***Prociphilus*** sp. (Watanabe 1941c; Starý 1962e, 1975a; Takada 1968; Starý et al. 1971, 1977a; Kierych 1980; Bhagat 1982a, 1984; Chen et al. 2009); ***Pseudomegoura magnoliae*** (Essig & Kuwana) (Watanabe 1941c; Mackauer & Starý 1967; Starý 1975a); ***Pterocomma rufipes*** (Hartig) (Starý 1973a; Starý & Leclant 1973; Tomanović et al. 2009c; Žikić et al. 2012); ***Rhopalomyzus lonicerae*** (Siebold) (Mackauer & Starý 1967; Starý & Rupais 1963, 1964; Starý 1965a, 2006; Tomanović et al. 1999b, 2007a, 2009c; Kavallieratos et al. 2004; Žikić et al. 2012); ***Rhopalomyzus poae*** (Gillette) (Mackauer & Starý 1967); ***Rhopalosiphoninus deutzifoliae*** Shinji (Starý & Schlinger 1967; Takada 1968, 1973; Starý 1974c, 1975a; Finlayson 1990); ***Rhopalosiphum maidis*** (Fitch) (Jackson et al. 1974; Starý 1974c, 1976c, 1981b, 2006; Marsh 1979; Chou 1981; Düzgüneş et al. 1982; Polgár 1984; Chen & Shi 2001; Uysal et al. 2004; Chen et al. 2009); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Skriptshinskij 1930; Starý 1958, 1967b, 1974c, 2006; Mackauer 1962c; Starý & Rupais 1964; Mackauer & Starý 1967; Starý et al. 1971; Baker & Broad 2013); ***Rhopalosiphum oxyacanthae*** (Schrank) (Starý & Rupais 1964; Starý 1965a, 1967b, 1974c, 1975c, 1976a, 1977, 1981b, 2006; Mackauer & Starý 1967; Gärdenfors 1986); ***Rhopalosiphum padi*** (Linnaeus) (Skriptshinskij 1930; Meyer 1934; Starý 1958, 1962e, 1963b, 1964d, 1966a, 1966c, 1967b, 1974c, 1976c, 1981b, 1987a, 1999b, 2006; Mackauer & Starý 1967; Starý et al. 1971; Jackson et al. 1974; Powell 1982; Gärdenfors 1986; Leather et al. 1989; Höller et al. 1993; Rakhshani et al. 2008b; Tomanović et al. 2009c; Westrum et al. 2010; Barahoei et al. 2013; Davidian & Gavrilyuk 2014; Ferrer-Suay et al. 2017; Davidian 2018c); ***Rhopalosiphum rufiabdominale*** (Sasaki) (Watanabe 1941c; Starý 1975a; Chen et al. 2009); ***Rhopalosiphum rufulum*** Richards (Starý 2006; Tomanović et al. 2012); ***Rhopalosiphum*** sp. (Davidian 2018c); ***Sappaphis*** sp. (Starý 1962e); ***Schizaphis eastopi*** van Harten & Ilharco (Starý et al. 1999); ***Schizaphis graminum*** (Rondani) (Dureseau et al. 1972; Jackson et al. 1974; Starý 1974c, 1981b, 1995c; Gruber & Coutinot 1984; Gruber et al. 1994; Chen & Shi 2001; Kavallieratos et al. 2004, 2005b; Rakhshani et al. 2008b; Tomanović et al. 2009c; Žikić et al. 2012; Barahoei et al. 2014); ***Schizaphis longicaudata*** Hille Ris Lambers (Thuneberg 1960; Mackauer & Starý 1967); ***Schizaphis palustris*** (Theobald) (Starý et al. 1977a); ***Schizaphis rotundiventris*** (Signoret) (Mackauer & Starý 1967); ***Schizaphis scirpi*** (Passerini) (Starý 1966c, 1974c, 1977, 2006; Tomanović et al. 2012; Ferrer-Suay et al. 2017); ***Semiaphis nolitangere*** Aizenberg (Starý 1974c); ***Sinomegoura citricola*** (van der Goot) (Starý & Schlinger 1967; Chiu & Liu 1969; Tao & Chiu 1971; Starý 1974c, 1975a; Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Sipha maydis*** Passerini (Starý 1981b); ***Sipha*** sp. (Mackauer & Starý 1967); ***Sitobion avenae*** (Fabricius) (Skriptshinskij 1930; Watanabe 1941b; Chao & Chen 1947; Starý 1958, 1966c, 1966d, 1974c, 1975a, 1976a, 1976c, 1977, 1978b, 1981b, 1987a, 1995c, 1996, 1999b, 2006; Mackauer 1962c; Mackauer & Starý 1967; Takada 1968; Starý et al. 1971, 1975, 2000, 2007; Dean 1974; Jackson et al. 1974; Marsh 1979; Agarwala et al. 1980; Berest 1980, 1985; Dean et al. 1981; Powell 1982; Vickerman 1982; Pankanin-Franczyk 1983, 1986; Bhagat 1984, 1985; Polgár 1984; Dong & Wang 1985; Höller et al. 1993; Elmali & Toros 1994; Darvish-Mojeni & Bayat-Asadi 1995; Pankanin-Franczyk & Ceryngier 1995; Fuentes-Contreras et al. 1996; Le Ralec et al. 1996; Tomanović et al. 1999b, 1999c, 2005b, 2009c; Kavallieratos et al. 2004; Uysal et al. 2004; Tomić et al. 2005; Wei et al. 2005; Rakhshani et al. 2008b; Chen et al. 2009; Derocles et al. 2012, 2014a; Kos et al. 2012; Nazari et al. 2012; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Sitobion fragariae*** (Walker) (Starý et al. 1975; Starý 1976a, 1981b, 2006; Tomanović et al. 1999b, 1999c, 2009c; Kavallieratos et al. 2004, 2005b; Žikić et al. 2012; Derocles et al. 2014a); ***Sitobion ibarae*** (Matsumura) (Starý & Schlinger 1967; Chiu & Liu 1969; Tao & Chiu 1971; Takada 1973; Starý 1974c, 1975a; Liu 1975; Chou 1981; Finlayson 1990; Chen & Shi 2001; Chen et al. 2009); ***Sitobion rosaeiformis*** (Das) (Agarwala et al. 1980; Starý & Ghosh 1983); ***Sitobion*** spp. (Starý 1962e, 1964d, 1966c, 2006; Chen

& Shi 2001; Kos et al. 2012); ***Staticobium limonii*** Contarini (Kos et al. 2012); ***Tetraneura ulmi*** (Linnaeus) (Starý 1962e, 1963b, 1964d, 1974c); ***Tetraneura*** sp. (Bhagat 1982a, 1984, 1985); ***Uroleucon cichorii*** (Koch) (Starý 1958; Kos et al. 2012); ***Uroleucon formosanum*** (Takahashi) (Starý & Schlinger 1967; Tao & Chiu 1971; Starý 1974c, 1975a; Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Uroleucon gobonis*** (Matsumura) (Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Uroleucon hypochoeridis*** (Fabricius) (Mackauer 1962c); ***Uroleucon nigrotuberculatum*** (Olive) (Takada & Nakamura 2010; Takada & Kamijo 2012); ***Uroleucon obscurum*** (Koch) (Mackauer 1962c); ***Uroleucon picridis*** (Fabricius) (Mackauer & Starý 1967); ***Uroleucon sonchi*** (Linnaeus) (Singh et al. 1995).

***Distribution.*** **Algeria** (Aroun et al. 2016; Khaladi et al. 2024); **Andorra** (Sanchis et al. 1999); **Armenia** (Davidian 2018c); **Australia** (Carver 1992); **Austria** (Mackauer & Starý 1967; Mackauer 1968c; Starý 1974c); **Azerbaijan** (Starý 1974c; Mustafayeva 2020); **Belarus** (Davidian 2018c); **Belgium** (Wesmael 1835; Marshall 1891, 1896, 1899; Mackauer & Starý 1967; Starý & Schlinger 1967; Gärdenfors 1986; Langer & Hance 2004; Lopes et al. 2016); **Brazil** (Starý et al. 2007); **Bulgaria** (Mackauer & Starý 1967; Starý 1962b, 1974c, 1976a; Atanassova 1997; Kolarov 1997; Todorov 2014); **Canada** (BOLD:ACF5763); **Chile** (Starý 1993b, 1995c; Starý et al. 1994b); **China** (Takahashi 1925; Gahan 1926; Fahringer 1935; Watanabe 1941b, 1947; Sonan 1944; Chao & Chen 1947; Starý 1967a, 1974c, 1975a, 1979a; Mackauer & Starý 1967; Starý & Schlinger 1967; Chiu & Liu 1969; Liu 1975; Chu et al. 1978; Chou 1981; Yang & Wu 1981; Dong & Wang 1985, 1993; Gärdenfors 1986; Zheng et al. 1986, 1987; Wu et al. 1987; Li et al. 1991; Lu & Ji 1992; Gu et al. 1995; Chen & Shi 2001; He et al. 2004; Tursun et al. 2006; Huang et al. 2008; Chen et al. 2009); **Czech Republic** (Quilis-Pérez 1934; Hodek et al. 1962; Starý 1962e, 1965b, 1966c, 1972f, 1974c, 1975c, 1976a, 1976c, 1977, 1978a, 1978b, 1981b, 1983f, 1986a, 1987a, 1989a, 1991, 1995b, 1996, 1999b, 2006; Mackauer & Starý 1967; Starý & Schlinger 1967; Starý & Leclant 1973; Gärdenfors 1986; Starý & Němec 1986; Pike & Starý 1996a; Zeman & Vanek 2001; Tomić et al. 2005; Starý & Havelka 2008; Tomanović et al. 2012; Ferrer-Suay et al. 2017; Davidian 2018c); **Denmark** (Mackauer 1968c); **Egypt** (Abdel-Rahman 2005; El-Ghiet et al. 2014; Rakhshani et al. 2019); **Estonia** (Starý & Rupais 1964); **Finland** (Thuneberg 1960; Mackauer & Starý 1967; Mackauer 1968c; Starý 1974c, 1981b; Koponen & Vikberg 1984b; Leather et al. 1989; Koponen & Halme 1993); **France** (Blanchard 1840; Dours 1873; Gaulle 1908; Regnier 1923; Gautier & Bonnamour 1929; Gautier et al. 1929; Bonnemaison 1959; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975, 1977a; Dureseau et al. 1972; Starý 1974c, 1976a, 1981b; Aeschlimann 1981; Rabasse & Dedryver 1983; Gruber & Coutinot 1984; Aeschlimann & Vitou 1985; Gärdenfors 1986; Völkl 1989; Gruber et al. 1994; Derocles et al. 2012, 2014a; Andrade et al. 2015); **Georgia** (Akhvlediani 1964; Starý 1965a, 1974c, 1976a, 1981b; Barjadze & Gratiashvili 2010; Davidian 2018c); **Germany** (Nees von Esenbeck 1834a; Blanchard 1840; Kirchner 1867; Marshall 1896; Szépligeti 1904; Hadersold 1938; Starý 1961d, 1974c, 1981b; Mackauer 1962c; Mackauer & Starý 1967; Boness & Starý 1988; Borgemeister & Poehling 1988; Kuo-Sell et al. 1988, 1989; Sorg 1990; Höller et al. 1993; Pike & Starý 1996a; Belokobylskij & Taeger 2001; Adisu et al. 2002; Belokobylskij et al. 2003; Tomić et al. 2005; Vollhardt et al. 2008; Davidian 2018c); **Greece** (Starý 1976a; Gärdenfors 1986; Kavallieratos et al. 2001, 2004, 2008b); **Hungary** (Szépligeti 1899; Mackauer & Starý 1967; Mackauer 1968c; Starý 1974c; Polgár 1982, 1983, 1984, 1987); **Iceland** (Ruthe 1859; Lindroth 1931; Petersen 1956; Mackauer & Starý 1967); **India** (Rao et al. 1969; Starý 1974c; Rishi 1976; Raychaudhuri et al. 1978, 1979, 1990; Starý & Ghosh 1978, 1983; Agarwala et al. 1980, 1981a; Bhagat 1982a, 1984, 1985; Ghosh & Agarwala 1982; Saha et al. 1982; Agarwala 1983b; Ahmad & Singh 1994a, 1995b; Singh et al. 1995; Devi et al. 1996, 1999; Subhrani et al. 2006; Dey & Akhtar 2007; Rakhshani et al. 2012a; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Iran** (Starý 1979a; Starý et al. 2000; Rakhshani et al. 2008b, 2019; Fallahzadeh & Saghaei 2010; Nazari et al. 2012; Rakhshani 2012; Barahoei et al. 2013; Ameri et al. 2019); **Iraq** (Starý 1976a; Rakhshani et al. 2019); **Ireland** (Mackauer & Starý 1967; Gärdenfors 1986; O'Connor et al. 1999); **Italy** (Nees von Esenbeck 1834a; Marshall 1896; Starý 1966d, 1974c, 1976a, 1981b; Mackauer & Starý 1967; Tremblay 1967a, 1976; Mackauer 1968c; Roberti 1969; Tremblay et al. 1978, 1980; Aeschlimann 1981; Arzone & Alma 1986; Pennacchio et al. 1988; Bergamesco et al. 1995); **Japan** (Ashmead 1906; Watanabe 1941b, 1941c; Mackauer & Starý 1967; Starý 1967a, 1974c, 1975a; Starý & Schlinger 1967; Watanabe & Takada 1967; Takada 1968, 1973, 2002; Yano et al. 1983; Finlayson 1990; Takada & Sugimoto 1994; Takada & Nakamura 2010; Takada & Kamijo 2012); **Kazakhstan** (Starý & Juchnevič 1978; Starý 1979a; Davidian 2018c); **Kyrgyzstan** (Davidian 2018c;

Petrović et al. 2021a); **Latvia** (Starý & Rupais 1963, 1964; Starý 1965a; Mackauer & Starý 1967; Davidian 2018c); **Lebanon** (Hussein & Kawar 1984; Rakhshani et al. 2019); **Lithuania** (Starý & Rupais 1963, 1964; Rakauskas 1981, 1985); **Madeira Islands** (Graham 1986); **Moldova** (Starý 1974c; Talitzky & Kuslitzky 1990; Tomić et al. 2005); **Mongolia** (Takada 1979a); **Montenegro** (Kavallieratos et al. 2004, 2013; Tomanović et al. 2009c; Žikić et al. 2012); **Netherlands** (Snellen van Vollenhoven 1873; Marshall 1896; Mackauer & Starý 1967; Mackauer 1968c; van Achterberg 1976; Gärdenfors 1986; Papp et al. 1996); **New Zealand** (Purposeful introduction – Cameron et al. 1980; Bulman et al. 2021; Ward 2026); **North Korea** (Takada 1976b, 1979b; Starý & Choi 2000); **Norway** (Mackauer & Starý 1967; Mackauer 1968c; Edland 1976; Starý 1981b; Westrum et al. 2010; Mjøs et al. 2024); **Pakistan** (Alam & Hafiz 1963; Mackauer & Starý 1967; Starý 1974c; Starý & Ghosh 1983; Starý et al. 1999); **Paraguay** (González Torres et al. 2018); **Poland** (Niezabitowski 1910; Wiackowski & Wiackowska 1961, 1996; Mackauer & Starý 1967; Cierniewska 1973; Pankanin-Franczyk 1979, 1983, 1986, 1995; Kierych 1980; Starý 1981b; Pankanin-Franczyk et al. 1986; Barczak 1988, 1991b; Plewka & Pankanin-Franczyk 1989; Olszak 1994; Goszczyński & Cichocka 1995; Pankanin-Franczyk & Ceryngier 1995; Huflejt 1997; Wiackowski et al. 1997, 2001; Pankanin-Franczyk & Sobota 1998; Barczak et al. 1999, 2005, 2013, 2014; Tran & Piekarska-Boniecka 2017); **Romania** (Feraru & Mustata 2004); **Russia** (Meyer 1927; Starý & Rupais 1963; Starý 1965a, 1974c, 1979a; Mackauer & Starý 1967; Mackauer 1968c; Barannik 1986; Krotova 1993; Davidian 2007, 2018c, 2019b; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024; Shpanev 2025); **Serbia** (Starý 1974c, 1981b; Tomanović et al. 1998a, 1998b, 1999c, 2007a, 2008c, 2009c; Žikić et al. 2000, 2012; Tomanović & Brajković 2001; Kavallieratos et al. 2004, 2005b, 2008b, 2013; Tomić et al. 2005); **Slovakia** (Starý 1977, 1989a; Al Dobai & Praslička 1999; Al Dobai et al. 1999; Praslička et al. 2003; Praslička & Huszar 2005; Tomić et al. 2005; Starý & Lukáš 2009; Ferrer-Suay et al. 2017); **Slovenia** (Graeffe 1908; Gärdenfors 1986; Kos et al. 2008, 2009a, 2012); **South Korea** (Starý & Schlinger 1967; Starý 1974c; Chang et al. 1994; Starý & Choi 2000; Davidian 2018c; Kim 2026); **Spain** (Marshall 1896; Ceballos 1956; Mackauer & Starý 1967; Starý 1976a; Tizado & Núñez-Perez 1991; Michelena et al. 2004; Pons et al. 2011; Michelena Saval & Martínez De Murguía 2012; Aparicio et al. 2019); **Sweden** (Thomson 1895; Szépligeti 1904; Mackauer & Starý 1967; Mackauer 1968a; Starý 1974c; Gärdenfors 1986; Pike & Starý 1996a; Tomanović et al. 2012); **Switzerland** (Blösch 1906; Mackauer & Starý 1967; Starý 1981b); **Tajikistan** (Fulmek 1968; Starý 1979a, 1981b; Davidian 2018c); **Türkiye** (Starý 1976a, 1981b; Düzgüneş et al. 1982; Elmali & Toros 1994; Kiran 1994; Tanigoshi et al. 1995; Uysal et al. 2004; Çetin Erdoğan et al. 2008, 2010; Akar & Çetin Erdoğan 2017; Davidian 2018c); **Ukraine** (Niezabitowski 1910; Telenga 1950; Starý 1962f, 1974c, 1976a, 1981b; Berest 1980, 1985, 1987; Kaliuzhna 2013a, 2013b, 2016a, 2019a, 2019b, 2026; Davidian 2018c); **United Kingdom** (Curtis 1837; Smith 1853; Marshall 1872a, 1896, 1899; Parfitt 1881; Szépligeti 1904; Lyle 1933; Stelfox 1944; Kloet & Hincks 1945; Mackauer 1961b; Mackauer & Starý 1967; Jones 1972; Dean 1974, 1975; Starý 1974c, 1981b; Dean et al. 1981; Powell 1982; Vickerman 1982; Ashmole et al. 1983; Gärdenfors 1986; Müller et al. 1999; van Veen et al. 2008; Baker & Broad 2013; Davidian & Rispin 2016); **USA** (Mackauer 1963a; Burd & Puterka 2012); **Uzbekistan** (Starý 1979a; Daminova et al. 2001; Aripov 2003; Daminova 2007); **Vietnam** (Tomanović et al. 2026b).

***Remarks.*** *Ephedrus plagiator* was introduced into Argentina, Brazil, and Chile during the 1980s for the biological control of wheat aphids. Although it was recovered in Brazil shortly after its release (Starý et al. 2007), no additional specimens have been collected since the program ended in 1992. Its establishment in Brazil therefore remains unconfirmed.

### *Ephedrus primordialis* Brues, 1933 [Fossil]

*Ephedrus primordialis* Brues, 1933:106. Holotype ♀ (Fritsch collection, lost). – Baltic amber.

***Host.*** Unknown.

***Distribution.*** Oligocene (Starý 1958, 1970a, 1973b; Mackauer 1968a), Late Eocene (Brues 1933; Davidian et al. 2023b).

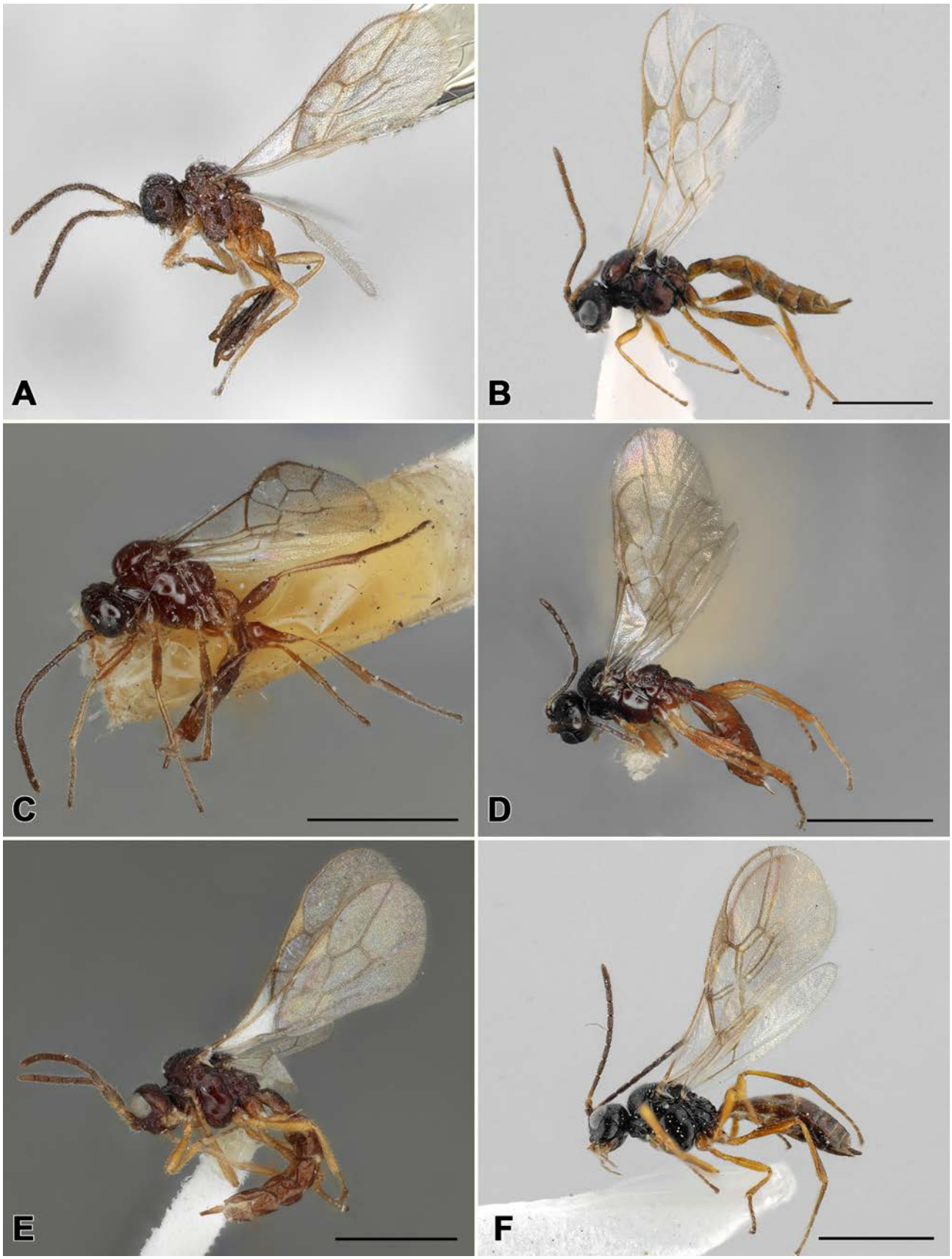



**Figure 61.** Species of the genus *Ephedrus* Haliday, 1833. **A.** *Ephedrus nacheri* Quilis, 1934 – South Korea, NAS. **B.** *Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929 – Iran, DPPZ; **C.** *Ephedrus nigricornis* Gahan, 1911, Holotype (= *Ephedrus californicus*), USNM; **D.** *Ephedrus nitidus* Gahan, 1917 – Lectotype (= *Ephedrus persicae*), USNM; **E.** *Ephedrus orientalis* Starý & Schlinger, 1967 – Holotype, USNM; **F.** *Ephedrus persicae* Froggatt, 1904 – Iran, DPPZ. Scale bar: 1 mm.

### *Ephedrus prociphili* Starý, 1982 [Fig. 62B]

*Ephedrus prociphili* Starý, 1982b:99. Holotype ♀ (IECA), paratypes ♀♀ ♂♂ (IECA, MZLU). – Czech Republic.

***Hosts.*** ***Eriosoma*** sp. (Starý 2006); ***Prociphilus bumeliae*** (Schrank) (Starý 1982b); ***Prociphilus fraxini*** (Fabricius) (Starý 1982b, 1987a); ***Prociphilus pini*** (Burmeister), ***Prociphilus xylostei*** (De Geer) (Gärdenfors 1986); ***Prociphilus*** sp. (Gärdenfors 1986; Pennacchio et al. 1988; Starý 2006).

***Distribution.*** **Canada** (Gärdenfors 1986); **Czech Republic** (Starý 1982b, 1987a, 1989a, 2006; Gärdenfors 1986; Pennacchio et al. 1988; Starý & Havelka 2008); **France** (Starý 1982b); **Netherlands** (Gärdenfors 1986); **Slovakia** (Starý 1982b, 1989a); **Sweden** (Gärdenfors 1986).

### *Ephedrus quadratum* Shi, 2001

*Ephedrus quadratum* Shi [in Chen & Shi], 2001:205. Holotype ♀ (FAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chen & Shi 2001).

### *Ephedrus radiatus* (Chen, 1986)

*Fovephedrus radiatus* Chen, 1986:93. Holotype ♀, paratypes ♀ ♂ (FAFU). – China.

***Host.*** ***Myzus ligustri*** (Mosley) (Chen 1986).

***Distribution.*** **China** (Chen 1986; Chen & Shi 2001).

### *Ephedrus ramnagarensis* Akhtar, 2011

*Ephedrus ramnagarensis* Akhtar [in Akhtar et al.], 2011c:100. Holotype ♀, paratypes ♀♀ (NPCI). – India.

***Host.*** Unknown.

***Distribution.*** **India** (Akhtar et al. 2011c; Das & Chakrabarti 2023a).

### *Ephedrus rasnitsyni* Davidian & Kaliuzhna, 2021 [Fossil]

*Ephedrus rasnitsyni* Davidian & Kaliuzhna [in Davidian et al.], 2021a:60. Holotype ♀ (PIN). – Russia.

***Host.*** Unknown.

***Distribution.*** Middle Eocene (Davidian et al. 2021a).

### *Ephedrus robustus* Liu, 1968

*Ephedrus robustus* Liu, 1968:38. Holotype ♀ (TARI?). – Taiwan.

***Hosts.*** ***Aphis aurantii*** Boyer de Fonscolombe (Chen & Shi 2001); ***Aphis spiraecola*** Patch (Liu 1968, 1969, 1975; Tao & Chiu 1971; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Melanaphis sacchari*** (Zehntner) (Liu 1968, 1975; Chiu & Liu 1969; Tao & Chiu 1971; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Myzus persicae*** (Sulzer) (Chen et al. 2009); ***Rhopalosiphum maidis*** (Fitch) (Tao & Chiu 1971; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009).

***Distribution.*** **China** (Liu 1968, 1975; Chiu & Liu 1969; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009).

### *Ephedrus rugosus* (Chen, 1986)

*Fovephedrus rugosus* Chen, 1986:92. Holotype ♀, paratypes ♀ ♂ (FAFU). – China.

***Host.*** ***Myzus persicae*** (Sulzer) (Chen 1986).

***Distribution.*** **China** (Chen 1986; Chen & Shi 2001).

### *Ephedrus srinagarensis* Starý & Bhagat, 1978

*Ephedrus srinagarensis* Starý & Bhagat, 1978:388. Holotype ♀ (ZSI), paratype ♀ (IECA). – India.

***Hosts.*** ***Aphis gossypii*** Glover (Subhrani et al. 2006); ***Brachysiphoniella montana*** (van der Goot) (Paonam

et al. 2011); ***Myzus persicae*** (Sulzer), ***Myzus siegesbeckicola*** Strand (Raychaudhuri et al. 1990); ***Myzus*** sp. (Starý & Bhagat 1978); ***Pentalonia kalimpongensis*** (Basu) (Raychaudhuri et al. 1990); ***Prociphilus himalayensis*** Chakrabarti (Starý et al. 1999); ***Prociphilus*** spp. (Bhagat 1982a; Das & Chakrabarti 1990a; Starý et al. 1999; Chakrabarti et al. 2002).

***Distribution.*** **India** (Starý & Bhagat 1978; Agarwala et al. 1981a; Bhagat 1982a; Starý & Ghosh 1983; Das & Chakrabarti 1990a, 2023a; Raychaudhuri et al. 1990; Subhrani et al. 2006; Dey & Akhtar 2007; Ahmad & Wani 2014); **Pakistan** (Starý et al. 1999).

### *Ephedrus tamaricis* Tomanović & Petrović, 2016 [Fig. 62D]

*Ephedrus tamaricis* Tomanović & Petrović [in Petrović et al.], 2016:1388: Holotype ♀, paratypes ♀♀ ♂♂ (BNHM). – Slovenia.

***Host. Brachyunguis tamaricis*** (Lichtenstein) (Petrović et al. 2016).

***Distribution.*** **Egypt** (BOLD:ACP4758); **Lebanon** (BOLD:ACP4758); **Palestine** (BOLD:ACP4758); **Slovenia** (Petrović et al. 2016).

### *Ephedrus tanycoleosus* Chen, 2001

*Ephedrus tanycoleosus* Chen [in Chen & Shi], 2001:205. Holotype ♀, paratype ♀ (FAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chen & Shi 2001).

### *Ephedrus transversus* (Chen, 1986)

*Foveophedrus transversus* Chen, 1986:94. Holotype ♀, paratypes ♀♀ (FAFU). – China.

***Host. Myzus persicae*** (Sulzer) (Chen 1986).

***Distribution.*** **China** (Chen 1986; Chen & Shi 2001).

***Remarks.*** The available Chinese account records four female specimens from Changsha, Hunan, and states that the male is unknown, but it does not explicitly designate a holotype or paratypes (Chen & Shi 2001).

### *Ephedrus trichosiphoniellae* Takada, 1968

*Ephedrus trichosiphoniellae* Takada, 1968:75. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Hosts. Capitophorus formosartemisiae*** (Takahashi), ***Capitophorus mitegoni*** Eastop (Raychaudhuri et al. 1990); ***Eumyzus impatiensae*** (Shinji) (Takada 1968); ***Myzus ornatus*** Laing, ***Neomyzus circumflexus*** (Buckton) (Samanta & Raychaudhuri 1984a); ***Tuberocephalus momonis*** (Matsumura) (Takada 1968; Starý 1975a).

***Distribution.*** **China** (Gärdenfors 1986); **India** (Samanta & Raychaudhuri 1984a; Raychaudhuri et al. 1990; Das & Chakrabarti 2023a); **Japan** (Takada 1968; Starý 1975a; Gärdenfors 1986; Pennacchio et al. 1988); **Vietnam** (Tomanović et al. 2026b).

### *Ephedrus urticae* Bhagat, 1982

*Ephedrus urticae* Bhagat, 1982b:115. Holotype ♀, paratypes ♀♀ (DZKU). – India.

***Hosts. Microlophium carnosum*** (Buckton) (Bhagat 1982b); ***Pentalonia kalimpongensis*** (Basu), ***Myzus persicae*** (Sulzer) (Raychaudhuri et al. 1990).

***Distribution.*** **India** (Bhagat 1982b; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Ahmad & Wani 2014).

### *Ephedrus vaccinii* Gärdenfors, 1986 [Fig. 62E]

*Ephedrus vaccinii* Gärdenfors, 1986:65. Holotype ♀, paratypes ♂♂ (MZLU). – Sweden.

***Hosts. Aphis vaccinii*** (Börner) (Gärdenfors 1986); ***Aulacorthum flavum*** F.P. Müller (Koponen & Halme 1993); ***Wahlgreniella vaccinii*** (Theobald) (Gärdenfors 1986).

***Distribution.*** **Finland** (Koponen & Halme 1993; Silfverberg 1996); **Russia** (Davidian 2018c, 2019b); **Sweden** (Gärdenfors 1986).

### *Ephedrus validus* (Haliday, 1833) [Fig. 62F]

*Aphidius* (*Ephedrus*) *validus* Haliday, 1833:485. Holotype ♀ (after Mackauer 1961b) (NHMUK). – United Kingdom.

***Hosts.*** ***Anuraphis farfarae*** (Koch) (Quilis-Pérez 1934; Starý 1958); ***Aphis fabae*** Scopoli (Börner & Heinze 1957); ***Aphis glycines*** Matsumura (Chang et al. 1994); ***Aphis gossypii*** Glover (Ataeva 1961); ***Aphis pomi*** De Geer (Ataeva 1961; Fulmek 1968); ***Aphis rumicis*** Linnaeus (Wilkinson 1926); ***Brachycaudus helichrysi*** (Kaltenbach) (Fulmek 1968); *Cinara cupressi* Buckton (Ataeva 1961); ***Dysaphis plantaginea*** (Passerini) (Fulmek 1968); ***Dysaphis pyri*** (Boyer de Fonscolombe) (Savary 1953; Börner & Heinze 1957); ***Eriosoma*** sp. (Mackauer & Starý 1967); ***Myzus beybienkoi*** Narzykulov (Ataeva 1961); ***Myzus cerasi*** (Fabricius) (Marshall 1891, 1899; Bignell 1901; Fulmek 1968); ***Thecabius affinis*** Kaltenbach (Mackauer & Starý 1967; Gärdenfors 1986).

***Distribution.*** **Austria** (Fulmek 1968); **Bulgaria** (Gärdenfors 1986); **Cyprus** (Wilkinson 1926; Mackauer & Starý 1967); **Czech Republic** (Quilis-Pérez 1934; Starý 1958, 1966c, 1987a, 1989a, 2006; Fulmek 1968; Pennacchio et al. 1988; Davidian 2018c); **Denmark** (Mackauer & Starý 1967; Gärdenfors 1986); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971; Koponen & Vikberg 1984b; Koponen & Halme 1993); **France** (Starý et al. 1971; Gärdenfors 1986; Derocles et al. 2014a); **Germany** (Starý 1958; Mackauer & Starý 1967; Boness & Starý 1988; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **Ireland** (Stelfox 1941, 1957; O'Connor et al. 1999); **Italy** (Fulmek 1968); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Tomanović & Brajković 2000; Kavallieratos et al. 2004; Tomanović et al. 2009c; Žikić et al. 2012); **Netherlands** (Gärdenfors 1986; Papp et al. 1996); **Norway** (Riedel & Hansen 2014; Mjøs et al. 2024); **Poland** (Niezabitowski 1910; Kierych 1975; Huflejt 1997; Tran & Piekarska-Boniecka 2017); **Portugal** (BOLD:ACP2346); **Romania** (Lacatusu & Panu 1969); **Russia** (Mackauer & Starý 1967; Mackauer 1968c; Davidian & Gavrilyuk 2014; Davidian 2018c, 2019b; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **South Korea** (Starý & Schlinger 1967; Starý 1975a; Chang et al. 1994; Starý & Choi 2000); **Spain** (Quilis-Pérez 1931b; Michelena Saval & Martínez De Murguía 2012); **Sweden** (Thomson 1895; Gärdenfors 1986); **Switzerland** (Ferrière 1928; Savary 1953); **Tajikistan** (Fulmek 1968); **Ukraine** (Kaliuzhna 2019a, 2019b); **United Kingdom** (Curtis 1837; Smith 1853; Marshall 1872a, 1891, 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1961b; Gärdenfors 1986; Davidian & Rispin 2016).

### *Ephedrus vietnamensis* Tomanović & van Achterberg, 2026

*Ephedrus vietnamensis* Tomanović & van Achterberg [in Tomanović et al.], 2026b:19. Holotype ♀, paratypes ♀♀ ♂♂ (RMNH). – Vietnam.

***Host.*** Unknown.

***Distribution.*** **Vietnam** (Tomanović et al. 2026b).

### *Ephedrus zaikai* Davidian, 2023 [Fossil]

*Ephedrus zaikai* Davidian [in Davidian et al.], 2023b:2. Holotype ♀ (KAM) – Russia (Baltic amber, Late Eocene).

***Host.*** Unknown.

***Distribution.*** Russia, Late Eocene (Davidian et al. 2023b).

## Genus *Parephedrus* Starý & Carver, 1971 [1 species]

*Parephedrus* Starý & Carver, 1971:175. Type species: *Parephedrus relictus* Starý & Carver, 1971.

### *Parephedrus relictus* Starý & Carver, 1971 [Fig. 63A]

*Parephedrus relictus* Starý & Carver, 1971:175. Holotype ♀ (ANIC), paratypes ♀♀ ♂♂ (ANIC, IECA). – Australia.

***Hosts.*** ***Taiwanaphis furcifera*** (Carver & Hales) (Carver & Starý 1974); ***Taiwanaphis*** sp. (Starý & Carver 1971).

***Distribution.*** **Australia** (Starý & Carver 1971; Carver & Starý 1974; Ward et al. 2021b).

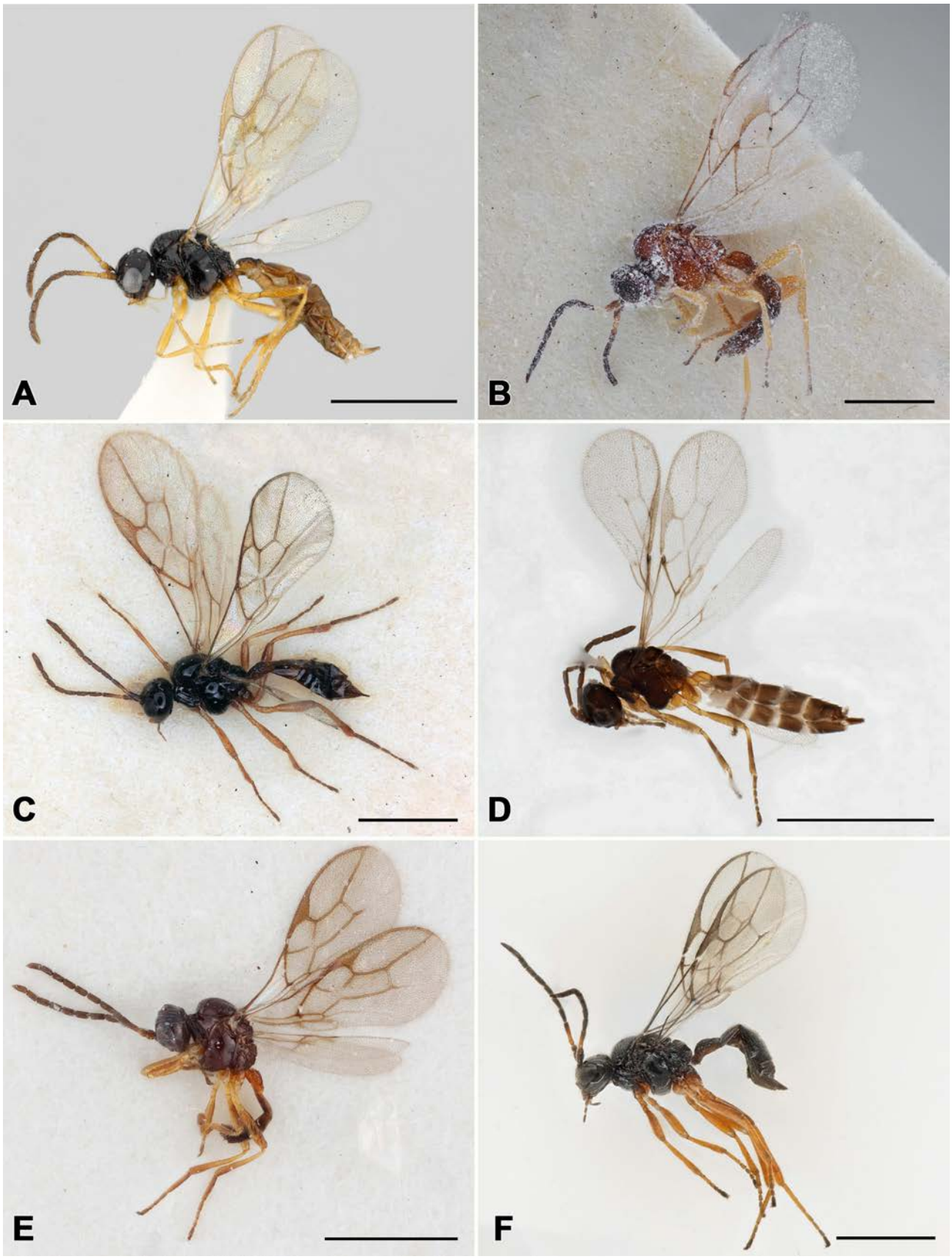



**Figure 62.** Species of the genus *Ephedrus* Haliday, 1833. **A.** *Ephedrus plagiator* (Nees, 1811) – Iran, DPPZ; **B.** *Ephedrus prociphili* Starý, 1982 – Paratype, MZLU; **C.** *Ephedrus pulchellus* Stelfox, 1941 – Lectotype (= *Ephedrus persicae*), USNM; **D.** *Ephedrus tamaricis* Tomanović & Petrović, 2016 – Egypt, BOLD:ACP4758; **E.** *Ephedrus vaccinii* Gärdenfors, 1986 – Paratype, MZLU; **F.** *Ephedrus validus* (Haliday, 1833) – Netherlands, RMNH. Scale bar: 1 mm.

### Genus *Protephedrus* Quilis, 1940 [1 species]

*Protephedrus* Quilis, 1940:55. Type species: *Protephedrus terciarius* Quilis, 1940.

#### *Protephedrus terciarius* Quilis, 1940 [Fossil]

*Protephedrus terciarius* Quilis, 1940:56. Holotype ♀ (Lost). – France.

***Host.*** Unknown.

***Distribution.*** **France** – Oligocene (Quilis-Pérez 1940; Starý 1970a, 1973b).

### Genus *Pseudephedrus* Starý, 1972 [9 species] [Fig. 63B]

*Pseudephedrus* Starý, 1972:317. Type species: *Pseudephedrus neotropicalis* Starý, 1972.

#### *Pseudephedrus andensis* Starý, 1994

*Pseudephedrus andensis* Starý, 1994:88. Holotype ♀, paratypes ♀♀ ♂ (IECA). – Chile.

***Hosts.*** ***Neuquenaphis palliceps*** Hille Ris Lambers (Starý 1994, 1995c; Starý et al. 2014c); ***Neuquenaphis similis*** Hille Ris Lambers (Tomanović et al. 2023b).

***Distribution.*** **Chile** (Starý 1994, 1995c; Starý et al. 2014c; Tomanović et al. 2023b).

#### *Pseudephedrus chilensis* Starý, 1976

*Pseudephedrus chilensis* Starý, 1976d:24. Holotype ♀, paratype ♂ (IECA). – Chile.

***Hosts.*** ***Neuquenaphis edwardsi*** (Laing) (Starý 1994, 1995c; Starý et al. 2014c; Tomanović et al. 2023b); ***Neuquenaphis similis*** Hille Ris Lambers (Tomanović et al. 2023b).

***Distribution.*** **Argentina** (Tomanović et al. 2023b); **Chile** (Starý 1976d, 1994, 1995c; Belshaw & Quicke 2002; Starý et al. 2014c).

#### *Pseudephedrus flavus* Tomanović & Žikić, 2023

*Pseudephedrus flava* Tomanović & Žikić [in Tomanović et al.], 2023b:913. Holotype ♀ (ICBT). – Chile.

***Host.*** ***Neuquenaphis similis*** Hille Ris Lambers (Tomanović et al. 2023b).

***Distribution.*** **Chile** (Tomanović et al. 2023b).

***Remarks.*** Originally published as *Pseudephedrus flava* Tomanović & Žikić, 2023. Because *Pseudephedrus* is masculine and *flava* is adjectival, the spelling is corrected to *Pseudephedrus flavus* under ICZN Articles 31.2 and 34.2 (suppl. I).

#### *Pseudephedrus lambersi* Starý, 1976

*Pseudephedrus lambersi* Starý, 1976d:25. Holotype ♀, paratypes ♀♀ (IECA). – Chile.

***Hosts.*** ***Neuquenaphis palliceps*** Hille Ris Lambers (Starý 1994, 1995c; Starý et al. 2014c); ***Neuquenaphis similis*** Hille Ris Lambers (Starý 1976a, 1994, 1995c; Starý et al. 2014c; Tomanović et al. 2023b).

***Distribution.*** **Chile** (Starý 1976d, 1994, 1995c; Starý et al. 2014c; Tomanović et al. 2023b).

***Remarks.*** According to the original description (Starý 1976d), some paratypes are deposited in the former collection of D. Hille Ris Lambers (Bennekom, Netherlands), and possibly included in RMNH.

#### *Pseudephedrus longivalvus* Starý, 1994

*Pseudephedrus longivalvus* Starý, 1994:91. Holotype ♀, paratypes ♀ ♂ (IECA). – Chile.

***Hosts.*** ***Neuquenaphis staryi*** Quednau & Remaudière (Starý 1994, 1995c; Starý et al. 2014c); ***Neuquenaphis similis*** Hille Ris Lambers (Starý et al. 2014c; Tomanović et al. 2023b).

***Distribution.*** **Chile** (Starý 1994, 1995c; Starý et al. 2014c; Tomanović et al. 2023b).

### *Pseudephedrus pubescens* Tomanović & Žikić, 2023

*Pseudephedrus pubescens* Tomanović & Žikić [in Tomanović et al.], 2023b:912. Holotype ♀ (ICBT). – Chile.

***Host.*** ***Neuquenaphis similis*** Hille Ris Lambers (Tomanović et al. 2023b).

***Distribution.*** **Chile** (Tomanović et al. 2023b).

### *Pseudephedrus neotropicalis* Starý, 1972

*Pseudephedrus neotropicalis* Starý, 1972e:1. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Cuba.

***Hosts.*** ***Lizerius acunai*** (Holman) (Starý 1981a); ***Lizerius*** sp. (Starý 1972e).

***Distribution.*** **Cuba** (Starý 1972e, 1981a; Starý et al. 2014c).

### *Pseudephedrus patagonicus* Tomanović & Žikić, 2023

*Pseudephedrus patagonicus* Tomanović & Žikić [in Tomanović et al.], 2023b:915. Holotype ♀ (ICBT). – Chile.

***Host.*** ***Neuquenaphis similis*** Hille Ris Lambers (Tomanović et al. 2023b).

***Distribution.*** **Chile** (Tomanović et al. 2023b).

### *Pseudephedrus staryi* Tomanović & Žikić, 2023

*Pseudephedrus staryi* Tomanović & Žikić [in Tomanović et al.], 2023b:910. Holotype ♀ (ICBT), paratypes ♀♀ (ICBT, FBUB). – Chile.

***Host.*** ***Neuquenaphis similis*** Hille Ris Lambers (Tomanović et al. 2023b).

***Distribution.*** **Chile** (Tomanović et al. 2023b).

## Genus *Toxares* Haliday, 1840 [8 species]

*Toxares* Haliday [in Westwood], 1840:65. Type species: *Aphidius* (*Trionyx*) *deltiger* Haliday, 1833.

**Syn.** *Aphidius* Nees, 1819, subg. *Trionyx* Haliday, 1833. *Teronyx* Haldeman, 1842. Emendation for *Trionyx* Haliday, 1833.

***Remarks.*** The older name *Trionyx* Haliday, 1833 is not available because it is a junior homonym of *Trionyx* Geoffroy, 1809.

### *Toxares brevistigmus* Tomanović & van Achterberg, 2026

*Toxares brevistigmus* Tomanović & van Achterberg [in Tomanović et al.], 2026b:29. Holotype ♀ (RMNH). – Vietnam.

***Host.*** Unknown.

***Distribution.*** **Vietnam** (Tomanović et al. 2026b).

### *Toxares deltiger* (Haliday, 1833) [Fig. 63C]

*Aphidius* (*Trionyx*) *deltiger* Haliday, 1833:487. Lectotype ♀ (after Mackauer 1961b), paralectotype ♂ (NHMUK). – United Kingdom.

**Syn.:** *Ephedrus flaveolus* Györfi, 1958.

***Hosts.*** ***Acyrthosiphon caraganae*** (Cholodkovsky) (Starý 1958, 1964d, 1966c, 1974c, 1987a, 2006; Mackauer & Starý 1967; Mackauer 1968c; Marsh 1979); ***Acyrthosiphon pisum*** (Harris) (Cameron et al. 1984); ***Amphorophora rubi*** (Kaltenbach) (Starý et al. 1971; Starý 1974c); ***Aphis craccivora*** Koch (Bhagat 1985); ***Aphis nerii*** Boyer de Fonscolombe (Raychaudhuri et al. 1990); ***Aphis spiraecola*** Patch (Starý & Ghosh 1978); ***Betacallis sikkimensis*** Basu, Ghosh & Raychaudhuri (Chakrabarti & Debnath 2009); ***Betacallis*** sp. (Bhagat 1984); ***Brachycaudus cardui*** (Linnaeus) (Tomanović et al. 2024); ***Brachycaudus helichrysi*** (Kaltenbach) Starý & Ghosh 1978); ***Brachycaudus*** sp. (Starý & Bhagat 1978); ***Capitophorus hippophaes*** (Walker) (Starý & Ghosh 1978); ***Capitophorus*** sp. (Tomanović et al. 2024); ***Cryptomyzus ribis*** (Linnaeus) (Starý 1987a, 2006); ***Cryptomyzus*** sp. (Ferrer-Suay et al. 2017); ***Drepanosiphum platanoidis*** (Schrank) (Stelfox 1941); ***Dysaphis plantaginea*** (Passerini) (Mackauer 1962c; Mackauer & Starý 1967; Marsh 1979; Finlayson 1990); ***Eumyzus*** sp. (Bhagat 1984); ***Hyperomyzus lactucae*** (Linnaeus) (Tomanović et al. 2024); ***Hyperomyzus picridis*** (Börner) (Starý 1987a); ***Hyperomyzus*** sp. (Starý & Bhagat 1978); ***Impatientinum balsamines*** (Kaltenbach) (Starý et al. 1971; Starý 1974c); ***Macrosiphoniella*** sp. (Starý & Bhagat 1978); ***Macrosiphum adianti*** (Oestlund) (Pike et al. 2000); ***Macrosiphum euphorbiae*** (Thomas)

(Starý 1987a, 2006); ***Macrosiphum walkeri*** (Robinson) (Pike et al. 2000); ***Metopolophium dirhodum*** (Walker) (Powell 1980, 1982; Dean et al. 1981; Starý 1981b; Höller et al. 1993); ***Myzus certus*** (Walker) (Mackauer 1962c, 1968c; Mackauer & Starý 1967; Marsh 1979); ***Myzus ornatus*** Laing (Starý & Ghosh 1978); ***Myzus persicae*** (Sulzer) (Mackauer & Starý 1967; Mackauer 1968c, 1968d; Starý & Ghosh 1978; Marsh 1979; Hofsvang & Høgvar 1983b); ***Neoacyrthosiphon euryae*** (Takahashi) (Starý & Ghosh 1978); ***Ovatus*** sp., ***Prociphilus*** sp. (Bhagat 1984); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Starý & Ghosh 1979); ***Schizaphis rotundiventris*** (Signoret) (Starý & Ghosh 1978); ***Sitobion avenae*** (Fabricius) (Dean et al. 1981; Powell 1982; Cameron et al. 1984; Tomanović et al. 2024).

***Distribution.*** **Austria** (Mackauer & Starý 1967); **Belarus** (BOLD:AAK1902); **Belgium** (Kirchner 1867; Mackauer & Starý 1967; Powell 1980; Jansen 2005; Lopes et al. 2016; Tomanović et al. 2024); **Bulgaria** (Todorov 2006b); **Canada** (Mackauer 1962c; Mackauer & Starý 1967); **China** (Davidian 2018c); **Czech Republic** (Starý 1958, 1966c, 1974c, 1987a, 1989a, 2006; Mackauer & Starý 1967; Ferrer-Suay et al. 2017); **Denmark** (Tomanović et al. 2024); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971; Koponen & Halme 1993); **France** (Starý et al. 1971, 1977a; Starý 1974c, 1981b); **Germany** (Mackauer 1962c; Mackauer & Starý 1967; Starý 1974c; Boness & Starý 1988; Borgemeister & Poehling 1988; Höller et al. 1993; Belokobylskij et al. 2003; Davidian 2018c); **Hungary** (Györfi 1958; Mackauer & Starý 1967; Polgár 1983); **India** (Rishi 1976; Rishi & Bhagat 1980; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Bhagat 1984, 1985; Starý & Bhagat 1978; Starý & Ghosh 1978, 1979; Raychaudhuri et al. 1990; Bhagat & Ahmad 1995; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Ireland** (Stelfox 1941; Mackauer & Starý 1967; O'Connor et al. 1999); **Italy** (Graeffe 1908); **Kazakhstan** (Davidian 2018c); **Lithuania** (Rakauskas 1985; Davidian 2018c); **Moldova** (Talitzky & Kuslitzky 1990); **Netherlands** (Evenhuis & de Jong 1961; Mackauer & Starý 1967; Finlayson 1990; Papp et al. 1996; Tomanović et al. 2024); **Norway** (Hofsvang & Høgvar 1983b; Westrum et al. 2010; Mjøs et al. 2024; Tomanović et al. 2024); **Poland** (Niezabitowski 1910; Mackauer & Starý 1967; Kierych 1975; Huflejt 1997; Pankanin-Franczyk & Sobota 1998; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian 2007, 2019b, 2020b; Davidian & Gavrilyuk 2014; Davidian & Humala 2023); **Slovakia** (Starý 1958, 1989a); **South Korea** (Choi et al. 2017; Kim 2026); **Spain** (Tizado & Núñez-Perez 1991; Sanchis et al. 1995; Nieves-Aldrey et al. 2003; Michelena Saval & Martínez De Murguía 2012); **Sweden** (Thomson 1895); **Türkiye** (Tomanović et al. 2007c, 2008b, 2024; Rakhshani et al. 2019); **Ukraine** (Kaliuzhna 2014, 2017b, 2019a); **United Kingdom** (Curtis 1837; Smith 1853; Marshall 1872a, 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Stelfox 1941; Kloet & Hincks 1945; Mackauer 1961b; Mackauer & Starý 1967; Starý 1974c, 1981b; Powell 1980, 1982; Dean et al. 1981; Cameron et al. 1984; Powell et al. 1986b; Perez-Rodriguez et al. 2015; Davidian & Rispin 2016); **USA** (Pike et al. 2000).

***Remarks.*** The occurrence of this species was recorded in the Balkan region in 1908 (Tomanović et al. 1998a); however, the specific location remains unclear. Specimens examined by Choi et al. (2017), in South Korea represent both *Toxares deltiger* and *Toxares koreanus*.

### *Toxares flavus* Tomanović & van Achterberg, 2026

*Toxares flavus* Tomanović & van Achterberg [in Tomanović et al.], 2026b:31. Holotype ♀, paratype ♂ (RMNH). – Vietnam.

***Host.*** Unknown.

***Distribution.*** **Vietnam** (Tomanović et al. 2026b).

### *Toxares fovealis* Tomanović & van Achterberg, 2024

*Toxares fovealis* Tomanović & van Achterberg [in Tomanović et al.], 2024:4. Holotype ♀ (RMNH). – Netherlands.

***Host.*** Unknown.

***Distribution.*** **Netherlands** (Tomanović et al. 2024).

### *Toxares koreanus* Tomanović, Kim & Petrović, 2022 [Fig. 63D]

*Toxares koreanus* Tomanović, Kim & Petrović [in Kim et al.], 2022b:188. Holotype ♀, paratype ♂ (NIBR). – South Korea.

***Host.*** Unknown.

***Distribution.*** **South Korea** (Kim et al. 2022b; Kim 2026).

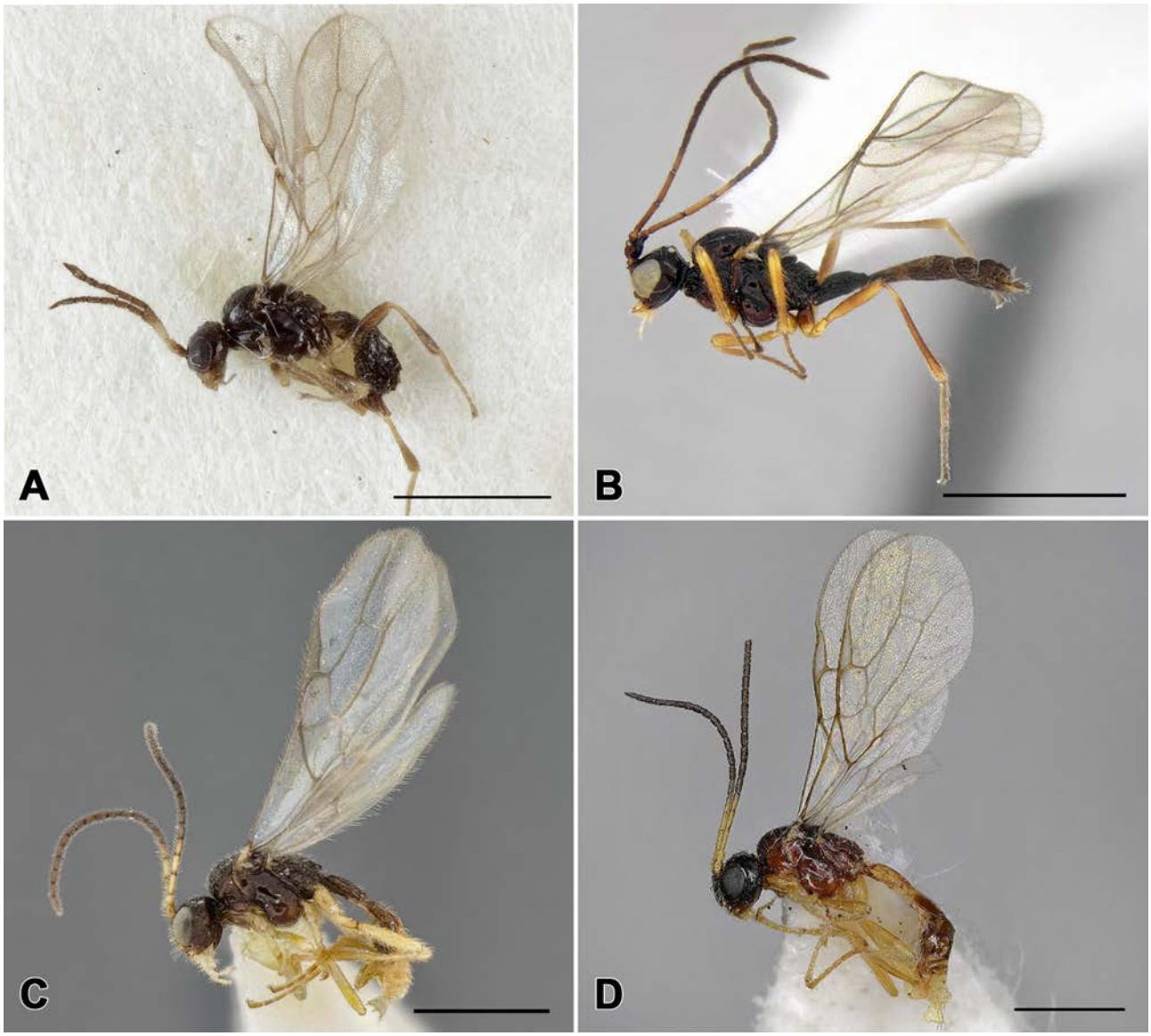



**Figure 63.** Species of the genera *Parephedrus* Starý & Carver, 1971, *Pseudephedrus* Starý, 1972, and *Toxares* Haliday, 1840. **A.** *Parephedrus relictus* Starý & Carver, 1971 – Holotype, ANIC; **B.** *Pseudephedrus* sp. – Chile, KSUC; **C.** *Toxares deltiger* (Haliday, 1833) – CNC, Canada; **D.** *Toxares koreanus* Tomanović, Kim & Petrović, 2022 – South Korea, KSNU. Scale bar: 1 mm.

### *Toxares macrosiphophagum* Shuja-Uddin, 1974

*Toxares macrosiphophagum* Shuja-Uddin, 1974:269. Holotype ♀, paratypes ♀♀ ♂♂ (ZMAU). – India.

***Hosts.*** ***Aphis solanella*** Theobald, ***Aphis spiraecola*** Patch, ***Brachycaudus helichrysi*** (Kaltenbach), ***Capitophorus mitegoni*** Eastop, ***Lachnus tropicalis*** (van der Goot) (Starý & Ghosh 1983); ***Macrosiphoniella sanborni*** (Gillette) (Shuja-Uddin 1974; Starý & Ghosh 1983); ***Myzus boehmeriae*** Takahashi, ***Myzus obtusirostris*** David, Narayanan & Rajasingh, ***Myzus ornatus*** Laing, ***Myzus persicae*** (Sulzer) (Starý & Ghosh 1983); ***Rhopalosiphum maidis*** (Fitch) (Starý & Ghosh 1983; Starý et al. 1999); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Starý & Ghosh 1983); ***Rhopalosiphum padi*** (Linnaeus) (Starý et al. 1999); ***Schizaphis rotundiventris*** (Signoret) (Starý & Ghosh 1983).

***Distribution.*** **India** (Shuja-Uddin 1974; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Starý & Ghosh 1983; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Rakhshani et al. 2012a; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Pakistan** (Starý & Ghosh 1983; Starý et al. 1999).

### *Toxares shigai* Takada, 1965

*Toxares shigai* Takada, 1965b:17. Holotype ♀, paratype ♂ (KUEC). – Japan.

***Hosts.*** ***Aphis farinosa*** Gmelin (Takada & Rishi 1980); ***Brachycaudus helichrysi*** (Kaltenbach) (Starý & Ghosh 1975); ***Chaitophorus leucomelas*** Koch (Takada & Rishi 1980); ***Macrosiphoniella sanborni*** (Gillette) (Dharmadhikari & Ramaseshiah 1970); ***Myzus persicae*** (Sulzer) (Starý & Ghosh 1975); ***Uroleucon tanaceti*** (Linnaeus) (Takada & Rishi 1980).

***Distribution.*** **China** (Chou 1981; Chen & Shi 2001); **India** (Dharmadhikari & Ramaseshiah 1970; Shuja-Uddin 1974; Starý & Ghosh 1975; Takada & Rishi 1980; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Ahmad & Wani 2014); **Japan** (Takada 1965b, 1968; Starý 1975a); **Thailand** (Starý et al. 2008).

### *Toxares zakai* Shuja-Uddin, 1974

*Toxares zakai* Shuja-Uddin, 1974:272. Holotype ♀, paratypes ♀♀ ♂♂ (ZMAU). – India.

***Hosts.*** ***Aphis craccivora*** Koch (Raychaudhuri et al. 1990); ***Myzus persicae*** (Sulzer) (Shuja-Uddin 1974); ***Sinomegoura rhododendri*** (Takahashi) (Raychaudhuri et al. 1990).

***Distribution.*** **India** (Shuja-Uddin 1974; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Starý & Ghosh 1983; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a).

## Tribe PRAINI Mackauer, 1961 [8 genera, 100 species (including 2 fossils)]

### Genus *Archipraon* Starý, 1973 [1 species]

*Archipraon* Starý, 1973:2. Type species: *Praon gausai* Quilis, 1940.

### *Archipraon gausai* (Quilis, 1940) [Fossil]

*Praon gausai* Quilis, 1940:59. Holotype ♀ (MNHN). – France.

***Host.*** Unknown.

***Distribution.*** **France** (Quilis-Pérez 1940; Starý 1970a, 1973b).

### Genus *Areopraon* Mackauer, 1959 [12 species]

*Areopraon* Mackauer, 1959a:810. Type species: *Praon lepelleyi* Waterston, 1926.

**Syn.:** *Mesopraon* Starý, 1981d:175. Type species: *Mesopraon helleni* Starý, 1981.

### *Areopraon antiquum* Mackauer, 1967 [Fig. 64A]

*Areopraon antiquum* Mackauer, 1967a:139. Holotype ♂, paratypes ♂♂ (CNC). – Pakistan.

***Host.*** ***Mindarus abietinus*** Koch (Mackauer 1967a).

***Distribution.*** **Nepal** (Starý & Ghosh 1983); **Pakistan** (Mackauer 1967a; Mackauer & Starý 1967; Starý & Ghosh 1983; Starý et al. 1999).

### *Areopraon chaitophori* Tomanović & Petrović, 2009

*Areopraon chaitophori* Tomanović & Petrović [in Tomanović et al.], 2009b:188. Holotype ♀, paratypes ♀♀ ♂♂ (FBUB). – Serbia.

***Hosts.*** ***Chaitophorus leucomelas*** Koch (Tomanović et al. 2009b; Žikić et al. 2012, 2013); ***Chaitophorus*** sp. (Davidian 2019a).

***Distribution.*** **Canada** (BOLD:AAQ2945); **Montenegro** (Derocles et al. 2012); **Russia** (Davidian 2019a, 2019b); **Serbia** (Tomanović et al. 2009b; Žikić et al. 2012, 2013; Mitrovski-Bogdanović et al. 2013); **USA** (BOLD:AAQ2945).

***Remarks.*** Based on its association with aphids of the genus *Chaitophorus*, together with the diagnostic characters of the propodeum, petiole, and ovipositor sheath (Tomanović et al. 2009b), the species may represent a conspecific taxon with *Praon carinum* Johnson, 1987. Barcode sequences attributed to this species in BOLD likewise indicate a Nearctic distributional range.

### *Areopraon chui* Tian & Chen, 2018 [Fig. 64B]

*Areopraon chui* Tian & Chen [in Tian et al.], 2018:64. Holotype ♀ (ZJUH). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Tian et al. 2018).

### *Areopraon helleni* (Starý, 1981) [Fig. 64C]

*Mesopraon helleni* Starý, 1981d:175. Holotype ♀ (ZMHF). – Finland.

***Host.*** Unknown.

***Distribution.*** **Finland** (Starý 1981d; Tomanović et al. 2006b); **Hungary** (Kovács 2001); **Russia** (Davidian 2007, 2019a, 2019b; Davidian & Humala 2023; Davidian & Ruchin 2023).

### *Areopraon kurohimense* Takada, 1968

*Areopraon kurohimense* Takada, 1968:78. Holotype ♂, paratypes ♂♂ (EIHU). – Japan.

***Host.*** Unknown.

***Distribution.*** **Japan** (Takada 1968; Starý 1975a).

### *Areopraon lepelleyi* (Waterston, 1926) [Fig. 64D]

*Praon lepelleyi* Waterston, 1926:237. Holotype ♀, paratypes ♀♀ ♂ (NHMUK). – United Kingdom.

***Hosts.*** ***Eriosoma lanigerum*** (Hausmann) (Waterston 1926; Mackauer & Starý 1967; Fulmek 1968); ***Eriosoma lanuginosum*** (Hartig) (Starý 1966b, 1966c, 1966d, 1976a; Tremblay 1976; Kazemzadeh et al. 2009; Rakhshani et al. 2012b); ***Eriosoma patchiae*** (Börner & Blunk) (Starý 1976a); ***Eriosoma phaenax*** **Mordvilko** (Bhagat 1985); ***Eriosoma ulmi*** (Linnaeus) (Mackauer 1959a; Starý 1964d, 1976a, 1977, 1987a; Mackauer & Starý 1967; Rishi & Bhagat 1980; Bhagat 1981a, 1982a; Dessart & Gärdenfors 1985; Dessart & Starý 2006); ***Eriosoma*** spp. (Tremblay 1976; Žikić et al. 2012); ***Mindarus abietinus*** Koch (Wiackowski et al. 2001); ***Schizoneurella indica*** Hille Ris Lambers (Bhagat 1981a, 1982a, 1985).

***Distribution.*** **Czech Republic** (Starý 1966c, 1977, 1987a, 1989a, 2006; Mackauer & Starý 1967; Dessart & Gärdenfors 1985); **France** (Mackauer & Starý 1967); **Georgia** (Starý 1976a); **Germany** (Mackauer 1959a; Mackauer & Starý 1967; Boness & Starý 1988; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **India** (Rishi & Bhagat 1980; Bhagat 1981a, 1982a, 1985; Starý & Ghosh 1983; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Iran** (Kazemzadeh et al. 2009; Rakhshani et al. 2012b, 2019); **Italy** (Starý 1966d, 1976a; Tremblay 1976; Bergamesco et al. 1995); **Poland** (Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian 2007, 2019a, 2019b, 2019c); **Serbia** (Žikić et al. 2012); **Sweden** (Mackauer 1959a; Mackauer & Starý 1967); **United Kingdom** (Waterston 1926; Lyle 1933; Kloet & Hincks 1945; Mackauer 1959a, 1961b; Mackauer & Starý 1967; Davidian & Rispin 2016).

### *Areopraon pilosum* Mackauer, 1959

*Areopraon pilosum* Mackauer, 1959a:853. Holotype ♀ (ZMHB). – Germany.

***Host.*** ***Pterocomma salicis*** (Linnaeus) (Tobias & Chiriac 1971).

***Distribution.*** **Germany** (Mackauer 1959a; Mackauer & Starý 1967; Tobias & Chiriac 1971; Belokobylskij & Taeger 2001; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **Moldova** (Tobias & Chiriac 1971; Talitzky & Kuslitzky 1990); **Netherlands** (Papp et al. 1996); **Russia** (Davidian 2019a, 2019b; Davidian & Humala 2023).

### *Areopraon rasnitsyni* Davidian, 2011

*Areopraon rasnitsyni* Davidian, 2011:247. Holotype ♀, paratype ♂ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Kazakhstan** (Davidian 2019a); **Russia** (Davidian & Gavrilyuk 2011; Davidian & Gavrilyuk 2014; Davidian 2019a, 2019b; Davidian & Ruchin 2023).

### *Areopraon silvestre* (Starý, 1971) [Fig. 64E]

*Praon silvestre* Starý, 1971c:316. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Czech Republic.

***Hosts.*** *Illinoia liriodendri* (Monell) (Franjević et al. 2015); ***Periphyllus acericola*** (Walker) (Starý 1971c, 1972c, 1977, 1987a, 2006; Tomanović et al. 2006b); ***Periphyllus aceris*** (Linnaeus) (Starý 1971c, 1972c, 1977, 1987a, 2006; Tomanović et al. 2006b; Ferrer-Suay et al. 2017); ***Periphyllus hirticornis*** (Walker) (Starý 1971c, 1972c, 1977, 2006; Tomanović et al. 2006b); ***Periphyllus lyropictus*** (Kessler) (Ferrer-Suay et al. 2017); ***Periphyllus testudinaceus*** (Fernie) (Starý 1971c, 1972c, 1987a, 2006; Starý et al. 1973; Tomanović et al. 2006b; Baker & Broad 2013); ***Periphyllus*** spp. (Starý 1987a, 1995b; Tomanović et al. 2006b; Žikić et al. 2012; Kavallieratos et al. 2016; Ferrer-Suay et al. 2017).

***Distribution.*** **Bulgaria** (Starý 1976a; Kolarov 1997; Kavallieratos et al. 2004); **Croatia** (Franjević et al. 2015); **Czech Republic** (Starý 1971c, 1972c, 1977, 1987a, 1989a, 1995b, 2006; Tomanović et al. 2006b; Starý & Havelka 2008; Ferrer-Suay et al. 2017); **Finland** (Halme 1977); **France** (Starý et al. 1973, 1977a; Starý 1976a); **Germany** (Boness & Starý 1988); **Norway** (Hofsvang & Høgvar 1983b; Westrum et al. 2010); **Serbia** (Tomanović et al. 2006b; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2013; Kavallieratos et al. 2016); **Slovakia** (Starý 1977; Tomanović et al. 2006b); **Switzerland** (Starý 1971c; Tomanović et al. 2006b); **Ukraine** (Kaliuzhna 2014, 2019a, 2019b); **United Kingdom** (Baker & Broad 2013).

### *Areopraon tricolor* Davidian, 2021 [Fig. 64F]

*Areopraon tricolor* Davidian [in Davidian & Belokobylskij], 2021:133. Holotype ♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** Russia (Davidian & Belokobylskij 2021).

### *Areopraon thailandicum* Starý, 2008

*Areopraon thailandicum* Starý [in Starý et al.], 2008:39. Holotype ♀ (QSBG), paratype ♀ (IECA). – Thailand.

***Host.*** Unknown.

***Distribution.*** **Thailand** (Starý et al. 2008).

### *Areopraon vladivostoki* Davidian, 2021

*Areopraon vladivostoki* Davidian [in Davidian & Belokobylskij], 2021:134. Holotype ♀ (ZISP). – Russia.

***Host.*** Unknown.

***Distribution.*** **Russia** (Davidian & Belokobylskij 2021).

## Genus *Astigmapraon* Tian & Chen, 2017 [1 species]

*Astigmapraon* Tian & Chen, 2017:132. Type species: *Astigmapraon hei* Tian & Chen, 2017.

### *Astigmapraon hei* Tian et Chen, 2017 [Figs 65A–B]

*Astigmapraon hei* Tian et Chen [in Tian et al.], 2017:132. Holotype ♀, paratypes ♂♂ (ZJUH). – China.

**Syn.:** *Praon longistigmus* Davidian, 2020.

***Host.*** Unknown.

***Distribution.*** **China** (Tian et al. 2017; Davidian 2020c; Davidian & Belokobylskij 2024).

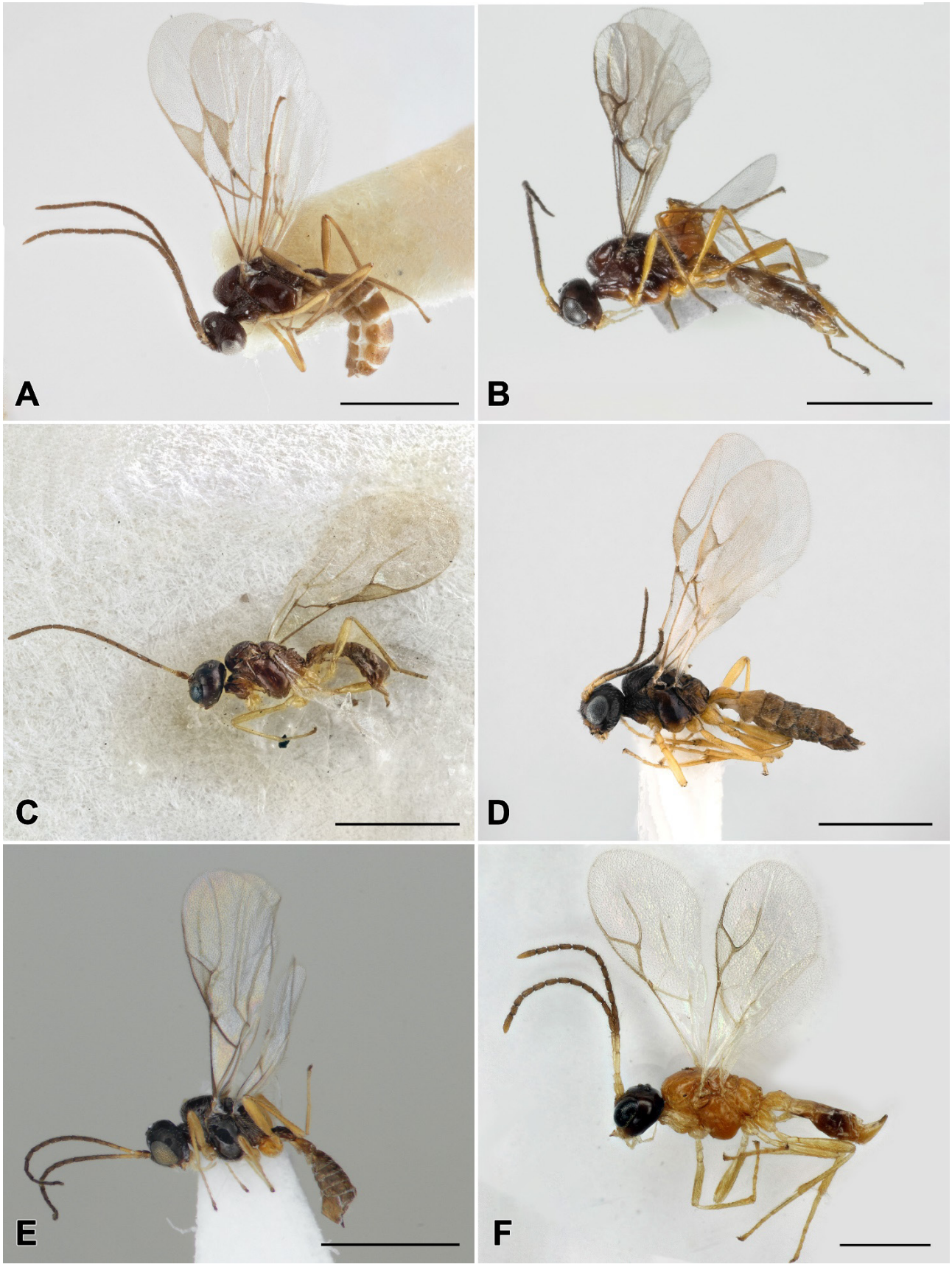



**Figure 64.** Species of the genus *Areopraon* Mackauer, 1959. **A.** *Areopraon antiquum* Mackauer, 1967 – Holotype, CNC; **B.** *Areopraon chui* Tian & Chen, 2018 – Holotype, ZJUH (Tian et al. 2018); **C.** *Areopraon helleni* (Starý, 1981) – Holotype, ZMHF; **D.** *Areopraon lepelleyi* (Waterston, 1926) – Iran, DPPZ; **E.** *Areopraon silvestre* (Starý, 1971) – UK, NHMUK (Baker & Broad 2013); **F.** *Areopraon tricolor* Davidian, 2021 – Holotype, ZISP. Scale bar: 1 mm.

### Genus *Choreopraon* Mackauer, 2012 [1 species]

*Choreopraon* Mackauer, 2012:77. Type species: *Choreopraon totarae* Mackauer, 2012.

### *Choreopraon totarae* Mackauer, 2012 [Figs 65C–D]

*Choreopraon totarae* Mackauer [in Mackauer & Finlayson], 2012:78. Holotype ♀, paratypes ♀♂ (NZAC). – New Zealand.

***Host.*** ***Neophyllaphis totarae*** Cottier (Belshaw et al. 2000; Mackauer & Finlayson 2012).

***Distribution.*** **New Zealand** (Belshaw et al. 2000; Belshaw & Quicke 2002; Mackauer & Finlayson 2012; Ward 2026).

### Genus *Dyscritulus* Hincks, 1943 [5 species] [Fig. 65F]

*Dyscritulus* Hincks, 1943a:224. [refinement - Hincks, 1943b]. Type species: *Dyscritus planiceps* Marshall, 1896.

**Syn.:** *Dyscritus* Marshall, 1896 [junior homonym]. Type species: *Dyscritus planiceps* Marshall, 1896.

### *Dyscritulus dzhungaricus* Davidian, 2019

*Dyscritulus dzhungaricus* Davidian, 2019d:854. Holotype ♀, paratype ♂ (ZISP). – Kazakhstan.

***Host.*** Unknown.

***Distribution.*** **Kazakhstan** (Davidian 2019d); **Mongolia**, **Russia** (Davidian 2020b).

### *Dyscritulus europaeus* Kocić & Tomanović, 2023

*Dyscritulus europaeus* Kocić & Tomanović [in Kocić et al.], 2023:287. Holotype ♀ (RMNH), paratypes ♀ ♂ (RMNH, FBUB). – Spain.

***Host.*** ***Drepanosiphum platanoidis*** (Schrank) (Kocić et al. 2023).

***Distribution.*** **France**, **Serbia**, **Spain** (Kocić et al. 2023).

### *Dyscritulus planiceps* (Marshall, 1896) [Fig. 65E]

*Dyscritus planiceps* Marshall, 1896:618. Holotype ♀ (NHMUK). – United Kingdom.

***Hosts.*** ***Drepanosiphum oregonense*** Granovsky (Mackauer & Starý 1967; Starý et al. 1971; Starý 1978a; Sanchis et al. 2000); ***Drepanosiphum platanoidis*** (Schrank) (Starý 1959c, 1964d, 1966c, 1970b, 1977, 1978a, 1989a, 2006; Mackauer & Starý 1967; Hamilton 1974; Vassileva-Sumnalieva 1976; Kierych 1980; Völkl & Mackauer 1996; Atanassova 1997; Kolarov 1997; Tomanović et al. 1999b; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); ***Drepanosiphum*** spp. (Starý 1978a, 1995b, 2006; Ferrer-Suay et al. 2017; Davidian 2018a, 2019a); *Periphyllus aceris* (Linnaeus) (Wiackowski et al. 2001); *Periphyllus testudinaceus* (Fernie) (Wiackowski et al. 2001; Davidian 2018a, 2019a).

***Distribution.*** **Austria** (Mackauer & Starý 1967; Mackauer 1968a); **Belgium** (Mackauer & Starý 1967; Mackauer 1968a; Lopes et al. 2016); **Bulgaria** (Vassileva-Sumnalieva 1976; Atanassova 1997; Kolarov 1997); **Czech Republic** (Starý 1959c, 1966c, 1970b, 1977, 1978a, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Ferrer-Suay et al. 2017); **France** (Mackauer & Starý 1967; Mackauer 1968a; Starý et al. 1971; Starý 1978a); **Germany** (Mackauer & Starý 1967; Mackauer 1968a; Boness & Starý 1988; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **Italy** (Mancini 2001); **Moldova** (Talitzky & Kuslitzky 1990); **Netherlands** (Mackauer & Starý 1967; Mackauer 1968a); **Norway** (Mjøs et al. 2024); **Poland** (Kierych 1980; Huflejt 1997; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Romania** (Lacatusu & Panu 1969); **Russia** (Davidian 2018a, 2019a, 2019b; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a, 1999b; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); **Slovakia** (Starý 1977, 1989a); **Spain** (Michelena Saval & González Funes 1988b; Tizado & Núñez-Perez 1991; Suay Cano & Michelena Saval 1998; Sanchis et al. 2000); **Switzerland** (Mackauer & Starý 1967; Mackauer 1968a); **United Kingdom** (Marshall 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Hincks 1944; Kloet & Hincks 1945; Starý 1959c, 1978a; Mackauer 1961b; Mackauer & Starý 1967; Hamilton 1974; Belshaw & Quicke 2002; Davidian & Rispin 2016).

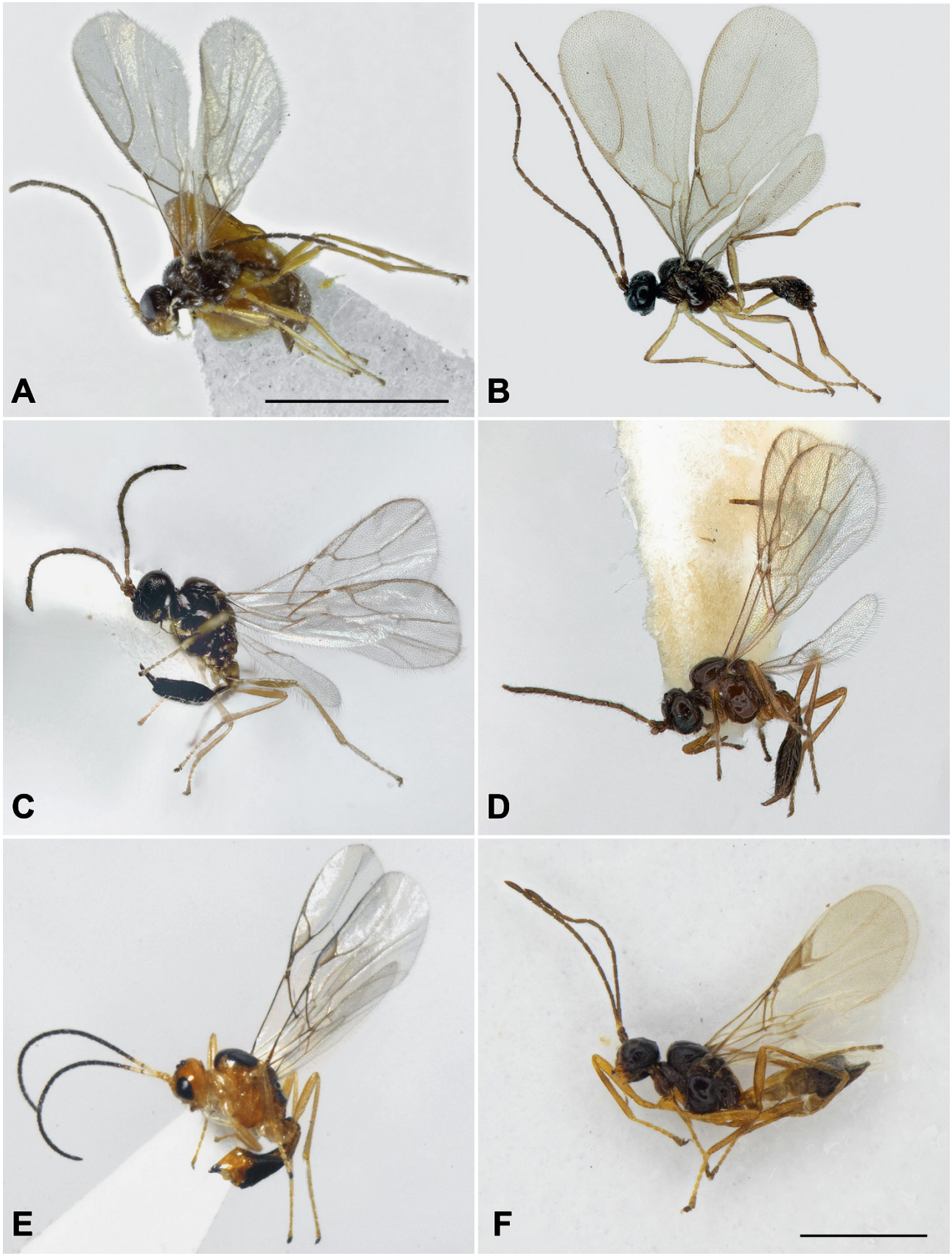



**Figure 65.** Species of the genera *Astigmapraon* Tian & Chen, 2017, *Choreopraon* Mackauer, 2012, and *Dyscritulus* Hincks, 1943. **A.** *Astigmapraon hei* Tian & Chen, 2017 – Holotype, ZJUH; **B.** *Astigmapraon hei* Tian & Chen, 2017 – China, ZISP (Davidian 2020c); **C.** *Choreopraon totarae* Mackauer, 2012 – Holotype, NZAC; **D.** *Choreopraon totarae* Mackauer, 2012 – New Zealand, RMNH; **E.** *Dyscritulus planiceps* (Marshall, 1896) – Photo credit: influentialpoints; **F.** *Dyscritulus* sp. – Russia, ZISP. Scale bar: 1 mm.

***Remarks.*** Mummified aphids resembling those associated with *Dyscritulus* sp. (probably *D. planiceps*) were observed on *Magnolia grandiflora* in Canada (Halifax – GBIF: 314875188; Vancouver – GBIF: 398589505). Species-level identification requires collection and rearing of specimens to obtain adult parasitoids.

### *Dyscritulus pygmaeus* Mackauer, 1961

*Dyscritulus pygmaeus* Mackauer, 1961c:270. Holotype ♀ (MMUE). – United Kingdom.

***Host.*** Unknown.

***Distribution.*** **Austria** (Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **Hungary** (Polgár 1983); **United Kingdom** (Mackauer 1961c; Mackauer & Starý 1967).

### *Dyscritulus trjapitzini* Davidian, 2018

*Dyscritulus trjapitzini* Davidian, 2018:779. Holotype ♀, paratype ♂ (ZISP). – Georgia.

***Host.*** Unknown aphid on *Quercus* (Davidian 2018a).

***Distribution.*** **Georgia** (Davidian 2018a, 2019a).

## Genus *Praon* Haliday, 1833 [76 species]

*Aphidius* (*Praon*) Haliday, 1833:261, 483. Type species: *Bracon exsoletus* Nees, 1811.

**Syn.** *Bracon* (*Achoristus*) Ratzeburg, 1852:31. Type species: *Bracon aphidiiformis* Ratzeburg, 1852; *Aphidaria* Provancher, 1886:153. Type species: *Aphidaria simulans* Provancher, 1886; *Parapraon* Starý, 1983e:206. Type species: *Praon gallicum* Starý, 1971.

### *Praon abjectum* (Haliday, 1833) [Fig. 66A]

*Aphidius abjectum* Haliday, 1833:485. Lectotype ♀ (after Mackauer 1961b), paralectotype ♀ (NHMUK). – Ireland.

**Syn.:** *Bracon aphidiiforme* Ratzeburg, 1852; *Praon peregrinum* Ruthe, 1859.

***Hosts.*** ***Acyrthosiphon scariolae*** Nevsky (Marshall 1896; Mackauer 1959a); ***Aphis acetosae*** Linnaeus (Davidian & Gavrilyuk 2014; Davidian 2019a); ***Aphis bupleuri*** (Börner) (Starý 1966c, 2006; Mackauer & Starý 1967); ***Aphis craccae*** Linnaeus (Starý 2006; Ferrer-Suay et al. 2017); ***Aphis craccivora*** Koch (Starý 1966c, 1967a, 1967b, 1969c, 1976a, 1987a, 2006; Mackauer & Starý 1967; Dharmadhikari & Ramaseshiah 1970; Starý & Kaddou 1971; Marsh 1979; Kavallieratos et al. 2004, 2016; Žikić et al. 2012; Pons et al. 2018; Davidian 2019a); ***Aphis elegantula*** Szelegiewicz (Žikić et al. 2012); ***Aphis epilobiaria*** Theobald (Starý et al. 1977a; González & Michelena 1987); ***Aphis epilobii*** Kaltenbach (Bignell 1901; Mackauer 1959a, 1962c; Mackauer & Starý 1967; Starý et al. 1973; Tomanović et al. 1999b; Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis fabae*** Scopoli (Mackauer 1959a; Hodek et al. 1962; Starý 1964d, 1966b, 1966c, 1966d, 1967b, 1972f, 1977, 1987a, 1991, 1995b, 2006; Mackauer & Starý 1967; Marsh 1979; Barczak 1988, 1991b; Barczak et al. 1999; Wiackowski et al. 2001; Kavallieratos et al. 2004; Žikić et al. 2012; Davidian & Gavrilyuk 2014; Ferrer-Suay et al. 2017; Davidian 2019a); ***Aphis fabae cirsiiacanthoidis*** Scopoli (Völkl 1989; Starý 1991); ***Aphis fabae evonymi*** Fabricius (Malaquin & Moitie 1914; Fulmek 1968); ***Aphis farinosa*** Gmelin (Starý 1964d, 1966c, 1967b, 1977, 1987a, 2006; Mackauer & Starý 1967; Marsh 1979; Bhagat 1984, 1985; Wiackowski et al. 2001; Ferrer-Suay et al. 2017); ***Aphis grossulariae*** Kaltenbach (Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis hederae*** Kaltenbach (Starý 1987a, 2006); ***Aphis hieracii*** Schrank (Bignell 1901; Mackauer & Starý 1967); ***Aphis intybi*** Koch (Starý 2006); ***Aphis nasturtii*** Kaltenbach (Starý 1977, 1987a, 2006; Starý et al. 1977a; Wiackowski et al. 2001; Tomanović et al. 2012; Ferrer-Suay et al. 2017); ***Aphis oenotherae*** Oestlund (Pons et al. 2018); ***Aphis pollinosa*** Walker [*n. dub.*] (Starý et al. 1971; Bhagat 1984); ***Aphis pomi*** De Geer (Kavallieratos et al. 2008b; Žikić et al. 2012; Davidian & Gavrilyuk 2014); ***Aphis praeterita*** Walker (Mackauer & Starý 1967); ***Aphis punicae*** Passerini (Starý & Kaddou 1971; Starý 1976a); ***Aphis ruborum*** (Börner) (Starý et al. 1975; Starý 1976a; Havelka et al. 2012); ***Aphis rumicis*** Linnaeus (Starý 1987a, 2006; Müller et al. 1999); ***Aphis sambuci*** Linnaeus (Mackauer 1959a; Starý 1964d, 1966c, 1967b, 1976a, 1987a, 1995b, 2006; Mackauer & Starý 1967; Starý

et al. 1973; Kierych 1975; Marsh 1979; Starý & Němec 1986; Barczak et al. 1999; Tomanović et al. 1999b; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001; Kavallieratos et al. 2004; Kos et al. 2012; Davidian 2019a); ***Aphis solanella*** Theobald (Starý & Kaddou 1971; Starý 1976a; Kavallieratos et al. 2010; Pons et al. 2018); ***Aphis spiraecola*** Patch (Starý et al. 1973, 1975; Starý 1976a); ***Aphis spiraephaga*** Müller (Starý 1987a, 1995a, 2006; Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis viburni*** Scopoli (Starý 1966c, 1977, 2006; Mackauer & Starý 1967); ***Aphis viticis*** Ferrari (Starý & Kaddou 1971; Starý 1976a); ***Aphis*** spp. (Giraud & Laboulbène 1877; Starý 1964d, 1965a, 1966c, 1967b, 1969c, 2006; Mackauer & Heie 1965; Bhagat 1984; Davidian & Gavrilyuk 2014; Davidian 2019a); ***Aulacorthum solani*** (Kaltenbach) (Kos et al. 2009a, 2012); ***Brachycaudus cardui*** (Linnaeus) (Wiackowski & Wiackowska 1996; Wiackowski et al. 2001; Rakhshani et al. 2007a; Rakhshani 2012); ***Brachycaudus helichrysi*** (Kaltenbach) (Kavallieratos et al. 2004; Žikić et al. 2012); ***Capitophorus*** sp. (Davidian 2019a); *Chromaphis juglandicola* (Kaltenbach) (Ataeva 1961); ***Cryptomyzus ribis*** (Linnaeus) (Fulmek 1968); ***Dysaphis anthrisci*** Börner (Quilis-Pérez 1934); ***Dysaphis sorbi*** (Kaltenbach) (Fulmek 1968); ***Hyadaphis coriandri*** (Das) (Barannik 1986); ***Hyadaphis foeniculi*** (Passerini) (Luzhetzki 1960); ***Hyalopterus pruni*** (Geoffroy) (Wiackowski et al. 2001; Kos et al. 2012; Tomanović et al. 2012; Žikić et al. 2012; Barczak et al. 2013); ***Hyperomyzus lactucae*** (Linnaeus) (Marshall 1896; Györfi 1960; Fulmek 1968); ***Liosomaphis berberidis*** (Kaltenbach) (Wiackowski et al. 2001; Kavallieratos et al. 2004; Žikić et al. 2012; Davidian 2019a); ***Longicaudus trirhodus*** (Walker) (Kavallieratos et al. 2004); ***Macrosiphum stellariae*** Theobald, ***Megoura viciae*** Buckton (Wiackowski et al. 2001); ***Melanaphis donacis*** (Passerini), ***Myzaphis rosarum*** (Kaltenbach) (Bhagat 1984); ***Myzus beybienkoi*** Narzykulov (Ataeva 1961); ***Myzus persicae*** (Sulzer) (Wiackowski et al. 2001; Wei et al. 2005; Kos et al. 2009a, 2012; Alaserhat & Canbay 2017; Aparicio et al. 2019); ***Nasonovia compositellae nigra*** (Hille Ris Lambers) (Mackauer 1959a); ***Nasonovia ribisnigri*** (Mosley) (Wiackowski et al. 2001); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Starý & Bhagat 1978; Starý & Ghosh 1983); ***Rhopalosiphum oxyacanthae*** (Schrank) (Davidian 2019a); ***Rhopalosiphum padi*** (Linnaeus) (Starý 1964d, 1966a; Mackauer & Starý 1967; Marsh 1979); ***Rhopalosiphum*** sp. (Starý 1966c, 1976a, 1981b, 1987a, 2006; Mackauer & Starý 1967; Davidian 2019a); ***Semiaphis anthrisci*** (Kaltenbach) (Quilis-Pérez 1934; Mackauer 1959a; Györfi 1960; Fulmek 1968); ***Sitobion avenae*** (Fabricius) (Atanassova 1997; Wiackowski et al. 2001); *Smynthurodes betae* Westwood (Marshall 1896; Bignell 1901; Mackauer 1959a; Györfi 1960; Wiackowski et al. 2001).

***Distribution.*** **Andorra** (Sanchis et al. 1999); **Armenia** (Davidian 2019a); **Austria** (Mackauer 1959a; Mackauer & Starý 1967); **Belgium** (Schulz 1910; Jansen 2005; Lopes et al. 2016); **Bosnia and Hercegovina** (Kavallieratos et al. 2004, 2016); **Bulgaria** (Starý 1976a; Atanassova 1997); **China** (Gu et al. 1995); **Czech Republic** (Quilis-Pérez 1934; Mackauer 1959a; Hodek et al. 1962; Starý 1966c, 1967a, 1972f, 1977, 1981b, 1987a, 1989a, 1991, 1995a; Starý & Němec 1986; Starý & Havelka 2008; Tomanović et al. 2012; Ferrer-Suay et al. 2017); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967); **Faroe Islands** (Roman 1925; Kryger & Schmiedeknecht 1938); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971; Starý 1981b; Koponen & Vikberg 1984b); **France** (Dours 1873; Gaulle 1908; Gautier & Bonnamour 1932; Mackauer 1959a; Mackauer & Starý 1967; Starý et al. 1971, 1975, 1977a; Starý 1973a, 1976a; Völkl 1989; Havelka et al. 2012; Mitrovski-Bogdanović et al. 2013); **Germany** (Kirchner 1867; Marshall 1890; Mackauer 1959a, 1962c, 1964b; Mackauer & Starý 1967; Boness & Starý 1988); **Greece** (Kavallieratos et al. 2010); **Greenland** (Lundbeck 1897; Henriksen & Lundbeck 1917; Muesebeck & Walkley 1951; Lesse & Granger 1952; Mackauer & Starý 1967; Marsh 1979); **Hungary** (Szépligeti 1899; Györfi 1941, 1960; Polgár 1981, 1983); **Iceland** (Ruthe 1859; Szépligeti 1904; Lindroth 1931; Petersen 1956); **India** (Dharmadhikari & Ramaseshiah 1970; Starý & Bhagat 1978; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Starý & Ghosh 1983; Bhagat 1984, 1985; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Iran** (Rakhshani et al. 2007a, 2019; Fallahzadeh & Saghaei 2010; Rakhshani 2012; Abdoli et al. 2026); **Iraq** (Starý 1969c, 1976a; Starý & Kaddou 1971; Rakhshani et al. 2019); **Ireland** (Starý 1988b; O'Connor et al. 1999); **Italy** (Starý 1966d, 1976a, 1981b; Bergamesco et al. 1995); **Kyrgyzstan** (Davidian 2019a); **Moldova** (Talitzky & Kuslitzky 1990; Davidian 2019a); **Montenegro** (Kavallieratos et al. 2004; Žikić et al. 2012); **Netherlands** (Mackauer & Starý 1967); **Norway** (Mackauer

1968c; Starý 1981b; Westrum et al. 2010; Mjøs et al. 2024); **Poland** (Niezabitowski 1910; Mackauer & Starý 1967; Kierych 1975; Barczak 1988, 1991b; Olszak 1994; Huflejt 1997; Barczak et al. 1999, 2005, 2013; Wiackowski & Wiackowska 1996, 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Starý 1965a; Mackauer & Starý 1967; Mackauer 1968c; Barannik 1986; Krotova 1993; Davidian 2007, 2019a, 2019b; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Mackauer & Starý 1967; Tomanović et al. 1998a, 1999b, 2012; Žikić et al. 2000, 2012; Tomanović & Brajković 2001; Kavallieratos et al. 2004, 2008b, 2013, 2016; Mitrovski-Bogdanović et al. 2013); **Slovakia** (Starý 1977, 1989a); **Slovenia** (Kos et al. 2008, 2009a, 2012; Mitrovski-Bogdanović et al. 2013); **South Korea** (BOLD:AFD6750); **Spain** (Starý 1976a; González & Michelena 1987; Tizado & Núñez-Perez 1991; Tizado Morales et al. 1992; Pons et al. 2011, 2018; Aparicio et al. 2019); **Sweden** (Mackauer 1959a; Mackauer & Starý 1967); **Switzerland** (Ferrière 1928, 1947; Mackauer 1959a, 1968c; Mackauer & Starý 1967); **Tajikistan** (Ataeva 1961); **Türkiye** (Tomanović et al. 2008b; Akar & Çetin Erdoğan 2017; Rakhshani et al. 2019); **Ukraine** (Kaliuzhna 2017b, 2019a; Davidian 2019a); **United Kingdom** (Curtis 1837; Smith 1853; Kirchner 1867; Marshall 1872a, 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1959a, 1961b; Mackauer & Starý 1967; Müller et al. 1999; van Veen et al. 2008; Davidian & Rispin 2016); **Uzbekistan** (Daminova et al. 2001; Aripov 2003; Daminova 2007, 2019a).

### *Praon absinthii* Bignell, 1894 [Fig. 66B]

*Praon absinthii* Bignell, 1894:255. Syntype ♀♂ (NHMUK or PLYM). – United Kingdom.

***Hosts. Macrosiphoniella absinthii*** (Linnaeus) (Bignell 1894; Mackauer 1959a; Starý 1964d, 1966c, 1976a, 1977, 1979a, 2006; Mackauer & Starý 1967; Suay Cano & Michelena Saval 1998; Starý et al. 2000; Wiackowski et al. 2001; Rakhshani et al. 2011); ***Macrosiphoniella artemisiae*** (Boyer de Fonscolombe) (Starý et al. 1971; Starý 1976a); ***Macrosiphoniella leucanthemi*** (Ferrari) (Starý et al. 1973; Starý 1976a); ***Macrosiphoniella millefolii*** (De Geer) (Starý 1964d, 1965a, 1966c, 2006; Mackauer & Starý 1967; Starý et al. 1971); ***Macrosiphoniella oblonga*** (Mordvilko) (Rakhshani et al. 2007a, 2011; Talebi et al. 2009); ***Macrosiphoniella sanborni*** (Gillette) (Mackauer 1959a, 1962c; Mackauer & Starý 1967; Starý 1976a; Rakhshani et al. 2007a, 2011); ***Macrosiphoniella staegeri*** Hille Ris Lambers (Starý et al. 1971; Starý 1976a); ***Macrosiphoniella tanacetaria*** (Kaltenbach) (Kavallieratos et al. 2004; Starý 2006; Starý & Havelka 2008; Žikić et al. 2012); ***Macrosiphoniella usquertensis*** Hille Ris Lambers (Starý et al. 1973); ***Macrosiphoniella*** sp. (Starý 1964d); ***Pleotrichophorus*** sp. (Starý 1995b, 2006); ***Titanosiphon artemisiae*** (Koch) (Starý 1964d, 1966c; Mackauer & Starý 1967).

***Distribution.*** **Austria** (Mackauer 1959a; Mackauer & Starý 1967); **China** (Chen & Shi 2001); **Czech Republic** (Starý 1966c, 1977, 1989a, 1995b, 2006; Mackauer & Starý 1967; Starý & Havelka 2008); **Denmark** (Mackauer 1968c); **Finland** (Mackauer 1968c; Rakhshani et al. 2011); **France** (Starý et al. 1971, 1973, 1977a; Starý 1976a); **Georgia** (Starý 1976a); **Germany** (Mackauer 1959a, 1962c; Mackauer & Starý 1967; Belokobylskij et al. 2003; Rakhshani et al. 2011); **Hungary** (Györfi 1960; Mackauer & Starý 1967; Polgár 1983); **India** (Agarwala et al. 1981a; Dey & Akhtar 2007); **Iran** (Starý 1979a; Starý et al. 2000; Rakhshani et al. 2007a, 2019; Talebi et al. 2009; Fallahzadeh & Saghaei 2010); **Italy** (Starý 1976a; Bergamesco et al. 1995); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Tomanović et al. 2026a); **Netherlands** (Papp et al. 1996); **Poland** (Wiackowski et al. 2001); **Romania** (Lacatusu & Panu 1969); **Russia** (Starý 1965a; Davidian 2007, 2019a, 2019b; Rakhshani et al. 2011; Davidian & Humala 2023; Davidian & Ruchin 2023); **Serbia** (Mackauer 1959a; Mackauer & Starý 1967; Tomanović et al. 1998a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); **Slovakia** (Starý 1977, 1989a); **Spain** (Starý 1976a; Suay Cano & Michelena Saval 1998); **Ukraine** (Meyer 1927); **United Kingdom** (Bignell 1894; Mackauer 1959a; Mackauer & Starý 1967); **Uzbekistan** (Aripov 2003).

### *Praon alaskense* Ashmead, 1902 [Fig. 66C]

*Praon alaskensis* Ashmead, 1902:243. Lectotype ♂ (after Mackauer 1968a) (USNM). – USA.

***Host. Acyrthosiphon pisum*** (Harris) (Fluke 1925, 1929).

***Distribution.*** **Canada** (McLeod 1938; Mackauer & Starý 1967; Johnson 1987); **USA** (Ashmead 1902; Szépligeti 1904; Gahan 1911a; Viereck 1923; Fluke 1925, 1929; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Johnson 1987).

### *Praon americanum* (Ashmead, 1889) [Fig. 66D]

*Diaeretus americanus* Ashmead, 1889:669. Lectotype ♂ (after Mackauer 1968a) (USNM). – USA.

**Syn.:** *Diaeretus brunneiventre* Ashmead, 1889; *Diaeretus websteri* Ashmead, 1889; *Aphidius bruneiventre* Dalla Torre, 1898; *Praon nanus* Baker, 1909.

***Hosts.*** ***Aphis cercocarpi*** Gillette & Palmer (Pike et al. 2000); ***Aphis gossypii*** Glover, ***Aphis oenotherae*** Oestlund (Johnson 1987); ***Aphis salicariae*** Koch (Pike et al. 2000); ***Myzus persicae*** (Sulzer) (Shands et al. 1955; Mackauer & Starý 1967; Marsh 1979; Johnson 1987); ***Rhopalosiphum oxyacanthae*** (Schrank) (Mackauer & Starý 1967; Marsh 1979); ***Rhopalosiphum padi*** (Linnaeus) (Muesebeck & Walkley 1951; Mackauer & Starý 1967; Marsh 1979); ***Sitobion avenae*** (Fabricius) (Riley & Howard 1890; Phillips 1916; Mackauer & Starý 1967; Marsh 1979).

***Distribution.*** **USA** (Ashmead 1889, 1900a; Riley & Howard 1890; Szépligeti 1904; Baker 1909; Viereck 1910; Gahan 1911a; Smith 1944; Muesebeck & Walkley 1951; Shands et al. 1955; Mackauer 1963a; Mackauer & Starý 1967; Johnson 1987; Pike et al. 2000).

### *Praon artemisaphis* Smith, 1944 [Fig. 66E]

*Praon artemisaphis* Smith, 1944:26. Holotype ♀ (USNM), paratypes ♀♀ (NCSU). – USA.

***Hosts.*** ***Aphis gossypii*** Glover, ***Aphis neogillettei*** Palmer, ***Chaitophorus nudus*** Richards (Batulla & Robinson 1984); ***Flabellomicrosiphum knowltoni*** Smith (Pike et al. 1997a); ***Obtusicauda coweni*** (Hunter) (Smith 1944; Muesebeck & Walkley 1951; Marsh 1979; Johnson 1987; Pike et al. 1997a, 2000); ***Pleotrichophorus*** sp. (Pike et al. 1997a).

***Distribution.*** **Canada** (Batulla & Robinson 1984); **USA** (Smith 1944; Muesebeck & Walkley 1951; Muesebeck 1958a; Pike et al. 1997a, 2000).

### *Praon artemisicola* Pike & Starý, 1997 [Fig. 66F]

*Praon artemisicola* Pike & Starý [in Pike et al.], 1997a:146. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (IECA, WSUJ). – USA.

***Hosts.*** ***Artemisaphis artemisicola*** (Williams) (Pike et al. 2000); ***Epameibaphis atricornis*** Gillette & Palmer (Pike et al. 1997a, 2000); ***Flabellomicrosiphum knowltoni*** Smith (Pike et al. 1997a); ***Flabellomicrosiphum*** sp. (Pike et al. 2000); ***Obtusicauda coweni*** (Hunter) (Mackauer & Starý 1967); ***Obtusicauda filifoliae*** (Gillette & Palmer) (Pike et al. 1997a); ***Pleotrichophorus quadritrichus*** (Knowlton & Smith) (Pike et al. 2000); ***Pseudoepameibaphis tridentatae*** (Wilson) (Pike et al. 1997a, 2000).

***Distribution.*** **USA** (Mackauer & Starý 1967; Pike et al. 1997a, 2000).

### *Praon athenaeum* Kavallieratos & Lykouressis, 2000

*Praon athenaeum* Kavallieratos & Lykouressis, 2000:8. Holotype ♀, paratypes ♀♀ (AUAG). – Greece.

***Host.*** ***Hyperomyzus lactucae*** (Linnaeus) (Kavallieratos & Lykouressis 2000; Kavallieratos & Tomanović 2001; Kavallieratos et al. 2001, 2003, 2004).

***Distribution.*** **Greece** (Kavallieratos & Lykouressis 2000; Kavallieratos & Tomanović 2001; Kavallieratos et al. 2001, 2003, 2004); **Russia** (Davidian 2019a, 2019b); **Türkiye** (Akar & Çetin Erdoğan 2017).

### *Praon baodingense* (Ji & Zhang, 1992)

*Parapraon baodingense* Ji & Zhang, 1992:100. Holotype ♀, paratypes ♀♀ ♂♂ (HAU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Ji & Zhang 1992; Chen & Shi 2001).

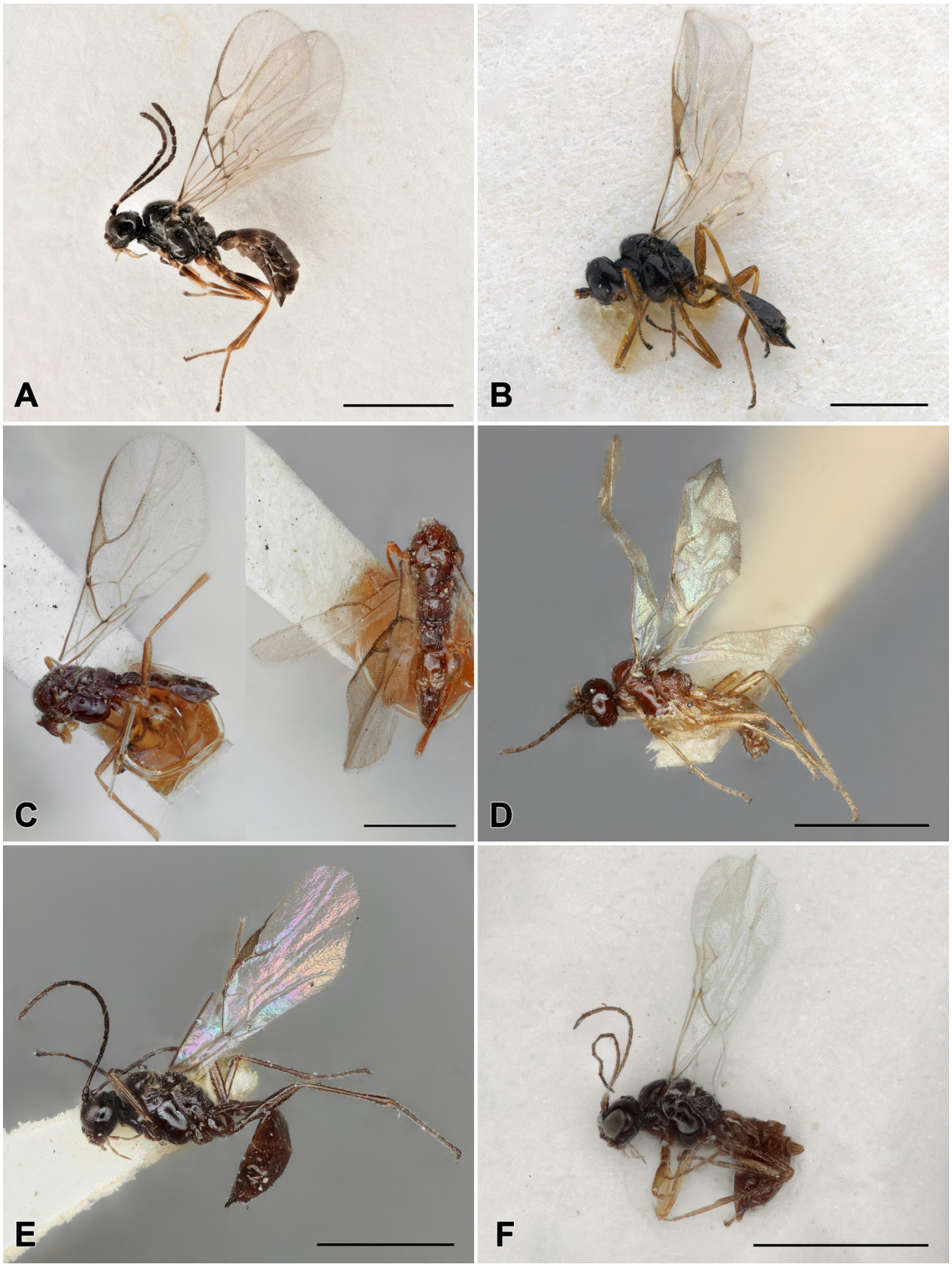



**Figure 66.** Species of the genus *Praon* Haliday, 1833. **A.** *Praon abjectum* (Haliday, 1833) – Netherlands, RMNH; **B.** *Praon absinthii* Bignell, 1894 – Czech Republic, DPPZ; **C.** *Praon alaskense* Ashmead, 1902 – Lectotype, USNM; **D.** *Praon americanum* (Ashmead, 1889) – Lectotype, USNM; **E.** *Praon artemisaphis* Smith, 1944 – Holotype, USNM; **F.** *Praon artemisicola* Pike & Starý, 1997 – Holotype, USNM. Scale bar: 1 mm.

### *Praon barbatum* Mackauer, 1967

*Praon barbatum* Mackauer [in Mackauer & Finlayson], 1967:1057. Holotype ♀, paratypes ♀♀ ♂♂ (CNC). – France.

***Hosts.*** ***Acyrthosiphon gossypii*** Mordvilko (Mackauer & Finlayson 1967; Starý & González 1978; Starý 1979a; Zheng et al. 1985; Chen & Shi 2001; Wei et al. 2005); ***Acyrthosiphon kondoi*** Shinji (González et al. 1978; Nakashima & Akashi 2005); ***Acyrthosiphon pisum*** (Harris) (Mackauer & Finlayson 1967; Starý et al. 1971; Starý 1972b, 1972d, 1972f, 1976a, 1977, 1978b, 1979a, 1987a, 1995b, 2006; Kierych 1975; González et al. 1978; Starý & González 1978; Aeschlimann 1981; Haeselbarth 1983; Tremblay et al. 1985; Zheng et al. 1985; Pennacchio & Tremblay 1988; Tremblay & Pennacchio 1988a; Finlayson 1990; Tomanović et al. 1996, 1999b; Chen & Shi 2001; Kavallieratos et al. 2004; Nakashima & Akashi 2005; Wei et al. 2005; Rakhshani et al. 2007a, 2019; Kos et al. 2009a, 2012; Derocles et al. 2012, 2014a; Nazari et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Taheri & Rakhshani 2013; Zouari et al. 2018; Davidian 2019a, 2019c); *Nearctaphis bakeri* (Cowen) (Barahoei et al. 2013).

***Distribution.*** **Afghanistan** (González et al. 1978); **Andorra** (Sanchis et al. 1999); **Austria** (Mackauer & Finlayson 1967); **Belarus** (BOLD:ACR4408); **Belgium** (Lopes et al. 2016); **China** (Zheng et al. 1985, 1987; Chen & Shi 2001, 2002); **Cyprus** (Aeschlimann 1981; Kavallieratos et al. 2004); **Czech Republic** (Starý 1972f, 1977, 1978b, 1987a, 1989a, 1995b, 2006; Starý & Havelka 2008); **Finland** (Mackauer 1968c; Hellén 1971); **France** (Mackauer & Finlayson 1967; Starý et al. 1971, 1977a; Aeschlimann 1981; Derocles et al. 2012, 2014a); **Germany** (Belokobylskij et al. 2003); **Greece** (González et al. 1978; Aeschlimann 1981); **Iran** (González et al. 1978; Starý & González 1978; Starý 1979a; Starý et al. 2000; Rakhshani et al. 2007a, 2019; Fallahzadeh & Saghaei 2010; Nazari et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Taheri & Rakhshani 2013); **Italy** (Starý 1976a; Aeschlimann 1981; Pennacchio & Tremblay 1988; Tremblay & Pennacchio 1988a; Bergamesco et al. 1995); **Japan** (Senoo et al. 2002; Nakashima & Akashi 2005); **Lebanon** (Tremblay et al. 1985; Rakhshani et al. 2019); **Moldova** (Starý 1972f; Talitzky & Kuslitzky 1990); **Mongolia** (Takada 1979a); **Montenegro** (Kavallieratos et al. 2004; Žikić et al. 2012); **Morocco** (Starý 1976a; Rakhshani et al. 2019); **New Zealand** (Bulman et al. 2021); **Norway** (Artsdatabanken 2026); **Poland** (Kierych 1975; Huflejt 1997); **Russia** (Davidian 2019a, 2019b, 2019c; Davidian & Humala 2023; Davidian & Ruchin 2023); **Saudi Arabia** (Rakhshani et al. 2019); **Serbia** (Tomanović et al. 1996, 1998a, 1999b; Žikić et al. 2000, 2012; Tomanović & Brajković 2001; Kavallieratos et al. 2004); **Slovakia** (Starý 1977, 1989a); **Slovenia** (Kos et al. 2008, 2009a, 2012); **Spain** (Starý 1976a; Tizado & Núñez-Perez 1991; Pons et al. 2011); **Switzerland** (Mackauer & Finlayson 1967; Mackauer 1968c); **Tajikistan** (Starý & González 1978; Starý 1979a); **Tunisia** (Zouari et al. 2018); **Türkiye** (Demirhan & Çetin Erdoğan 2023); **Turkmenistan** (Starý & González 1978; Starý 1979a); **United Kingdom** (Davidian & Rispin 2016); **Uzbekistan** (Starý & González 1978; Starý 1979a; Daminova et al. 2001; Aripov 2003).

### *Praon bicolor* Mackauer, 1959 [Fig. 67A]

*Praon bicolor* Mackauer, 1959a:824. Holotype ♀, paratype ♂ (CNC). – Germany.

***Hosts.*** ***Cinara obscura*** Bradley (Michelena et al. 1998); ***Cinara pineti*** (Fabricius) (Núñez-Perez & Tizado 1996; Wiackowski et al. 2001; Kavallieratos et al. 2004, 2016; Žikić et al. 2012; Davidian & Gavrilyuk 2014; Davidian 2019a); ***Cinara*** sp. (Mackauer & Starý 1967; Kavallieratos et al. 2016); ***Eulachnus agilis*** (Kaltenbach) (Mackauer 1959a; Mackauer & Starý 1967; Starý 1977, 1987a, 2006; Kierych 1980; Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Eulachnus rileyi*** (Williams) (Starý 1976a; Tremblay 1976; Núñez-Perez & Tizado 1996; Kavallieratos et al. 2004, 2016; Baker & Broad 2009; Žikić et al. 2012); ***Eulachnus*** spp. (Starý 1965a; Mackauer & Starý 1967; Davidian 2019a); *Metopolophium dirhodum* (Walker) (Polgár 1984); *Schizaphis* sp. (Derocles et al. 2012); *Semiaphis dauci* (Fabricius) (Wiackowski et al. 2001).

***Distribution.*** **Czech Republic** (Starý 1966c, 1977, 1987a, 1989a, 2006; Mackauer & Starý 1967; Starý & Havelka 2008); **Finland** (BOLD:AAE7186); **France** (Starý et al. 1971; Derocles et al. 2012); **Germany** (Mackauer 1959a; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1981, 1983, 1984); **Iran** (Farahani et al. 2015; Rakhshani et al. 2019); **Italy** (Tremblay 1975a, 1976; Starý 1976a; Bergamesco et al. 1995); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Kavallieratos et al. 2016); **North Macedonia** (Kavallieratos et al. 2016); **Poland** (Kierych 1980; Olszak 1994; Huflejt 1997; Wiackowski &

Wiackowska 2000; Wiackowski et al. 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Starý 1965a; Mackauer & Starý 1967; Davidian & Gavrilyuk 2014; Davidian 2019a, 2019b; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024); **Serbia** (Tomanović et al. 1998a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); **Slovakia** (Starý 1977, 1989a); **Spain** (Mackauer & Starý 1967; Starý 1976a; Tizado & Núñez-Perez 1991; Núñez-Perez & Tizado 1996; Michelena et al. 1998); **Syria** (Abo Kaf & Alrostom 2020); **Ukraine** (Kaliuzhna 2019a, 2019b); **United Kingdom** (Baker & Broad 2009).

### *Praon brachycerum* (Ji & Zhang, 1992)

*Parapraon brachycerum* Ji & Zhang, 1992:101. Holotype ♀, paratypes ♀ ♂ (NWAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Ji & Zhang 1992; Chen & Shi 2001).

### *Praon breviantennalis* Kocić & Tomanović, 2024

*Praon breviantennalis* Kocić & Tomanović [in Čkrkić et al.], 2024b:7. Holotype ♀, paratypes ♀ (FBUB). – Norway.

***Host.*** Unknown.

***Distribution.*** **Norway** (Kocić et al. 2024b).

### *Praon brevepetiolatum* Chiriac, 1995

*Praon brevepetiolatum* Chiriac, 1995:50. Holotype ♀, paratype ♂ (ASM). – Moldova.

***Host.*** ***Coloradoa heinzei*** (Börner) (Chiriac 1996).

***Distribution.*** **Kazakhstan** (Davidian 2019a); **Moldova** (Chiriac 1996; Davidian 2019a).

### *Praon brevistigma* van Achterberg, 2006 [Fig. 67B]

*Praon brevistigma* van Achterberg, 2006:23. Holotype ♀ (ZMUC), paratypes ♀♀ ♂♂ (ZMUC, RMNH). – Greenland.

***Host.*** Unknown.

***Distribution.*** **Greenland** (van Achterberg 2006).

### *Praon callaphis* Mackauer & Sullivan, 1982 [Fig. 67C]

*Praon callaphis* Mackauer & Sullivan, 1982:1159. Holotype ♀, paratypes ♀♀ ♂♂ (CNC). – USA.

***Host.*** ***Panaphis juglandis*** (Goeze) (Mackauer & Sullivan 1982).

***Distribution.*** **Afghanistan, USA** (Mackauer & Sullivan 1982).

### *Praon capitophori* Takada, 1968

*Praon capitophori* Takada, 1968:83. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Host.*** ***Capitophorus*** sp. (Takada 1968, 1973; Starý 1975a).

***Distribution.*** **Japan** (Takada 1968, 1973; Starý 1975a; Konishi & Maetô 2000).

### *Praon caricicola* Mackauer, 1967 [Fig. 67D]

*Praon caricicola* Mackauer, 1967a:140. Holotype ♀, paratypes ♀♀ ♂ (CNC). – Germany.

***Host.*** ***Iziphya memorialis*** (Mackauer 1967a; Mackauer & Starý 1967).

***Distribution.*** **Germany** (Mackauer 1967a; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1983).

### *Praon carinum* Johnson, 1987 [Fig. 67E]

*Praon carinum* Johnson, 1987:1007. Holotype ♀, paratypes ♀ ♂ (CNC). – Canada.

***Host.*** ***Chaitophorus nudus*** Richards (Johnson 1987).

***Distribution.*** **Canada** (Johnson 1987).

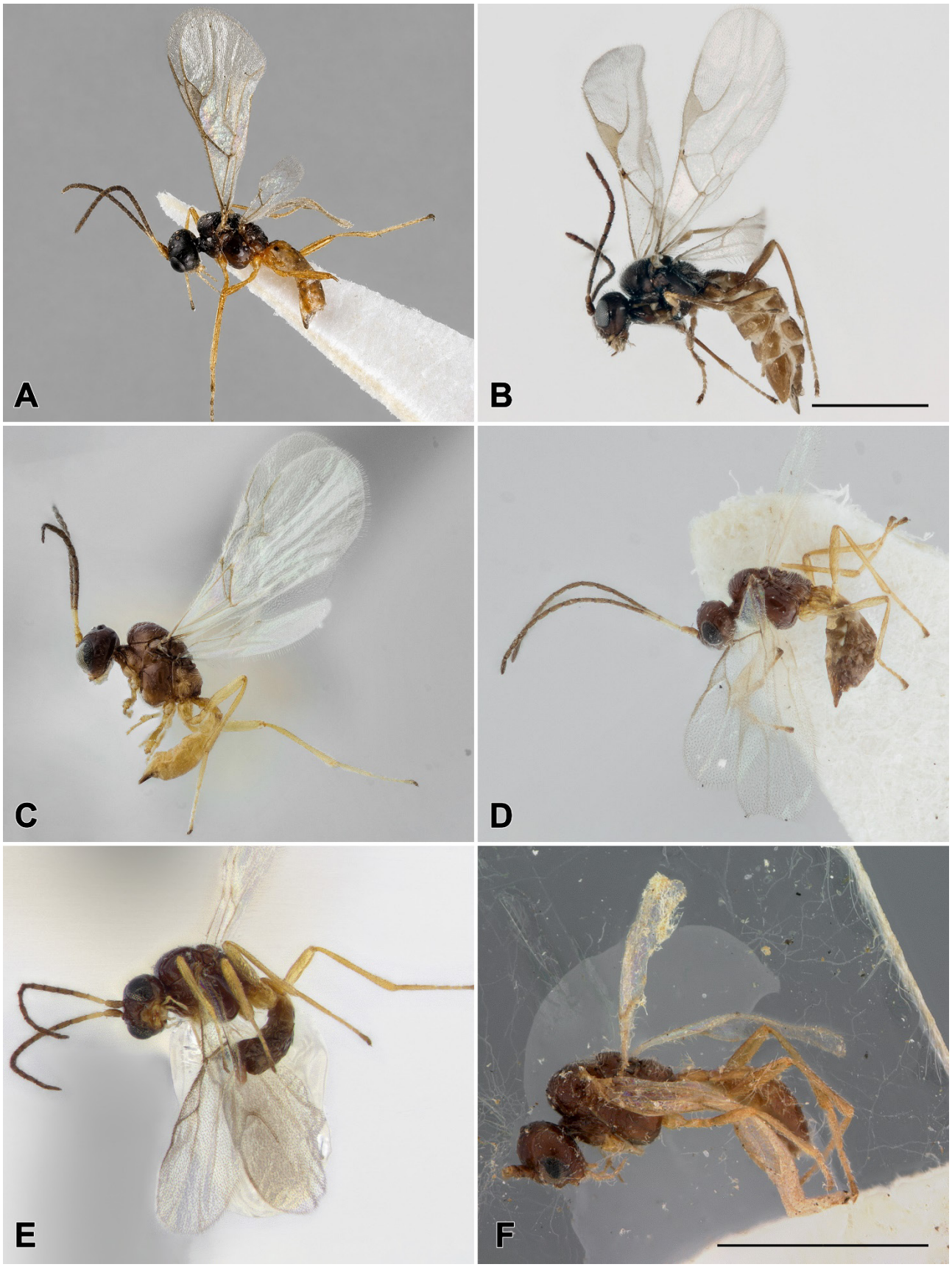



**Figure 67.** Species of the genus *Praon* Haliday, 1833. **A.** *Praon bicolor* Mackauer, 1959 – Finland, ZMHF; **B.** *Praon brevistigma* van Achterberg, 2006 – Holotype, ZMUC; C. *Praon callaphis* Mackauer & Sullivan, 1982 – Holotype, CNC; **D.** *Praon caricicola* Mackauer, 1967 – Holotype, CNC; **E.** *Praon carinum* Johnson, 1987 – Holotype, CNC; **F.** *Praon cerasaphis* (Fitch, 1855) – Lectotype, USNM. Scale bar: 1 mm.

### *Praon cavariellae* Starý, 1971

*Praon cavariellae* Starý [in Starý et al.], 1971:27. Holotype ♀ (MNHN), paratypes ♀♀ ♂♂ (MNHN, IECA). – France.

***Hosts.*** ***Cavariella aegopodii*** (Scopoli) (Starý et al. 1971); ***Cavariella theobaldi*** (Gillette & Bragg) (Starý et al. 1977a; Starý 2006; Baker & Broad 2013); ***Cavariella*** sp. (Starý 2006)

***Distribution.*** **Czech Republic** (Starý et al. 1971; Starý 1989a, 2006); **Finland** (BOLD:ACU0567); **France** (Starý et al. 1971, 1977a); **Hungary** (Polgár 1987); **Russia** (Davidian & Manukyan 2024; Davidian 2019a, 2019b); **United Kingdom** (Baker & Broad 2013).

### *Praon cerasaphis* (Fitch, 1855) [Fig. 67F]

*Trioxys cerasaphis* Fitch, 1856:138. Lectotype ♂ (after Mackauer 1968a) (USNM). – USA.

***Hosts.*** ***Acyrthosiphon pisum*** (Harris) (Chittenden 1901, 1909; Davis 1915; Treherne 1916); ***Hyalopteroides humilis*** (Walker) (Hayhurst 1909b); ***Macrosiphum rosae*** (Linnaeus) (Withington 1909).

***Distribution.*** **Canada** (Fletcher 1900; Treherne 1916); **USA** (Smith 1890; Ashmead 1900a; Chittenden 1901; Szépligeti 1904; Hayhurst 1909b; Withington 1909; Viereck 1910; Gahan 1911a; Muesebeck 1928; Smith 1944; Muesebeck & Walkley 1951).

### *Praon changbaishanense* Shi, 2001

*Praon changbaishanense* Shi [in Chen & Shi], 2001:206. Holotype ♂ (FAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chen & Shi 2001).

### *Praon coloradense* Ashmead, 1890 [Fig. 68A]

*Praon coloradensis* Ashmead, 1890:20. Holotype ♂ (USNM). – USA.

***Hosts.*** ***Nearctaphis bakeri*** (Cowen) (Smith 1923); ***Periphyllus negundinis*** (Thomas) (Gahan 1911a; Webster 1917); ***Uroleucon bicolor*** (Nevsky) (Gahan 1911a).

***Distribution.*** **USA** (Ashmead 1890; Webster 1895, 1917; Szépligeti 1904; Smith 1923; Gahan 1911a; Muesebeck & Walkley 1951; Muesebeck 1958a; Mackauer & Starý 1967).

### *Praon coniforme* Pike & Starý, 2000 [Fig. 68B]

*Praon coniforme* Pike & Starý [in Pike et al.], 2000:720. Holotype ♀ (USNM), paratypes ♀ ♂♂ (IECA, WSUJ). – USA.

***Host.*** ***Aphthargelia symphoricarpi*** (Thomas) (Pike et al. 2000).

***Distribution.*** **USA** (Pike et al. 2000).

### *Praon coreanum* Takada, 1979

*Praon coreanum* Takada, 1979b:185. Holotype ♀, paratype ♀ (HNHM). – North Korea.

***Host.*** Unknown.

***Distribution.*** **North Korea** (Takada 1979b; Starý & Choi 2000; Kim 2026); **South Korea** (Davidian 2019a).

### *Praon cowiche* Hollingbery & Pike, 2012

*Praon cowiche* Hollingbery & Pike, 2012:624. Holotype ♀ (USNM), paratype ♀♀♂♂ (WSUP). – USA.

***Hosts.*** ***Pleotrichophorus elongatus*** (Knowlton), ***Pleotrichophorus pycnorhysus*** (Knowlton & Smith), ***Uroleucon erigeronense*** (Thomas) (Hollingbery et al. 2012).

***Distribution.*** **USA** (Hollingbery et al. 2012).

### *Praon dorsale* (Haliday, 1833)

*Aphidius dorsalis* Haliday, 1833:484. Lectotype ♀ (after Mackauer 1968a) (NHMUK). – United Kingdom.

**Syn.:** *Blacus discolor* Nees von Esenbeck, 1834; *Praon collare* Förster, 1867 [*nomen nudum*].

***Hosts.*** ***Acyrthosiphon gossypii*** Mordvilko (Starý 1965a; Mackauer & Starý 1967); ***Acyrthosiphon ilka*** Mordvilko (Györfi 1960); ***Acyrthosiphon kondoi*** Shinji (González et al. 1979); ***Acyrthosiphon pisum*** (Harris) (Györfi 1960; Starý 1964d, 1965a, 1966c, 1966d, 1975a; Takada 1968, 1973; Hozák 1970; Mustata 1986; Wiackowski et al. 1997, 2001; Müller & Godfray 1998; Olbrycht 1999; Müller et al. 1999; Chen & Shi 2001; Jones et al. 2009); ***Acyrthosiphon*** sp. (Takada 1973); ***Amphicercidus tuberculatus*** David, Narayanan & Rajasingh (Bhagat 1984); ***Amphorophora rubi*** (Kaltenbach) (Müller et al. 1999); *Aphis craccivora* Koch (Chen & Shi 2001; Oğuzoğlu & Avcı 2025); *Cinara pini* (Linnaeus) (Oğuzoğlu & Avcı 2025); ***Corylobium avellanae*** (Schrank) (Tremblay & Pennacchio 1985; Viggiani 1988; Starý 2006; Mitrovski-Bogdanović et al. 2014); ***Hyperomyzus lactucae*** (Linnaeus) (Aeschlimann & Vitou 1985); ***Indomegoura indica*** (van der Goot) (Watanabe & Takada 1964b; Takada 1968, 1973; Tao & Chiu 1971; Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Macrosiphoniella artemisiae*** (Boyer de Fonscolombe) (Starý 1977); ***Macrosiphoniella linariae*** (Koch) (Starý 1966c; Mackauer & Starý 1967); ***Macrosiphoniella sanborni*** (Gillette) (Bhagat 1984); ***Macrosiphoniella staegeri*** Hille Ris Lambers (Mackauer & Starý 1967); ***Macrosiphoniella*** sp. (Bhagat 1986b); ***Macrosiphum cholodkovskyi*** (Mordvilko) (Mitrovski-Bogdanović et al. 2014); ***Macrosiphum euphorbiae*** (Thomas) (Aeschlimann & Vitou 1985); ***Macrosiphum funestum*** (Macchiati) (Müller et al. 1999; Mitrovski-Bogdanović et al. 2014); ***Macrosiphum ptericolens*** Patch (Müller et al. 1999); ***Macrosiphum*** sp. (Mitrovski-Bogdanović et al. 2014); ***Megoura viciae*** Buckton (Starý 1966c; Mackauer & Starý 1967; Müller et al. 1999; Jones et al. 2009); ***Microlophium carnosum*** (Buckton) (Mackauer & Starý 1967; Müller et al. 1999); ***Paczoskia major*** **Börner** (Starý 1966c; Mackauer & Starý 1967); ***Paczoskia*** sp. (Mescheloff & Rosen 1988); ***Staticobium limonii*** Contarini (Starý et al. 1975, 1977a; Starý 1976a); ***Uroleucon aeneum*** (Hille Ris Lambers) (Tremblay 1976; Völkl & Starý 1988); ***Uroleucon campanulae*** (Kaltenbach) (Starý 1966c; Mackauer & Starý 1967); ***Uroleucon carlinae*** (Börner) (Starý et al. 1971); ***Uroleucon carthami*** (Hille Ris Lambers) (Starý 1961h, 1965a, 1966d, 1976a; Mackauer & Starý 1967; Mescheloff & Rosen 1988); ***Uroleucon chondrillae*** (Nevsky) (Starý et al. 1971, 1973, 1975; Starý 1976a); ***Uroleucon cichorii*** (Koch) (Starý 1962b, 1964d, 1966c, 1976a, 1977; Mackauer & Starý 1967; Starý et al. 1971, 1973; González & Michelena 1987; Völkl & Starý 1988; Starý 1995b; Atanassova 1997; Kolarov 1997; Žikić et al. 2012); ***Uroleucon cirsii*** (Linnaeus) (Barczak 1993); ***Uroleucon formosanum*** (Takahashi) (Tao & Chiu 1971; Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Uroleucon gobonis*** (Matsumura) (Takada 1968; Tao & Chiu 1971; Liu 1975; Starý 1975a; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Uroleucon hypochoeridis*** (Fabricius) (Mackauer & Starý 1967; Kierych 1975); ***Uroleucon jaceae*** (Linnaeus) (Starý 1964d, 1966c, 1966d, 1976a, 1977, 1995b; Mackauer & Starý 1967; Starý et al. 1971, 1975, 1977a; Völkl & Starý 1988; Güz & Kılınçer 2005); ***Uroleucon obscurum*** (Koch) (Starý 1965a; Mackauer & Starý 1967; Starý et al. 1971); ***Uroleucon ochropus*** (Hille Ris Lambers) (Starý et al. 1977a); ***Uroleucon picridis*** (Fabricius) (Takada 1968; Starý 1975a; Mescheloff & Rosen 1988; Cecilio & Ilharco 2002); ***Uroleucon solidaginis*** (Fabricius) (Starý et al. 1971); ***Uroleucon sonchi*** (Linnaeus) (Starý 1962b, 1976a; Mackauer & Starý 1967; Fulmek 1968; Starý et al. 1973; Aeschlimann & Vitou 1985; González & Michelena 1987; Starý & Sekkat 1987; Mescheloff & Rosen 1988; Atanassova 1997; Kolarov 1997; Suay Cano & Michelena Saval 1998); ***Uroleucon tanaceti*** (Linnaeus) (Starý et al. 1971); ***Uroleucon taraxaci*** (Kaltenbach) (Starý 1964d, 1966c; Mackauer & Starý 1967; Starý et al. 1977a); ***Uroleucon tussilaginis*** (Walker) (Mackauer 1959a, 1962c; Mackauer & Starý 1967); ***Uroleucon*** spp. (Roberti 1969; Starý et al. 1975; Tremblay 1976; Starý 1977, 1979a, 1986a, 1987a; Sanchis et al. 2000; Chen & Shi 2001; Wei et al. 2005).

***Distribution.*** **Andorra** (Sanchis et al. 1999); **Austria** (Mackauer 1959a; Mackauer & Starý 1967); **Bulgaria** (Starý 1962b, 1976a; Mackauer & Starý 1967; Atanassova 1997; Kolarov 1997); **China** (Liu 1975; Starý 1975a; Chou 1981; Dong & Wang 1985; Chen & Shi 2001; Chen et al. 2009); **Czech Republic** (Starý 1966c, 1977, 1986a, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Hozák 1970; Mitrovski-Bogdanović et al. 2014; Davidian 2019a); **Finland** (Mackauer 1968c; Hellén 1971; Koponen & Vikberg 1984b); **France** (Starý et al. 1971, 1973, 1975, 1977a; Starý 1976a; Aeschlimann & Vitou 1985); **Germany** (Nees von Esenbeck 1834a; Kirchner 1867; Marshall 1896; Szépligeti 1904; Mackauer 1959a, 1962c; Mackauer & Starý 1967; Boness & Starý 1988; Völkl & Starý 1988; Belokobylskij & Taeger 2001; Belokobylskij et al.

2003); **Georgia** (Davidian 2019a | BOLD:AEJ5438); **Greece** (Aeschlimann & Vitou 1985); **Hungary** (Györfi 1960; Mackauer & Starý 1967; Polgár 1981, 1983); **India** (Mackauer & Starý 1967; Dharmadhikari & Ramaseshiah 1970; Starý & Ghosh 1983; Bhagat 1984, 1986b; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a); **Iraq** (Aeschlimann & Vitou 1985); **Ireland** (Mackauer 1959a; Mackauer & Starý 1967); **Italy** (Starý 1966d, 1976a; Mackauer & Starý 1967; Roberti 1969; Tremblay 1976; Tremblay & Pennacchio 1985; Viggiani 1988; Bergamesco et al. 1995); **Japan** (Watanabe & Takada 1964b; Takada 1968, 1973; Starý 1975a; González et al. 1979); **Kazakhstan** (Davidian 2019a); **Moldova** (Talitzky & Kuslitzky 1990); **Montenegro** (Mitrovski-Bogdanović et al. 2014); **Morocco** (Starý & Sekkat 1987); **Netherlands** (Szépligeti 1904; Papp et al. 1996); **Norway** (Riedel & Hansen 2014; Mjøs et al. 2024); **Palestine** (Mescheloff & Rosen 1988); **Poland** (Kirchner 1867; Mackauer & Starý 1967; Kierych 1975; Barczak 1993; Huflejt 1997; Wiackowski et al. 1997, 2001; Olbrycht 1999; Tran & Piekarska-Boniecka 2017); **Portugal** (Cecilio & Ilharco 2002); **Romania** (Mustata 1986); **Russia** (Starý 1961h, 1965a; Mackauer & Starý 1967; Mackauer 1968c; Davidian 2007, 2019a, 2019b, 2019c; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian & Humala 2023); **Serbia** (Tomanović et al. 1998a; Mitrovski-Bogdanović et al. 2013, 2014; Žikić et al. 2000, 2012); **Slovakia** (Starý 1977, 1989a); **South Korea** (Paik 1975; Starý & Choi 2000); **Spain** (Quilis-Pérez 1931b; Starý 1976a; Tizado & Núñez-Perez 1991; González & Michelena 1987; Suay Cano & Michelena Saval 1998; Sanchis et al. 2000); **Sweden** (Thomson 1895; Szépligeti 1904; Mackauer 1959a; Mackauer & Starý 1967); **Switzerland** (Mackauer 1959a; Mackauer & Starý 1967; Mitrovski-Bogdanović et al. 2013, 2014); **Tajikistan** (Starý 1965a, 1979a); **Türkiye** (Aeschlimann & Vitou 1985; Güz & Kılınçer 2005; Davidian 2019a; Oğuzoğlu & Avcı 2025); **Turkmenistan** (Starý 1965a, 1979a); **Ukraine** (Starý 1961h, 1965a); **United Kingdom** (Smith 1853; Curtis 1837; Kirchner 1867; Marshall 1872a, 1896; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1959a, 1961b; Mackauer & Starý 1967; Müller & Godfray 1998; Müller et al. 1999; van Veen et al. 2008); **Uzbekistan** (Starý 1965a, 1979a; Daminova et al. 2001; Daminova 2007; Aripov 2003).

***Remarks.*** Due to the complications in the taxonomy, there is a big complexity in the recorded host range and distribution of *Praon dorsale*. The group associated with *Urolecucon* and *Macrosiphoniella* aphids most probably belongs to *Praon yomenae* Takada, while the real *Praon dorsale* is mostly restricted to *Corylobium avellanae* (Schrank) and *Macrosiphum* species (Mitrovski-Bogdanović et al. 2014). Records of associations with *Acyrthosiphon*, *Aulacorthum*, *Amphrophora*, and *Macrosiphum* species might refer to *Praon longicorne* Marshall (see Tremblay & Pennacchio 1985; Tremblay et al. 1986).

### *Praon exsoletum* (Nees, 1811) [Fig. 68C]

*Bracon exsoletus* Nees von Esenbeck, 1811:30. Syntype ♂ (ZMHB, destroyed). – Germany.

*Praon exsoletum*: Mackauer, 1959a:832. Neotype ♀ (ZMHB). – Germany.

**Syn.** *Praon palitans* Muesebeck, 1956.

***Hosts.*** *Acyrthosiphon pisum* (Harris) (Monajemi & Esmaili 1981; Starý et al. 2000; Davidian 2019a); *Amphorophora rubi* (Kaltenbach) (Fulmek 1968); *Aphis craccivora* Koch (Luzhetski 1960; Ataeva 1961); *Aphis medicaginis* Koch (Starý 1966c; Chen & Shi 2001); *Eriosoma lanuginosum* (Hartig) (Rondani 1872); *Eriosoma ulmi* (Linnaeus) (Fulmek 1968); *Hyalopterus pruni* (Geoffroy) (Reinhard 1856); *Macrosiphum rosae* (Linnaeus) (Nees von Esenbeck 1834b; Rondani 1876; Žikić et al. 2012); *Macrosiphum stellariae* Theobald (Wiackowski et al. 1997, 2001); *Metopolophium dirhodum* (Walker) (Polgár 1984); ***Therioaphis bonjeaniae*** Hille Ris Lambers & van Den Bosch (Mackauer & Starý 1967); ***Therioaphis brachytricha*** Hille Ris Lambers & van Den Bosch (Mackauer & Starý 1967); ***Therioaphis ononidis*** (Kaltenbach) (Starý et al. 1973; Starý 1976a); ***Therioaphis riehmi*** (Börner) (van den Bosch 1957; Mackauer 1959e; Mackauer & Starý 1967; Muesebeck 1967; Mackauer & Campbell 1972; Marsh 1979; Finlayson 1990; Starý et al. 2000; Pike et al. 2000); ***Therioaphis tenera*** (Aizenberg) (Davidian 2019c); ***Therioaphis trifolii*** (Monell) (Harpaz 1955; Muesebeck 1956, 1958a; van den Bosch 1957, 1964; van den Bosch et al. 1958a, 1959b; Mackauer 1959e, 1962c; Schlinger & Hall 1959; Schlinger & Hall 1960a, 1960b; Farahbakhsh 1961; Force & Messenger 1964a; Mackauer & Starý 1967; Messenger 1968; Avidov & Harpaz 1969; Angalet 1970; Hozák 1970; Starý et al. 1971, 2000; Starý 1976a, 1977, 1979a, 1987a, 1995b, 2006; Marsh 1979; Aeschlimann

1981; Monajemi & Esmaili 1981; Starý & Erdelen 1982; Haeselbarth 1983; Tremblay et al. 1985; González & Michelena 1987; Mescheloff & Rosen 1988; Pennacchio & Tremblay 1988; Tremblay & Pennacchio 1988a; Rasulian 1989; Finlayson 1990; Pike et al. 1996, 2000; Kolarov 1997; Vidal 1997a; Tomanović et al. 1999b; Kavallieratos et al. 2001, 2003, 2004; Uysal et al. 2004; Wei et al. 2005; Rakhshani et al. 2006a, 2007a, 2012b; Laamari et al. 2011, 2012; Kos et al. 2012; Nazari et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Ferrer-Suay et al. 2017; Davidian 2019a); ***Therioaphis*** spp. (Mackauer 1959a, 1962c; Starý 1965a, 1966c, 1966d, 2006; Starý & Kaddou 1971); *Uroleucon sonchi* (Linnaeus) (Ghelamallah et al. 2018).

***Distribution.*** **Algeria** (Laamari et al. 2011, 2012; Ghelamallah et al. 2018; Rakhshani et al. 2019); **Andorra** (Sanchis et al. 1999); **Belgium** (Wesmael 1835; Marshall 1899; Leclercq 1946; Mackauer & Starý 1967; Lopes et al. 2016); **Bulgaria** (Starý 1976a; Kolarov 1997; Kavallieratos et al. 2005b; Todorov 2007, 2014); **Canada** (Mackauer & Campbell 1972; Wylie & Bisdee 1987; Johnson 1987); **China** (Chen & Shi 2001); **Cyprus** (Aeschlimann 1981; Kavallieratos et al. 2004); **Czech Republic** (Starý 1966c, 1977, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Hozák 1970; Ferrer-Suay et al. 2017; Davidian 2019a); **Egypt** (Mackauer 1959a; Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Dours 1873; Gaulle 1908; Marshall 1900; Szépligeti 1904; Muesebeck 1956, 1958a; Mackauer 1959e; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1977a; Starý 1976a; Aeschlimann 1981); **Germany** (Nees von Esenbeck 1834a; Kirchner 1867; Marshall 1896; Szépligeti 1904; Mackauer 1959a, 1961b, 1962c; Mackauer & Starý 1967; Belokobylskij & Taeger 2001; Belokobylskij et al. 2003); **Greece** (Györfi 1941, 1960; Aeschlimann 1981; Polgár 1981, 1982, 1983, 1984; Vidal 1997a; Kavallieratos et al. 2001, 2003, 2004); **Iran** (van den Bosch 1957; Mackauer & Starý 1967; Starý 1979a; Monajemi & Esmaili 1981; Starý et al. 2000; Rakhshani et al. 2006a, 2007a, 2012b, 2019; Fallahzadeh & Saghaei 2010; Nazari et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Ghotbi Ravandi et al. 2017); **Iraq** (Starý & Kaddou 1971; Starý 1976a; Al-Hussainawy et al. 2019; Rakhshani et al. 2019); **Italy** (Rondani 1876; Marshall 1896; Szépligeti 1904; Muesebeck 1958a; Mackauer 1959a; Starý 1966d, 1976a; Mackauer & Starý 1967; Aeschlimann 1981; Pennacchio & Tremblay 1988; Tremblay & Pennacchio 1988a; Bergamesco et al. 1995); **Lebanon** (van den Bosch 1957; Starý 1976a; Tremblay et al. 1985; Rakhshani et al. 2019); **Mexico** (Mackauer & Starý 1967; Starý & Remaudière 1988; Finlayson 1990; Coronado-Blanco et al. 2004); **Moldova** (Talitzky & Kuslitzky 1990; Davidian 2019a); **Montenegro** (Fahringer 1925); **Palestine** (Harpaz 1955; Muesebeck 1956, 1958a; Mackauer 1959a, 1959e; Mackauer & Starý 1967; Avidov & Harpaz 1969; Starý 1976a; Mescheloff & Rosen 1988); **Netherlands** (Mackauer & Starý 1967); **Pakistan** (BOLD:ACE2830); **Poland** (Niezabitowski 1910; Mackauer & Starý 1967; Huflejt 1997; Wiackowski et al. 1997, 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Mackauer & Starý 1967; Davidian & Gavrilyuk 2014; Davidian 2019a, 2019b, 2019c; Davidian & Humala 2023; Shpanev 2025); **Saudi Arabia** (Ahmad & Bakr 2013; Rakhshani et al. 2019); **Serbia** (Fahringer 1925; Muesebeck 1956, 1958a; van den Bosch 1957; Mackauer & Starý 1967; Tomanović et al. 1998a, 1999b; Tomanović & Brajković 2001; Kavallieratos et al. 2004; Žikić et al. 2012); **Slovakia** (Starý 1989a); **Slovenia** (Kos et al. 2012); **South Africa** (BOLD:ACE2830); **Spain** (Quilis-Pérez 1931b; Starý 1976a; González & Michelena 1987; Tizado & Núñez-Perez 1991; Sanchis et al. 1995; Nieves-Aldrey et al. 2003; Pons et al. 2011, 2013); **Switzerland** (Mackauer & Starý 1967); **Tajikistan** (Ataeva 1961; Starý 1965a, 1979a); **Türkiye** (van den Bosch 1957; Mackauer & Starý 1967; Starý 1976a; Uysal et al. 2004; Çetin Erdoğan et al. 2008; Akar & Çetin Erdoğan 2017; Rakhshani et al. 2019); **Ukraine** (Kaliuzhna 2019b); **United Kingdom** (Curtis 1837; Smith 1853; Marshall 1872a, 1896; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer & Starý 1967; Davidian & Rispin 2016); **USA** (Muesebeck 1956, 1958a, 1967; van den Bosch et al. 1957, 1959a, 1959b, 1964; Hagen et al. 1958; Mackauer 1959e, 1962c; Schlinger & Hall 1960a, 1960b; Mackauer & Starý 1967; Angalet 1970; Gutierrez & van den Bosch 1970; Johnson 1987; Finlayson 1990; Pike et al. 1996, 2000; Davidian 2019a); **Uzbekistan** (Luzhetski 1960; Starý 1965a, 1979a; Daminova et al. 2001; Aripov 2003); **Yemen** (Starý & Erdelen 1982; Starý et al. 2014b; Rakhshani et al. 2019).

***Remarks.*** *Praon exsoletum* is a specialized parasitoid of *Therioaphis* aphids. All other records are suspicious.

### *Praon flavicorne* Starý, 1971

*Praon flavicorne* Starý [in Starý et al.], 1971:28. Holotype ♀ (MNHN), paratypes ♀♀ ♂♂ (IECA). – France.

***Hosts.*** ***Agrioaphis castanicola*** Baker, ***Betulaphis*** sp. (Starý 2006); ***Capitophorus hippophaes*** (Walker) (Starý & Remaudière 1987); ***Capitophorus horni*** Börner (Starý et al. 1971; Robert et al. 1972; Starý & Remaudière 1987); ***Eucallipterus tiliae*** (Linnaeus) (Starý 1995b, 2006); ***Euceraphis punctipennis*** (Zetterstedt) (Starý 2006); ***Leomyzocallis walshii*** (Monell), ***Myzocallis carpini*** (Koch), ***Myzocallis coryli*** (Goeze), ***Phyllaphis fagi*** (Linnaeus), ***Tinocallis platani*** (Kaltenbach), ***Tuberculatus annulatus*** (Hartig) (Starý 2006).

***Distribution.*** **Czech Republic** (Starý 1995b, 2006); **France** (Starý et al. 1971, 1977a; Robert et al. 1972); **Russia** (Davidian 2019b).

***Remarks.*** According to the original description (Starý et al. 1971), some paratypes are deposited in the collections of G. Remaudière and J.M. Rabasse (France), which may be transferred to other collections.

### *Praon flavinode* (Haliday, 1833) [Fig. 68D]

*Aphidius flavinodis* Haliday, 1833:485. Syntype ♀ (NHMUK, lost). – United Kingdom.

***Syn.*** *Blacus emacerator* Nees 1834; *Praon glabrum* Starý & Schlinger, 1967 [Fig. 69B].

***Hosts.*** ***Agrioaphis castanicola*** Baker (Starý 1987a; Derocles et al. 2014a); *Aphis gossypii* Glover (Dharmadhikari & Ramaseshiah 1970); *Aphis pomi* De Geer (Fulmek 1968); ***Betulaphis quadrituberculata*** (Kaltenbach) (Mackauer & Starý 1967; Starý 1978a; Kierych 1980); ***Calaphis flava*** Mordvilko (Mackauer & Heie 1965; Mackauer & Starý 1967; Starý 1978a; Žikić et al. 2012; Kavallieratos et al. 2004, 2016); ***Callipterinella calliptera*** (Hartig) (Mackauer & Heie 1965); ***Callipterinella tuberculata*** (von Heyden) (Mackauer & Starý 1967; Starý 1978a); ***Corylobium avellanae*** (Schrank), ***Elatobium abietinum*** (Walker) (Mackauer 1959a); ***Eucallipterus tiliae*** (Linnaeus) (Marshall 1891, 1899; Rudow 1918; Mackauer 1959a, 1962c; Györfi 1960; Starý & Rupais 1964; Starý 1964d, 1965a, 1966c, 1977, 1978a, 1987a, 1995b; Mackauer & Starý 1967; Vassileva-Sumnalieva 1976; Kierych 1980; Atanassova 1997; Wiackowski et al. 2001; Kavallieratos et al. 2004, 2016; Derocles et al. 2012; Žikić et al. 2012; Ferrer-Suay et al. 2017; Davidian & Manukyan 2024); ***Euceraphis betulae*** (Koch) (Starý & Schlinger 1967; Kierych 1980); ***Euceraphis punctipennis*** (Zetterstedt) (Petersen 1956; Mackauer 1959a, 1962c; Mackauer & Heie 1965; Mackauer & Starý 1967; Starý & Schlinger 1967; Takada 1968, 1973; Kierych 1975, 1980; Starý 1975a, 1977, 1978a, 1987a; Michelena et al. 1998; Chen & Shi 2001; Wiackowski et al. 2001; Starý & Havelka 2008; Davidian & Gavrilyuk 2014); ***Leomyzocallis walshii*** (Monell) (Havelka & Starý 2007); *Microlophium carnosum* (Buckton) (Mackauer 1959a); ***Myzocallis carpini*** (Koch) (Starý 1964d, 1966c, 1978a, 1987a; Mackauer & Starý 1967); ***Myzocallis coryli*** (Goeze) (Wiackowski et al. 2001; Starý & Havelka 2008; Derocles et al. 2014a); ***Panaphis juglandis*** (Goeze) (Wiackowski et al. 2001); ***Phyllaphis fagi*** (Linnaeus) (Mackauer 1962c; Mackauer & Starý 1967; Starý 1978a, 1987a); *Sitobion avenae* (Fabricius) (Ivanov 1927; Mackauer 1959a; Chen & Shi 2001); ***Tinocallis nevskyi*** Remaudière, Quednau & Heie (Barahoei et al. 2010, 2012, 2013); ***Tinocallis platani*** (Kaltenbach) (Starý 1966c, 1978a, 1987a; Mackauer & Starý 1967); ***Tuberculatus albosiphonatus*** Hille Ris Lambers (Starý & Kaddou 1971; Starý 1976a); ***Tuberculatus annulatus*** (Hartig) (Mackauer 1959a, 1962c; Starý 1966c, 1978a, 1987a; Vassileva-Sumnalieva 1976; Barczak 1994; Atanassova 1997; Wiackowski et al. 2001; Starý & Havelka 2008; Derocles et al. 2012); ***Tuberculatus moerickei*** Hille Ris Lambers (Starý 1976a); ***Tuberculatus querceus*** (Kaltenbach) (Mackauer & Starý 1967); ***Tuberculatus*** sp. (Starý 1969d; Starý & Kaddou 1971; Ferrer-Suay et al. 2017); *Uroleucon cichorii* (Koch), *Uroleucon jaceae* (Linnaeus) (Mackauer 1959a).

***Distribution.*** **Australia** (Mackauer & Starý 1967); **Austria** (Mackauer 1959a; Mackauer & Starý 1967); **Belarus** (BOLD:ACB7939); **Bulgaria** (Vassileva-Sumnalieva 1976; Atanassova 1997); **China** (Chen & Shi 2001); **Croatia** (Graeffe 1908); **Czech Republic** (Starý 1966c, 1977, 1978a, 1987a, 1989a, 1995b, 2006; Mackauer & Starý 1967; Havelka & Starý 2007; Starý & Havelka 2008; Ferrer-Suay et al. 2017); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Starý 1978a); **France** (Starý et al. 1971; Starý 1976a; Derocles et al. 2012, 2014a); **Georgia** (Starý 1978a); **Germany** (Mackauer 1959a, 1962c; Mackauer & Starý 1967; Starý 1978a; Belokobylskij et al. 2003);

**Hungary** (Györfi 1960; Mackauer & Starý 1967; Polgár 1983); **Iceland** (Petersen 1956; Mackauer & Starý 1967); **India** (Dharmadhikari & Ramaseshiah 1970; Das & Chakrabarti 2023a); **Iran** (Barahoei et al. 2010, 2012, 2013; Rakhshani et al. 2019); **Iraq** (Starý 1969d, 1976a; Starý & Kaddou 1971; Rakhshani et al. 2019); **Italy** (Mackauer 1959a; Bergamesco et al. 1995); **Japan** (Starý & Schlinger 1967; Takada 1968, 1973); **Latvia** (Starý & Rupais 1964; Mackauer & Starý 1967; Starý 1978a); **Netherlands** (Wesmael 1835; Mackauer & Starý 1967; Papp et al. 1996); **Norway** (Mjøs et al. 2024); **Poland** (Kierych 1975, 1980; Barczak 1994; Wiackowski et al. 2001); **Russia** (Starý 1965a, 1978a; Mackauer & Starý 1967; Davidian 2007, 2019b; Davidian & Gavrilyuk 2014; Davidian & Manukyan 2024); **Serbia** (Mackauer 1959a; Starý 1978a; Tomanović et al. 1998a; Kavallieratos et al. 2004, 2016; Žikić et al. 2012); **Slovakia** (Starý 1989a); **Spain** (Starý 1976a; Tizado & Núñez-Perez 1991; Michelena et al. 1998); **Sweden** (Mackauer & Starý 1967); **Switzerland** (van Achterberg & Rezbanyai-Reser 2001); **Türkiye** (Akar & Çetin Erdoğan 2017); **United Kingdom** (Haliday 1833; Mackauer 1959a; Mackauer & Starý 1967; Starý 1978a; Davidian & Rispin 2016); **Uzbekistan** (Aripov 2003).

***Remarks.*** No type specimens of this species were located in NHMUK. The few specimens present in the general collection, originating from the Marshall, Bignell, and Lyle collections, correspond to the concept of the species presented by Mackauer (1959a), which was based on material from Central Europe. Mackauer did not designate a neotype because he considered the typologically defined species *flavinode* (Haliday) likely to represent a complex of at least two distinct species. He further suggested that the name *flavinode* should be restricted to specimens reared from aphids of the subfamily Drepanosiphinae. Records of associations with *Uroleucon* aphids (Mackauer 1959a), might also refer to *Praon yomenae* Takada, 1968.

### *Praon fulvum* Pike & Starý, 2000 [Fig. 68E]

*Praon fulvum* Pike & Starý [in Pike et al.], 2000:722. Holotype ♀ (USNM), paratypes ♀♀ (IECA, WSUJ). – USA.

***Hosts.*** ***Macrosiphum euphorbiae*** (Thomas), ***Macrosiphum tuberculaceps*** (Essig), ***Macrosiphum*** sp. (Pike et al. 2000).

***Distribution.*** **USA** (Pike et al. 2000).

### *Praon gallicum* Starý, 1971 [Fig. 68F]

*Praon gallicum* Starý, 1971e:625. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, IECA). – France.

***Hosts.*** ***Acyrthosiphon kondoi*** Shinji (Starý 1993b, 1995c); ***Acyrthosiphon pisum*** (Harris) (Starý 1993b, 1995c; Starý et al. 1993a, 2007); ***Aphis gossypii*** Glover (Rogers et al. 1972); ***Diuraphis noxia*** (Mordvilko) (Starý 1995c, 2006; Pike et al. 2000; Bosque-Pérez et al. 2002); ***Macrosiphum*** spp. (Johnson 1987); ***Metopolophium dirhodum*** (Walker) (Starý 1976c, 1977, 1981b, 1987a, 1993b, 1995c, 2006; Johnson 1987; Höller et al. 1993; Tomanović et al. 1999b, 1999c, 2008c; Pike et al. 2000; Kavallieratos et al. 2004, 2005b; Žikić et al. 2012); ***Myzus*** sp. (Johnson 1987); ***Pleotrichophorus glandulosus*** (Kaltenbach) (Kavallieratos et al. 2004; Žikić et al. 2012); ***Rhopalomyzus*** sp. (Johnson 1987); ***Rhopalosiphum maidis*** (Fitch) (El-Serafy 1999; Starý 2006); ***Rhopalosiphum padi*** (Linnaeus) (Starý 1987a; Ibrahim 1990a, 1990b; Höller et al. 1993; Starý 1995c, 2006; El-Serafy 1999; Tomanović et al. 1999b, 1999c; Pike et al. 2000; Kavallieratos et al. 2004, 2005b; Bagheri-Matin et al. 2010; Nazari et al. 2012; Žikić et al. 2012; Davidian 2019a); ***Schizaphis graminum*** (Rondani) (Starý 1971e, 1979a, 1981b, 1993b, 2006; Gruber & Coutinot 1984; Johnson 1987; Gruber et al. 1994; El-Serafy 1999; Tomanović et al. 1999b, 1999c; Chen & Shi 2001; Kavallieratos et al. 2004, 2005b; Wei et al. 2005; Starý et al. 2007; Žikić et al. 2012); ***Sitobion avenae*** (Fabricius) (Höller et al. 1993; Starý et al. 1993a; Pankanin-Franczyk & Ceryngier 1995; Starý 1995c, 2006; El-Serafy 1999; Tomanović et al. 1999b, 1999c; Pike et al. 2000; Chen & Shi 2001; Kavallieratos et al. 2004, 2005b; Žikić et al. 2012); ***Sitobion fragariae*** (Walker) (Starý 1993b, 1995c; Starý et al. 1994b).

***Distribution.*** **Andorra** (Sanchis et al. 1999); **Argentina** (Tomanović et al. 2025); **Belgium** (Starý 1981b; Langer et al. 1998; Langer & Hance 2004; Jansen 2005; Lopes et al. 2016); **Brazil** (Starý et al. 2007); **Canada** (Johnson 1987); **Chile** (Gerding et al. 1989; Starý 1993b, 1994, 1995c; Starý et al. 1993a; Derocles et al. 2012); **China** (Zheng et al. 1987; Chen & Shi 2001); **Czech Republic** (Starý 1981b, 1987a, 1989a, 2006; Starý & González 1992; Starý & Havelka 2008; Davidian 2019a); **Egypt** (Ibrahim 1990a, 1990b; El-Serafy 1999;

Rakhshani et al. 2019); **France** (Starý et al. 1971; Starý 1971e, 1981b; Gruber & Coutinot 1984; Gruber et al. 1994; Derocles et al. 2012); **Germany** (Borgemeister & Poehling 1988; Höller et al. 1993; Adisu et al. 2002; Belokobylskij et al. 2003); **Greece** (Starý 1981b); **Hungary** (Polgár 1987); **Iran** (Bagheri-Matin et al. 2010; Nazari et al. 2012; Rakhshani et al. 2019); **Iraq** (BOLD:AAF0448); **Kazakhstan** (Davidian 2019a); **Netherlands** (Starý 1981b); **Norway** (Starý 1981b; Westrum et al. 2010; Mjøs et al. 2024); **Paraguay** (González Torres et al. 2018); **Poland** (Pankanin-Franczyk & Ceryngier 1995; Huflejt 1997; Pankanin-Franczyk & Sobota 1998; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2019a, 2019b; Shpanev 2025); **Serbia** (Tomanović et al. 1998a, 1999c, 2008c; Žikić et al. 2000, 2012; Tomanović & Brajković 2001; Kavallieratos et al. 2004, 2005b); **Slovakia** (Starý 1989a; Prasličká et al. 2003; Starý & Lukáš 2009); **Sweden** (Rusch et al. 2013); **USA** (Johnson 1987; Pike et al. 2000; Whitfield & Lewis 2001; Bosque-Pérez et al. 2002); **Uzbekistan** (Starý 1979a, 1981b; Aripov 2003).

***Remarks.*** *Praon gallicum* was introduced into Argentina, Brazil, and Chile during the 1980s as a biological control agent against wheat aphids. Following its initial recovery in Brazil (Starý et al. 2007), no subsequent Brazilian records have been reported after releases ceased in 1992. Although the species was recently recovered in Argentina (Tomanović et al. 2025), its occurrence in Brazil is considered uncertain.

### *Praon genriki* Davidian, 2020 [Fig. 69A]

*Praon genriki* Davidian, 2020c:208. Holotype ♀ (ZISP). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Davidian 2020c).

### *Praon himalayense* Das & Chakrabarti, 1989

*Praon himalayensis* Das & Chakrabarti, 1989c:346. Holotype ♀, paratypes ♀♀ ♂♂ (ZSI). – India.

***Host.*** ***Panaphis juglandis*** (Goeze) (Das & Chakrabarti 1989c).

***Distribution.*** **India** (Das & Chakrabarti 1989c, 2023a; Dey & Akhtar 2007).

### *Praon hubeiense* Chen & Shi, 1999

*Praon hubeiense* Chen & Shi [in Chen et al.], 1999:167. Holotype ♀, paratypes ♀ ♂ (FAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chen et al. 1999; Chen & Shi 2001; Whitfield et al. 2002).

### *Praon humulaphidis* Ashmead, 1889

*Praon humulaphidis* Ashmead, 1889:657. Holotype ♀ (USNM). – USA.

**Syn.:** *Praon virginiense* Ashmead, 1889 [Fig. 71C]; *Praon negundinis* Smith, 1944 [Fig. 69C].

***Hosts.*** ***Acyrthosiphon macrosiphum*** (Wilson), ***Illinoia*** sp., ***Macrosiphum euphorbiae*** (Thomas) (Pike et al. 2000); ***Macrosiphum*** sp. (Mackauer & Starý 1967); ***Nasonovia ribisnigri*** (Mosley) (Pike et al. 2000); ***Periphyllus lyropictus*** (Kessler) (Mackauer & Starý 1967; Marsh 1979); ***Periphyllus negundinis*** (Thomas), ***Uroleucon illini*** (Hottes & Frison) (Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Marsh 1979).

***Distribution.*** **Canada** (Mackauer & Starý 1967; Johnson 1987); **USA** (Ashmead 1889; Riley & Howard 1890; Szépligeti 1904; Gahan 1911a; Webster 1917; Muesebeck 1928, 1958a; Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Johnson 1987; Pike et al. 2000; Whitfield & Lewis 2001).

### *Praon hyperomyzus* Saha, Poddar, Das, Agarwala & Raychaudhuri, 1982

*Praon hyperomyzus* Saha, Poddar, Das, Agarwala & Raychaudhuri, 1982:1. Holotype ♀, paratypes ♀ ♂ (CUCE). – India.

***Host.*** ***Hyperomyzus carduellinus*** (Theobald) (Saha et al. 1982).

***Distribution.*** **India** (Saha et al. 1982; Dey & Akhtar 2007; Das & Chakrabarti 2023a).

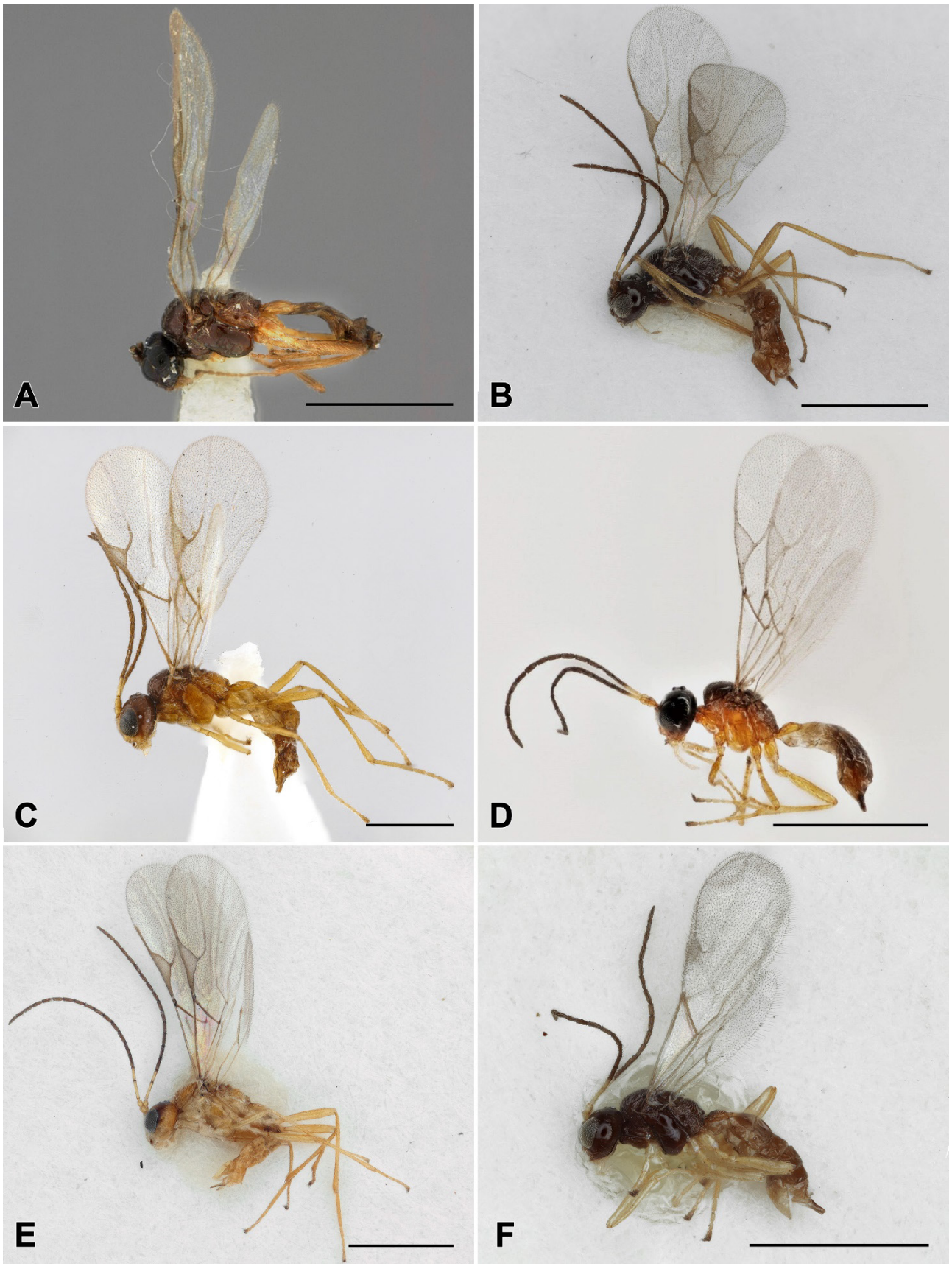



**Figure 68.** Species of the genus *Praon* Haliday, 1833. **A.** *Praon coloradense* Ashmead, 1890 – Holotype, USNM; **B.** *Praon coniforme* Pike & Starý, 2000 – Holotype, USNM; **C.** *Praon exsoletum* (Nees, 1811) – Iran, DPPZ; **D.** *Praon flavinode* (Haliday, 1833) – Netherlands, RMNH; **E.** *Praon fulvum* Pike & Starý, 2000 – Holotype, USNM; **F.** *Praon gallicum* Starý, 1971 – Holotype, USNM. Scale bar: 1 mm.

### *Praon kashmirense* Bhagat, 1982

*Praon kashmirensis* Bhagat, 1982b:113. Holotype ♀, paratype ♀ (DZKU). – India.

***Hosts.*** ***Aphis farinosa*** Gmelin (Bhagat 1985); ***Chaitophorus pakistanicus*** Hille Ris Lambers (Bhagat 1982b).

***Distribution.*** **India** (Bhagat 1982b, 1985; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a).

### *Praon kurisakiae* Takada, 2014

*Praon kurisakiae* Takada, 2014:90. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Host.*** ***Kurisakia querciphila*** Takahashi (Takada 2014).

***Distribution.*** **Japan** (Takada 2014).

### *Praon latgerinae* Starý & Remaudière, 1982

*Praon latgerinae* Starý & Remaudière, 1982:116. Holotype ♀, paratypes ♀♀ ♂ (IECA). – Mexico.

***Host.*** ***Latgerina orizabaensis*** Remaudière (Starý & Remaudière 1982).

***Distribution.*** **Mexico** (Starý & Remaudière 1982, 1988).

### *Praon lemantinum* Gautier, 1922

*Praon lemantinum* Gautier, 1922a:239. Syntype ♀ (MCL). – France.

***Hosts.*** ***Capitophorus hippophaes*** (Walker) (Fulmek 1968); ***Cryptomyzus alboapicalis*** (Theobald) (Mackauer 1959a, 1962c; Mackauer & Starý 1967); ***Cryptomyzus galeopsidis*** (Kaltenbach) (Mackauer 1959a, 1962c; Mackauer & Starý 1967); ***Cryptomyzus ribis*** (Linnaeus) (Starý 2006; Davidian & Gavrilyuk 2014; Davidian 2019a); ***Cryptomyzus*** sp. (Starý 1995b, 2006).

***Distribution.*** **Czech Republic** (Starý 1989a, 1995b, 2006); **Finland** (Mackauer 1968c; Hellén 1971); **France** (Gautier 1922a; Mackauer 1959a; Mackauer & Starý 1967; Fulmek 1968; Starý et al. 1971); **Germany** (Mackauer 1959a, 1962c; Mackauer & Starý 1967; Belokobylskij et al. 2003); **Hungary** (Polgár 1983); **Romania** (Lacatusu & Panu 1969); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2019a, 2019b).

### *Praon longicaudus* Tomanović & Starý, 2013

*Praon longicaudus* Tomanović & Starý [in Mitrovski-Bogdanović et al.], 2013:175. Holotype ♀ (BNHM), paratypes ♀♀ ♂♂ (FBUB). – Montenegro.

***Host.*** ***Longicaudus trirhodus*** (Walker) (Mitrovski-Bogdanović et al. 2013).

***Distribution.*** **Montenegro** (Mitrovski-Bogdanović et al. 2013).

### *Praon longicorne* Marshall, 1896 [Fig. 69D]

*Praon longicorne* Marshall, 1896:536. Lectotype ♀ (after Mackauer 1968a), paralectotype ♂ (NHMUK). – United Kingdom.

**Syn.:** *Praon grossum* Starý, 1971.

***Hosts.*** ***Acyrthosiphon chelidonii*** (Kaltenbach) (Bignell 1901; Goury & Guignon 1905; Mackauer 1959a, 1961b); ***Acyrthosiphon malvae*** (Mosley) (Starý et al. 1977a; Mitrovski-Bogdanović et al. 2014); ***Acyrthosiphon pisum*** (Harris) (Starý 1971c, 1972f, 2006; Mitrovski-Bogdanović et al. 2014); ***Amphorophora ampullata*** Buckton (Starý 1971c, 2006); ***Amphorophora rubi*** (Kaltenbach) (Starý 1971c, 1976a, 1979a, 1987a, 2006; Starý et al. 1973; Starý & González 1978; Mitrovski-Bogdanović et al. 2014); ***Amphorophora*** spp. (Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis fabae*** Scopoli (Starý et al. 2014a); ***Aulacorthum rufum*** Hille Ris Lambers (Mitrovski-Bogdanović et al. 2014); ***Aulacorthum solani*** (Kaltenbach) (Starý et al. 1973; Starý 1976a; Mitrovski-Bogdanović et al. 2014); ***Corylobium avellanae*** (Schrank) (Starý et al. 1973); ***Hyadaphis foeniculi*** (Passerini) (Bignell 1901; Mackauer 1959a); ***Impatientinum asiaticum*** Nevsky (Starý 2006; Mitrovski-Bogdanović et al. 2014; Starý et al. 2014a); ***Impatientinum balsamines*** (Kaltenbach) (Starý

1970d, 1971c, 2006; Mitrovski-Bogdanović et al. 2014; Starý et al. 2014a; Ferrer-Suay et al. 2017); ***Macrosiphum cerinthiacum*** Börner (Starý 1971c, 2006); ***Macrosiphum cholodkovskyi*** (Mordvilko) (Kavallieratos et al. 2004; Tomanović et al. 2007a; Žikić et al. 2012); ***Macrosiphum euphorbiae*** (Thomas) (Starý 1971c); ***Macrosiphum funestum*** (Macchiati) (Starý 1971c, 2006; Kavallieratos et al. 2004; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2014); ***Macrosiphum gei*** (Koch) (Starý 1971c); ***Macrosiphum melampyri*** Mordvilko (Starý et al. 1977a); ***Macrosiphum oredonense*** Remaudière (Starý 1971c, 2006; Kavallieratos et al. 2004; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2014); ***Macrosiphum polanense*** Pašek (Starý 2006); ***Macrosiphum prenanthidis*** Börner (Starý 1971c; Žikić et al. 2012); ***Macrosiphum stellariae*** Theobald (Starý 1971c, 2006); ***Microlophium carnosum*** (Buckton) (Starý 1971c, 1983f, 1987a, 2006; Mitrovski-Bogdanović et al. 2014); ***Uroleucon cichorii*** (Koch) (Žikić et al. 2012).

***Distribution.*** **Azerbaijan** (Davidian 2019a); **Bulgaria** (Todorov 2006b); **Czech Republic** (Starý 1970d, 1971c, 1972f, 1983f, 1987a, 1989a, 2006; Starý & Havelka 2008; Mitrovski-Bogdanović et al. 2014; Ferrer-Suay et al. 2017); **Finland** (Starý 1971c); **France** (Starý 1971c, 1976a; Starý et al. 1971, 1973, 1977a; Mitrovski-Bogdanović et al. 2014); **Germany** (Starý 1971c); **Hungary** (Szépligeti 1899; Györfi 1960); **India** (Subba Rao & Sharma 1960; Ghosh & Agarwala 1982; Dey & Akhtar 2007); **Italy** (Bergamesco et al. 1995); **Kazakhstan** (Davidian 2019a); **Moldova** (Starý 1971c, 1972f; Talitzky & Kuslitzky 1990); **Montenegro** (Kavallieratos et al. 2004, 2005b, 2013; Tomanović et al. 2007a; Mitrovski-Bogdanović et al. 2014; Žikić et al. 2012); **Netherlands** (Papp et al. 1996); **Norway** (Artsdatabanken 2026); **Poland** (Niezabitowski 1910; Huflejt 1997); **Russia** (Starý 1971c; Davidian 2019a, 2019b; Davidian & Humala 2023); **Serbia** (Tomanović et al. 1998a; Kavallieratos et al. 2004, 2005b, 2013; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2014); **Slovakia** (Starý 1989a); **Spain** (Tizado & Núñez-Perez 1991); **Tajikistan** (Starý & González 1978; Starý 1979a); **Türkiye** (Tomanović et al. 2008b; Rakhshani et al. 2019); **Ukraine** (Kaliuzhna 2013a, 2019a, 2019b); **United Kingdom** (Marshall 1896; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Mackauer 1959a, 1961b; Davidian & Rispin 2016).

### *Praon megourae* Starý, 1971

*Praon megourae* Starý, 1971c:313. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Czech Republic.

***Host.*** ***Megoura viciae*** Buckton (Starý 1971c, 1995b, 2006; Tomanović 2000; Kavallieratos et al. 2004; Žikić et al. 2012).

***Distribution.*** **Czech Republic** (Starý 1971c, 1989a, 1995b, 2006); **Montenegro** (Tomanović 2000; Kavallieratos et al. 2004; Žikić et al. 2012); **Ukraine** (Kaliuzhna 2019a).

### *Praon minor* Starý, 1971

*Praon minor* Starý [in Starý et al.], 1971:31. Holotype ♀ (MNHN), paratypes ♀♀ ♂♂ (MNHN, IECA). – France.

***Host.*** ***Ericaphis leclanti*** Remaudière (Starý et al. 1971).

***Distribution.*** **France** (Starý et al. 1971); **Russia** (Davidian 2019a, 2019b).

### *Praon mollitrichosiphi* Agarwala, Saha & Mahapatra, 1987

*Praon mollitrichosiphi* Agarwala, Saha & Mahapatra, 1987:329. Holotype ♀, paratype ♀ (CUCE). – India.

***Host.*** ***Mollitrichosiphum tenuicorpus*** (Okajima) (Agarwala et al. 1987; Starý et al. 2010a).

***Distribution.*** **India** (Agarwala et al. 1987; Dey & Akhtar 2007; Starý et al. 2010a; Das & Chakrabarti 2023a).

***Remarks.*** The type depository was not indicated in the original description.

### *Praon muyuense* Shi, 2001

*Praon muyuense* Shi [in Chen & Shi], 2001:206. Holotype ♀ (FAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chen & Shi 2001).

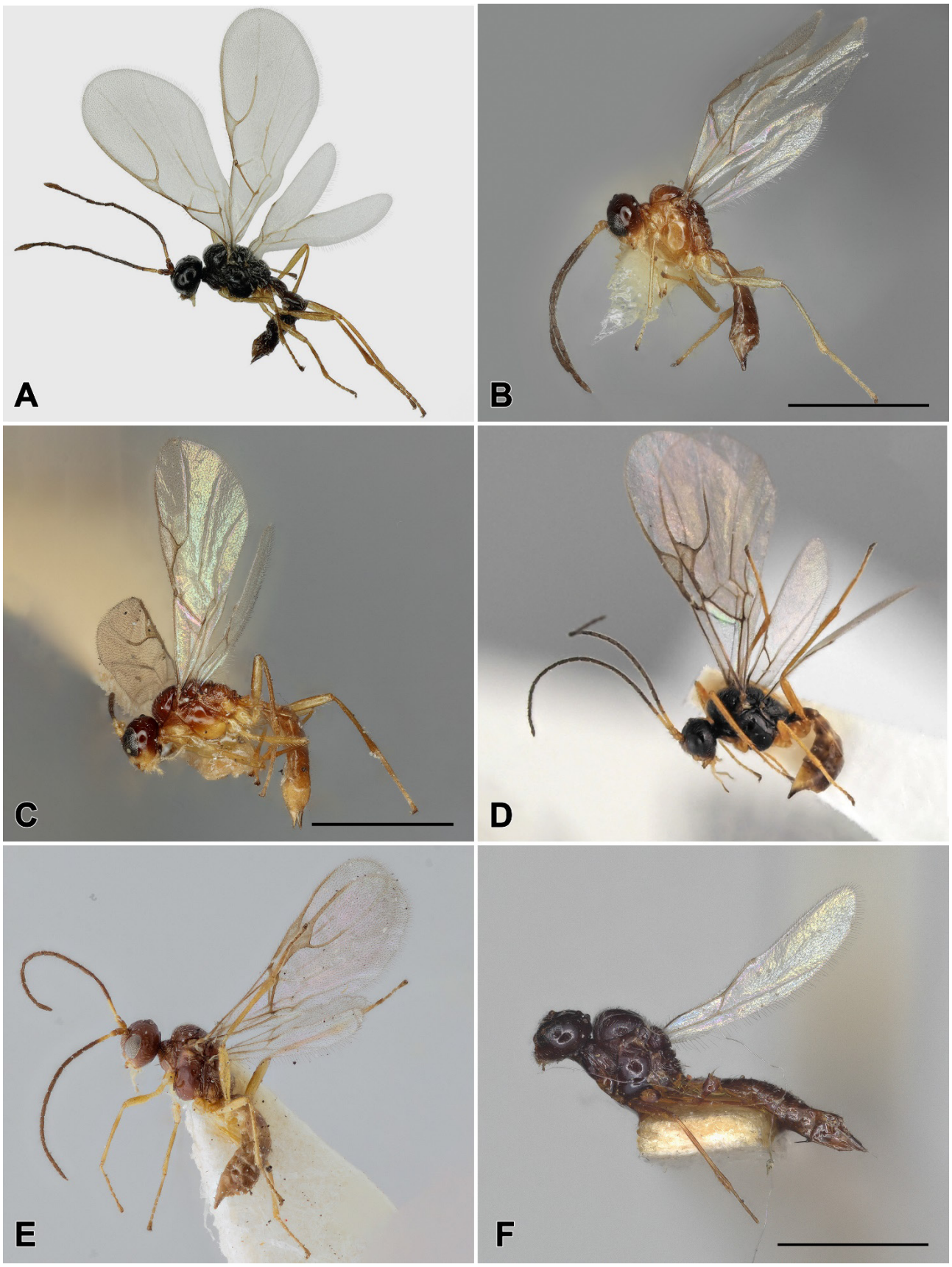



**Figure 69.** Species of the genus *Praon* Haliday, 1833. **A.** *Praon genriki* Davidian, 2020 – China, ZISP (Davidian 2020c); **B.** *Praon glabrum* Starý & Schlinger, 1967 – Holotype (= *Praon flavinode*), USNM; **C.** *Praon humulaphidis* Ashmead, 1889 – Holotype of *Praon negundinis* Smith, 1944, USNM; **D.** *Praon longicorne* Marshall, 1896 – Finland, ZMHF; **E.** *Praon necans* Mackauer, 1959 – Holotype, CNC; **F.** *Praon occidentale* Baker, 1909 – Lectotype, CASC. Scale bar: 1 mm.

### *Praon necans* Mackauer, 1959 [Fig. 69E]

*Praon necans* Mackauer, 1959a:839. Holotype ♀, paratype ♂ (CNC). – Germany.

**Syn.:** *Praon nympheae* Subba Rao, Sarup & Sharma, 1963.

***Hosts.*** ***Aphis craccivora*** Koch (Nazari et al. 2012; Gamal et al. 2022); ***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); ***Rhopalosiphoninus calthae*** (Koch) (Kierych 1975); ***Rhopalosiphum maidis*** (Fitch) (El-Heneidy & Abdel-Samad 2001; El-Heneidy et al. 2001, 2002, 2003); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Benoit 1955; Mackauer 1959a; Subba Rao et al. 1963; Starý 1966a, 1966c, 1967b, 1977, 1987a, 2006; Mackauer & Starý 1967; Bhagat 1984, 1986b; Costa 1988; Tomanović et al. 1999b, 2012; Kavallieratos et al. 2004; Mossadegh et al. 2011; Nazari et al. 2012; Žikić et al. 2012; Baker & Broad 2013; Ferrer-Suay et al. 2017; Davidian 2019a); ***Rhopalosiphum oxyacanthae*** (Schrank) (Mackauer & Starý 1967); ***Rhopalosiphum padi*** (Linnaeus) (Starý 1981b; 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); ***Rhopalosiphum rufulum*** Richards (Starý 2006; Tomanović 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); ***Schizaphis*** spp. (Starý 2006; Tomanović et al. 2012; Ferrer-Suay et al. 2017); ***Sitobion avenae*** (Fabricius) (El-Heneidy et al. 2001, 2002, 2003; Mossadegh et al. 2011); ***Staticobium limonii*** Contarini (Kos et al. 2012).

***Distribution.*** **China** (Gu et al. 1995); **Czech Republic** (Starý 1966c, 1977, 1987a, 1989a, 2006; Mackauer & Starý 1967; Tomanović et al. 2012; Ferrer-Suay et al. 2017); **Egypt** (Abdel-Rahman et al. 2000; El-Heneidy & Abdel-Samad 2001; El-Heneidy et al. 2001, 2002, 2003; Abdel-Samad & Gomaa 2004; Abdel-Rahman 2005; Mahmoud et al. 2009; El-Ghiet et al. 2014; Rakhshani et al. 2019; Gamal et al. 2022); **Finland** (Mackauer & Starý 1967; Mackauer 1968c; Hellén 1971); **France** (Tomanović et al. 2012); **Germany** (Mackauer 1959a; Mackauer & Starý 1967; Boness & Starý 1988; Belokobylskij et al. 2003; Tomanović et al. 2012); **Hungary** (Polgár 1983; Kovács 2001; Tomanović et al. 2012); **India** (Subba Rao et al. 1963; Mackauer & Starý 1967; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Starý & Ghosh 1983; Bhagat 1984, 1986b; Raychaudhuri et al. 1990; Dey & Akhtar 2007; Das & Chakrabarti 2023a); **Iran** (Mossadegh et al. 2011; Nazari et al. 2012; Ameri et al. 2019; Rakhshani et al. 2019); **Iraq** (Starý 1976a; Rakhshani et al. 2019); **Italy** (Starý 1981b; Bergamesco et al. 1995; Tomanović et al. 2012); **Japan** (Davidian 2019a); **Moldova** (Talitzky & Kuslitzky 1990); **Netherlands** (Mackauer & Starý 1967; Mackauer 1968a); **Norway** (Mjøs et al. 2024); **Pakistan** (Mackauer & Starý 1967; Mackauer 1968a; Starý & Ghosh 1983; Starý et al. 1999); **Poland** (Kierych 1975; Pankanin-Franczyk et al. 1986; Huflejt 1997; Tran & Piekarska-Boniecka 2017); **Portugal** (Costa 1988; Tomanović et al. 2012); **Russia** (Mackauer 1968c; Krotova 1993; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian 2019a, 2019b; Davidian & Humala 2023; Davidian & Ruchin 2023); **Serbia** (Tomanović et al. 1998a, 1999b, 2012; Kavallieratos et al. 2004; Žikić et al. 2012); **Slovakia** (Starý 1977); **Slovenia** (Kos et al. 2012); **Ukraine** (Kaliuzhna 2014, 2016a, 2019b); **United Kingdom** (Baker & Broad 2013).

### *Praon nonveilleri* Tomanović & Kavallieratos, 2003

*Praon nonveilleri* Tomanović & Kavallieratos [in Tomanović et al.], 2003b:347. Holotype ♀ (FBUB), paratypes ♀♀♂♂ (AUAG). – Serbia.

***Host.*** ***Uroleucon inulicola*** (Hille Ris Lambers) (Tomanović et al. 2003b; Kavallieratos et al. 2004; Žikić et al. 2012).

***Distribution.*** **Serbia** (Tomanović et al. 2003b; Kavallieratos et al. 2004; Žikić et al. 2012); **Türkiye** (Akar & Çetin Erdoğan 2017; Rakhshani et al. 2019; Demirhan & Çetin Erdoğan 2023).

### *Praon occidentale* Baker, 1909 [Fig. 69F]

*Praon occidentalis* Baker, 1909:23. Lectotype ♀ (after Mackauer 1963a) (CASC). – USA.

***Hosts.*** ***Acyrthosiphon lactucae*** (Passerini) (Carroll & Hoyt 1986; Johnson 1987; Pike et al. 2000); ***Acyrthosiphon pisum*** (Harris) (Smith 1944; Muesebeck & Walkley 1951; Hagen & Schlinger 1960;

Schlinger & Hall 1960a; Mackauer & Starý 1967; Wheeler 1978; Marsh 1979; Johnson 1987; Pike et al. 2000); ***Amphicercidus flocculosus*** (Gillette & Palmer) (Starý & Remaudière 1982); ***Amphorophora geranii*** Gillette & Palmer, ***Aphis craccivora*** Koch (Pike et al. 2000); ***Aphis euphorbiae*** Kaltenbach (Marsh 1979); ***Aphis gossypii*** Glover, ***Aphis lugentis*** Williams (Pike et al. 2000); ***Aphis nasturtii*** Kaltenbach (Duncan & Couture 1957; Mackauer & Starý 1967; Marsh 1979; Johnson 1987); ***Aphthargelia symphoricarpi*** (Thomas) (Carroll & Hoyt 1986; Johnson 1987); ***Aulacorthum solani*** (Kaltenbach) (Mackauer & Starý 1967; Marsh 1979; Johnson 1987); ***Brachycaudus helichrysi*** (Kaltenbach), ***Capitophorus elaeagni*** (Del Guercio), ***Chaetosiphon thomasi*** Hille Ris Lambers (Pike et al. 2000); ***Diuraphis noxia*** (Mordvilko) (Pike et al. 1996, 2000; Bosque-Pérez et al. 2002); ***Dysaphis plantaginea*** (Passerini), ***Ericaphis wakibae*** (Hottes) (Pike et al. 2000); ***Hyperomyzus*** sp. (Carroll & Hoyt 1986; Pike et al. 2000); ***Illinoia*** sp. (Zuparko & Dahlsten 1993; Pike et al. 1996, 2000); ***Macrosiphoniella ludovicianae*** (Oestlund) (Carroll & Hoyt 1986; Johnson 1987; Pike et al. 1997a, 2000); ***Macrosiphum albifrons*** Essig (Pike et al. 2000); ***Macrosiphum euphorbiae*** (Thomas) (MacGillivray & Spicer 1953; Shands et al. 1965; Mackauer & Starý 1967; Starý 1967a; Carroll & Hoyt 1986; Pike et al. 2000); ***Macrosiphum osmaroniae*** (Wilson) (Pike et al. 2000); ***Macrosiphum rosae*** (Linnaeus) (Schlinger 1960a; Schlinger & Hall 1960a; Mackauer & Starý 1967; Marsh 1979; Carroll & Hoyt 1986; Pike et al. 1996, 2000); ***Macrosiphum*** spp. (Mackauer & Starý 1967; Pike et al. 2000); ***Metopolophium dirhodum*** (Walker), ***Metopolophinum*** sp., ***Microlophium*** sp. (Pike et al. 2000); ***Microlophium carnosum*** (Buckton) (Carroll & Hoyt 1986; Johnson 1987); ***Myzaphis bucktoni*** Jacob (Johnson 1987); ***Myzus persicae*** (Sulzer) (MacGillivray & Spicer 1953; Mackauer & Starý 1967; Mackauer 1968d; Marsh 1979; Carroll & Hoyt 1986; Johnson 1987; Pike et al. 2000); ***Nasonovia aquilegiae*** (Essig), ***Nasonovia polemonii*** (Gillette & Palmer), ***Nasonovia*** sp., ***Nearctaphis bakeri*** (Cowen), ***Nearctaphis kachena*** (Hottes), (Pike et al. 2000); ***Phorodon humuli*** (Schrank) (Johnson 1987; Pike et al. 2000; Wright & James 2001); ***Rhopalosiphum oxyacanthae*** (Schrank) (Carroll & Hoyt 1986; Pike et al. 2000); ***Rhopalosiphum padi*** (Linnaeus) (Pike et al. 1996, 2000); ***Sitobion avenae*** (Fabricius) (Carroll & Hoyt 1986; Johnson 1987; Pike et al. 2000); ***Uroleucon erigeronense*** (Thomas), ***Uroleucon sonchi*** (Linnaeus), ***Uroleucon zymozionense*** (Knowlton) (Pike et al. 2000); ***Uroleucon*** spp. (Starý & Remaudière 1982; Carroll & Hoyt 1986; Pike et al. 1996, 2000); ***Wahlgreniella nervata*** (Gillette) (Carroll & Hoyt 1986; Johnson 1987; Pike et al. 2000).

***Distribution.*** **Canada** (Smith 1944; Muesebeck & Walkley 1951; MacGillivray & Spicer 1953; Duncan & Couture 1957; Mackauer & Bisdee 1965; Mackauer & Starý 1967; Starý 1967a; Mackauer & Finlayson 1967; Johnson 1987; Finlayson 1990; Wylie et al. 2005; Raworth et al. 2008); **Chile**, **Guatemala** (Starý et al. 2014c); **Mexico** (Starý & Remaudière 1982, 1988); **USA** (Baker 1909; Gahan 1911a; Smith 1944; Muesebeck & Walkley 1951; Muesebeck 1958a; Hagen & Schlinger 1960; Schlinger 1960a; Schlinger & Hall 1960a; Mackauer 1963a; Shands et al. 1965; Mackauer & Finlayson 1967; Mackauer & Starý 1967; Wheeler 1978; Carroll & Hoyt 1986; Johnson 1987; Zuparko & Dahlsten 1993; Pike et al. 1996, 1997a, 2000; Wright & James 2001; Bosque-Pérez et al. 2002).

### *Praon orientale* Starý & Schlinger, 1967 [Fig. 70A]

*Praon orientale* Starý & Schlinger, 1967:100. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (IECA, USNM). – Hong Kong.

***Hosts.*** ***Acyrthosiphon pisum*** (Harris) (Chen & Shi 2001; Wei et al. 2005); ***Acyrthosiphon*** spp. (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1974c, 1975a); ***Amphorophora*** sp. (Mackauer & Starý 1967; Starý & Schlinger 1967); ***Aphis craccivora*** Koch (Chen & Shi 2001); ***Aphis spiraecola*** Patch (Starý 1967a, 1974c, 1975a; Mackauer & Starý 1967; Starý & Schlinger 1967; Finlayson 1990); ***Aulacorthum solani*** (Kaltenbach) (Raychaudhuri et al. 1990; Takada 2002); ***Cavariella*** sp. (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1974c, 1975a); ***Hyperomyzus lactucae*** (Linnaeus) (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1974c, 1975a; Liu 1975; Chou 1981; Chen & Shi 2001; Chen et al. 2009); ***Macrosiphum*** sp. (Starý & Schlinger 1967; Chen & Shi 2001; Takada 2002); ***Myzus persicae*** (Sulzer) (Mackauer & Starý 1967; Starý 1967a, 1974c, 1975a; Starý & Schlinger 1967; Yamauchi & Takada 1978; Chen & Shi 2001; Takada 2002); ***Parachaitophorus spiraea*** (Takahashi) (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1974c, 1975a); ***Pseudomegoura magnoliae*** (Essig & Kuwana) (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1974c, 1975a; Finlayson 1990); ***Rhopalosiphoninus deutzifoliae*** Shinji (Mackauer & Starý 1967; Starý 1974c, 1975a); ***Rhopalosiphoninus tiliae*** (Matsumura) (Mackauer & Starý 1967; Starý 1974c, 1975a);

***Rhopalosiphoninus*** sp. (Starý & Schlinger 1967); ***Sitobion avenae*** (Fabricius) (Starý 1974c); ***Sitobion ibarae*** (Matsumura) (Mackauer & Starý 1967; Starý 1974c, 1975a; Yamauchi & Takada 1978; Finlayson 1990); ***Uroleucon*** sp. (Das & Chakrabarti 1991a).

***Distribution.*** **China** (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1974c; Liu 1975; Chou 1981; Dong & Wang 1985; Chen & Shi 2001; Chen et al. 2009); **India** (Raychaudhuri et al. 1990; Das & Chakrabarti 1991a, 2023a; Dey & Akhtar 2007; Rakhshani et al. 2012a); **Japan** (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1974c; Yamauchi & Takada 1978; Finlayson 1990; Takada 2002); **South Korea** (Starý 1967a, 1974c; Mackauer & Starý 1967; Starý & Schlinger 1967; Finlayson 1990; Starý & Choi 2000; Kim 2026).

***Remarks.*** According to Takada (1968), *Praon orientale* might be conspecific with *P. volucre*. However, the two taxa differ in F1 coloration (*P. orientale* has an entirely yellow F1, whereas at least the basal half is brown in *P. volucre*). Therefore, they are best treated as separate species pending further taxonomic studies.

### *Praon orpheusi* Kavallieratos, Athanassiou & Tomanović, 2003

*Praon orpheusi* Kavallieratos, Athanassiou & Tomanović, 2003:14. Holotype ♀, paratypes ♀♀ (AUAG). – Greece.

***Hosts. Hyperomyzus lactucae*** (Linnaeus) (Rakhshani et al. 2007a; Talebi et al. 2009); ***Macrosiphum rosae*** (Linnaeus) (Kavallieratos et al. 2003, 2004).

***Distribution.*** **Bulgaria**, **Greece** (Kavallieratos et al. 2003, 2004); **Iran** (Rakhshani et al. 2007a, 2019; Talebi et al. 2009; Fallahzadeh & Saghaei 2010).

### *Praon pakistanum* Kirkland, 1979 [Fig. 70B]

*Praon pakistanum* Kirkland, 1979:309. Holotype ♀, paratypes ♀♀♂♂ (USNM). – Pakistan.

***Host. Schizaphis graminum*** (Rondani) (Kirkland 1979; Starý & Ghosh 1983; Starý et al. 1999).

***Distribution.*** **Pakistan** (Kirkland 1979; Starý & Ghosh 1983; Starý et al. 1999; Bodlah et al. 2012c), **USA** (lab reared - Kirkland 1979).

### *Praon pequodorum* Viereck, 1917 [Fig. 70C]

*Praon pequodorum* Viereck, 1917:259. Holotype ♀ (after Mackauer 1968a) (USNM). – USA.

***Hosts. Acyrthosiphon macrosiphum*** (Wilson) (Pike et al. 2000); ***Acyrthosiphon pisum*** (Harris) (Mackauer & Starý 1967; Mackauer 1976b; Wheeler 1978; Marsh 1979; Chow 1982; Mackauer & Kambhampati 1986; Johnson 1987; Thiboldeaux et al. 1987; Finlayson 1990; Danyk & Mackauer 1996; Pike et al. 1996, 2000); ***Amphorophora rubi*** (Kaltenbach) (Pike et al. 2000); ***Aphthargelia symphoricarpi*** (Thomas) (Johnson 1987); ***Aulacorthum solani*** (Kaltenbach) (Shands et al. 1965; Marsh 1979); ***Illinoia*** sp. (Pike et al. 2000); ***Macrosiphum euphorbiae*** (Thomas) (MacGillivray & Spicer 1953; Shands et al. 1965; Mackauer & Starý 1967; Boiteau 1983); ***Myzus persicae*** (Sulzer) (Wheeler 1923; Starý 1967a; Mackauer & Starý 1967; Johnson 1987); ***Therioaphis riehmi*** (Börner) (Pike et al. 2000); ***Uroleucon ivae*** Robinson (Pike et al. 1996, 2000); ***Uroleucon rudbeckiae*** (Fitch) (Johnson 1987); ***Uroleucon sonchi*** (Linnaeus) (Pike et al. 2000).

***Distribution.*** **Canada** (MacGillivray & Spicer 1953; Mackauer & Bisdee 1965; Mackauer & Starý 1967; Mackauer 1976b; Boiteau 1983; Mackauer & Kambhampati 1986; Johnson 1987; Wylie et al. 2005); **China** (Chen & Shi 2001); **USA** (Viereck 1917; Wheeler 1923; Shands et al. 1965; Mackauer & Starý 1967; Starý 1967a; Wheeler 1978; Johnson 1987; Rethwisch & Manglitz 1987; Thiboldeaux et al. 1987; Finlayson 1990; Whitfield & Lewis 2001; Meisner et al. 2007; Pike et al. 1996, 2000).

### *Praon pisiaphis* Chou & Xiang, 1982

*Praon pisiaphis* Chou & Xiang, 1982:43. Holotype ♀, paratypes ♀ ♂ (NWAFU). – China.

***Host. Acyrthosiphon pisum*** (Harris) (Chou & Xiang 1982; Wei et al. 2005).

***Distribution.*** **China** (Chou & Xiang 1982; Chen & Shi 2001).

### *Praon prunaphis* Chou & Xiang, 1982

*Praon prunaphis* Chou & Xiang, 1982:44. Holotype ♀, paratypes ♀ ♂ (NWAFU). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Chou & Xiang 1982; Gu et al. 1995; Chen & Shi 2001).

### *Praon pubescens* Starý, 1961 [Fig. 70D]

*Praon pubescens* Starý, 1961g:340. Holotype ♀, paratypes ♀♀ ♂♂ (IECA). – Czech Republic.

***Hosts.*** *Metopolophium dirhodum* (Walker) (Wiackowski et al. 1997, 2001); ***Nasonovia brachycyclica*** Holman (Starý et al. 1973); ***Nasonovia brevipes*** (Börner) (Starý et al. 1971); ***Nasonovia compositellae nigra*** (Hille Ris Lambers) (Starý 1961g, 1963b, 1964d, 1966c, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971; Tomanović et al. 2008a); ***Nasonovia ribisnigri*** (Mosley) (Starý et al. 1971; Starý 1987a, 2006; Kavallieratos et al. 2004; Tomanović et al. 2008a; Nazari et al. 2012; Žikić et al. 2012); ***Nasonovia*** spp. (Das & Chakrabarti 1991a; Kavallieratos et al. 2004; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Uroleucon*** sp. (Starý et al. 1971).

***Distribution.*** **Bulgaria** (Todorov 2008); **Czech Republic** (Starý 1961g, 1966c, 1987a, 1989a, 2006; Mackauer & Starý 1967; Starý & Havelka 2008; Tomanović et al. 2008a); **France** (Starý et al. 1971, 1973; Tomanović et al. 2008a); **Hungary** (Polgár 1983); **India** (Das & Chakrabarti 1991a, 2023a; Dey & Akhtar 2007); **Iran** (Nazari et al. 2012; Rakhshani et al. 2019); **Montenegro** (Kavallieratos et al. 2004; Tomanović et al. 2008a; Žikić et al. 2012); **Netherlands** (Papp et al. 1996); **Poland** (Wiackowski et al. 1997, 2001; Tran & Piekarska-Boniecka 2017); **Serbia** (Tomanović et al. 1998a, 2008a; Kavallieratos et al. 2004; Žikić et al. 2012); **Slovakia** (Starý 1961g, 1989a; Ferrer-Suay et al. 2017); **Türkiye** (Tomanović et al. 2008b; Akar & Çetin Erdoğan 2017; Rakhshani et al. 2019); **Ukraine** (Kaliuzhna 2013a, 2019a, 2019b).

### *Praon quadratum* Starý & Schlinger, 1967 [Fig. 70E]

*Praon quadratum* Starý & Schlinger, 1967:103. Holotype ♀ (USNM). – Japan.

***Host.*** ***Coloradoa rufomaculata*** (Wilson) (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a).

***Distribution.*** **Japan** (Mackauer & Starý 1967; Starý & Schlinger 1967; Starý 1975a).

### *Praon retusae* Tomanović & Kavallieratos, 2002

*Praon retusae* Tomanović & Kavallieratos, 2002b:341. Holotype ♀, paratype ♂ (BNHM). – Montenegro.

***Hosts.*** ***Acyrthosiphon malvae*** (Mosley) (Tomanović et al. 2006a, 2007a; Žikić et al. 2012); ***Acyrthosiphon*** sp. (Tomanović & Kavallieratos 2002b; Kavallieratos et al. 2004; Žikić et al. 2012).

***Distribution.*** **Montenegro** (Kavallieratos & Tomanović 2001; Tomanović & Kavallieratos 2002b; Kavallieratos et al. 2004; Tomanović et al. 2006a, 2007a; Žikić et al. 2012).

### *Praon rhopalosiphum* Takada, 1968

*Praon rhopalosiphum* Takada, 1968:80. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Hosts.*** ***Myzus persicae*** (Sulzer) (Takada & Takenaka 1982; Takada 2002); ***Rhopalosiphum nymphaeae*** (Linnaeus) (Dong & Wang 1985; Chen & Shi 2001); ***Rhopalosiphum padi*** (Linnaeus) (Chen & Shi 2001); ***Rhopalosiphum*** spp. (Takada 1968; Wei et al. 2005).

***Distribution.*** **China** (Dong & Wang 1985; Chen & Shi 2001; Zhao et al. 2013); **Japan** (Takada 1968, 2002; Starý 1975a; Takada & Takenaka 1982).

### *Praon rosaecola* Starý, 1961 [Fig. 70F]

*Praon rosaecola* Starý, 1961g:341. Holotype ♀, paratypes ♀♀ (IECA). – Czech Republic.

***Hosts.*** *Aphis fabae* Scopoli (Wiackowski et al. 2001); ***Chaetosiphon tetrarhodum*** (Walker) (Wiackowski et al. 1997, 2001); ***Macrosiphum rosae*** (Linnaeus) (Starý 1961g, 1964d, 1966c, 1976a, 1987a, 2006; Mackauer

& Starý 1967; Starý et al. 1975, 1977a; Mescheloff & Rosen 1988; Wiackowski et al. 1997, 2001; Tomanović et al. 1999b; Kavallieratos et al. 2004; Rakhshani et al. 2007a, 2012b; Talebi et al. 2009; Barahoei et al. 2010, 2012, 2013; Davidian 2019a); ***Macrosiphum*** *aff*. ***euphorbiae*** (Thomas) (Davidian 2019a); ***Sitobion fragariae*** (Walker) (Starý et al. 1975, 1977a); ***Wahlgreniella nervata*** (Gillette) (Barahoei et al. 2013).

***Distribution.*** **Armenia** (Davidian 2019a); **Bulgaria** (Todorov 2014); **Czech Republic** (Starý 1961g, 1966c, 1987a, 1989a, 2006; Mackauer & Starý 1967); **France** (Starý et al. 1975, 1977a; Starý 1976a); **Hungary** (Polgár 1983); **Iran** (Rakhshani et al. 2007a, 2012b, 2019; Fallahzadeh & Saghaei 2010; Barahoei et al. 2010, 2012, 2013); **Moldova** (Talitzky & Kuslitzky 1990; Davidian 2019a); **Palestine** (Mescheloff & Rosen 1988); **Poland** (Huflejt 1997; Wiackowski et al. 1997, 2001; Tran & Piekarska-Boniecka 2017); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2019a, 2019b); **Serbia** (Tomanović et al. 1998a, 1999b; Žikić et al. 2000, 2012; Kavallieratos et al. 2004); **Spain** (Tizado & Núñez-Perez 1991); **Türkiye** (Davidian 2019a).

### *Praon sambuci* Tomanović & Starý, 2013

*Praon sambuci* Tomanović & Starý [in Mitrovski-Bogdanović et al.], 2013:177. Holotype ♀ (BNHM), paratypes ♀♀ ♂♂ (FBUB). – Serbia.

***Hosts.*** ***Aphis sambuci*** Linnaeus (Mitrovski-Bogdanović et al. 2013; Kavallieratos et al. 2016).

***Distribution.*** **Serbia** (Mitrovski-Bogdanović et al. 2013; Kavallieratos et al. 2016).

***Remarks.*** The records for the association of *Praon abjectum* with *Aphis sambuci* Linnaeus throughout the Palaearctic (and even the Nearctic) region may refer to *Praon sambuci*.

### *Praon simulans* (Provancher, 1886)

*Aphidaria simulans* Provancher, 1886:153. Syntypes ♀ ♂ (uncertain). – Canada.

**Syn.:** *Praon aguti* Smith, 1944 [Fig. 71A].

***Hosts.*** ***Acyrthosiphon malvae*** (Mosley) (Griswold 1927; Muesebeck 1928); ***Acyrthosiphon pisum*** (Harris) (Davis 1915; Fluke 1925, 1929; Muesebeck 1928; Knowlton et al. 1938; Smith 1944; Knowlton 1951; Muesebeck & Walkley 1951; MacGillivray & Spicer 1953; Shands et al. 1955; Hagen & Schlinger 1960; Schlinger & Hall 1960a; Mackauer & Starý 1967; Marsh 1979; Johnson 1987); ***Aphis nasturtii*** Kaltenbach (Duncan & Couture 1957); ***Aulacorthum solani*** (Kaltenbach) (Shands et al. 1955; Mackauer & Starý 1967; Marsh 1979); ***Brevicoryne brassicae*** (Linnaeus) (Spencer 1926); ***Hyalopterus pruni*** (Geoffroy) (Smith 1936); ***Lipaphis erysimi*** (Kaltenbach) (Spencer 1926); ***Macrosiphoniella abrotani*** (Walker) (Mackauer & Starý 1967; Marsh 1979); ***Macrosiphoniella frigidicola*** Gillette & Palmer (MacGillivray & Spicer 1953; Muesebeck 1967; Marsh 1979); ***Macrosiphum albifrons*** Essig (MacGillivray & Spicer 1953); ***Macrosiphum euphorbiae*** (Thomas) (Spencer 1926; Smith 1944; Muesebeck & Walkley 1951; MacGillivray & Spicer 1953; Shands et al. 1955, 1965; Duncan & Couture 1957; Starý 1967a; Mackauer & Starý 1967; Marsh 1979; Johnson 1987); ***Macrosiphum rhamni*** (Clarke) (Pike et al. 2000); ***Macrosiphum rosae*** (Linnaeus) (Timberlake 1910; McLeod 1938; Smith 1944; Muesebeck & Walkley 1951; Mackauer & Starý 1967; Marsh 1979; Johnson 1987); ***Myzus persicae*** (Sulzer) (Wheeler 1923; Spencer 1926; Garman et al. 1953; MacGillivray & Spicer 1953; Shands et al. 1955, 1965; Duncan & Couture 1957; Starý 1967a; Mackauer & Starý 1967; Muesebeck 1967; Marsh 1979; Johnson 1987); ***Neomyzus circumflexus*** (Buckton) (Sekhar 1960; Mackauer & Starý 1967; Marsh 1979); ***Sitobion avenae*** (Fabricius) (Spencer 1926); ***Uroleucon ambrosiae*** (Thomas) (Mackauer & Starý 1967; Marsh 1979); ***Uroleucon rudbeckiae*** (Fitch) (Gahan 1910, 1911a; Muesebeck 1928, 1967; Mackauer & Starý 1967; Marsh 1979).

***Distribution.*** **Canada** (Provancher 1886; McLeod 1938; Smith 1944; Muesebeck & Walkley 1951; Strickland 1952; MacGillivray & Spicer 1953; Duncan & Couture 1957; Mackauer & Starý 1967; Muesebeck 1967; Starý 1967a); **United Kingdom** (Kloet & Hincks 1945); **USA** (Nason 1905; Gahan 1911a; Davis 1915; Fluke 1925; Griswold 1927; Muesebeck 1928; Smith 1936, 1944; Knowlton et al. 1938; Knowlton 1951; Muesebeck & Walkley 1951; Shands et al. 1955, 1965; Sekhar 1957, 1958; Hagen & Schlinger 1960; Schlinger & Hall 1960a; Mackauer & Starý 1967; Starý 1967a; Johnson 1987; Pike et al. 2000).

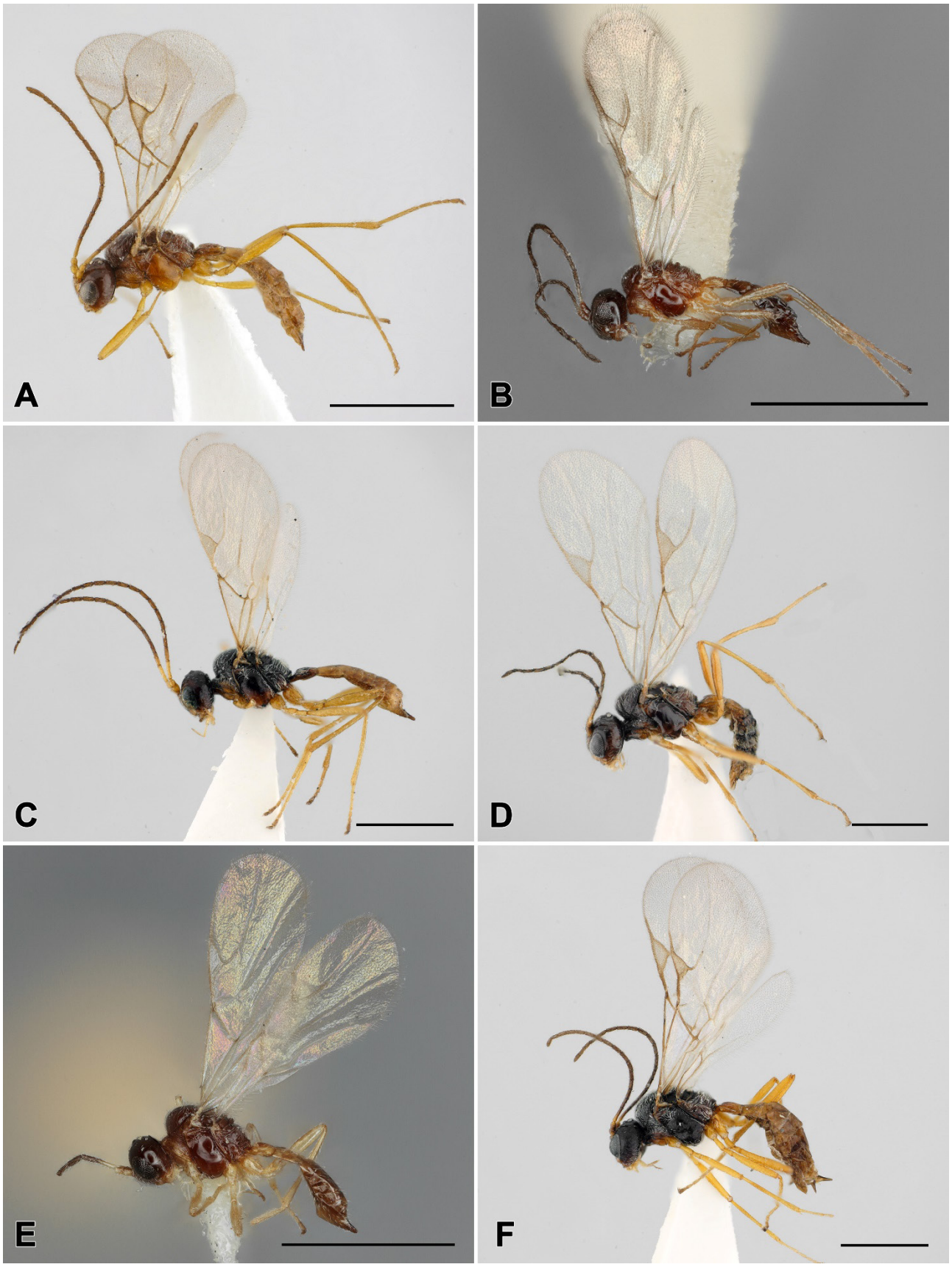



**Figure 70.** Species of the genus *Praon* Haliday, 1833. **A.** *Praon orientale* Starý & Schlinger, 1967 – India, DPPZ; **B.** *Praon pakistanum* Kirkland, 1979 – Holotype, USNM; **C.** *Praon pequodorum* Viereck, 1917 – USA, DPPZ; **D.** *Praon pubescens* Starý, 1961 – Czech Republic, DPPZ; **E.** *Praon quadratum* Starý & Schlinger, 1967 – Holotype, USNM; **F.** *Praon rosaecola* Starý, 1961 – Iran, DPPZ. Scale bar: 1 mm.

### *Praon spinosum* Mackauer, 1959

*Praon spinosum* Mackauer, 1959a:841. Holotype ♀ (SDEI). – Germany.

***Hosts.*** ***Allaphis cyperi*** (Walker) (Mackauer & Starý 1967); ***Allaphis foxtonensis*** (Cottier) (Mackauer & Starý 1967); ***Allaphis verrucosa*** (Gillette) (Tomanović et al. 2007a, 2012; Žikić et al. 2012); ***Allaphis*** sp. (Mackauer & Starý 1967); ***Aphis*** sp. (Davidian 2019a); ***Hyadaphis tataricae*** (Aizenberg) (Davidian 2019a); ***Subsaltusaphis aquatilis*** (Ossiannilsson), ***Subsaltusaphis flava*** (Hille Ris Lambers) (Mackauer & Starý 1967); ***Subsaltusaphis picta*** (Hille Ris Lambers) (Mackauer & Starý 1967; Baker & Broad 2009; Tomanović et al. 2012; Žikić et al. 2012); ***Thripsaphis*** sp. (Mackauer 1959a; Tomanović et al. 2012).

***Distribution.*** **Austria** (Mackauer 1968a); **Bulgaria** (Todorov & Ivanova 2016); **France** (Mackauer & Starý 1967; Mackauer 1968a); **Germany** (Mackauer 1959a; Mackauer & Starý 1967; Belokobylskij et al. 2003; Tomanović et al. 2007a, 2012); **Hungary** (Polgár 1983); **Montenegro** (Tomanović et al. 2012; Žikić et al. 2012); **Netherlands** (Mackauer & Starý 1967; Mackauer 1968a); **Russia** (Davidian 2019a, 2019b; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024; Shpanev 2025); **Serbia** (Tomanović et al. 2007a, 2012; Žikić et al. 2012); **Sweden** (Mackauer & Starý 1967; Mackauer 1968a); **United Kingdom** (Baker & Broad 2009).

### *Praon stagona* Takada & Rishi, 1980

*Praon stagona* Takada & Rishi, 1980:234. Holotype ♀ (ZSI), paratypes ♀ ♂♂ (EIHU). – India.

***Hosts.*** ***Amphicercidus tuberculatus*** David, Narayanan & Rajasingh (Bhagat 1986a); ***Stagona*** sp. (Takada & Rishi 1980).

***Distribution.*** **India** (Takada & Rishi 1980; Agarwala et al. 1981a; Starý & Ghosh 1983; Bhagat 1986a; Dey & Akhtar 2007; Ahmad & Wani 2014; Das & Chakrabarti 2023a).

### *Praon staryi* Kavallieratos & Lykouressis, 2000

*Praon staryi* Kavallieratos & Lykouressis, 2000:5. Holotype ♀, paratypes ♀♀ ♂♂ (AUAG). – Greece.

***Hosts.*** ***Myzus persicae*** (Sulzer) (Kavallieratos & Lykouressis 2000; Kavallieratos & Tomanović 2001; Kavallieratos et al. 2001, 2003, 2004, 2005a, 2005b).

***Distribution.*** **Greece** (Kavallieratos & Lykouressis 2000; Kavallieratos & Tomanović 2001; Kavallieratos et al. 2001, 2003, 2004, 2005a, 2005b).

### *Praon staticobii* Tomanović & Petrović, 2014

*Praon staticobii* Tomanović & Petrović [in Mitrovski-Bogdanović et al.], 2014:227. Holotype ♀, paratypes ♀♀ ♂♂ (FBUB). – Slovenia.

***Host.*** ***Staticobium limonii*** Contarini (Mitrovski-Bogdanović et al. 2014).

***Distribution.*** **Serbia** (Tomanović et al. 2021); **Slovenia** (Mitrovski-Bogdanović et al. 2014).

### *Praon taisetsuzanum* Takada, 1968

*Praon taisetsuzanum* Takada, 1968:84. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Host.*** Unknown.

***Distribution.*** **Japan** (Takada 1968; Starý 1975a); **Russia** (Davidian 2019a, 2019b).

### *Praon thalictri* Starý, 1985

*Praon thalictri* Starý, 1985c:137. Holotype ♀, paratypes ♀ (IECA). – Burundi.

***Host.*** ***Sitobion thalictri*** Remaudière (Starý et al. 1985c).

***Distribution.*** **Burundi** (Starý et al. 1985c).

### *Praon tonkinensis* Tomanović & van Achterberg, 2026

*Praon tonkinensis* Tomanović & van Achterberg [in Tomanović et al.], 2026b:25. Holotype ♀, paratypes ♀♀ ♂♂ (RMNH). – Vietnam.

***Host.*** Unknown.

***Distribution.*** **Vietnam** (Tomanović et al. 2026b).

### *Praon uematsui* Takada, 2017

*Praon uematsui* Takada, 2017:265. Holotype ♀, paratypes ♀ ♂♂ (EIHU). – Japan.

***Host.*** Unknown.

***Distribution.*** **Japan** (Takada 2017).

### *Praon unicum* Smith, 1944 [Fig. 71B]

*Praon unicus* Smith, 1944:30. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (NCSU). – USA.

***Hosts.*** ***Acyrthosiphon lactucae*** (Passerini) (Carroll & Hoyt 1986; Johnson 1987; Pike et al. 1996, 2000); ***Aphis coweni*** Palmer (Pike et al. 1996, 2000); ***Aphis craccivora*** Koch (Pike et al. 2000); ***Aphis fabae*** Scopoli (Marsh 1979; Carroll & Hoyt 1986); ***Aphis gossypii*** Glover (Carroll & Hoyt 1986; Pike et al. 2000); ***Aphis nasturtii*** Kaltenbach (Johnson 1987); ***Aphis nigratibialis*** Robinson (Pike et al. 2000); ***Aphis oenotherae*** Oestlund (Carroll & Hoyt 1986; Pike et al. 2000); ***Aphis pomi*** De Geer (Carroll & Hoyt 1986; Pike et al. 2000); ***Aphis rumicis*** Linnaeus (Schlinger & Hall 1960a; Muesebeck 1967; Marsh 1979; Johnson 1987; Pike et al. 1996, 2000); ***Aphis salicariae*** Koch (Pike et al. 2000); ***Aphis spiraecola*** Patch (Mackauer & Starý 1967; Marsh 1979); ***Aphis varians*** Patch (Pike et al. 2000); ***Aphis*** sp. (Schlinger & Hall 1960a; Pike et al. 2000); ***Aulacorthum solani*** (Kaltenbach) (Schlinger & Hall 1960a; Muesebeck 1967); ***Brachycaudus helichrysi*** (Kaltenbach) (Carroll & Hoyt 1986; Pike et al. 2000); ***Brachycaudus tragopogonis*** (Kaltenbach), ***Cavariella aegopodii*** (Scopoli), ***Cavariella pastinacae*** (Linnaeus) (Pike et al. 2000); ***Chromaphis juglandicola*** (Kaltenbach) (Schlinger et al. 1960a, 1960b); ***Diuraphis noxia*** (Mordvilko) (Pike et al. 1996, 1997b, 2000); ***Dysaphis plantaginea*** (Passerini), ***Ericaphis gentneri*** (Mason) (Carroll & Hoyt 1986; Pike et al. 2000); ***Hyperomyzus lactucae*** (Linnaeus) (Pike et al. 2000); ***Hyperomyzus nigricornis*** (Knowlton) (Carroll & Hoyt 1986; Johnson 1987; Pike et al. 2000); ***Illinoia liriodendri*** (Monell) (Zuparko & Dahlsten 1993); ***Liosomaphis berberidis*** (Kaltenbach) (Carroll & Hoyt 1986; Johnson 1987); ***Macrosiphum aetheocornum*** Smith & Knowlton (Carroll & Hoyt 1986); ***Macrosiphum euphorbiae*** (Thomas) (Carroll & Hoyt 1986; Pike et al. 1996, 2000); ***Macrosiphum gaurae*** (Williams), ***Macrosiphum pallidum*** (Oestlund) (Pike et al. 2000); ***Macrosiphum rosae*** (Linnaeus) (Schlinger 1960a; Schlinger & Hall 1960a; Muesebeck 1967); ***Macrosiphum valerianiae*** (Clarke), ***Metopolophium dirhodum*** (Walker), ***Myzodium mimulicola*** (Drews & Sampson), ***Myzus cerasi*** (Fabricius) (Pike et al. 2000); ***Myzus lythri*** (Schrank) (Carroll & Hoyt 1986; Johnson 1987); ***Myzus persicae*** (Sulzer) (Schlinger & Hall 1960a; Mackauer & Starý 1967; Muesebeck 1967; Marsh 1979; Carroll & Hoyt 1986; Johnson 1987; Finlayson 1990; Pike et al. 2000); ***Nasonovia ribisnigri*** (Mosley), ***Nasonovia*** sp. (Pike et al. 2000); ***Nearctaphis bakeri*** (Cowen) (Carroll & Hoyt 1986; Johnson 1987; Pike et al. 2000); ***Nearctaphis kachena*** (Hottes) (Pike et al. 2000); ***Ovatus crataegarius*** (Walker) (Mackauer & Starý 1967; Marsh 1979); ***Phorodon humuli*** (Schrank) (Carroll & Hoyt 1986; Pike et al. 2000; Wright & James 2001); ***Rhopalosiphum maidis*** (Fitch) (Pike et al. 1996, 2000); ***Rhopalosiphum oxyacanthae*** (Schrank) (Carroll & Hoyt 1986; Johnson 1987; Pike et al. 2000); ***Rhopalosiphum padi*** (Linnaeus) (Pike et al. 1996, 2000); ***Sitobion avenae*** (Fabricius) (Carroll & Hoyt 1986; Pike et al. 1997b, 2000); ***Uroleucon ambrosiae*** (Thomas) (Schlinger & Hall 1960a; Muesebeck 1967); ***Uroleucon*** sp. (Pike et al. 2000); ***Wahlgreniella nervata*** (Gillette) (Carroll & Hoyt 1986; Johnson 1987).

***Distribution.*** **Canada** (Johnson 1987; Raworth et al. 2008); **USA** (Smith 1944; Muesebeck & Walkley 1951; Muesebeck 1958a, 1967; Schlinger & Hall 1960a; Schlinger et al. 1960a, 1960b; Mackauer & Starý 1967; Carroll & Hoyt 1986; Johnson 1987; Finlayson 1990; Zuparko & Dahlsten 1993; Pike et al. 1996,1997b, 2000; Wright & James 2001; Raworth et al. 2008).

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

*Praon unitum* Mescheloff & Rosen, 1988:97. Holotype ♀, paratypes ♀♀ ♂♂ (AROV). – Palestine [Israel].

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

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

### *Praon uroleucon* Tomanović & Kavallieratos, 2003

*Praon uroleucon* Tomanović & Kavallieratos [in Tomanović et al.], 2003a:20. Holotype ♀ (BNHM), paratypes ♀♀ ♂♂ (AUAG). – Montenegro.

***Host.*** ***Uroleucon*** sp. (Tomanović et al. 2003a; Kavallieratos et al. 2004; Žikić et al. 2012).

***Distribution.*** **Montenegro** (Tomanović et al. 2003a; Kavallieratos et al. 2004; Žikić et al. 2012); **Russia** (Davidian 2019a, 2019b); **Türkiye** (Akar & Çetin Erdoğan 2017; Rakhshani et al. 2019); **United Kingdom** (Davidian & Rispin 2016).

### *Praon volucre* (Haliday, 1833) [Fig. 71D]

*Aphidius* (*Praon*) *volucris* Haliday, 1833:484. Lectotype ♀ (after Mackauer 1961b), paralectotype ♂ (NHMUK). – United Kingdom.

**Syn.:** *Blacus angulator* Nees von Esenbeck, 1834; *Aphidius aphidivorum* Ratzeburg, 1844; *Praon pruni* Ivanov, 1925; *Praon mongolicum* Watanabe, 1949; *Praon myzophagum* Mackauer, 1959.

***Hosts.*** ***Acyrthosiphon caraganae*** (Cholodkovsky) (Starý 1963b, 1964a, 1966c, 1967b, 1974b, 1974c, 1977, 1987a, 2006; Mackauer & Starý 1967; Kierych 1975; Wiackowski et al. 1997, 2001; Davidian 2019a); ***Acyrthosiphon chelidonii*** (Kaltenbach) (Goury & Guignon 1905; Mackauer 1959a, 1962c; Mackauer & Starý 1967; Starý 1974b, 1974c); ***Acyrthosiphon cyparissiae*** (Koch) (Starý 1974b, 1974c, 1977); ***Acyrthosiphon daphnidis*** Ilharco (Tomanović et al. 2004a); ***Acyrthosiphon euphorbiae*** Börner (Starý 2006); ***Acyrthosiphon gossypii*** Mordvilko (Mackauer & Starý 1967; Zheng et al. 1985; Wei et al. 2005; Alikhani et al. 2013); ***Acyrthosiphon ilka*** Mordvilko (Mackauer & Starý 1967); ***Acyrthosiphon knechteli*** (Börner) (Mackauer & Starý 1967); ***Acyrthosiphon kondoi*** Shinji (Starý 1993b, 1995c; Starý et al. 2007); ***Acyrthosiphon lactucae*** (Passerini) (Düzgüneş et al. 1982; Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b, 2009a; Uysal et al. 2004; Rakhshani et al. 2007a; Žikić et al. 2012); ***Acyrthosiphon lambersi*** Leclant & Remaudière (Starý et al. 1973, 1975; Starý 1976a); ***Acyrthosiphon malvae*** (Mosley) (Mackauer 1962c; Starý et al. 1973, 1993a; Starý 1974b, 1974c, 1976a, 1993b, 1995c; Cecilio & Ilharco 2002; Tomanović et al. 2003b, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012; Hubert & van Achterberg 2023); ***Acyrthosiphon papaverinum*** Nevsky ex Pek (Davidian 2019a); ***Acyrthosiphon parvum*** Börner (Starý et al. 1977a); ***Acyrthosiphon pisum*** (Harris) (Mackauer 1959a, 1962c; Markkula 1960; Mackauer & Starý 1967; Hozák 1970; Zeren & Düzgüneş 1983; Cameron et al. 1984; Tremblay et al. 1985; Mustata 1986; Pennacchio & Tremblay 1988; Starý 1993b, 1995c; Lukas 1996; Wiackowski et al. 1997; Suay Cano & Michelena Saval 1998; Starý et al. 1999, 2007; Müller et al. 1999; Tomanović et al. 1999b, 2003b, 2009a; Sanchis et al. 2000; Chen & Shi 2001; Kavallieratos et al. 2001, 2003, 2004; Uysal et al. 2004; Wei et al. 2005; Rakhshani et al. 2006a, 2007a, 2019; Laamari et al. 2011, 2012; Bodlah et al. 2012c; Kos et al. 2012; Žikić et al. 2012; Derocles et al. 2014a; Chaouche & Laamari 2015; Davidian 2019a); ***Acyrthosiphon*** spp. (Starý et al. 1975; Tomanović et al. 1999b; Starý 2006; Žikić et al. 2012); ***Agrioaphis castanicola*** Baker (Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b, 2009a); ***Amphorophora amurensis*** (Mordvilko) (Takada 1968; Starý 1975a); ***Amphorophora catharinae*** (Nevsky) (Starý & González 1978; Starý 1979a; Barahoei et al. 2010, 2012, 2013; Rakhshani et al. 2012b); ***Amphorophora rubi*** (Kaltenbach) (Mackauer 1959a; Mackauer & Starý 1967; Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b, 2009a; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2014); ***Amphorophora*** sp. (Žikić et al. 2012); ***Aphis affinis*** Del Guercio (Rakhshani et al. 2012b); ***Aphis arbuti*** Ferrari (Starý 1974b, 1974c, 1976a; Starý et al. 1971); ***Aphis aurantii*** Boyer de Fonscolombe (Ferrière & Voukassovitch 1928; Tremblay et al. 1980, 1985;

Hussein & Kawar 1984; Tremblay 1984; Michelena Saval & Sanchis Segovia 1997b; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2003, 2004, 2005b, 2008a; Tomanović et al. 2003b, 2009a; Boukhris-Bouhachem 2011; Yoldaş et al. 2011; Labdaoui et al. 2026); ***Aphis ballotae*** Passerini (Gagui et al. 2023); ***Aphis craccivora*** Koch (Mackauer & Starý 1967; Starý 1967a, 1974b, 1974c, 1976a, 1979a, 1987a, 1993b, 1995c; Starý et al. 1971, 1975; Zeren & Düzgüneş 1983; Mescheloff & Rosen 1988; Kavallieratos et al. 2001, 2003, 2004, 2010; Tomanović et al. 2003b, 2009a; Uysal et al. 2004; Rakhshani et al. 2005a, 2006a, 2007a; Barahoei et al. 2010, 2012, 2013; Yoldaş et al. 2011; Laamari et al. 2011, 2012; Rakhshani et al. 2012b; Alikhani et al. 2013); ***Aphis crepidis*** (Börner) (Tomanović et al. 2003b, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis dlabolai*** Holman (Barahoei et al. 2013); ***Aphis epilobiaria*** Theobald (Mescheloff & Rosen 1988); ***Aphis fabae*** Scopoli (Mackauer 1962c; Mackauer & Starý 1967; Dharmadhikari & Ramaseshiah 1970; Starý et al. 1971, 2000, 2014a; Starý 1974b, 1974c, 1976a, 1979a, 2006; Tremblay et al. 1980, 1985; Abou-Fakhr 1982; Düzgüneş et al. 1982; Hussein & Kawar 1984; González & Michelena 1987; Barczak 1988, 1991b; Mescheloff & Rosen 1988; Ben Halima et al. 1994; Abou-Fakhr & Kawar 1998; Barczak et al. 1999; Kavallieratos et al. 2001, 2003, 2004, 2010, 2013; Tomanović et al. 2003b, 2009a; Uysal et al. 2004; Ben Halima & Ben Hamouda 2005; Güz & Kılınçer 2005; Rakhshani et al. 2007a; Laamari et al. 2011, 2012; Nazari et al. 2012; Žikić et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Alaserhat & Canbay 2017; Davidian 2019a; Alaserhat et al. 2021; Satar et al. 2021); ***Aphis fabae cirsiiacanthoidis*** Scopoli (Völkl 1989; Starý 1991; Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b, 2009a; Rakhshani et al. 2007a); ***Aphis frangulae*** Kaltenbach (Davidian 2019a); ***Aphis galiiscabri*** Schrank (Bayram et al. 2018); ***Aphis gossypii*** Glover (Mackauer & Starý 1967; Rao et al. 1969; Starý 1974b, 1974c; Tremblay et al. 1980, 1985; Abou-Fakhr 1982; Hussein & Kawar 1984; Darwish et al. 1994; Kavallieratos & Lykouressis 1999a; Chen & Shi 2001; Kavallieratos et al. 2001, 2002a, 2003, 2004, 2005b, 2010; Rabasse et al. 2001; Tomanović et al. 2003b, 2009a; Lumbierres et al. 2005; Yoldaş et al. 2011; Barahoei et al. 2013; Satar et al. 2014; Ghelamallah et al. 2018; Pons et al. 2018; Zouari et al. 2018; Davidian 2019a; Alaserhat et al. 2021); ***Aphis grossulariae*** Kaltenbach (Starý 1974b, 1974c, 1987a, 2006); ***Aphis hederae*** Kaltenbach (Ippolito & Parenzan 1982); ***Aphis hillerislambersi*** Nieto Nafría & Mier Durante (Suay Cano & Michelena Saval 1998); ***Aphis idaei*** van der Goot (Mackauer & Starý 1967; Starý 1974b, 1974c); ***Aphis intybi*** Koch (Starý 2006); ***Aphis marthae*** Essig (Starý 1993b, 1995c); ***Aphis nasturtii*** Kaltenbach (Mescheloff & Rosen 1988; Starý et al. 2014a); ***Aphis nerii*** Boyer de Fonscolombe (Tremblay et al. 1985; Abou-Fakhr & Kawar 1998); ***Aphis pomi*** De Geer (Mackauer 1959a; Mackauer & Starý 1967; Starý 1966b, 1966d, 1974b, 1974c, 1976a, 1979a; Cierniewska 1973; Düzgüneş et al. 1982; Hussein & Kawar 1984; Uysal et al. 2004; Rakhshani 2012; Mustafayeva 2020); ***Aphis punicae*** Passerini (Hussein & Kawar 1984); ***Aphis salviae*** Walker (Laamari et al. 2011, 2012); ***Aphis sambuci*** Linnaeus (Starý et al. 1971; Starý 1974b, 1974c; Barczak et al. 1999; Davidian & Manukyan 2024); ***Aphis solanella*** Theobald (Starý 1976a; Düzgüneş et al. 1982; Kavallieratos et al. 2001, 2003, 2004, 2010; Tomanović et al. 2003b, 2009a; Uysal et al. 2004; Güz & Kılınçer 2005; Rakhshani et al. 2007a, 2019; Talebi et al. 2009; Barahoei et al. 2010, 2012, 2013; Alikhani et al. 2013); ***Aphis spiraecola*** Patch (Darwish et al. 1994; Boukhris-Bouhachem 2011; Yoldaş et al. 2011; Zouari et al. 2018; Alaserhat et al. 2021); ***Aphis spiraephaga*** Müller (Starý 1995a, 2006; Tomanović et al. 2003b, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012); ***Aphis tirucalis*** Hille Ris Lambers (Starý et al. 1971; Starý 1974b, 1974c); ***Aphis umbrella*** (Börner) (Tremblay et al. 1985, Abou-Fakhr & Kawar 1998; Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b, 2009a); ***Aphis urticata*** Gmelin (Rakhshani et al. 2012b); ***Aphis viticis*** Ferrari (Kavallieratos et al. 2001, 2003, 2004, 2008a; Tomanović et al. 2003b, 2009a); ***Aphis*** spp. (Niezabitowski 1910; Giraud & Laboulbène 1877; Mackauer 1959a; Starý 1966d, 1974b; Starý et al. 1971; Bhagat 1984; Mescheloff & Rosen 1988; Tomanović et al. 1999b; Davidian 2019a); ***Aulacorthum solani*** (Kaltenbach) (Mackauer 1959a; Mackauer & Starý 1967; Starý 1974b, 1974c, 1975a, 1976a, 1993b; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2003, 2004, 2005b, 2008b, 2010; Tomanović et al. 2003b, 2009a; Starý et al. 2007; Žikić et al. 2012); ***Aulacorthum solani aegopodii*** Börner (Starý 1974b, 1974c, 2006; Kierych 1975); ***Aulacorthum syringae*** (Matsumura) (Takada 1968, 1973; Starý 1975a); ***Brachycaudus amygdalinus*** (Schouteden) (Starý 1974c, 1976a; Düzgüneş et al. 1982; Uysal et al. 2004; Rakhshani et al. 2007a; Talebi et al. 2009; Rakhshani 2012); ***Brachycaudus cardui*** (Linnaeus) (Düzgüneş

et al. 1982; Wiackowski & Wiackowska 1996; Wiackowski et al. 2001; Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b, 2009a; Uysal et al. 2004; Aslan & Karaca 2005; Rakhshani et al. 2007a; Laamari et al. 2011, 2012; Kos et al. 2012; Rakhshani 2012); ***Brachycaudus cerasicola*** (Mordvilko) (Starý 1974c, 1979a); ***Brachycaudus cerinthis*** Bozhko (Mitrovski-Bogdanović et al. 2014); ***Brachycaudus helichrysi*** (Kaltenbach) (Mackauer 1959a; Starý 1966c, 1969a, 1974b, 1974c, 1987a, 1995b, 2006; Mackauer & Starý 1967; Starý et al. 1971, 2007; Tremblay et al. 1985; Tomanović et al. 1998b, 2003b, 2009a; Kavallieratos et al. 2001, 2003, 2004, 2005b, 2008b, 2010; Rakhshani et al. 2007a; Talebi et al. 2009; Jafari Ahmadabadi et al. 2011; Jafari Ahmadabadi & Modarres Awal 2012; Rakhshani 2012; Žikić et al. 2012; Barahoei et al. 2013); ***Brachycaudus helichrysi warei*** (Theobald) (Kavallieratos et al. 2004; Tomanović et al. 2009a); ***Brachycaudus lychnidis*** (Linnaeus) (Starý 1963b, 1964d, 1966c, 1967b, 1974b, 1974c, 1976a, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1971, 1973, 1975; Ferrer-Suay et al. 2017); ***Brachycaudus persicae*** Passerini (Starý 1966c; Rakhshani 2012); ***Brachycaudus populi*** (Del Guercio) (Starý 2006); ***Brachycaudus prunicola*** (Kaltenbach) (Mackauer 1959a; Starý 1974c, 1979a; Davidian 2019a); ***Brachycaudus tragopogonis*** (Kaltenbach) (Fulmek 1968; Mescheloff & Rosen 1988); ***Brachycaudus*** spp. (Starý 1977; Mescheloff & Rosen 1988; Tomanović et al. 1999b; Starý 2006); ***Brachycorynella asparagi*** (Mordvilko) (Starý 1990a, 2006); ***Brevicoryne brassicae*** (Linnaeus) (Ferrière & Voukassovitch 1928; Mackauer 1959a; Starý 1963b, 1967b, 1974b, 1974c, 1987a, 2006; Mackauer & Starý 1967; Kılınçer 1982; Mustata 1986; Starý & Delfino 1987; Farrugia 1995; Tomanović et al. 2003b, 2009a; Kavallieratos et al. 2004; Uysal et al. 2004; Starý et al. 2007; Kos et al. 2012; Mifsud & Starý 2012; Žikić et al. 2012; Derocles et al. 2014a; Hubert & van Achterberg 2023); ***Capitophorus elaeagni*** (Del Guercio) (Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b, 2009a); ***Capitophorus*** spp. (Starý 1993b, 1995c); ***Cavariella*** sp. (Derocles et al. 2012); ***Chaetosiphon tetrarhodum*** (Walker) (Starý 1993b, 1995c); *Chromaphis juglandicola* (Kaltenbach) (Wiackowski & Wiackowska 1996; Wiackowski et al. 2001); *Cinara cedri* Mimeur (Oğuzoğlu & Avcı 2025); *Cinara cembrae* (Seitner) (Mackauer 1959a; Györfi 1960); *Cinara cupressi* (Buckton) (Ataeva 1961); *Cinara pinea* (Mordvilko) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Cinara pineti*** (Fabricius) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Corylobium avellanae*** (Schrank) (Starý 1974b, 1974c, 2006; Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b, 2009a); ***Cryptomyzus ribis*** (Linnaeus) (Meyer 1927; Mackauer 1959a; Mackauer & Starý 1967; Barannik 1986; Starý et al. 2007; Žikić et al. 2012; Davidian 2019a); ***Cryptomyzus*** spp. (Tomanović et al. 1999b; Mitrovski-Bogdanović et al. 2014); ***Diuraphis calamagrostis*** (Ossiannilsson) (Beirne 1942; Bhagat 1984); ***Diuraphis noxia*** (Mordvilko) (Starý 1999b, 2006; Starý et al. 2000; Uysal et al. 2004; Rakhshani et al. 2007a, 2008b; Barahoei et al. 2013); ***Drepanosiphon platanoidis*** (Schrank) (Mackauer 1959a); ***Dysaphis crataegi*** (Kaltenbach) (Barannik 1986; Davidian 2019a); ***Dysaphis plantaginea*** (Passerini) (Mackauer & Starý 1967; Cierniewska 1973; Starý 1974b, 1974c; Wiackowski & Wiackowska 1996; Wiackowski et al. 2001); ***Dysaphis pyri*** (Boyer de Fonscolombe) (Rakhshani 2012); ***Dysaphis reaumuri*** (Starý 1974b, 1974c; Davidian 2019a); ***Dysaphis*** spp. (Starý 1964d, 1966c, 1969a, 1974b, 1974c, 1979a, 1987a, 2006); ***Elatobium abietinum*** (Walker) (Mackauer 1959a; Mackauer & Starý 1967); ***Eucallipterus tiliae*** (Linnaeus) (Davidian 2019c); ***Eucarazzia elegans*** (Ferrari) (Starý 1974b, 1974c, 1976a; Starý et al. 1971); ***Euceraphis punctipennis*** (Zetterstedt), *Eulachnus agilis* (Kaltenbach) (Wiackowski & Wiackowska 2000; Wiackowski et al. 2001); ***Hyadaphis foeniculi*** (Passerini) (Starý 1974c, 1979a; Tomanović et al. 2003b, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012); ***Hyadaphis*** sp. (Starý 1974b, 1974c, 2006); ***Hyalopterus amygdali*** (Blanchard) (Ferrière & Voukassovitch 1928; Starý 1966d; Kierych 1975; Darwish 1992; Darwish et al. 1994; Kavallieratos et al. 2001, 2003, 2004, 2008b; Tomanović et al. 2003b, 2009a; Lumbierres et al. 2005; Rakhshani et al. 2007a; Rakhshani 2012; Nazari et al. 2012; Taheri & Rakhshani 2013; Pons et al. 2018; Zouari et al. 2018); ***Hyalopterus pruni*** (Geoffroy) (Ivanov 1927; Györfi 1943; Benoit 1955; Mackauer 1959a, 1962c; Wiackowski & Wiackowska 1961; Starý & Rupais 1963; Starý 1963b, 1964c, 1964d, 1965a, 1965b, 1966a, 1966b, 1966c, 1966d, 1967b, 1974b, 1974c, 1976a, 1977, 1979a, 1987a, 1995b, 2006; Akhvlediani 1964; Mackauer & Heie 1965; Mackauer & Starý 1967; Tremblay 1967a; Remaudière & Leclant 1971; Starý & Kaddou 1971; Starý et al. 1971, 1973, 1975; Cierniewska 1973; Kierych 1980; Rakauskas 1981; Düzgüneş et al. 1982; Hussein & Kawar 1984; González & Michelena 1987; Michelena et al. 1994, 2004; Wiackowski & Wiackowska 1996; Atanassova

1997; Kolarov 1997; Tomanović et al. 1998b, 1999b, 2003b, 2009a, 2012; Kavallieratos et al. 2001, 2003, 2004, 2008b; Wiackowski et al. 2001; Ölmez & Ulusoy 2003; Uysal et al. 2004; Aslan & Karaca 2005; Ben Halima & Ben Hamouda 2005; Güz & Kılınçer 2005; Rakhshani et al. 2007a; Jafari Ahmadabadi et al. 2011; Jafari Ahmadabadi & Modarres Awal 2012; Kos et al. 2012; Laamari et al. 2012; Rakhshani 2012; Žikić et al. 2012; Alikhani et al. 2013; Barahoei et al. 2013; Barczak et al. 2013; Ferrer-Suay et al. 2017; Pons et al. 2018; Davidian 2019a; Sadat et al. 2019; Davidian & Manukyan 2024); ***Hyperomyzus lactucae*** (Linnaeus) (Ferrière & Voukassovitch 1928; Mackauer 1959a, 1962c; Starý 1963b, 1964d, 1965a, 1966c, 1966d, 1974b, 1974c, 1976a, 1977, 1993b, 1995c, 2006; Mackauer & Starý 1967; Starý et al. 1975, 1993a, 2007; Abou-Fakhr 1982; Düzgüneş et al. 1982; Bhagat 1984; Hussein & Kawar 1984; Aeschlimann & Vitou 1985; Tremblay et al. 1985; Barannik 1986; Carver & Woolcock 1986; González & Michelena 1987; Mescheloff & Rosen 1988; Cecilio 1996; Wiackowski & Wiackowska 1996; Abou-Fakhr & Kawar 1998; Tomanović et al. 1999b, 2003b, 2009a; Kavallieratos et al. 2001, 2003, 2004, 2005b; Wiackowski et al. 2001; Uysal et al. 2004; Güz & Kılınçer 2005; Nebreda et al. 2005; Rakhshani et al. 2007a; Talebi et al. 2009; Laamari et al. 2011, 2012; Žikić et al. 2012; Derocles et al. 2014a; Chaouche & Laamari 2015; Pons et al. 2018; Hemidi & Laamari 2020); ***Hyperomyzus picridis*** (Börner) (Starý 1976a; Starý et al. 1977a; Laamari et al. 2011, 2012); ***Hyperomyzus*** spp. (Starý 1966d, 1974c, 2006; Tremblay 1967a; Ferrer-Suay et al. 2017); ***Illinoia liriodendri*** (Monell) (Meseguer et al. 2024); ***Illinoia spiraecola*** (Patch) (Dharmadhikari & Ramaseshiah 1970); ***Impatientinum asiaticum*** Nevsky (Starý 1970d, 1974b, 1987a, 2006; Starý et al. 2014a); ***Impatientinum balsamines*** (Kaltenbach) (Starý 1974c, 2006; Starý et al. 2014a; Ferrer-Suay et al. 2017); ***Linosiphon galiophagum*** (Wimshurst) (Starý 1974b, 1974c, 2006); ***Linosiphon*** sp. (Ferrer-Suay et al. 2017); ***Liosomaphis atra*** Hille Ris Lambers (Bhagat 1984); ***Liosomaphis berberidis*** (Kaltenbach) (Laamari et al. 2011); ***Lipaphis erysimi*** (Kaltenbach) (Starý 1974b, 1974c, 2006; Starý & Ghosh 1983; Kos et al. 2012; Ferrer-Suay et al. 2017); ***Lipaphis fritzmuelleri*** Börner (Starý 1974b, 1974c, 1987a, 2006); ***Macrosiphoniella absinthii*** (Linnaeus) (Mackauer 1959a); ***Macrosiphoniella riedeli*** Szelegiewicz (Mescheloff & Rosen 1988; Davidian 2019a); ***Macrosiphoniella*** spp. (Starý 1965a, 1974b, 1974c); ***Macrosiphum cholodkovskyi*** (Mordvilko) (Starý et al. 1973); ***Macrosiphum daphnidis*** Börner (Mackauer 1959a; Mackauer & Starý 1967; Tomanović et al. 1999b, 2003b, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012); ***Macrosiphum euphorbiae*** (Thomas) (Dunn 1949; Mackauer 1959a; Starý 1966c, 1966d, 1967a, 1974b, 1974c, 1976a, 1987a, 1993b, 1995c; Mackauer & Starý 1967; Roberti 1969; Starý et al. 1971, 1993a, 2007; Zeren & Düzgüneş 1983; Aeschlimann & Vitou 1985; Mescheloff & Rosen 1988; Yoldaş et al. 1990; Ben Halima & Ben Hamouda 1993; Kavallieratos & Lykouressis 1999a; Tomanović et al. 1999b, 2003b, 2009a; Kavallieratos et al. 2001, 2003, 2004, 2005b, 2008a, 2010; Uysal et al. 2004; Lins et al. 2011; Žikić et al. 2012; Derocles et al. 2014a; Bayram et al. 2018; Davidian 2019a; Alaserhat et al. 2021); ***Macrosiphum funestum*** (Macchiati) (Starý 1974b, 1974c, 2006); ***Macrosiphum gei*** (Koch) (Starý et al. 1971; Starý 1974b, 1974c); ***Macrosiphum prenanthidis*** Börner (Starý et al. 1971; Starý 1974b, 1974c, 2006; Ferrer-Suay et al. 2017); ***Macrosiphum rosae*** (Linnaeus) (Niezabitowski 1910; Mackauer 1959a, 1962c; Starý 1961h, 1964d, 1965a, 1966c, 1966d, 1967b, 1974b, 1974c, 1976a, 1977, 1979a, 1987a, 1993b, 1995b, 2006; Mackauer & Starý 1967; Roberti 1969; Starý & Kaddou 1971; Starý et al. 1973, 1993a, 2007; Tremblay 1976; Rakauskas 1981; Abou-Fakhr 1982; Düzgüneş et al. 1982; Hussein & Kawar 1984; Tremblay et al. 1985; González & Michelena 1987; Starý & Sekkat 1987; Costa 1988; Cecilio 1996; Wiackowski et al. 1997, 2001; Abou-Fakhr & Kawar 1998; Kavallieratos et al. 2001, 2003, 2004, 2013; Cecilio & Ilharco 2002; Tomanović et al. 2003b, 2009a; Uysal et al. 2004; Rakhshani et al. 2007a; Talebi et al. 2009; Barahoei et al. 2010, 2012, 2013; Laamari et al. 2011; Derocles et al. 2012, 2014a; Kos et al. 2012; Nazari et al. 2012; Žikić et al. 2012; Alikhani et al. 2013; Ferrer-Suay et al. 2017; Davidian 2019a; Mustafayeva 2020); ***Macrosiphum sorbi*** Matsumura (Takada 1968, 1973; Starý 1975a); ***Macrosiphum stellariae*** Theobald (Starý 1974b, 1974c); ***Macrosiphum*** spp. (Starý 1974b; Bhagat 1984; Das & Chakrabarti 1991a; Starý et al. 2000; Mitrovski-Bogdanović et al. 2014); ***Megoura crassicauda*** Mordvilko (Davidian 2019a); ***Megoura viciae*** Buckton (Wiackowski et al. 2001); ***Melanaphis donacis*** (Passerini) (Starý & Kaddou 1971; Starý 1974c, 1976a); ***Metopeurum fuscoviride*** Stroyan (Starý 2006); ***Metopolophium albidum*** Hille Ris Lambers (Mackauer & Starý 1967; Müller et al. 1999); ***Metopolophium dirhodum*** (Walker) (Dean 1974; Powell 1980, 1982; Dean et al. 1981; Starý 1981b, 1987a, 1993b, 1995c, 2006; Ankersmit 1983; Polgár 1984; Plewka & Pankanin-

Franczyk 1989; Höller et al. 1993; Hance 1995; Tomanović et al. 1999b, 1999c, 2003b, 2009a; Kavallieratos et al. 2001, 2003, 2004, 2005b; Wiackowski et al. 2001; Starý et al. 2007; Rakhshani et al. 2008b; Žikić et al. 2012; Barahoei et al. 2013; Taheri & Rakhshani 2013; Derocles et al. 2014a); ***Metopolophium festucae cerealium*** Stroyan (Starý 1993b, 1995c); ***Metopolophium montanum*** Hille Ris Lambers (Starý et al. 1971; Starý 1974b, 1974c); ***Microlophium carnosum*** (Buckton) (Starý 1963b, 1964d, 1966c, 1967b, 1974b, 1974c, 1977, 1983f, 1987a, 2006; Mackauer & Starý 1967; Starý et al. 1973; Cameron et al. 1984; Kos et al. 2012; Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b, 2009a; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2014); ***Myzaphis rosarum*** (Kaltenbach) (Düzgüneş et al. 1982; Uysal et al. 2004; Ferrer-Suay et al. 2017); ***Myzaphis turanica*** Nevsky (Bhagat 1984); ***Myzocallis coryli*** (Goeze) (Wiackowski & Wiackowska 1996; Wiackowski et al. 2001; Derocles et al. 2012); ***Myzus beybienkoi*** (Narzikulov) (Starý et al. 2000); ***Myzus cerasi*** (Fabricius) (Starý 1974b, 1974c; Wiackowski & Wiackowska 1996; Wiackowski et al. 2001; Davidian 2019a); ***Myzus certus*** (Walker) (Mackauer 1968d; Marsh 1979); ***Myzus ligustri*** (Mosley) (Starý 1974b, 1974c; Tomanović et al. 2003b, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012; Ferrer-Suay et al. 2017); ***Myzus lythri*** (Schrank) (Starý et al. 1977a); ***Myzus ornatus*** Laing (Starý et al. 1971, 2007; Starý 1974b, 1974c, 1993b, 1995c); ***Myzus padellus*** Hille Ris Lambers & Rogerson (Barannik 1986); ***Myzus persicae*** (Sulzer) (Dunn 1949; Watanabe 1949; Mackauer 1959a, 1962c, 1968d; Starý 1965a, 1967a, 1974b, 1974c, 1975a, 1976a, 1979a, 1987a, 1993b, 1995c, 2006; Mackauer & Starý 1967; Rosen 1967; Watanabe & Takada 1967; Avidov & Harpaz 1969; Dharmadhikari & Ramaseshiah 1970; Starý et al. 1971, 1973, 1975, 1993a, 2000, 2007; Tremblay 1976; Marsh 1979; Plotnikov 1981; Abou-Fakhr 1982; Düzgüneş et al. 1982; Hofsvang & Høgvar 1983b; Zeren & Düzgüneş 1983; Hussein & Kawar 1984; Tremblay et al. 1985; Zheng et al. 1985; Starý & Sekkat 1987; Mescheloff & Rosen 1988; Finlayson 1990; Ben Halima & Ben Hamouda 1993, 2005; Farrugia 1995; Vidal 1997a; Abou-Fakhr & Kawar 1998; Tomanović et al. 1998b, 1999b, 2003b, 2005a, 2005b, 2009a, 2016; Kavallieratos & Lykouressis 1999a; Chen & Shi 2001; Kavallieratos et al. 2001, 2003, 2004, 2008b, 2010; Wiackowski et al. 2001; Uysal et al. 2004; Güz & Kılınçer 2005; Rakhshani et al. 2007a; Boukhris-Bouhachem 2011; Jafari Ahmadabadi et al. 2011; Yoldaş et al. 2011; Jafari Ahmadabadi & Modarres Awal 2012; Laamari et al. 2012; Mifsud & Starý 2012; Nazari et al. 2012; Rakhshani 2012; Žikić et al. 2012; Barahoei et al. 2013; Chaouche & Laamari 2015; Zouari et al. 2018; Aparicio et al. 2019; Davidian 2019a; Mustafayeva 2020; Alaserhat et al. 2021; Satar et al. 2021); ***Myzus varians*** Davidson (Arzone & Alma 1986; Tomanović et al. 1998b, 2003b, 2009a; Kavallieratos et al. 2001, 2003, 2004; Žikić et al. 2012); ***Myzus*** sp. (Starý & Bhagat 1978); ***Nasonovia ribisnigri*** (Mosley) (Starý 1993b, 1995c; Wiackowski & Wiackowska 1996; Wiackowski et al. 2001); ***Neomyzus circumflexus*** (Buckton) (Starý 1974c, 1979a; Kavallieratos et al. 2016); ***Ovatus crataegarius*** (Walker) (Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b, 2009a); ***Phorodon humuli*** (Schrank) (Starý 1974b, 1974c, 1977, 1995b, 2006; Pike & Starý 1996a; Tomanović et al. 1998b, 1999b, 2003b, 2009a; Kavallieratos et al. 2004, 2008b; Rakhshani et al. 2007a; Žikić et al. 2012; Ferrer-Suay et al. 2017; Davidian 2019a, 2019c); ***Pseudomegoura magnoliae*** (Essig & Kuwana) (Watanabe & Takada 1964b; Takada 1968, 1973; Starý 1975a); ***Rhodobium porosum*** (Sanderson) (Starý 1993b, 1995c; Starý et al. 2007); ***Rhopalomyzus lonicerae*** (Siebold) (Starý 1974b, 1995b, 2006; Tomanović et al. 2003b, 2009a; Kavallieratos et al. 2004; Žikić et al. 2012); ***Rhopalomyzus poae*** (Gillette) (Starý 1974b, 1974c, 1987a, 2006); ***Rhopalosiphoninus calthae*** (Koch) (Starý et al. 1971; Starý 1974b, 1974c); ***Rhopalosiphoninus*** sp. (Starý 1974b, 1977, 2006; Ferrer-Suay et al. 2017); ***Rhopalosiphum maidis*** (Fitch) (Hafez 1994; Starý 1995c; Güz & Kılınçer 2005; Rakhshani et al. 2007a, 2008b; Barahoei et al. 2010, 2012, 2013; Nazari et al. 2012; Alikhani et al. 2013); ***Rhopalosiphum oxyacanthae*** (Schrank) (Mackauer & Starý 1967); ***Rhopalosiphum padi*** (Linnaeus) (Mackauer 1959a, 1959e; Mackauer & Starý 1967; Starý 1974b, 1974c, 1976a, 1976c, 1977, 1979a, 1981b, 1987a, 1993b, 1995c, 1999b, 2006; Starý & Juchnevič 1978; Powell 1982; Polgár 1984; Barannik 1986; Höller et al. 1993; Hafez 1994; Özder & Toros 1999; Tomanović et al. 1999b, 1999c, 2003b, 2009a; Kavallieratos et al. 2001, 2002b, 2003, 2004, 2005b; Wiackowski et al. 2001; Uysal et al. 2004; Rakhshani et al. 2007a, 2008b; Žikić et al. 2012; Barahoei et al. 2013; Gadallah et al. 2017; Bayram et al. 2018; Davidian 2019a); ***Schizaphis graminum*** (Rondani) (Berest 1980, 1985; Starý 1981b, 1993b, 1995c, 2006; Gruber & Coutinot 1984; Mescheloff & Rosen 1988; Gruber et al. 1994; Hafez 1994; Tomanović et al. 1999b, 1999c, 2003b, 2009a;

Chen & Shi 2001; Kavallieratos et al. 2004, 2005b; Rakhshani et al. 2007a, 2008b; Nazari et al. 2012; Žikić et al. 2012; Barahoei et al. 2013); ***Semiaphis dauci sesseli*** Börner (Starý 1974b, 1974c); ***Siphonophora*** sp. (Mackauer 1959a); ***Sitobion avenae*** (Fabricius) (Mackauer 1959a, 1962c; Starý 1966d, 1974b, 1974c, 1975a, 1976a, 1976c, 1977, 1978b, 1993b, 1995b, 1995c, 1996, 1999b, 2006; Mackauer & Starý 1967; Takada 1968; Roberti 1969; Starý et al. 1973, 1975, 1993a, 2007; Dean 1974; Berest 1980, 1985; Düzgüneş et al. 1982; Powell 1982; Vickerman 1982; Ankersmit 1983; Pankanin-Franczyk 1983, 1986; Cameron et al. 1984; Polgár 1984; Kuo-Sell & Eggers 1987; Höller et al. 1993; Hance 1995; Pankanin-Franczyk & Ceryngier 1995; Le Ralec et al. 1996; Micha & Wyss 1996; Stilmant 1996; Özder & Toros 1999; Tomanović et al. 1999b, 1999c, 2003b, 2009a; Chen & Shi 2001; Kavallieratos et al. 2001, 2003, 2004, 2005b; Wiackowski et al. 2001; Ölmez & Ulusoy 2003; Uysal et al. 2004; Rakhshani et al. 2007a, 2008b; Derocles et al. 2012; Kos et al. 2012; Žikić et al. 2012; Barahoei et al. 2013; Gadallah et al. 2017; Davidian 2019a; Khaladi et al. 2025); ***Sitobion fragariae*** (Walker) (Mackauer 1959a, 1959e; Starý 1961h, 1965a, 1974b, 1974c, 1976a, 1981b, 1993b, 1995c; Mackauer & Starý 1967; Starý et al. 1975, 1993a, 1994b; Tremblay 1976; Mescheloff & Rosen 1988; Lilley et al. 1994a, 1994b; Kavallieratos et al. 2001, 2003, 2004, 2005b; Wiackowski et al. 2001; Tomanović et al. 2003b, 2009a; Laamari et al. 2011, 2012; Žikić et al. 2012; Khaladi et al. 2025); ***Sitobion ibarae*** (Matsumura) (Takada 1968; Starý 1975a); ***Tuberculatus annulatus*** (Hartig) (Marshall 1896; Wilson 1960; Mackauer 1959a); ***Uroleucon aeneum*** (Hille Ris Lambers) (Starý 1993b; Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b, 2009a); ***Uroleucon bereticum*** (Blanchard) (Starý et al. 2007); ***Uroleucon cichorii*** (Koch) (Tremblay et al. 1985; Tomanović et al. 2003b, 2009a; Kavallieratos et al. 2004; Rakhshani et al. 2007a; Kos et al. 2012; Žikić et al. 2012; Bayram et al. 2018); ***Uroleucon compositae*** (Theobald) (Rakhshani et al. 2007a; Barahoei et al. 2013); ***Uroleucon inulicola*** (Hille Ris Lambers) (Abou-Fakhr & Kawar 1998); ***Uroleucon jaceae*** (Linnaeus) (Mackauer 1959a, 1962c; Starý 1966d, 1974b, 1974c, 1976a; Mackauer & Starý 1967; Moreno et al. 1999; Kavallieratos et al. 2005b; Rakhshani et al. 2007a; Bayram et al. 2018); ***Uroleucon murale*** (Buckton) (Starý et al. 1971; Starý 1974b, 1974c); ***Uroleucon ochropus*** (Hille Ris Lambers) (Starý 1961h, 1965a, 1974b, 1974c, 1976a; Mackauer & Starý 1967; Starý et al. 1971); ***Uroleucon picridis*** (Fabricius) (Ferrière & Voukassovitch 1928; Mackauer 1959a; Mackauer & Starý 1967); ***Uroleucon solidaginis*** (Fabricius) (Mackauer 1959a); ***Uroleucon sonchi*** (Linnaeus) (Ferrière & Voukassovitch 1928; Mackauer 1959a; Mackauer & Starý 1967; Starý 1976a, 1993b, 1995c, 2006; Abou-Fakhr 1982; Tremblay et al. 1985; González & Michelena 1987; Starý et al. 1993a, 2007; Abou-Fakhr & Kawar 1998; Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b, 2009a; Güz & Kılınçer 2005; Rakhshani et al. 2007a, 2012b; Talebi et al. 2009; Barahoei et al. 2010, 2012, 2013; Laamari et al. 2011, 2012; Nazari et al. 2012); ***Uroleucon*** spp. (Ferrière & Voukassovitch 1928; Mackauer 1962h; Starý 1965a, 1966d, 1974b, 1976a, 1993b, 1995c; Starý et al. 1971, 2007; Bhagat 1984; González & Michelena 1987; Moreno et al. 1999; Kavallieratos et al. 2001, 2003, 2004, 2005b; Tomanović et al. 2003b; Güz & Kılınçer 2005; Rakhshani et al. 2007a, 2019; Kos et al. 2009a, 2012; Laamari et al. 2012; Mitrovski-Bogdanović et al. 2014); ***Vesiculaphis*** sp. (Starý 1974b, 1974c, 2006); ***Wahlgreniella ossiannilssoni*** Hille Ris Lambers (Starý et al. 1971; Starý 1974b, 1974c).

***Distribution.*** **Algeria** (Starý 1976a; Laamari et al. 2011, 2012; Chaouche & Laamari 2015; Aroun et al. 2016; Ghelamallah et al. 2018; Rakhshani et al. 2019; Sadat et al. 2019; Hemidi & Laamari 2020; Neffah-Baziz et al. 2020; Mohdeb et al. 2021; Gagui et al. 2023; Khaladi et al. 2024, 2025; Labdaoui et al. 2026; Taleb et al. 2026); **Andorra** (Sanchis et al. 1999); **Argentina** (De Santis 1967; Starý & Delfino 1987); **Armenia** (Davidian 2019a); **Australia** (Carver & Woolcock 1986; Ward et al. 2021b); **Austria** (Mackauer 1959a; Mackauer & Starý 1967; Fulmek 1968); **Azerbaijan** (Starý 1965a, 1974c, 1976a; Davidian 2019a; Mustafayeva 2020); **Belgium** (Lameere 1907; Hance 1995; Langer et al. 1998; Langer & Hance 2004; Jansen 2005; Alhmedi et al. 2006, 2009; Verheggen et al. 2009; Colinet et al. 2012; Derocles et al. 2012; Lopes et al. 2016); **Bosnia and Hercegovina** (Tomanović et al. 2003b, 2009a; Kavallieratos et al. 2004, 2005b, 2008b); **Brazil** (Sampaio et al. 2005; Starý et al. 2007); **Bulgaria** (Starý 1974b, 1974c, 1976a; Vassileva-Sumnalieva 1976; Starý 1981b; Atanassova 1997; Kolarov 1997; Kavallieratos et al. 2003, 2004, 2005b, 2013; Tomanović et al. 2003b, 2009a; Todorov 2007, 2009c, 2014; Todorov & Ivanova 2016); **Canada** (BOLD:AAE7186 | BOLD:ACG6374); **Canary Islands** (Mackauer 1962b; Mackauer & Starý 1967; Starý 1976a); **Chile** (Suzuki & Vargas 1980; Gerding et al. 1989; Starý 1993b, 1994, 1995c; Starý et al.

1993a, 1994b); **China** (Fahringer 1935; Watanabe 1949; Mackauer 1959a; Mackauer & Starý 1967; Starý 1979a; Dong & Wang 1985; Zheng et al. 1985, 1987; Lu & Ji 1992; Gu et al. 1995; Chen & Shi 2001; He et al. 2004; Tursun et al. 2006; Zhao et al. 2013); **Czech Republic** (Starý 1965b, 1966c, 1967a, 1970d, 1974b, 1974c, 1976a, 1976c, 1977, 1978b, 1981b, 1983f, 1987a, 1989a, 1990a, 1991, 1995a, 1995b, 1996, 1999b, 2006; Mackauer & Starý 1967; Hozák 1970; Starý & González 1992; Pike & Starý 1996a; Starý & Havelka 2008; Tomanović et al. 2012; Mitrovski-Bogdanović et al. 2014; Ferrer-Suay et al. 2017; Davidian 2019a); **Denmark** (Mackauer & Heie 1965; Mackauer & Starý 1967; Mackauer 1968c; Langer 2001); **Egypt** (Darwish 1992; Darwish et al. 1994; Hafez 1994; El-Ghiet et al. 2014; Gadallah et al. 2017; Rakhshani et al. 2019); **Estonia** (Tomanović et al. 2012); **Finland** (Markkula 1960; Mackauer & Starý 1967; Mackauer 1968c; Starý 1974b, 1974c, 1981b; Koponen & Vikberg 1984b; Tomanović et al. 2012); **France** (Kirchner 1867; Dours 1873; Gaulle 1908; Mackauer 1959a; Mackauer & Starý 1967; Remaudière & Leclant 1971; Starý et al. 1971, 1973, 1975, 1977a; Starý 1974b, 1974c, 1976a, 1981b; Gruber & Coutinot 1984; Aeschlimann & Vitou 1985; Völkl 1989; Gruber et al. 1994; Rabasse et al. 2001; Derocles et al. 2012, 2014a; Tomanović et al. 2012; Andrade et al. 2015); **Germany** (Nees von Esenbeck 1834a; Kirchner 1867; Marshall 1896; Szépligeti 1904; Mackauer 1959a, 1962c, 1964b; Mackauer & Starý 1967; Starý 1967a, 1974b, 1974c; Kuo-Sell & Eggers 1987; Boness & Starý 1988; Borgemeister & Poehling 1988; Kuo-Sell et al. 1989; Sorg 1990; Höller et al. 1993; Powell et al. 1993; Adisu et al. 2002; Belokobylskij et al. 2003; Vollhardt et al. 2008; Tomanović et al. 2012); **Georgia** (Akhvlediani 1964; Starý 1974c, 1976a; Tomanović et al. 2012; Davidian 2019a); **Greece** (Starý 1976a, 1981b; Aeschlimann & Vitou 1985; Vidal 1997a; Kavallieratos & Lykouressis 1999a; Kavallieratos et al. 2001, 2002a, 2002b, 2003, 2004, 2005a, 2005b, 2008a, 2008b, 2010, 2013, 2016; Tomanović et al. 2003b, 2009a, 2012); **Greenland** (BOLD:AAE7186); **Hungary** (Szépligeti 1898, 1899, 1904; Mackauer & Starý 1967; Starý 1974c; Polgár 1981, 1982, 1983, 1984, 1987); **Iceland** (Ruthe 1859; Szépligeti 1904; Lindroth 1931; Petersen 1956; Mackauer & Starý 1967); **India** (Subba Rao & Sharma 1960; Mackauer & Starý 1967; Rao et al. 1969; Dharmadhikari & Ramaseshiah 1970; Starý 1974c; Starý & Bhagat 1978; Agarwala et al. 1981a; Ghosh & Agarwala 1982; Starý & Ghosh 1983; Bhagat 1984; Raychaudhuri et al. 1990; Das & Chakrabarti 1991a, 2023a; Dey & Akhtar 2007; Ahmad & Wani 2014); **Iran** (Mackauer & Starý 1967; Starý 1979a; Starý et al. 2000; Rakhshani et al. 2005a, 2006a, 2007a, 2008b, 2011, 2012b, 2019; Barahoei et al. 2010, 2012, 2013; Fallahzadeh & Saghaei 2010; Jafari Ahmadabadi et al. 2011; Jafari Ahmadabadi & Modarres Awal 2012; Nazari et al. 2012; Rakhshani 2012; Alikhani et al. 2013; Taheri & Rakhshani 2013; Ghotbi Ravandi et al. 2017; Ameri et al. 2019; Abdoli et al. 2026); **Iraq** (Starý 1969a, 1974c, 1976a; Starý & Kaddou 1971; Aeschlimann & Vitou 1985; Tomanović et al. 2012; Rakhshani et al. 2019; Al-Ameri et al. 2025); **Ireland** (Beirne 1942; Mackauer 1959a; Mackauer & Starý 1967; Giller et al. 1995; O'Connor et al. 1999; Hubert & van Achterberg 2023); **Italy** (Quilis-Pérez 1932; Mackauer 1959a, 1968c; Starý 1964c, 1966d, 1967a, 1974b, 1974c, 1976a; Tremblay 1967a, 1976, 1984; Roberti 1969; Tremblay et al. 1978, 1980; Arzone & Alma 1986; Pennacchio & Tremblay 1988; Tremblay & Pennacchio 1988a; Ferrari & Nicoli 1994; Bergamesco et al. 1995; Lozzia 1999; Tomanović et al. 2012); **Japan** (Watanabe & Takada 1964b, 1967; Shiga 1967; Takada 1968, 1973; Starý 1975a; Konishi & Maetô 2000); **Kazakhstan** (Starý & Juchnevič 1978; Starý 1981b; Davidian 2019a); **Kyrgyzstan** (Starý 1967a, 1979a; Davidian 2019a); **Latvia** (Mackauer & Starý 1967); **Lebanon** (Abou-Fakhr 1982; Hussein & Kawar 1984; Tremblay 1984; Tremblay et al. 1985; Abou-Fakhr & Kawar 1998; Rakhshani et al. 2019); **Lithuania** (Rakauskas 1981, 1985); **Madeira Islands** (Graham 1986); **Malta** (Farrugia 1995; Mifsud & Starý 2012; Rakhshani et al. 2015b); **Moldova** (Adaškevič et al. 1971; Starý 1974c, 1981b; Talitzky & Kuslitzky 1990; Pike & Starý 1996a; Davidian 2019a); **Mongolia** (Watanabe 1949; Mackauer 1959a; Mackauer & Starý 1967); **Montenegro** (Tomanović et al. 2003b, 2004a, 2009a; Kavallieratos et al. 2004, 2008a, 2013; Žikić et al. 2012); **Morocco** (Starý & Sekkat 1987; Rakhshani et al. 2019); **Nepal** (Tamrakar & Singh 2000); **Netherlands** (Mackauer & Starý 1967; Mackauer 1968c; Starý 1981b; Papp et al. 1996; van Achterberg 2007); **North Macedonia** (Kavallieratos et al. 2004, 2005b; Tomanović et al. 2003b, 2009a, 2012); **Norway** (Starý 1981b; Hofsvang & Høgvar 1983b; Westrum et al. 2010; Mjøs et al. 2024); **Pakistan** (Starý & Ghosh 1983; Starý et al. 1999; Bodlah et al. 2012c); **Palestine** (Smith 1853; Kirchner 1867; Mackauer 1959a, 1959e; Fleschner 1963; Rosen 1966, 1967, 1969; Mackauer & Starý 1967; Avidov & Harpaz 1969; Starý 1967a, 1974c, 1976a, 1981b; Mescheloff & Rosen 1988;

Finlayson 1990); **Papua New Guinea** (BOLD:AAE7186); **Paraguay** (González Torres et al. 2018); **Poland** (Niezabitowski 1910; Wiackowski & Wiackowska 1961; Cierniewska 1973; Kierych 1975; Pankanin-Franczyk 1979, 1983, 1986; Starý 1981b; Barczak 1988, 1991b; Plewka & Pankanin-Franczyk 1989; Pankanin-Franczyk & Ceryngier 1995; Wiackowski & Wiackowska 1996; Gabrys et al. 1997; Huflejt 1997; Wiackowski et al. 1997; Pankanin-Franczyk & Sobota 1998; Barczak et al. 1999, 2005, 2013, 2014; Wiackowski & Wiackowska 2000; Tran & Piekarska-Boniecka 2017); **Portugal** (Starý 1976a; Costa 1988; Cecilio 1996; Cecilio & Ilharco 2002; Tomanović et al. 2012); **Romania** (Mustata 1986); **Russia** (Starý & Rupais 1963; Starý 1965a, 1967a, 1974b, 1974c; Mackauer & Starý 1967; Mackauer 1968c; Barannik 1986; Krotova 1993; Davidian 2007, 2019a, 2019b, 2019c; Gavrilyuk & Novgorodova 2007; Davidian & Gavrilyuk 2014; Davidian & Humala 2023; Davidian & Ruchin 2023; Davidian & Manukyan 2024; Shpanev 2025); **Serbia** (Ferrière & Voukassovitch 1928; Mackauer 1959a; Mackauer & Starý 1967; Starý 1974c, 1976a, 1981b; Tomanović et al. 1998a, 1999c, 2003b, 2008c, 2009a, 2012; Tomanović & Brajković 2001; Kavallieratos et al. 2004, 2005b, 2008b, 2010, 2013; Žikić et al. 2000, 2012; Mitrovski-Bogdanović et al. 2014); **Slovakia** (Starý 1977, 1989a; Lukas 1996; Al Dobai & Praslička 1999; Al Dobai et al. 1999; Praslička et al. 2003; Praslička & Huszar 2005; Starý & Lukáš 2009; Ferrer-Suay et al. 2017); **Slovenia** (Kos et al. 2008, 2009a, 2012; Tomanović et al. 2012); **Spain** (Quilis-Pérez 1931b; Mackauer 1959a; Mackauer & Starý 1967; Starý 1976a; González & Michelena 1987; Tizado & Núñez-Perez 1991; Tizado Morales et al. 1992; Michelena et al. 1994, 2004; Sanchis et al. 1995, 2000; Michelena Saval & Sanchis Segovia 1997b; Suay Cano & Michelena Saval 1998; Moreno et al. 1999; Nieves-Aldrey et al. 2003; Pons & Starý 2003; Lumbierres et al. 2005, 2007, 2011; Nebreda et al. 2005; Michelena Saval & Martínez De Murguía 2012; Quinto et al. 2012; Pons et al. 2018; Aparicio et al. 2019); **Sweden** (Thomson 1895; Szépligeti 1904; Mackauer 1959a, 1968c; Mackauer & Starý 1967); **Switzerland** (Ferrière 1928; Mackauer 1959a, 1968c; Mackauer & Starý 1967; Starý 1974c; Mitrovski-Bogdanović et al. 2014); **Syria** (Abo Kaf & Alrostom 2020); **Tajikistan** (Ataeva 1961; Starý 1979a); **Tunisia** (Ben Halima & Ben Hamouda 1993, 2005; Ben Halima et al. 1994; Boukhris-Bouhachem 2011; Zouari et al. 2018); **Türkiye** (Düzgüneş et al. 1982; Kılınçer 1982; Zeren & Düzgüneş 1983; Aeschlimann & Vitou 1985; Yoldaş et al. 1990, 2011; Özder & Toros 1999; Kavallieratos et al. 2003, 2004, 2008b, 2013; Ölmez & Ulusoy 2003; Tomanović et al. 2003b, 2009a, 2012; Aslan & Karaca 2005; Güz & Kılınçer 2005; Çetin Erdoğan et al. 2008, 2010; Satar et al. 2014, 2021; Aslan 2015; Akar & Çetin Erdoğan 2017; Alaserhat & Canbay 2017; Bayram et al. 2018; Davidian 2019a; Rakhshani et al. 2019; Alaserhat et al. 2021; Demirhan & Çetin Erdoğan 2023; Oğuzoğlu & Avcı 2025); **Ukraine** (Ivanov 1927; Meyer 1927; Mackauer 1959a; Starý 1961h, 1962f, 1965a, 1974c, 1976a; Berest 1980, 1981b, 1985, 1987; Tomanović et al. 2012; Kaliuzhna 2013a, 2013b, 2016a, 2017b, 2019a, 2019b; Davidian 2019a); **United Kingdom** (Curtis 1837; Smith 1853; Marshall 1872a, 1896, 1899; Bignell 1901; Szépligeti 1904; Lyle 1933; Kloet & Hincks 1945; Dunn 1949; Mackauer 1959a, 1961b; Mackauer & Starý 1967; Jones 1972; Dean 1974, 1975; Starý 1974b, 1974c; Jones & Dean 1975; Powell 1980, 1982; Dean et al. 1981; Vickerman 1982; Cameron et al. 1984; Powell et al. 1986b, 1993; Vorley 1986; Lilley et al. 1994a, 1994b; Müller et al. 1999; van Veen et al. 2008; Perez-Rodriguez et al. 2015; Davidian & Rispin 2016); **USA** (Mackauer 1963a); **Uzbekistan** (Luzhetski 1960; Starý 1965a, 1974c, 1979a; Starý & González 1978; Daminova et al. 2001; Aripov 2003; Daminova 2007; Tomanović et al. 2012).

***Remarks.*** Records of *Praon volucre* from South Korea (Paik 1975; Starý & Choi 2000), may correspond to *Praon orientale* (Jong-Cheol Paik, pers. comm.). The latter species also needs further revision.

### *Praon yakimanum* Pike & Starý, 1996 [Fig. 71E]

*Praon yakimanum* Pike & Starý, 1996b:411. Holotype ♀ (USNM), paratypes ♀♀ ♂♂ (USNM, IECA, WSUJ). – USA.

***Hosts.*** ***Cavariella pastinacae*** (Linnaeus) (Pike et al. 2000); ***Diuraphis noxia*** (Mordvilko) (Pike & Starý 1996b; Pike et al. 1996, 1997b, 2000; Day 2005; Noma et al. 2005); ***Metopolophium dirhodum*** (Walker) (Pike et al. 2000); ***Rhopalosiphum padi*** (Linnaeus) (Pike & Starý 1996; Pike et al. 1996, 2000); ***Sitobion avenae*** (Fabricius) (Pike et al. 1997b, 2000).

***Distribution.*** **USA** (Pike & Starý 1996; Pike et al. 1996, 1997a, 2000; Day 2005; Noma et al. 2005).

### *Praon yomenae* Takada, 1968 [Fig. 71F]

*Praon yomenae* Takada, 1968:80. Holotype ♀, paratypes ♀ (EIHU). – Japan.

***Hosts.*** *Acyrthosiphon pisum* (Harris) (Chaouche & Laamari 2015); *Acyrthosiphon* spp., *Aphis nerii* Boyer de Fonscolombe (Mitrovski-Bogdanović et al. 2014); *Hyalopterus pruni* (Geoffroy) (Kos et al. 2012); *Hyperomyzus lactucae* (Linnaeus) (Kos et al. 2012; Hemidi & Laamari 2020); ***Indomegoura indica*** (van der Goot), ***Macrosiphoniella sanborni*** (Gillette), ***Macrosiphoniella staegeri*** Hille Ris Lambers (Mitrovski-Bogdanović et al. 2014); ***Macrosiphoniella yomenae*** (Shinji) (Takada 1968; Starý 1975a); ***Macrosiphoniella*** sp. (Mitrovski-Bogdanović et al. 2014); *Metopolophium dirhodum* (Walker) (Güçlü & Özbek 2002; Uysal et al. 2004); *Microlophium carnosum* (Buckton) (Ferrer-Suay et al. 2017); ***Staticobium limonii*** Contarini (Kos et al. 2012; Tomanović et al. 2012); ***Uroleucon acroptilidis*** Kadyrbekov, Renxin & Shao (Barahoei et al. 2010, 2012, 2013); ***Uroleucon aeneum*** (Hille Ris Lambers) (Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b; Laamari et al. 2012; Mifsud et al. 2013; Mitrovski-Bogdanović et al. 2014); ***Uroleucon ambrosiae*** (Thomas) (Hemidi & Laamari 2020); ***Uroleucon campanulae*** (Kaltenbach) (Starý 2006); ***Uroleucon campestre*** (Mitrovski-Bogdanović et al. 2014); ***Uroleucon carthami*** (Hille Ris Lambers) (Mescheloff & Rosen 1988; Barahoei et al. 2013); ***Uroleucon chondrillae*** (Nevsky) (Rakhshani et al. 2007a; Nazari et al. 2012; Alikhani et al. 2013; Mitrovski-Bogdanović et al. 2014); ***Uroleucon cichorii*** (Koch) (Tomanović et al. 2003b; Kavallieratos et al. 2004, 2005b; Starý 2006; Barahoei et al. 2010, 2012, 2013; Kos et al. 2012; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2014); ***Uroleucon compositae*** (Theobald) (Rakhshani et al. 2007a; Alikhani et al. 2013; Mitrovski-Bogdanović et al. 2014; Hemidi & Laamari 2020); ***Uroleucon doronici*** (Börner) (Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b); ***Uroleucon formosanum*** (Takahashi) (Yamauchi & Takada 1978; Mitrovski-Bogdanović et al. 2014); ***Uroleucon grossum*** (Hille Ris Lambers) (Tomanović et al. 2003b; Kavallieratos et al. 2004; Žikić et al. 2012); ***Uroleucon hypochoeridis*** (Fabricius) (Kos et al. 2012; Mitrovski-Bogdanović et al. 2014); ***Uroleucon inulicola*** (Hille Ris Lambers) (Mitrovski-Bogdanović et al. 2014); ***Uroleucon jaceae*** (Linnaeus) (Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b; Güz & Kılınçer 2005; Starý 2006; Rakhshani et al. 2007a; Barahoei et al. 2010, 2012, 2013; Laamari et al. 2011, 2012; Derocles et al. 2012; Baker & Broad 2013; Mitrovski-Bogdanović et al. 2014; Chaouche & Laamari 2015; Kök et al. 2020; Kök & Tomanović 2022); ***Uroleucon nigrotuberculatum*** (Olive) (Takada & Nakamura 2010); ***Uroleucon obscurum*** (Koch) (Starý 2006); ***Uroleucon picridis*** (Fabricius) (Mescheloff & Rosen 1988); ***Uroleucon solidaginis*** (Fabricius) (Mitrovski-Bogdanović et al. 2014); ***Uroleucon sonchi*** (Linnaeus) (Starý & Sekkat 1987; Mescheloff & Rosen 1988; Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b; Rakhshani et al. 2007a, 2012b; Talebi et al. 2009; Barahoei et al. 2010, 2012, 2013; Kos et al. 2012; Mitrovski-Bogdanović et al. 2014); ***Uroleucon tanaceti*** (Linnaeus) (Baker & Broad 2013; Mitrovski-Bogdanović et al. 2014); ***Uroleucon tortuosissimae*** Rezwani & Lampel (Barahoei et al. 2013); ***Uroleucon*** spp. (Tomanović et al. 2003b, 2008a; Kavallieratos et al. 2004; Starý 2006; Derocles et al. 2012; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2014; Davidian 2019a; Kök et al. 2020;).

***Distribution.*** **Algeria** (Laamari et al. 2011, 2012; Chaouche & Laamari 2015; Rakhshani et al. 2019; Hemidi & Laamari 2020); **Bulgaria** (Kavallieratos et al. 2003, 2004; Tomanović et al. 2003b; Todorov 2007, 2014; Mitrovski-Bogdanović et al. 2014); **Czech Republic** (Starý 2006; Starý & Havelka 2008; Tomanović et al. 2008a; Mitrovski-Bogdanović et al. 2014; Ferrer-Suay et al. 2017); **France** (Derocles et al. 2012, 2014a; Tomanović et al. 2012; Mitrovski-Bogdanović et al. 2014); **Germany** (BOLD:ACB7574); **Greece** (Kavallieratos et al. 2001, 2003, 2004; Tomanović et al. 2003b; Mitrovski-Bogdanović et al. 2014); **Iran** (Rakhshani et al. 2007a, 2012b, 2019; Barahoei et al. 2010, 2012, 2013; Fallahzadeh & Saghaei 2010; Nazari et al. 2012; Alikhani et al. 2013; Mitrovski-Bogdanović et al. 2014); **Italy** (Bergamesco et al. 1995; Mitrovski-Bogdanović et al. 2014); **Japan** (Takada 1968; Starý 1975a; Yamauchi & Takada 1978; Takada & Nakamura 2010; Mitrovski-Bogdanović et al. 2014); **Kyrgyzstan** (Petrović et al. 2021a); **Malta** (Mifsud et al. 2013; Rakhshani et al. 2015b); **Montenegro** (Tomanović et al. 2003b; Kavallieratos et al. 2004, 2005b; Žikić et al. 2012; Mitrovski-Bogdanović et al. 2014); **Morocco** (Starý & Sekkat 1987); **North Korea** (Takada 1976b, 1979b; Starý & Choi 2000; Kim 2026); **Norway** (Artsdatabanken 2026); **Palestine** (BOLD:ACB7574); **Poland** (Huflejt 1997); **Russia** (Davidian & Gavrilyuk 2014; Davidian 2019a, 2019b; Davidian

& Ruchin 2023); **Serbia** (Žikić et al. 2000, 2012; Tomanović et al. 2003b; Kavallieratos et al. 2004, 2005b; Mitrovski-Bogdanović et al. 2013, 2014); **Slovakia** (Mitrovski-Bogdanović et al. 2014); **Slovenia** (Kos et al. 2008, 2009a, 2012; Mitrovski-Bogdanović et al. 2014); **Spain** (Tizado & Núñez-Perez 1991); **Switzerland** (Mitrovski-Bogdanović et al. 2014); **Türkiye** (Güçlü & Özbek 2002; Tomanović et al. 2003b; Kavallieratos et al. 2003, 2004; Uysal et al. 2004; Güz & Kılınçer 2005; Çetin Erdoğan et al. 2008, 2010; Akar & Çetin Erdoğan 2017; Rakhshani et al. 2019; Kök et al. 2020; Kök & Tomanović 2022; Demirhan & Çetin Erdoğan 2023); **United Kingdom** (Baker & Broad 2013); **Yemen** (Starý et al. 2014b; Rakhshani et al. 2019).

### Genus *Propraon* Brues, 1933 [1 species]

*Propraon* Brues, 1933:108. Type species: *Propraon cellularis* Brues, 1933.

#### *Propraon cellulare* Brues, 1933 [Fossil]

*Propraon cellularis* Brues, 1933:109. Holotype ♀ (KAM - Lost). – Baltic amber.

***Host.*** Unknown.

***Distribution.*** Oligocene (Mackauer 1968a; Starý 1970a, 1973b); Eocene (Ortega-Blanco et al. 2009).

### Genus *Pseudopraon* Starý, 1975 [3 species]

*Pseudopraon* Starý, 1975:249. Type species: *Pseudopraon mindariphagum* Starý, 1975.

#### *Pseudopraon hei* Tian & Chen, 2018

*Pseudopraon hei* Tian & Chen [in Tian et al.], 2018:66. Holotype ♀ (ZJUH). – China.

***Host.*** Unknown.

***Distribution.*** **China** (Tian et al. 2018; Davidian 2019d).

#### *Pseudopraon mindariphagum* Starý, 1975 [Fig. 72A]

*Pseudopraon mindariphagum* Starý, 1975d:250. Holotype ♀, paratypes ♀ ♂ (IECA). – Czech Republic.

***Hosts. Mindarus abietinus*** Koch (Starý 1975d, 2006; Starý et al. 1977a; Starý & Remaudière 1982; Starý & Němec 1985; Pike et al. 2000; Davidian 2004, 2019a; Žikić et al. 2012; Kavallieratos et al. 2016; Pons et al. 2018); ***Mindarus*** sp. (Pike et al. 2000).

***Distribution.*** **Czech Republic** (Starý 1975d, 1989a, 2006; Starý & Němec 1985; Starý & Havelka 2008); **France** (Starý et al. 1977a); **Hungary** (Polgár 1983); **Mexico** (Starý & Remaudière 1982, 1988); **Montenegro** (Žikić et al. 2012; Kavallieratos et al. 2016); **Russia** (Davidian 2004, 2007, 2019a, 2020b); **Slovakia** (Starý 1989a); **Spain** (Pons et al. 2018); **USA** (Pike et al. 2000).

#### *Pseudopraon nipponicum* (Takada, 1968)

*Areopraon nipponicum* Takada, 1968:78. Holotype ♀, paratypes ♀♀ ♂♂ (EIHU). – Japan.

***Host. Mindarus japonicus*** Takahashi (Takada 1973, 1977a, 2019; Starý 1975a).

***Distribution.*** **Japan** (Takada 1968, 1973, 1977a, 2019).

### Unplaced genus

### Genus *Autriquella* Starý, 1988 [1 species]

*Autriquella* Starý, 1988:282. Type species: *Autriquella aptera* Starý, 1988.

#### *Autriquella aptera* Starý, 1988 [Figs 72B–C]

*Autriquella aptera* Starý, 1988a:284. Holotype ♂ (CNC), paratypes ♀♂ (CNC, IECA). – Kenya.

***Host.*** Unknown.

***Distribution.*** **Kenya** (Starý 1988a).

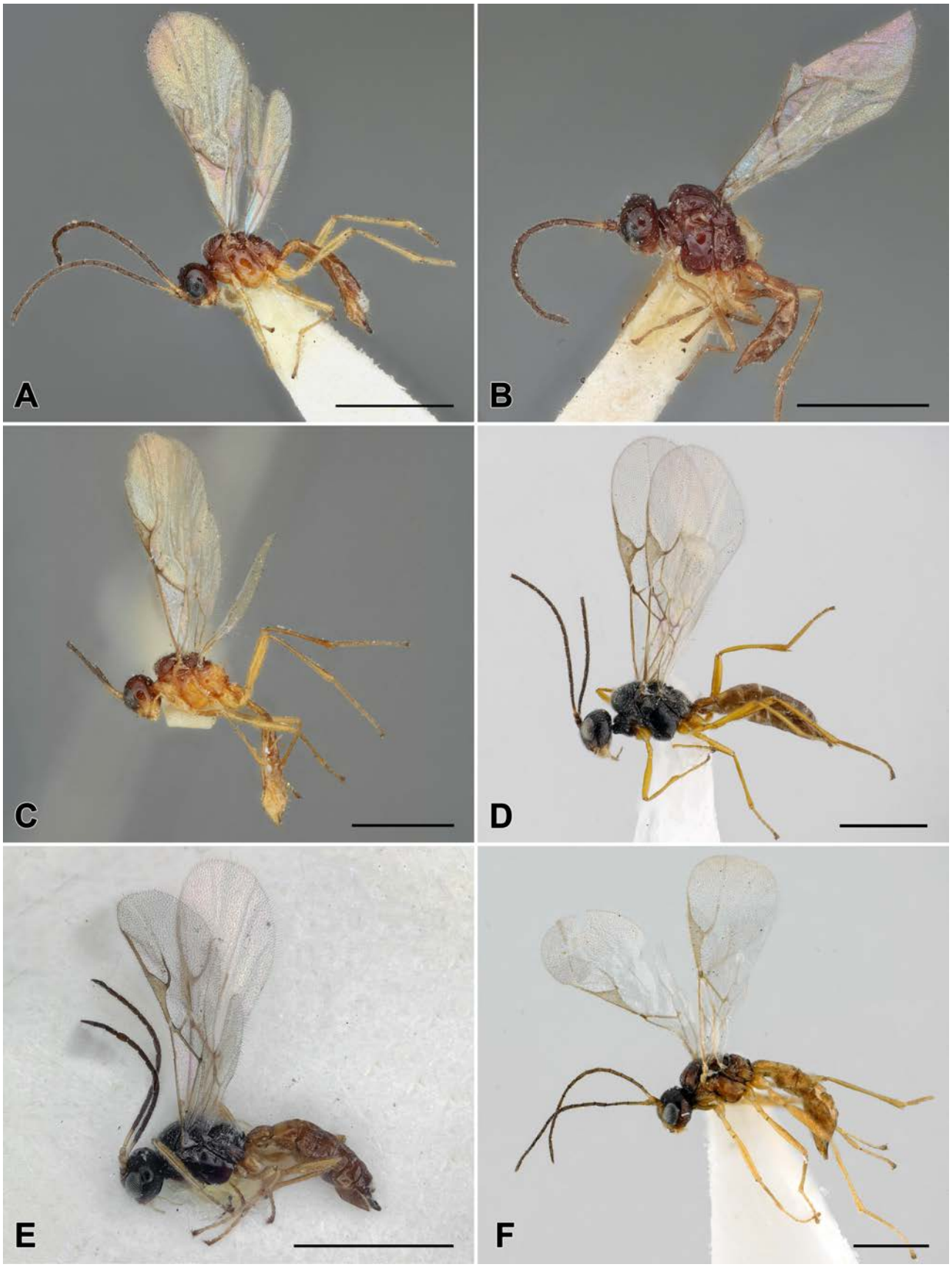



**Figure 71.** Species of the genus *Praon* Haliday, 1833. **A.** *Praon simulans* (Provancher, 1886) - Holotype of *Praon aguti* Smith, 1944, USNM; **B.** *Praon unicum* Smith, 1944 – Holotype, USNM; **C.** *Praon virginiense* (Ashmead, 1889) – Holotype (= *P. humulaphidis*), USNM; **D.** *Praon volucre* (Haliday, 1833) – Iran, DPPZ; **E.** *Praon yakimanum* Pike & Starý, 1996 – Holotype, USNM; **F.** *Praon yomenae* Takada, 1968 – Serbia, KSNU.




**Figure 72.** Species of the genera *Pseudopraon* Starý, 1975, and *Autriquella* Starý, 1988**. A.** *Pseudopraon mindariphagum* Starý, 1975 – Russia, ZISP; **B–C.** *Autriquella aptera* Starý, 1988 – Holotype, CNC. **B.** Lateral view; **C.** Dorsal view. Scale bar: 1 mm. [Scale bar is based on the original illustration in Starý (1988a) for B and C].

## Checklists of Aphidiinae by Country/Islands

### AFGHANISTAN [3 genera, 8 species]

*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius rapae* McIntosh, 1855
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius urticae* Haliday, 1834
*Lysiphlebus fabarum* (Marshall, 1896)
*Praon barbatum* Mackauer, 1967
*Praon callaphis* Mackauer & Sullivan, 1982

### ALBANIA [1 genus, 1 species]

*Aphidius rosae* Haliday, 1833

### ALGERIA [8 genera, 38 species]

*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius avenae* Haliday, 1834
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius matricariae* Haliday, 1834
*Aphidius persicus* Rakhshani & Starý, 2006
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius setiger* (Mackauer, 1961)
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius sonchi* Marshall, 1896
*Aphidius transcaspicus* Telenga, 1958
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Pauesia cedrobii* Starý & Leclant, 1977
*Pauesia silana* Tremblay, 1969
*Praon exsoletum* (Nees, 1811)
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Trioxys complanatus* Quilis, 1931
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys pallidus* (Haliday, 1833)

**ANDORRA** [12 genera, 43 species]

*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius absinthii* Marshall, 1896
*Aphidius artemisicola* Tizado & Núñez-Pérez, 1995
*Aphidius avenae* Haliday, 1834
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius sonchi* Marshall, 1896
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Betuloxys compressicornis* (Ruthe, 1859)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Diaeretus leucopterus* (Haliday, 1834)
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus balcanicus* Starý, 1998
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Paralipsis enervis* (Nees, 1834)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon barbatum* Mackauer, 1967
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon gallicum* Starý, 1971
*Praon volucre* (Haliday, 1833)
*Trioxys complanatus* Quilis, 1931
*Trioxys pallidus* (Haliday, 1833)

**ANGOLA** [3 genera, 5 species]

*Aphidius colemani* Viereck, 1912
*Aphidius petrstaryi* Čkrkić & Tomanović, 2024
*Aphidius platensis* Brèthes, 1913
*Binodoxys angolensis* (Starý & van Harten, 1977)
*Vanhartenia paoliellae* Starý & van Harten, 1974

**ARGENTINA** [8 genera, 20 species]

*Acanthocaudus tissoti* (Smith, 1944)
*Aphidius brethes* Tomanović & Kocić, 2025

*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius matricariae* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius salicis* Haliday, 1834
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys achalensis* Starý, 2004
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys tucumanus* (Starý, 1987)
*Ephedrus persicae* Froggatt, 1904
*Lysiphlebus testaceipes* (Cresson, 1880)
*Praon gallicum* Starý, 1971
*Praon volucre* (Haliday, 1833)
*Pseudephedrus chilensis* Starý, 1976
*Trioxys pampas* Tomanović & Kocić, 2025

**ARMENIA** [9 genera, 16 species]

*Adialytus salicaphis* (Fitch, 1855)
*Aphidius ervi* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys brevicornis* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Pauesia antennata* (Mukerji, 1950)
*Praon abjectum* (Haliday, 1833)
*Praon rosaecola* Starý, 1961
*Praon volucre* (Haliday, 1833)
*Trioxys asiaticus* Telenga, 1953
*Trioxys pallidus* (Haliday, 1833)

**AUSTRALIA** [7 genera, 29 species]

*Aphidius absinthii* Marshall, 1896
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius matricariae* Haliday, 1834
*Aphidius pelargonii* Starý & Carver, 1980
*Aphidius pisivorus* Smith, 1941
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius similis* Starý & Carver, 1980
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius sonchi* Marshall, 1896
*Diaeretus essigellae* Starý & Zuparko, 2002
*Ephedrus persicae* Froggatt, 1904

*Ephedrus plagiator* (Nees, 1811)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Parephedrus relictus* Starý & Carver, 1971
*Praon flavinode* (Haliday, 1833)
*Praon volucre* (Haliday, 1833)
*Trioxys cirsii* (Curtis, 1831)
*Trioxys complanatus* Quilis, 1931
*Trioxys pallidus* (Haliday, 1833)
*Trioxys tenuicaudus* Starý, 1978

**AUSTRIA** [16 genera, 66 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rubi* Starý, 1962
*Aphidius salicis* Haliday, 1834
*Aphidius setiger* (Mackauer, 1961)
*Aphidius silvaticus* Starý, 1962
*Aphidius urticae* Haliday, 1834
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Diaeretellus macrocarpus* Mackauer, 1961
*Dyscritulus planiceps* (Marshall, 1896)
*Dyscritulus pygmaeus* Mackauer, 1961
*Ephedrus carinatus* Tomanović, 2020
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus alpinus* Starý, 1971
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Metaphidius aterrimus* (Fahringer, 1935)
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus nervosus* (Haliday, 1833)
*Paralipsis enervis* (Nees, 1834)
*Pauesia abietis* (Marshall, 1896)
*Pauesia grossa* (Fahringer, 1937)

*Pauesia infulata* (Haliday, 1834)
*Pauesia laricis* (Haliday, 1834)
*Pauesia maculolachni* (Starý, 1960)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon barbatum* Mackauer, 1967
*Praon dorsale* (Haliday, 1833)
*Praon flavinode* (Haliday, 1833)
*Praon spinosum* Mackauer, 1959
*Praon volucre* (Haliday, 1833)
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Toxares deltiger* (Haliday, 1833)
*Trioxys betulae* Marshall, 1896
*Trioxys bicuspis* Mackauer, 1960
*Trioxys chaitaphidis* Mackauer, 1962
*Trioxys complanatus* Quilis, 1931
*Trioxys falcatus* Mackauer, 1959
*Trioxys pallidus* (Haliday, 1833)
*Trioxys sunnysidensis* Fulbright & Pike, 2007

**AZERBAIJAN** [9 genera, 18 species]

*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius rosae* Haliday, 1833
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Pauesia pini* (Haliday, 1834)
*Praon longicorne* Marshall, 1896
*Praon volucre* (Haliday, 1833)
*Trioxys auctus* (Haliday, 1833)

**BANGLADESH** [5 genera, 12 species]

*Archaphidus greenideae* Starý & Schlinger, 1967
*Betuloxys assamensis (*Starý, 1975)
*Betuloxys intermedius* (Shuja-Uddin, 1975)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys communis* (Gahan, 1926)
*Binodoxys greenideae* (Starý & van Harten, 1983)
*Binodoxys indicus* (Subba Rao & Sharma, 1958)
*Lipolexis bengalensis* Tomanović & Kocić, 2020
*Lipolexis gracilis* Förster, 1863
*Lipolexis oregmae* (Gahan, 1932)
*Lipolexis pakistanica* Tomanović & Kocić, 2020
*Lysiphlebia japonica* (Ashmead, 1906)

**BELARUS** [8 genera, 26 species]

*Aphidius aquilus* Mackauer, 1961
*Aphidius cingulatus* Ruthe, 1859
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius rosae* Haliday, 1833
*Aphidius setiger* (Mackauer, 1961)
*Aphidius tanacetarius* Mackauer, 1962
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Ephedrus brevis* Stelfox, 1941
*Ephedrus chaitophori* Gärdenfors, 1986
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus nacheri* Quilis, 1934
*Ephedrus plagiator* (Nees, 1811)
*Monoctonus nervosus* (Haliday, 1833)
*Pauesia pinicollis* (Starý, 1960)
*Pauesia silana* Tremblay, 1969
*Pauesia unilachni* (Gahan, 1926)
*Praon barbatum* Mackauer, 1967
*Praon flavinode* (Haliday, 1833)
*Toxares deltiger* (Haliday, 1833)
*Trioxys pallidus* (Haliday, 1833)
*Trioxys sunnysidensis* Fulbright & Pike, 2007

**BELGIUM** [11 genera, 47 species]

*Aphidius asteris* Haliday, 1834
*Aphidius avenae* Haliday, 1834
*Aphidius banksae* Kittel, 2016
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius matricariae* Haliday, 1834
*Aphidius microlophii* Pennacchio & Tremblay, 1987
*Aphidius phalangomyzi* Starý, 1963
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rubi* Starý, 1962
*Aphidius setiger* (Mackauer, 1961)
*Aphidius silvaticus* Starý, 1962
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius sonchi* Marshall, 1896
*Aphidius sussi* Pennacchio & Tremblay, 1989
*Aphidius tanacetarius* Mackauer, 1962
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Binodoxys similis* (Mackauer, 1959)

*Diaeretellus ephippium* (Haliday, 1833)
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus cerasicola* Starý, 1962
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Falciconus pseudoplatani* (Marshall, 1896)
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus hirticornis* Mackauer, 1960
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonus crepidis* (Haliday, 1834)
*Praon abjectum* (Haliday, 1833)
*Praon barbatum* Mackauer, 1967
*Praon exsoletum* (Nees, 1811)
*Praon gallicum* Starý, 1971
*Praon volucre* (Haliday, 1833)
*Toxares deltiger* (Haliday, 1833)
*Trioxys auctus* (Haliday, 1833)

**BENIN** [1 genus, 1 species]

*Lysiphlebus testaceipes* (Cresson, 1880)

**BERMUDA** [2 genera, 3 species]

*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Lysiphlebus testaceipes* (Cresson, 1880)

**BOLIVIA** [1 genus, 1 species]

*Aphidius platensis* Brèthes, 1913

**BOSNIA AND HERCEGOVINA** [3 genera, 4 species]

*Lipolexis pelopsi* Tomanović & Kavallieratos, 2020
*Praon abjectum* (Haliday, 1833)
*Praon volucre* (Haliday, 1833)
*Trioxys bajariae* (Györfi, 1958)

**BRAZIL** [6 genera, 16 species]

*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys brevicornis* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811) *
*Lysiphlebus testaceipes* (Cresson, 1880)
*Praon gallicum* Starý, 1971 *

*Praon volucre* (Haliday, 1833)
*Xenostigmus bifasciatus* (Ashmead, 1891)

* No specimens of these two species have been recovered in Brazil since the release program ended in 1992; therefore, their current occurrence in the country requires confirmation.

**BULGARIA** [19 genera, 84 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Adialytus veronicaecola* (Starý, 1978)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius arvensis* (Starý, 1960)
*Aphidius asteris* Haliday, 1834
*Aphidius avenae* Haliday, 1834
*Aphidius banksae* Kittel, 2016
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hortensis* Marshall, 1896
*Aphidius matricariae* Haliday, 1834
*Aphidius microlophii* Pennacchio & Tremblay, 1987
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius setiger* (Mackauer, 1961)
*Aphidius transcaspicus* Telenga, 1958
*Aphidius uroleuci* Mescheloff & Rosen, 1990
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon silvestre* (Starý, 1971)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys genistae* (Mackauer, 1960)
*Boreogalba julianae* Todorov, 2006
*Diaeretellus heinzei* (Mackauer, 1959)
*Diaeretellus macrocarpus* Mackauer, 1961
*Diaeretus leucopterus* (Haliday, 1834)
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus cerasicola* Starý, 1962
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Falciconus pseudoplatani* (Marshall, 1896)
*Lipolexis gracilis* Förster, 1863
*Lipolexis labialis* Tomanović & Kocić, 2020
*Lysiphlebus cardui* (Marshall, 1896)

*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus hirticornis* Mackauer, 1960
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus nervosus* (Haliday, 1833)
*Paralipsis enervis* (Nees, 1834)
*Pauesia abietis* (Marshall, 1896)
*Pauesia montana* Starý, 1966
*Pauesia picta* (Haliday, 1834)
*Pauesia silana* Tremblay, 1969
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon longicorne* Marshall, 1896
*Praon orpheusi* Kavallieratos, Athanassiou & Tomanović, 2003
*Praon pubescens* Starý, 1961
*Praon rosaecola* Starý, 1961
*Praon spinosum* Mackauer, 1959
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Toxares deltiger* (Haliday, 1833)
*Trioxys betulae* Marshall, 1896
*Trioxys complanatus* Quilis, 1931
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys lambersi* Mackauer, 1960
*Trioxys microceratus* Mackauer, 1968
*Trioxys pallidus* (Haliday, 1833)
*Trioxys tenuicaudus* Starý, 1978

**BURUNDI** [5 genera, 11 species]

*Aphidius autriquei* Starý, 1985
*Aphidius bertrandi* Benoit, 1955
*Aphidius colemani* Viereck, 1912
*Aphidius platensis* Brèthes, 1913
*Aphidius remaudierei* Čkrkić & Tomanović, 2024
*Aphidius transcaspicus* Telenga, 1958
*Binodoxys micromyzellae* (Starý, 1985)
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus fabarum* (Marshall, 1896)
*Pauesia unilachni* (Gahan, 1926)
*Praon thalictri* Starý, 1985

**CAMEROON** [1 genus, 1 species]

*Aphidius camerunensis* Mackauer, 1966

**CANADA** [16 genera, 109 species]

*Acanthocaudus tissoti* (Smith, 1944)
*Aclitus wyomingensis* Martens, 2026
*Adialytus ambiguus* (Haliday, 1834)

*Adialytus fuscicornis* (Ashmead, 1891)
*Adialytus salicaphis* (Fitch, 1855)
*Aphidius adelocarinus* Smith, 1944
*Aphidius alius* Muesebeck, 1958
*Aphidius amelanchieri* Liu, 1977
*Aphidius aquilus* Mackauer, 1961
*Aphidius avenae* Haliday, 1834
*Aphidius avenaphis* (Fitch, 1861)
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ericaphidis* Pike & Starý, 2011
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius gifuensis* Ashmead, 1906
*Aphidius hortensis* Marshall, 1896
*Aphidius lupini* Liu, 1977
*Aphidius masonaphis* Liu, 1977
*Aphidius matricariae* Haliday, 1834
*Aphidius nigripes* Ashmead, 1901
*Aphidius obscuripes* Ashmead, 1889
*Aphidius ohioensis* Smith, 1944
*Aphidius pisivorus* Smith, 1941
*Aphidius plocamaphidis* (Starý, 1973)
*Aphidius polygonaphis* (Fitch, 1855)
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rosaphidis* Smith, 1944
*Aphidius rubifolii* Mackauer, 1968
*Aphidius salicis* Haliday, 1834
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius setiger* (Mackauer, 1961)
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius sonchi* Marshall, 1896
*Aphidius tarsalis* van Achterberg, 2006
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Aphidius vaccinii* Liu, 1977
*Areopraon chaitophori* Tomanović & Petrović, 2009
*Betuloxys compressicornis* (Ruthe, 1859)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys carolinensis* (Smith, 1944)
*Binodoxys rhagii* (Ashmead, 1889)
*Boreogalba gladifer* Mackauer, 1962
*Chaetopauesia crassicornis* (Ashmead, 1891)
*Chaetopauesia talis* Mackauer, 1967
*Ephedrus brevis* Stelfox, 1941
*Ephedrus californicus* Baker, 1909
*Ephedrus clavicornis* Pike & Starý, 1999
*Ephedrus helleni* Mackauer, 1968
*Ephedrus incompletus* (Provancher, 1886)
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus nacheri* Quilis, 1934
*Ephedrus persicae* Froggatt, 1904

*Ephedrus plagiator* (Nees, 1811)
*Ephedrus prociphili* Starý, 1982
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonus brachyradius* Čkrkić, Petrović & Tomanović, 2019
*Monoctonus canadensis* Čkrkić, Petrović & Tomanović, 2019
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus indiscretus* Čkrkić, Petrović & Tomanović, 2020
*Monoctonus inexpectatus* Čkrkić, Petrović & Tomanović, 2019
*Monoctonus luteus* Čkrkić, Petrović & Tomanović, 2019
*Monoctonus nervosus* (Haliday, 1833)
*Monoctonus parvipalpus* Čkrkić, Petrović & Tomanović, 2019
*Monoctonus paulensis* (Ashmead, 1902)
*Monoctonus washingtonensis* Pike & Starý, 1995
*Pauesia bicolor* (Ashmead, 1889)
*Pauesia californica* (Ashmead, 1889)
*Pauesia juniperaphidis* (Gahan, 1911)
*Pauesia ponderosae* (Muesebeck, 1958)
*Pauesia procephali* (Ashmead, 1889)
*Pauesia takomaensis* (Smith, 1944)
*Pauesia varigata* (Smith, 1944)
*Pauesia xanthothera* (Smith, 1944)
*Praon alaskense* Ashmead, 1902
*Praon artemisaphis* Smith, 1944
*Praon carinum* Johnson, 1987
*Praon cerasaphis* (Fitch, 1855)
*Praon exsoletum* (Nees, 1811)
*Praon gallicum* Starý, 1971
*Praon humulaphidis* Ashmead, 1889
*Praon occidentale* Baker, 1909
*Praon pequodorum* Viereck, 1917
*Praon simulans* (Provancher, 1886)
*Praon unicum* Smith, 1944
*Praon volucre* (Haliday, 1833)
*Toxares deltiger* (Haliday, 1833)
*Trioxys ameraceris* Smith, 1944
*Trioxys auctus* (Haliday, 1833)
*Trioxys betulae* Marshall, 1896
*Trioxys complanatus* Quilis, 1931
*Trioxys ibis* Mackauer, 1961
*Trioxys infrequens* Smith, 1944
*Trioxys ovalis* (Provancher, 1886)
*Trioxys pallidus* (Haliday, 1833)
*Trioxys sunnysidensis* Fulbright & Pike, 2007
*Trioxys tenuicaudus* Starý, 1978
*Trioxys ulmi* Čkrkić & Tomanović, 2021
*Xenostigmus bifasciatus* (Ashmead, 1891)

## **CANARY ISLANDS** [8 genera, 20 species]

*Adialytus ambiguus* (Haliday, 1834)
*Aphidius avenae* Haliday, 1834
*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius matricariae* Haliday, 1834

*Aphidius rapae* McIntosh, 1855
*Aphidius rosae* Haliday, 1833
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonia pistaciaecola* Starý, 1962
*Praon volucre* (Haliday, 1833)
*Trioxys auctus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960

**CAPE VERDE ISLANDS** [1 genus, 3 species]

*Aphidius colemani* Viereck, 1912
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855

**CHILE** [7 genera, 25 species]

*Aphidius avenae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius salicis* Haliday, 1834
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys chilensis* (Starý, 1995)
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonus nervosus* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon occidentale* Baker, 1909
*Praon volucre* (Haliday, 1833)
*Pseudephedrus andensis* Starý, 1994
*Pseudephedrus chilensis* Starý, 1976
*Pseudephedrus flavus* Tomanović & Žikić, 2023
*Pseudephedrus lambersi* Starý, 1976
*Pseudephedrus longivalvus* Starý, 1994
*Pseudephedrus patagonicus* Tomanović & Žikić, 2023
*Pseudephedrus pubescens* Tomanović & Žikić, 2023
*Pseudephedrus staryi* Tomanović & Žikić, 2023

**CHINA** [22 genera, 145 species – excluding two *nomina nuda*]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius alius* Muesebeck, 1958
*Aphidius amamioshimensis* Takada, 1968
*Aphidius avenae* Haliday, 1834
*Aphidius biocarinatus* Chen & Shi, 2001
*Aphidius breviatus* Shi & Chen, 2001

*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius cupressi* Wang & Dong, 1996
*Aphidius dianensis* Dong & Wang, 1996
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius gifuensis* Ashmead, 1906
*Aphidius kunmingensis* (Wang & Dong, 1997)
*Aphidius lincangensis* Dong, 1988
*Aphidius longiantennatus* Chou & Xiang, 1982
*Aphidius macrosiphoniellae* Takada, 1968
*Aphidius marvelus* Chen & Shi, 2001
*Aphidius matricariae* Haliday, 1834
*Aphidius matsuyamensis* (Takada, 1966)
*Aphidius niger* Shi & Chen, 2001
*Aphidius phalangomyzi* Starý, 1963
*Aphidius phragnitei* Lu & Ji, 1993
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius sichuanensis* Chen & Shi, 2001
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius sonchi* Marshall, 1896
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Archaphidus greenideae* Starý & Schlinger, 1967
*Areopraon chui* Tian & Chen, 2018
*Astigmapraon hei* Tian et Chen, 2017
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys carinatus* (Starý & Schlinger, 1967)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys citri* (Liu, 1971) [*nomen nudum*]
*Binodoxys communis* (Gahan, 1926)
*Binodoxys formosanus* (Liu, 1971) [*nomen nudum*]
*Binodoxys gossypiaphis* Chou & Xiang, 1982
*Binodoxys hirsutus* (Wang & Dong, 1993)
*Binodoxys indicus* (Subba Rao & Sharma, 1958)
*Binodoxys sinensis* Mackauer, 1962
*Binodoxys spiraea* (Dong & Wang, 1993)
*Binodoxys struma* (Gahan, 1926)
*Binodoxys toxopterae* (Takada, 1966)
*Binodoxys yunnanicus* Davidian, 2024
*Bioxys japonicus* Starý & Schlinger, 1967
*Dactylonotum shaanxiense* Chou & Xiang, 1981
*Diaeretus leucopterus* (Haliday, 1834)
*Ephedrus cheni* Shi & Chen, 2001
*Ephedrus curtus* Chen, 2001
*Ephedrus jiangsuensis* Chen, 2001
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus longistigmus* Gärdenfors, 1986
*Ephedrus nacheri* Quilis, 1934
*Ephedrus nelumbus* Dong & Wang, 1996

*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus orientalis* Starý & Schlinger, 1967
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus quadratum* Shi, 2001
*Ephedrus radiatus* (Chen, 1986)
*Ephedrus robustus* Liu, 1968
*Ephedrus rugosus* (Chen, 1986)
*Ephedrus tanycoleosus* Chen, 2001
*Ephedrus transversus* (Chen, 1986)
*Ephedrus trichosiphoniellae* Takada, 1968
*Fissicaudus confucius* (Mackauer, 1962)
*Fissicaudus hanzhongensis* Chou & Xiang, 1982
*Lipolexis gracilis* Förster, 1863
*Lipolexis oregmae* (Gahan, 1932)
*Lipolexis peregrina* Tomanović & Kocić, 2020
*Lipolexis takadai* Tomanović & Kocić, 2020
*Lipolexis wuyiensis* Chen, 1981
*Lysiphlebia chrysanthemum* Dong & Wang, 1993
*Lysiphlebia japonica* (Ashmead, 1906)
*Lysiphlebia jiangchuanensis* Wang & Dong, 1996
*Lysiphlebia rugosa* Starý & Schlinger, 1967
*Lysiphlebia youyangensis* Wang & Dong, 1993
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus desertorum* Starý, 1965
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus orientalis* Starý & Rakhshani, 2010
*Lysiphlebus shaanxiensis* Chou & Xiang, 1982
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonus genriki* Davidian, 2025
*Monoctonus sichuanicus* Davidian, 2025
*Monoctonus woodwardiae* Starý & Schlinger, 1967
*Papilloma luteum* Wang, 1989
*Parabioxys songbaiensis* Shi & Chen, 2001
*Pauesia abietis* (Marshall, 1896)
*Pauesia japonica* (Ashmead, 1906)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia kunmingensis* Dong, 1988
*Pauesia laricis* (Haliday, 1834)
*Pauesia laticeps* (Gahan, 1926)
*Pauesia malongensis* Dong & Wang, 1997
*Pauesia pini* (Haliday, 1834)
*Pauesia platyclaudi* Zhang & Ji, 1992
*Pauesia salignae* (Watanabe, 1939)
*Pauesia shii* Ghafouri Moghaddam, 2026
*Pauesia soranumensis* Watanabe & Takada, 1965
*Pauesia taianensis* Lu & Ji, 1992
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon baodingense* (Ji & Zhang, 1992)
*Praon barbatum* Mackauer, 1967
*Praon brachycerum* (Ji & Zhang, 1992)
*Praon changbaishanense* Shi, 2001
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971

*Praon genriki* Davidian, 2020
*Praon hubeiense* Chen & Shi, 1999
*Praon muyuense* Shi, 2001
*Praon necans* Mackauer, 1959
*Praon orientale* Starý & Schlinger, 1967
*Praon pequodorum* Viereck, 1917
*Praon pisiaphis* Chou & Xiang, 1982
*Praon prunaphis* Chou & Xiang, 1982
*Praon rhopalosiphum* Takada, 1968
*Praon volucre* (Haliday, 1833)
*Pseudopraon hei* Tian & Chen, 2018
*Toxares deltiger* (Haliday, 1833)
*Toxares shigai* Takada, 1965
*Trioxys asiaticus* Telenga, 1953
*Trioxys auctus* (Haliday, 1833)
*Trioxys betulae* Marshall, 1896
*Trioxys flavus* Chou & Xiang, 1982
*Trioxys liui* Chou & Chou, 1993
*Trioxys pallidus* (Haliday, 1833)
*Trioxys populi* Gu & Zhao, 1997
*Trioxys robiniae* Dong & Wang, 1993
*Trioxys shivaphis* Takada, 1966
*Trioxys tenuicaudus* Starý, 1978

**COLOMBIA** [2 genera, 7 species]

*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius matricariae* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Lysiphlebus testaceipes* (Cresson, 1880)

**CONGO, DEMOCRATIC REPUBLIC OF** [2 genera, 3 species]

*Aphidius platensis* Brèthes, 1913
*Binodoxys benoiti* (Mackauer, 1959)
*Binodoxys pterastheniae* (Starý & Remaudière, 1977)

**COSTA RICA** [5 genera, 8 species]

*Aphidius colemani* Viereck, 1912
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Binodoxys silvaticus* (Starý, 1972)
*Binodoxys solitarius* (Starý, 1983)
*Ephedrus lacertosus* (Haliday, 1833)
*Lipolexis oregmae* (Gahan, 1932)
*Lysiphlebus testaceipes* (Cresson, 1880)

**CROATIA** [9 genera, 21 species]

*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius avenae* Haliday, 1834
*Aphidius balcanicus* Tomanović & Petrović, 2011
*Aphidius ervi* Haliday, 1834

*Aphidius rapae* McIntosh, 1855
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rubi* Starý, 1962
*Aphidius salicis* Haliday, 1834
*Aphidius silvaticus* Starý, 1962
*Areopraon silvestre* (Starý, 1971)
*Ephedrus hyadaphidis* Kocić & Tomanović, 2019
*Lipolexis labialis* Tomanović & Kocić, 2020
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Pauesia laricis* (Haliday, 1834)
*Pauesia szepligetii* (Starý, 1960)
*Praon flavinode* (Haliday, 1833)
*Trioxys acericola* Starý & Mackauer, 1971

**CUBA** [6 genera, 8 species]

*Acanthocaudus tissoti* (Smith, 1944)
*Aphidius floridaensis* Smith, 1944
*Aphidius rapae* McIntosh, 1855
*Binodoxys silvaticus* (Starý, 1972)
*Binodoxys silvicola* (Starý, 1972)
*Ephedrus incompletus* (Provancher, 1886)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Pseudephedrus neotropicalis* Starý, 1972

**CYPRUS** [4 genera, 11 species]

*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius transcaspicus* Telenga, 1958
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904
*Ephedrus validus* (Haliday, 1833)
*Praon barbatum* Mackauer, 1967
*Praon exsoletum* (Nees, 1811)

**CZECH REPUBLIC** [25 genera, 140 species]

*Aclitus obscuripennis* Förster, 1863
*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius arvensis* (Starý, 1960)
*Aphidius asteris* Haliday, 1834
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ervi* Haliday, 1834

*Aphidius erysimi* (Starý, 1960)
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius hortensis* Marshall, 1896
*Aphidius linosiphonis* Tomanović & Starý, 2001
*Aphidius matricariae* Haliday, 1834
*Aphidius megourae* Starý, 1965
*Aphidius microlophii* Pennacchio & Tremblay, 1987
*Aphidius phalangomyzi* Starý, 1963
*Aphidius plocamaphidis* (Starý, 1973)
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rubi* Starý, 1962
*Aphidius salicis* Haliday, 1834
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius setiger* (Mackauer, 1961)
*Aphidius silvaticus* Starý, 1962
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius sonchi* Marshall, 1896
*Aphidius sussi* Pennacchio & Tremblay, 1989
*Aphidius tanacetarius* Mackauer, 1962
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon lepelleyi* (Waterston, 1926)
*Areopraon silvestre* (Starý, 1971)
*Betuloxys compressicornis* (Ruthe, 1859)
*Betuloxys hortorum* (Starý, 1960)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys genistae* (Mackauer, 1960)
*Binodoxys heraclei* (Haliday, 1833)
*Calaphidius elegans* Mackauer, 1961
*Diaeretellus ephippium* (Haliday, 1833)
*Diaeretellus heinzei* (Mackauer, 1959)
*Diaeretellus macrocarpus* Mackauer, 1961
*Diaeretus leucopterus* (Haliday, 1834)
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus brevis* Stelfox, 1941
*Ephedrus cerasicola* Starý, 1962
*Ephedrus chaitophori* Gärdenfors, 1986
*Ephedrus helleni* Mackauer, 1968
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus lonicerae* Tomanović, Kavallieratos & Starý, 2009
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus prociphili* Starý, 1982
*Ephedrus validus* (Haliday, 1833)
*Falciconus pseudoplatani* (Marshall, 1896)
*Harkeria angustivalva* (Starý, 1959)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)

*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus hirticornis* Mackauer, 1960
*Lysiphlebus testaceipes* (Cresson, 1880)
*Metaphidius aterrimus* (Fahringer, 1935)
*Monoctonia vesicarii* Tremblay, 1991
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus leclanti* Tomanović & Starý, 2002
*Monoctonus nervosus* (Haliday, 1833)
*Paralipsis brachycaudi* Tomanović & Starý, 2019
*Paralipsis enervis* (Nees, 1834)
*Pauesia abietis* (Marshall, 1896)
*Pauesia cupressobii* (Starý, 1960)
*Pauesia grossa* (Fahringer, 1937)
*Pauesia infulata* (Haliday, 1834)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia juniperorum* (Starý, 1960)
*Pauesia laricis* (Haliday, 1834)
*Pauesia maculolachni* (Starý, 1960)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia silvestris* (Starý, 1960)
*Pauesia similis* Starý, 1966
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon barbatum* Mackauer, 1967
*Praon bicolor* Mackauer, 1959
*Praon cavariellae* Starý, 1971
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavicorne* Starý, 1971
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon lemantinum* Gautier, 1922
*Praon longicorne* Marshall, 1896
*Praon megourae* Starý, 1971
*Praon necans* Mackauer, 1959
*Praon pubescens* Starý, 1961
*Praon rosaecola* Starý, 1961
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Pseudopraon mindariphagum* Starý, 1975
*Toxares deltiger* (Haliday, 1833)
*Trioxys auctus* (Haliday, 1833)
*Trioxys betulae* Marshall, 1896
*Trioxys bicuspis* Mackauer, 1960
*Trioxys cirsii* (Curtis, 1831)
*Trioxys complanatus* Quilis, 1931
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys falcatus* Mackauer, 1959
*Trioxys galiobii* Starý, 1974
*Trioxys glaber* Starý, 1967
*Trioxys humuli* Mackauer, 1960

*Trioxys macroceratus* Starý, 1960
*Trioxys pallidus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960
*Trioxys parauctus* Starý, 1960
*Trioxys phyllaphidis* Mackauer, 1961
*Trioxys spinosus* Starý, 1963
*Trioxys sunnysidensis* Fulbright & Pike, 2007
*Trioxys tenuicaudus* Starý, 1978

**DENMARK** [14 genera, 41 species]

*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius avenae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius hortensis* Marshall, 1896
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius salicis* Haliday, 1834
*Aphidius silvaticus* Starý, 1962
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Betuloxys compressicornis* (Ruthe, 1859)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Diaeretellus ephippium* (Haliday, 1833)
*Diaeretus leucopterus* (Haliday, 1834)
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus nacheri* Quilis, 1934
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Falciconus pseudoplatani* (Marshall, 1896)
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus hirticornis* Mackauer, 1960
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus nervosus* (Haliday, 1833)
*Pauesia infulata* (Haliday, 1834)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia pini* (Haliday, 1834)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon flavinode* (Haliday, 1833)
*Praon volucre* (Haliday, 1833)
*Toxares deltiger* (Haliday, 1833)
*Trioxys betulae* Marshall, 1896
*Trioxys cirsii* (Curtis, 1831)

**DOMINICA** [2 genera, 2 species]

*Lipolexis oregmae* (Gahan, 1932)
*Lysiphlebus testaceipes* (Cresson, 1880)

**ECUADOR** [5 genera, 9 species]

*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Binodoxys silvaticus* (Starý, 1972)
*Binodoxys solitarius* (Starý, 1983)
*Ephedrus lacertosus* (Haliday, 1833)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Trioxys apterus* Gärdenfors, 1990

**EGYPT** [6 genera, 24 species]

*Aphidius asteris* Haliday, 1834
*Aphidius colemani* Viereck, 1912
*Aphidius egypti* Čkrkić & Tomanović, 2024
*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius sonchi* Marshall, 1896
*Aphidius transcaspicus* Telenga, 1958
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus tamaricis* Tomanović & Petrović, 2016
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Praon exsoletum* (Nees, 1811)
*Praon gallicum* Starý, 1971
*Praon necans* Mackauer, 1959
*Praon volucre* (Haliday, 1833)
*Trioxys pallidus* (Haliday, 1833)

**EL SALVADOR** [2 genera, 2 species]

*Aphidius rapae* McIntosh, 1855
*Lysiphlebus testaceipes* (Cresson, 1880)

**ERITREA** [1 genus, 1 species]

*Aphidius ervi* Haliday, 1834

**ESTONIA** [3 genera, 3 species]

*Aphidius hortensis* Marshall, 1896
*Ephedrus plagiator* (Nees, 1811)
*Praon volucre* (Haliday, 1833)

**ETHIOPIA** [1 genus, 7 species]

*Aphidius brevicarpus* Čkrkić & Tomanović, 2024
*Aphidius colemani* Viereck, 1912

*Aphidius hortensis* Marshall, 1896
*Aphidius petrstaryi* Čkrkić & Tomanović, 2024
*Aphidius platensis* Brèthes, 1913
*Aphidius setiger* (Mackauer, 1961)

**FALKLAND ISLANDS** [1 genus, 1 species]

*Aphidius subantarcticus* Starý & Vogel, 1985

**FAROE ISLANDS** [5 genera, 7 species]

*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius sonchi* Marshall, 1896
*Ephedrus lacertosus* (Haliday, 1833)
*Monoctonus caricis* (Haliday, 1833)
*Praon abjectum* (Haliday, 1833)
*Trioxys auctus* (Haliday, 1833)

**FINLAND** [21 genera, 113 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus balticus* Starý, 1979
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Adialytus veronicaecola* (Starý, 1978)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius arvensis* (Starý, 1960)
*Aphidius asteris* Haliday, 1834
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hortensis* Marshall, 1896
*Aphidius matricariae* Haliday, 1834
*Aphidius megourae* Starý, 1965
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rubi* Starý, 1962
*Aphidius salicis* Haliday, 1834
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius setiger* (Mackauer, 1961)
*Aphidius silvaticus* Starý, 1962
*Aphidius sonchi* Marshall, 1896
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Aphidius viaticus* (Sedlag, 1969)
*Areopraon helleni* (Starý, 1981)
*Areopraon silvestre* (Starý, 1971)
*Betuloxys compressicornis* (Ruthe, 1859)
*Betuloxys hortorum* (Starý, 1960)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)

*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Binodoxys letifer* (Haliday, 1833)
*Calaphidius elegans* Mackauer, 1961
*Diaeretellus ephippium* (Haliday, 1833)
*Diaeretellus heinzei* (Mackauer, 1959)
*Diaeretellus macrocarpus* Mackauer, 1961
*Diaeretus leucopterus* (Haliday, 1834)
*Dyscritulus pygmaeus* Mackauer, 1961
*Ephedrus brevis* Stelfox, 1941
*Ephedrus chaitophori* Gärdenfors, 1986
*Ephedrus helleni* Mackauer, 1968
*Ephedrus koponeni* Halme, 1992
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus longistigmus* Gärdenfors, 1986
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus vaccinii* Gärdenfors, 1986
*Ephedrus validus* (Haliday, 1833)
*Harkeria rufa* Cameron, 1900
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus hirticornis* Mackauer, 1960
*Metaphidius aterrimus* (Fahringer, 1935)
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus nervosus* (Haliday, 1833)
*Monoctonus paulensis* (Ashmead, 1902)
*Paralipsis enervis* (Nees, 1834)
*Pauesia abietis* (Marshall, 1896)
*Pauesia cupressobii* (Starý, 1960)
*Pauesia infulata* (Haliday, 1834)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia juniperorum* (Starý, 1960)
*Pauesia laricis* (Haliday, 1834)
*Pauesia maculolachni* (Starý, 1960)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia similis* Starý, 1966
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon barbatum* Mackauer, 1967
*Praon bicolor* Mackauer, 1959
*Praon cavariellae* Starý, 1971
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon lemantinum* Gautier, 1922
*Praon longicorne* Marshall, 1896
*Praon necans* Mackauer, 1959

*Praon volucre* (Haliday, 1833)
*Pseudopauesia prunicola* Halme, 1986
*Toxares deltiger* (Haliday, 1833)
*Trioxys auctus* (Haliday, 1833)
*Trioxys betulae* Marshall, 1896
*Trioxys cirsii* (Curtis, 1831)
*Trioxys complanatus* Quilis, 1931
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys falcatus* Mackauer, 1959
*Trioxys humuli* Mackauer, 1960
*Trioxys ibis* Mackauer, 1961
*Trioxys iziphyae* Mackauer, 1967
*Trioxys lambersi* Mackauer, 1960
*Trioxys macroceratus* Starý, 1960
*Trioxys microceratus* Mackauer, 1968
*Trioxys pallidus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960
*Trioxys tenuicaudus* Starý, 1978

**FRANCE** [31 (9 extinct) genera, 155 (20 extinct) species]

*Aclitus obscuripennis* Förster, 1863
*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius arvensis* (Starý, 1960)
*Aphidius asteris* Haliday, 1834
*Aphidius avenae* Haliday, 1834
*Aphidius banksae* Kittel, 2016
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius hortensis* Marshall, 1896
*Aphidius matricariae* Haliday, 1834
*Aphidius megourae* Starý, 1965
*Aphidius microlophii* Pennacchio & Tremblay, 1987
*Aphidius phalangomyzi* Starý, 1963
*Aphidius platensis* Brèthes, 1913
*Aphidius plocamaphidis* (Starý, 1973)
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rubi* Starý, 1962
*Aphidius rufus* Goureau, 1851
*Aphidius salicis* Haliday, 1834
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius setiger* (Mackauer, 1961)
*Aphidius sonchi* Marshall, 1896
*Aphidius staticobii* Tomanović & Petrović, 2012
*Aphidius tanacetarius* Mackauer, 1962
*Aphidius transcaspicus* Telenga, 1958

*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Aphidius viaticus* (Sedlag, 1969)
*Archipraon gausai* (Quilis, 1940) [Fossil]
*Areopraon lepelleyi* (Waterston, 1926)
*Areopraon silvestre* (Starý, 1971)
*Betuloxys compressicornis* (Ruthe, 1859)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys genistae* (Mackauer, 1960)
*Binodoxys heraclei* (Haliday, 1833)
*Binodoxys letifer* (Haliday, 1833)
*Binodoxys similis* (Mackauer, 1959)
*Diaeretellus ephippium* (Haliday, 1833)
*Diaeretellus macrocarpus* Mackauer, 1961
*Diaeretus leucopterus* (Haliday, 1834)
*Dyscritulus europaeus* Kocić & Tomanović, 2023
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus cerasicola* Starý, 1962
*Ephedrus chaitophori* Gärdenfors, 1986
*Ephedrus helleni* Mackauer, 1968
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus mirabilis* Timon-David, 1944 [Fossil]
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus prociphili* Starý, 1982
*Ephedrus validus* (Haliday, 1833)
*Falciconus pseudoplatani* (Marshall, 1896)
*Harkeria angustivalva* (Starý, 1959)
*Holocnomus braconiformis* Quilis, 1940 [Fossil]
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus alpinus* Starý, 1971
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus hirticornis* Mackauer, 1960
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus gallicus* Starý, 1977
*Monoctonus nervosus* (Haliday, 1833)
*Oligoaphidius sannoniensis* Quilis, 1940 [Fossil]
*Palaeoxys fuscus* (Quilis, 1940) [Fossil]
*Palaeoxys primigenius* (Quilis, 1940) [Fossil]
*Paralipsis enervis* (Nees, 1834)
*Pauesia abietis* (Marshall, 1896)
*Pauesia cedrobii* Starý & Leclant, 1977
*Pauesia cupressobii* (Starý, 1960)
*Pauesia grossa* (Fahringer, 1937)
*Pauesia infulata* (Haliday, 1834)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia juniperorum* (Starý, 1960)

*Pauesia laricis* (Haliday, 1834)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia silana* Tremblay, 1969
*Pauesia silvestris* (Starý, 1960)
*Pauesia similis* Starý, 1966
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon barbatum* Mackauer, 1967
*Praon bicolor* Mackauer, 1959
*Praon cavariellae* Starý, 1971
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavicorne* Starý, 1971
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon lemantinum* Gautier, 1922
*Praon longicorne* Marshall, 1896
*Praon minor* Starý, 1971
*Praon necans* Mackauer, 1959
*Praon pubescens* Starý, 1961
*Praon rosaecola* Starý, 1961
*Praon spinosum* Mackauer, 1959
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Promonoctonia quievreuxi* (Quilis, 1940) [Fossil]
*Protacanthoides fossilis* (Mackauer, 1959) [Fossil]
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Protephedrus terciarius* Quilis, 1940 [Fossil]
*Protodiaeretiella berdlandi* (Quilis, 1940) [Fossil]
*Pseudaphidius cenozoicum* (Quilis, 1940) [Fossil]
*Pseudaphidius fosiliferus* (Quilis, 1940) [Fossil]
*Pseudaphidius lysiphleboides* (Quilis, 1940) [Fossil]
*Pseudaphidius nigrofacies* (Quilis, 1940) [Fossil]
*Pseudaphidius oligoarundinis* (Quilis, 1940) [Fossil]
*Pseudaphidius oligocenus* (Quilis, 1940) [Fossil]
*Pseudaphidius premedicaginis* (Quilis, 1940) [Fossil]
*Pseudaphidius pseudogranarius* (Quilis, 1940) [Fossil]
*Pseudaphidius saliniferus* (Quilis, 1940) [Fossil]
*Pseudaphidius torneli* (Quilis, 1940) [Fossil]
*Pseudopraon mindariphagum* Starý, 1975
*Toxares deltiger* (Haliday, 1833)
*Trioxys acericola* Starý & Mackauer, 1971
*Trioxys ademuzi* Michelena & Sanchis, 1994
*Trioxys auctus* (Haliday, 1833)
*Trioxys betulae* Marshall, 1896
*Trioxys chaetosiphonis* Starý, 1971
*Trioxys cirsii* (Curtis, 1831)
*Trioxys complanatus* Quilis, 1931
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys falcatus* Mackauer, 1959
*Trioxys humuli* Mackauer, 1960
*Trioxys inulaecola* Starý & Remaudière, 1987
*Trioxys iziphyae* Mackauer, 1967
*Trioxys pallidus* (Haliday, 1833)
*Trioxys remaudierei* Starý & Rakhshani, 2017
*Trioxys spinosus* Starý, 1963
*Trioxys tanaceticola* Starý, 1971

**GEORGIA** [14 genera, 50 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius avenae* Haliday, 1834
*Aphidius balcanicus* Tomanović & Petrović, 2011
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hortensis* Marshall, 1896
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius setiger* (Mackauer, 1961)
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon lepelleyi* (Waterston, 1926)
*Betuloxys hortorum* (Starý, 1960)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Dyscritulus trjapitzini* Davidian, 2018
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Monoctonia pistaciaecola* Starý, 1962
*Monoctonus nervosus* (Haliday, 1833)
*Paralipsis enervis* (Nees, 1834)
*Praon absinthii* Bignell, 1894
*Praon dorsale* (Haliday, 1833)
*Praon flavinode* (Haliday, 1833)
*Praon volucre* (Haliday, 1833)
*Trioxys falcatus* Mackauer, 1959
*Trioxys humuli* Mackauer, 1960
*Trioxys pallidus* (Haliday, 1833)
*Trioxys phyllaphidis* Mackauer, 1961
*Trioxys tenuicaudus* Starý, 1978

**GERMANY** [23 genera, 124 species]

*Aclitus obscuripennis* Förster, 1863
*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)

*Adialytus thelaxis* (Starý, 1961)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius arvensis* (Starý, 1960)
*Aphidius asteris* Haliday, 1834
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ericaphidis* Pike & Starý, 2011
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius hortensis* Marshall, 1896
*Aphidius matricariae* Haliday, 1834
*Aphidius phalangomyzi* Starý, 1963
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius setiger* (Mackauer, 1961)
*Aphidius silvaticus* Starý, 1962
*Aphidius sonchi* Marshall, 1896
*Aphidius tanacetarius* Mackauer, 1962
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Aphidius viaticus* (Sedlag, 1969)
*Areopraon lepelleyi* (Waterston, 1926)
*Areopraon pilosum* Mackauer, 1959
*Areopraon silvestre* (Starý, 1971)
*Betuloxys compressicornis* (Ruthe, 1859)
*Betuloxys hortorum* (Starý, 1960)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys genistae* (Mackauer, 1960)
*Binodoxys heraclei* (Haliday, 1833)
*Binodoxys letifer* (Haliday, 1833)
*Calaphidius elegans* Mackauer, 1961
*Diaeretellus ephippium* (Haliday, 1833)
*Diaeretellus heinzei* (Mackauer, 1959)
*Diaeretellus macrocarpus* Mackauer, 1961
*Diaeretellus palustris* Starý, 1971
*Diaeretus leucopterus* (Haliday, 1834)
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus cerasicola* Starý, 1962
*Ephedrus chaitophori* Gärdenfors, 1986
*Ephedrus koponeni* Halme, 1992
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus longistigmus* Gärdenfors, 1986
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904

*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Falciconus pseudoplatani* (Marshall, 1896)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus hirticornis* Mackauer, 1960
*Lysiphlebus testaceipes* (Cresson, 1880)
*Metaphidius aterrimus* (Fahringer, 1935)
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus nervosus* (Haliday, 1833)
*Paralipsis brachycaudi* Tomanović & Starý, 2019
*Paralipsis enervis* (Nees, 1834)
*Pauesia abietis* (Marshall, 1896)
*Pauesia cupressobii* (Starý, 1960)
*Pauesia infulata* (Haliday, 1834)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia juniperorum* (Starý, 1960)
*Pauesia laricis* (Haliday, 1834)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia pinicollis* (Starý, 1960)
*Pauesia silvestris* (Starý, 1960)
*Pauesia similis* Starý, 1966
*Pauesia spatulata* Sedlag & Starý, 1980
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon barbatum* Mackauer, 1967
*Praon bicolor* Mackauer, 1959
*Praon caricicola* Mackauer, 1967
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon lemantinum* Gautier, 1922
*Praon longicorne* Marshall, 1896
*Praon necans* Mackauer, 1959
*Praon spinosum* Mackauer, 1959
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Pseudopauesia prunicola* Halme, 1986
*Toxares deltiger* (Haliday, 1833)
*Trioxys auctus* (Haliday, 1833)
*Trioxys betulae* Marshall, 1896
*Trioxys cirsii* (Curtis, 1831)
*Trioxys complanatus* Quilis, 1931
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys falcatus* Mackauer, 1959
*Trioxys humuli* Mackauer, 1960
*Trioxys iziphyae* Mackauer, 1967
*Trioxys lambersi* Mackauer, 1960

*Trioxys pallidus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960
*Trioxys parauctus* Starý, 1960
*Trioxys sunnysidensis* Fulbright & Pike, 2007
*Trioxys ulmi* Čkrkić & Tomanović, 2021

**GREECE** [10 genera, 51 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius apolloni* Kavallieratos & Tomanović, 2006
*Aphidius avenae* Haliday, 1834
*Aphidius banksae* Kittel, 2016
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius setiger* (Mackauer, 1961)
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius sonchi* Marshall, 1896
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Diaeretus leucopterus* (Haliday, 1834)
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Lipolexis gracilis* Förster, 1863
*Lipolexis pelopsi* Tomanović & Kavallieratos, 2020
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia silana* Tremblay, 1969
*Praon abjectum* (Haliday, 1833)
*Praon athenaeum* Kavallieratos & Lykouressis, 2000
*Praon barbatum* Mackauer, 1967
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon gallicum* Starý, 1971
*Praon orpheusi* Kavallieratos, Athanassiou & Tomanović, 2003
*Praon staryi* Kavallieratos & Lykouressis, 2000
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Trioxys complanatus* Quilis, 1931
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys pallidus* (Haliday, 1833)
*Trioxys tenuicaudus* Starý, 1978

**GREENLAND** [3 genera, 7 species]

*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius tarsalis* van Achterberg, 2006
*Betuloxys compressicornis* (Ruthe, 1859)
*Praon abjectum* (Haliday, 1833)
*Praon brevistigma* van Achterberg, 2006
*Praon volucre* (Haliday, 1833)

**GRENADA, & ST. VINCENT** [1 genus, 1 species]

*Lysiphlebus meridionalis* Ashmead, 1894

**GUADELOUPE** [1 genus, 1 species]

*Lysiphlebus testaceipes* (Cresson, 1880)

**GUAM** [3 genera, 5 species]

*Aphidius colemani* Viereck, 1912
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Lipolexis oregmae* (Gahan, 1932)
*Lysiphlebus testaceipes* (Cresson, 1880)

**GUATEMALA** [4 genera, 4 species]

*Aphidius rapae* McIntosh, 1855
*Ephedrus lacertosus* (Haliday, 1833)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Praon occidentale* Baker, 1909

**HAITI** [1 genus, 1 species]

*Lysiphlebus testaceipes* (Cresson, 1880)

**HUNGARY** [23 genera, 113 species]

*Aclitus obscuripennis* Förster, 1863
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius arvensis* (Starý, 1960)
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius erysimi* (Starý, 1960)
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius hortensis* Marshall, 1896
*Aphidius matricariae* Haliday, 1834
*Aphidius megourae* Starý, 1965
*Aphidius phalangomyzi* Starý, 1963
*Aphidius rapae* McIntosh, 1855

*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius setiger* (Mackauer, 1961)
*Aphidius sonchi* Marshall, 1896
*Aphidius tanacetarius* Mackauer, 1962
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon helleni* (Starý, 1981)
*Areopraon lepelleyi* (Waterston, 1926)
*Areopraon pilosum* Mackauer, 1959
*Betuloxys compressicornis* (Ruthe, 1859)
*Betuloxys hortorum* (Starý, 1960)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys genistae* (Mackauer, 1960)
*Binodoxys heraclei* (Haliday, 1833)
*Diaeretellus ephippium* (Haliday, 1833)
*Diaeretellus heinzei* (Mackauer, 1959)
*Diaeretellus macrocarpus* Mackauer, 1961
*Diaeretus leucopterus* (Haliday, 1834)
*Dyscritulus planiceps* (Marshall, 1896)
*Dyscritulus pygmaeus* Mackauer, 1961
*Ephedrus brevis* Stelfox, 1941
*Ephedrus cerasicola* Starý, 1962
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Falciconus pseudoplatani* (Marshall, 1896)
*Harkeria angustivalva* (Starý, 1959)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus desertorum* Starý, 1965
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus hirticornis* Mackauer, 1960
*Metaphidius aterrimus* (Fahringer, 1935)
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus nervosus* (Haliday, 1833)
*Paralipsis enervis* (Nees, 1834)
*Pauesia abietis* (Marshall, 1896)
*Pauesia cupressobii* (Starý, 1960)
*Pauesia grossa* (Fahringer, 1937)
*Pauesia infulata* (Haliday, 1834)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia juniperorum* (Starý, 1960)

*Pauesia laricis* (Haliday, 1834)
*Pauesia maculolachni* (Starý, 1960)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia pinicollis* (Starý, 1960)
*Pauesia silvestris* (Starý, 1960)
*Pauesia szepligetii* (Starý, 1960)
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon bicolor* Mackauer, 1959
*Praon caricicola* Mackauer, 1967
*Praon cavariellae* Starý, 1971
*Praon dorsale* (Haliday, 1833)
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon lemantinum* Gautier, 1922
*Praon longicorne* Marshall, 1896
*Praon necans* Mackauer, 1959
*Praon pubescens* Starý, 1961
*Praon rosaecola* Starý, 1961
*Praon spinosum* Mackauer, 1959
*Praon volucre* (Haliday, 1833)
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Pseudopraon mindariphagum* Starý, 1975
*Toxares deltiger* (Haliday, 1833)
*Trioxys auctus* (Haliday, 1833)
*Trioxys bajariae (*Györfi, 1958)
*Trioxys cirsii* (Curtis, 1831)
*Trioxys falcatus* Mackauer, 1959
*Trioxys glaber* Starý, 1967
*Trioxys humuli* Mackauer, 1960
*Trioxys macroceratus* Starý, 1960
*Trioxys pallidus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960
*Trioxys phyllaphidis* Mackauer, 1961
*Trioxys spinosus* Starý, 1963

**ICELAND** [5 genera, 10 species]

*Aphidius cingulatus* Ruthe, 1859
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Betuloxys compressicornis* (Ruthe, 1859)
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus plagiator* (Nees, 1811)
*Monoctonus caricis* (Haliday, 1833)
*Praon abjectum* (Haliday, 1833)
*Praon flavinode* (Haliday, 1833)
*Praon volucre* (Haliday, 1833)

**INDIA** [24 genera, 163 species – excluding a *nomen nudum*]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius areolatus* Ashmead, 1906
*Aphidius avenae* Haliday, 1834

*Aphidius bifurcatus* Rakhshani & Tomanović, 2012
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius erysimi* (Starý, 1960)
*Aphidius funebris* Mackauer, 1961
*Aphidius gifuensis* Ashmead, 1906
*Aphidius hieraciorum* Starý, 1962
*Aphidius hortensis* Marshall, 1896
*Aphidius macrosiphoniella* (Tamili & Raychaudhuri, 1984)
*Aphidius matricariae* Haliday, 1834
*Aphidius matsuyamensis* (Takada, 1966)
*Aphidius platensis* Brèthes, 1913
*Aphidius pleotrichophori* (Takada, 1966)
*Aphidius polycostulari* Das & Chakrabarti, 1991
*Aphidius qadrii* (Shuja-Uddin, 1976)
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius setiger* (Mackauer, 1961)
*Aphidius similis* Starý & Carver, 1980
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius sonchi* Marshall, 1896
*Aphidius staryi* Das & Chakrabarti, 1990
*Aphidius transcaspicus* Telenga, 1958
*Aphidius tuberculatus* Samanta & Raychaudhuri, 1990
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Archaphidus greenideae* Starý & Schlinger, 1967
*Areopraon lepelleyi* (Waterston, 1926)
*Betuloxys assamensis* (Starý, 1975)
*Betuloxys hortorum* (Starý, 1960)
*Betuloxys intermedius* (Shujauddin, 1975)
*Betuloxys manipurensis* Paonam, Singh & Singh, 1993
*Betuloxys takecallis* (Starý, 1978)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys basicurvus (*Shuja-Uddin, 1973)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys ceratovacunae* (Agarwala, Saha & Mahapatra, 1987)
*Binodoxys equatus* (Samanta, Tamili & Raychaudhuri, 1985)
*Binodoxys eutrichosiphi* (Starý, 1975)
*Binodoxys greenideae* (Starý & van Harten, 1983)
*Binodoxys indicus* (Subba Rao & Sharma, 1958)
*Binodoxys jaii* (Bhagat, 1982)
*Binodoxys joshimathensis* (Das & Chakrabarti, 1989)
*Binodoxys kashmirensis* Takada & Rishi, 1980
*Binodoxys kumaonensis* (Starý & Raychaudhuri, 1982)
*Binodoxys longispinus* (Shuja-Uddin, 1983)
*Binodoxys mackaueri* (Das & Chakrabarti, 1989)
*Binodoxys manipurensis* (Paonam & Singh, 1986)
*Binodoxys nungbaensis* (Paonam & Singh, 1986)
*Binodoxys oregmae* (Agarwala, Saha & Mahapatra, 1987)

*Binodoxys rubicola* (Shuja-Uddin, 1973)
*Binodoxys shillongensis* (Starý, 1978)
*Binodoxys sinensis* Mackauer, 1962
*Binodoxys struma* (Gahan, 1926)
*Binodoxys takecallis* (Das & Chakrabarti, 1989)
*Binodoxys tomentosae* (Das & Chakrabarti, 1990)
*Binodoxys trichosiphae* (Samanta & Raychaudhuri, 1990)
*Cristicaudus garhwalensis* Das & Chakrabarti, 1991
*Cristicaudus indicus* Das & Chakrabarti, 1991
*Cristicaudus nepalensis* (Takada, 1970)
*Diaeretellus palustris* Starý, 1971
*Diaeretus leucopterus* (Haliday, 1834)
*Eoaphidius longicaudatus* Samanta & Raychaudhuri, 1990
*Ephedrus brevis* Stelfox, 1941
*Ephedrus cavariellae* Takada, 1968
*Ephedrus cerasicola* Starý, 1962
*Ephedrus dioscoreae* Bhagat, 1982
*Ephedrus helleni* Mackauer, 1968
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus longiarticulatus* Rakhshani & Tomanović, 2012
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus orientalis* Starý & Schlinger, 1967
*Ephedrus perillae* Tamili & Raychaudhuri, 1984
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus ramnagarensis* Akhtar, 2011
*Ephedrus srinagarensis* Starý & Bhagat, 1978
*Ephedrus trichosiphoniellae* Takada, 1968
*Ephedrus urticae* Bhagat, 1982
*Falciconus longiradius* (Takada, 1966)
*Fissicaudus androensis* (Paonam & Singh, 1988)
*Fissicaudus areolatus* (Samanta, Tamili & Raychaudhuri, 1985)
*Indaphidius curvicaudatus* Starý, 1979
*Kashmiria aphidis* Starý & Bhagat, 1978
*Lipolexis gracilis* Förster, 1863
*Lipolexis myzakkaiae* Pramanik & Raychaudhuri, 1984
*Lipolexis oregmae* (Gahan, 1932)
*Lipolexis peregrina* Tomanović & Kocić, 2020
*Lipolexis pseudoscutellaris* Pramanik & Raychaudhuri, 1984
*Lysiphlebia mirzai* Shuja-Uddin, 1975
*Lysiphlebia rugosa* Starý & Schlinger, 1967
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus delhiensis* Subba Rao & Sharma, 1960
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus fotedari* Bhagat, 1981
*Monoctonus nervosus* (Haliday, 1833)
*Neopauesia manipurensis* Paonam & Singh, 1988
*Pauesia antennata* (Mukerji, 1950)
*Pauesia arcuata* Starý & Raychaudhuri, 1982
*Pauesia bizarrii* Samanta & Raychaudhuri, 1984
*Pauesia confusa* Samanta & Raychaudhuri, 1984
*Pauesia gulmargensis* Bhagat, 1981
*Pauesia hazratbalensis* Bhagat, 1981
*Pauesia himalayensis* Bhagat, 1981

*Pauesia hundungensis* Paonam & Singh, 1986
*Pauesia indica* Starý, 1977
*Pauesia labanensis* Samanta, Pramanik & Raychaudhuri, 1983
*Pauesia lachniella* Das & Chakrabarti, 1989
*Pauesia laricis* (Haliday, 1834)
*Pauesia leirikae* Paonam & Singh, 1989 [*nomen nudum*]
*Pauesia mashobrica* Starý & Raychaudhuri, 1982
*Pauesia orientalis* Das & Chakrabarti, 1989
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia pseudosilana* Samanta & Raychaudhuri, 1984
*Pauesia salignae* (Watanabe, 1939)
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon dorsale* (Haliday, 1833)
*Praon flavinode* (Haliday, 1833)
*Praon himalayense* Das & Chakrabarti, 1989
*Praon hyperomyzus* Saha, Poddar, Das, Agarwala & Raychaudhuri, 1982
*Praon kashmirense* Bhagat, 1982
*Praon longicorne* Marshall, 1896
*Praon mollitrichosiphi* Agarwala, Saha & Mahapatra, 1987
*Praon necans* Mackauer, 1959
*Praon orientale* Starý & Schlinger, 1967
*Praon pubescens* Starý, 1961
*Praon stagona* Takada & Rishi, 1980
*Praon volucre* (Haliday, 1833)
*Toxares deltiger* (Haliday, 1833)
*Toxares macrosiphophagum* Shuja-Uddin, 1974
*Toxares shigai* Takada, 1965
*Toxares zakai* Shuja-Uddin, 1974
*Trioxys auctus* (Haliday, 1833)
*Trioxys complanatus* Quilis, 1931
*Trioxys humuli* Mackauer, 1960
*Trioxys imphalensis* Paonam & Singh, 1988
*Trioxys pallidus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960
*Trioxys peniculatus* Agarwala, Saha & Mahapatra, 1985
*Trioxys raychaudhurii* Bhagat, 1990
*Trioxys rishii* Starý & Bhagat, 1978
*Trioxys rosaecola* Bhagat, 1982
*Trioxys shivaphis* Takada, 1966
*Trioxys soporensis* Shuja-Uddin, 1982

**INDONESIA** [1 genus, 2 species]

*Binodoxys communis* (Gahan, 1926)
*Lipolexis oregmae* (Gahan, 1932)

**IRAN** [14 genera, 78 species]

*Aclitus obscuripennis* Förster, 1863
*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Adialytus veronicaecola* (Starý, 1978)
*Aphidius absinthii* Marshall, 1896
*Aphidius arvensis* (Starý, 1960)

*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius iranicus* Rakhshani & Starý, 2007
*Aphidius matricariae* Haliday, 1834
*Aphidius persicus* Rakhshani & Starý, 2006
*Aphidius platensis* Brèthes, 1913
*Aphidius popovi* Starý, 1978
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius setiger* (Mackauer, 1961)
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius stigmaticus* Rakhshani & Tomanović, 2011
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon lepelleyi* (Waterston, 1926)
*Betuloxys hortorum* (Starý, 1960)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Ephedrus cerasicola* Starý, 1962
*Ephedrus chaitophori* Gärdenfors, 1986
*Ephedrus helleni* Mackauer, 1968
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus longistigmus* Gärdenfors, 1986
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus desertorum* Starý, 1965
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Lysiphlebus volkli* Tomanović & Kavallieratos, 2018
*Monoctonia pistaciaecola* Starý, 1962
*Monoctonia vesicarii* Tremblay, 1991
*Pauesia antennata* (Mukerji, 1950)
*Pauesia hazratbalensis* Bhagat, 1981
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon barbatum* Mackauer, 1967
*Praon bicolor* Mackauer, 1959
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon necans* Mackauer, 1959
*Praon orpheusi* Kavallieratos, Athanassiou & Tomanović, 2003
*Praon pubescens* Starý, 1961
*Praon rosaecola* Starý, 1961

*Praon unitum* Mescheloff & Rosen, 1988
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Tanytrichophorus petiolaris* Mackauer, 1961
*Trioxys asiaticus* Telenga, 1953
*Trioxys cirsii* (Curtis, 1831)
*Trioxys complanatus* Quilis, 1931
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys metacarpalis* Rakhshani & Starý, 2012
*Trioxys pallidus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960
*Trioxys pappi* Takada, 1979
*Trioxys tanaceticola* Starý, 1971

**IRAQ** [9 genera, 34 species]

*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius matricariae* Haliday, 1834
*Aphidius persicus* Rakhshani & Starý, 2006
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius rosae* Haliday, 1833
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius sonchi* Marshall, 1896
*Aphidius transcaspicus* Telenga, 1958
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonia pistaciaecola* Starý, 1962
*Pauesia antennata* (Mukerji, 1950)
*Praon abjectum* (Haliday, 1833)
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon necans* Mackauer, 1959
*Praon volucre* (Haliday, 1833)
*Trioxys complanatus* Quilis, 1931
*Trioxys pallidus* (Haliday, 1833)
*Trioxys quercicola* Starý, 1969
*Trioxys sunnysidensis* Fulbright & Pike, 2007

**IRELAND** [11 genera, 35 species]

*Adialytus ambiguus* (Haliday, 1834)
*Aphidius avenae* Haliday, 1834
*Aphidius ericaphidis* Pike & Starý, 2011
*Aphidius ervi* Haliday, 1834
*Aphidius gifuensis* Ashmead, 1906

*Aphidius matricariae* Haliday, 1834
*Aphidius microlophii* Pennacchio & Tremblay, 1987
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius rosae* Haliday, 1833
*Aphidius sonchi* Marshall, 1896
*Aphidius urticae* Haliday, 1834
*Betuloxys compressicornis* (Ruthe, 1859)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Binodoxys letifer* (Haliday, 1833)
*Diaeretellus ephippium* (Haliday, 1833)
*Ephedrus brevis* Stelfox, 1941
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus nervosus* (Haliday, 1833)
*Pauesia laricis* (Haliday, 1834)
*Praon abjectum* (Haliday, 1833)
*Praon dorsale* (Haliday, 1833)
*Praon volucre* (Haliday, 1833)
*Toxares deltiger* (Haliday, 1833)
*Trioxys auctus* (Haliday, 1833)
*Trioxys cirsii* (Curtis, 1831)
*Trioxys pallidus* (Haliday, 1833)

**ITALY** [15 genera, 92 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius hortensis* Marshall, 1896
*Aphidius matricariae* Haliday, 1834
*Aphidius microlophii* Pennacchio & Tremblay, 1987
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rufus* Goureau, 1851
*Aphidius salicis* Haliday, 1834
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius setiger* (Mackauer, 1961)
*Aphidius sonchi* Marshall, 1896

*Aphidius sussi* Pennacchio & Tremblay, 1989
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon lepelleyi* (Waterston, 1926)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys crudelis* (Rondani, 1848)
*Binodoxys heraclei* (Haliday, 1833)
*Diaeretus leucopterus* (Haliday, 1834)
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus cerasicola* Starý, 1962
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Harkeria angustivalva* (Starý, 1959)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus desertorum* Starý, 1965
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonia vesicarii* Tremblay, 1991
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Pauesia abietis* (Marshall, 1896)
*Pauesia alpina* Starý, 1966
*Pauesia goidanichi* Starý, 1966
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia juniperorum* (Starý, 1960)
*Pauesia laricis* (Haliday, 1834)
*Pauesia media* Starý, 1966
*Pauesia montana* Starý, 1966
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia silana* Tremblay, 1969
*Pauesia silvestris* (Starý, 1960)
*Pauesia similis* Starý, 1966
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon barbatum* Mackauer, 1967
*Praon bicolor* Mackauer, 1959
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon longicorne* Marshall, 1896
*Praon necans* Mackauer, 1959
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968

*Protaphidius wissmannii* (Ratzeburg, 1848)
*Toxares deltiger* (Haliday, 1833)
*Trioxys auctus* (Haliday, 1833)
*Trioxys cirsii* (Curtis, 1831)
*Trioxys complanatus* Quilis, 1931
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys falcatus* Mackauer, 1959
*Trioxys pallidus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960
*Trioxys tenuicaudus* Starý, 1978

## **JAMAICA** [1 genus, 1 species]

*Lipolexis oregmae* (Gahan, 1932)

## **JAPAN** [25 genera, 98 species]

*Aclitus sappaphis* Takada & Shiga, 1974
*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius amamioshimensis* Takada, 1968
*Aphidius aquilus* Mackauer, 1961
*Aphidius areolatus* Ashmead, 1906
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius gifuensis* Ashmead, 1906
*Aphidius longipetiolus* Takada, 1968
*Aphidius macrosiphoniellae* Takada, 1968
*Aphidius matsuyamensis* (Takada, 1966)
*Aphidius pleotrichophori* (Takada, 1966)
*Aphidius rapae* McIntosh, 1855
*Aphidius salicis* Haliday, 1834
*Aphidius sonchi* Marshall, 1896
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon kurohimense* Takada, 1968
*Betuloxys kamijoi* (Takada, 1968)
*Binodoxys brunnescens* (Starý & Schlinger, 1967)
*Binodoxys communis* (Gahan, 1926)
*Binodoxys eutrichosiphi* (Starý, 1975)
*Binodoxys indicus* (Subba Rao & Sharma, 1958)
*Binodoxys orientalis* (Starý & Schlinger, 1967)
*Binodoxys toxopterae* (Takada, 1966)
*Bioxys japonicus* Starý & Schlinger, 1967
*Calaphidius elegans* Mackauer, 1961
*Diaeretus leucopterus* (Haliday, 1834)
*Ephedrus brevis* Stelfox, 1941
*Ephedrus cavariellae* Takada, 1968
*Ephedrus helleni* Mackauer, 1968
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus longistigmus* Gärdenfors, 1986
*Ephedrus nacheri* Quilis, 1934

*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus trichosiphoniellae* Takada, 1968
*Falciconus longiradius* (Takada, 1966)
*Fissicaudus confucius* (Mackauer, 1962)
*Lipolexis gracilis* Förster, 1863
*Lipolexis peregrina* Tomanović & Kocić, 2020
*Lipolexis takadai* Tomanović & Kocić, 2020
*Lysiphlebia japonica* (Ashmead, 1906)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Monoctonia japonica* Rakhshani & Tomanović, 2015
*Monoctonus nervosus* (Haliday, 1833)
*Monoctonus similis* Starý & Schlinger, 1967
*Papilloma luteum* Wang, 1989
*Paralipsis eikoae* (Yasumatsu, 1951)
*Pauesia abietis* (Marshall, 1896)
*Pauesia akamatsucola* Takada, 1968
*Pauesia infulata* (Haliday, 1834)
*Pauesia inouyei* (Watanabe, 1941)
*Pauesia japonica* (Ashmead, 1906)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia konoi* (Watanabe, 1941)
*Pauesia laricis* (Haliday, 1834)
*Pauesia momicola* Watanabe & Takada, 1965
*Pauesia nopporensis* Watanabe & Takada, 1965
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia salignae* (Watanabe, 1939)
*Pauesia soranumensis* Watanabe & Takada, 1965
*Pauesia tropicalis* Starý & Schlinger, 1967
*Pauesia unilachni* (Gahan, 1926)
*Praon barbatum* Mackauer, 1967
*Praon capitophori* Takada, 1968
*Praon dorsale* (Haliday, 1833)
*Praon flavinode* (Haliday, 1833)
*Praon kurisakiae* Takada, 2014
*Praon necans* Mackauer, 1959
*Praon orientale* Starý & Schlinger, 1967
*Praon quadratum* Starý & Schlinger, 1967
*Praon rhopalosiphum* Takada, 1968
*Praon taisetsuzanum* Takada, 1968
*Praon uematsui* Takada, 2017
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Protaphidius nawaii* (Ashmead, 1906)
*Pseudopraon nipponicum* (Takada, 1968)
*Toxares shigai* Takada, 1965
*Trioxys artistigma* Takada, 1966
*Trioxys auctus* (Haliday, 1833)
*Trioxys brevipalpus* Takada, 1966
*Trioxys euceraphis* Takada, 1966
*Trioxys hokkaidensis* Takada, 1968
*Trioxys japonicus* Takada, 1966
*Trioxys myzocallis* Takada, 1968
*Trioxys rokkoensis* Davidian, 2007
*Trioxys shivaphis* Takada, 1966
*Trioxys tamarae* Davidian, 2005

**JORDAN** [2 genera, 3 species]

*Aphidius colemani* Viereck, 1912
*Aphidius rapae* McIntosh, 1855
*Ephedrus persicae* Froggatt, 1904

**KAZAKHSTAN** [14 genera, 50 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus veronicaecola* (Starý, 1978)
*Aphidius cingulatus* Ruthe, 1859
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius erysimi* (Starý, 1960)
*Aphidius funebris* Mackauer, 1961
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius ribis* Haliday, 1834
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius sonchi* Marshall, 1896
*Areopraon rasnitsyni* Davidian, 2011
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Dyscritulus dzhungaricus* Davidian, 2019
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus lonicerae* Tomanović, Kavallieratos & Starý, 2009
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus desertorum* Starý, 1965
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus hirticornis* Mackauer, 1960
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus nervosus* (Haliday, 1833)
*Paralipsis enervis* (Nees, 1834)
*Pauesia maculolachni* (Starý, 1960)
*Pauesia unilachni* (Gahan, 1926)
*Praon brevepetiolatum* Chiriac, 1995
*Praon dorsale* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon longicorne* Marshall, 1896
*Praon volucre* (Haliday, 1833)
*Toxares deltiger* (Haliday, 1833)
*Trioxys ademuzi* Michelena & Sanchis, 1994
*Trioxys asiaticus* Telenga, 1953
*Trioxys betulae* Marshall, 1896
*Trioxys complanatus* Quilis, 1931
*Trioxys longicaudi* Starý, 1978
*Trioxys pallidus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960
*Trioxys tanaceticola* Starý, 1971

**KENYA** [5 genera, 11 species]

*Aphidius bertrandi* Benoit, 1955
*Aphidius camerunensis* Mackauer, 1966
*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius transcaspicus* Telenga, 1958
*Autriquella aptera* Starý, 1988
*Binodoxys communis* (Gahan, 1926)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Pauesia abietis* (Marshall, 1896)

**KYRGYZSTAN** [9 genera, 34 species]

*Aphidius avenae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius salicis* Haliday, 1834
*Aphidius urticae* Haliday, 1834
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Ephedrus cerasicola* Starý, 1962
*Ephedrus helleni* Mackauer, 1968
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus desertorum* Starý, 1965
*Lysiphlebus fabarum* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus tianshanensis* Starý, 1978
*Pauesia goidanichi* Starý, 1966
*Pauesia hazratbalensis* Bhagat, 1981
*Pauesia infulata* (Haliday, 1834)
*Pauesia juniperorum* (Starý, 1960)
*Praon abjectum* (Haliday, 1833)
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Trioxys asiaticus* Telenga, 1953
*Trioxys depressus* Petrović & Tomanović, 2021
*Trioxys longicaudi* Starý, 1978

**LATVIA** [10 genera, 31 species]

*Aphidius aquilus* Mackauer, 1961
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius ervi* Haliday, 1834
*Aphidius hortensis* Marshall, 1896

*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rubi* Starý, 1962
*Aphidius setiger* (Mackauer, 1961)
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys angelicae* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Falciconus pseudoplatani* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Pauesia cupressobii* (Starý, 1960)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia pini* (Haliday, 1834)
*Pauesia unilachni* (Gahan, 1926)
*Praon flavinode* (Haliday, 1833)
*Praon volucre* (Haliday, 1833)
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Trioxys cirsii* (Curtis, 1831)
*Trioxys falcatus* Mackauer, 1959
*Trioxys pallidus* (Haliday, 1833)
*Trioxys tenuicaudus* Starý, 1978

**LEBANON** [8 genera, 22 species]

*Adialytus thelaxis* (Starý, 1961)
*Aphidius avenae* Haliday, 1834
*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Binodoxys angelicae* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus tamaricis* Tomanović & Petrović, 2016
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Praon barbatum* Mackauer, 1967
*Praon exsoletum* (Nees, 1811)
*Praon volucre* (Haliday, 1833)
*Trioxys complanatus* Quilis, 1931
*Trioxys pallidus* (Haliday, 1833)

**LEEWARD Islands** [1 genus, 1 species]

*Lysiphlebus testaceipes* (Cresson, 1880)

**LIBYA** [3 genera, 4 species]

*Aphidius colemani* Viereck, 1912
*Aphidius rapae* McIntosh, 1855
*Ephedrus persicae* Froggatt, 1904
*Lysiphlebus testaceipes* (Cresson, 1880)

**LITHUANIA** [10 genera, 47 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus balticus* Starý, 1979
*Aphidius aquilus* Mackauer, 1961
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rubi* Starý, 1962
*Aphidius setiger* (Mackauer, 1961)
*Aphidius silvaticus* Starý, 1962
*Aphidius sonchi* Marshall, 1896
*Aphidius urticae* Haliday, 1834
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Ephedrus cerasicola* Starý, 1962
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus volkli* Tomanović & Kavallieratos, 2018
*Paralipsis enervis* (Nees, 1834)
*Pauesia abietis* (Marshall, 1896)
*Pauesia akamatsucola* Takada, 1968
*Pauesia cupressobii* (Starý, 1960)
*Pauesia goidanichi* Starý, 1966
*Pauesia infulata* (Haliday, 1834)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia picta* (Haliday, 1834)
*Pauesia pinicollis* (Starý, 1960)
*Pauesia silana* Tremblay, 1969
*Pauesia similis* Starý, 1966
*Pauesia unilachni* (Gahan, 1926)
*Praon volucre* (Haliday, 1833)
*Toxares deltiger* (Haliday, 1833)
*Trioxys auctus* (Haliday, 1833)
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys falcatus* Mackauer, 1959
*Trioxys pallidus* (Haliday, 1833)

**MADAGASCAR** [4 genera, 8 species]

*Aphidius autriquei* Starý, 1985
*Aphidius camerunensis* Mackauer, 1966
*Aphidius platensis* Brèthes, 1913
*Aphidius seyrigi* Granger, 1949
*Binodoxys harinhalai* Starý, 2005
*Binodoxys madagascariensis* Starý, 2005
*Ephedrus persicae* Froggatt, 1904
*Lipolexis oregmae* (Gahan, 1932)

**MADEIRA ISLANDS** [7 genera, 16 species]

*Aphidius avenae* Haliday, 1834
*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius ribis* Haliday, 1834
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Binodoxys angelicae* (Haliday, 1833)
*Ephedrus plagiator* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Pauesia picta* (Haliday, 1834)
*Praon volucre* (Haliday, 1833)
*Trioxys pallidus* (Haliday, 1833)

**MALAWI** [2 genera, 3 species]

*Aphidius colemani* Viereck, 1912
*Lysiphlebus testaceipes* (Cresson, 1880)
*Pauesia juniperorum* (Starý, 1960)

**MALAYSIA** [2 genera, 2 species]

*Binodoxys communis* (Gahan, 1926)
*Lipolexis oregmae* (Gahan, 1932)

**MALTA** [9 genera, 16 species]

*Adialytus ambiguus* (Haliday, 1834)
*Aphidius absinthii* Marshall, 1896
*Aphidius colemani* Viereck, 1912
*Aphidius funebris* Mackauer, 1961
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Binodoxys angelicae* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Pauesia silana* Tremblay, 1969
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Trioxys pallidus* (Haliday, 1833)

**MEXICO** [12 genera, 38 species]

*Adialytus salicaphis* (Fitch, 1855)
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius nigripes* Ashmead, 1901
*Aphidius platensis* Brèthes, 1913
*Aphidius polygonaphis* (Fitch, 1855)
*Aphidius pseudopicipes* Starý, 1983
*Aphidius ramithyrus* Smith, 1944
*Aphidius rapae* McIntosh, 1855
*Aphidius ribis* Haliday, 1834
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius transcaspicus* Telenga, 1958
*Binodoxys acyrthosiphonis* (Starý, 1983)
*Binodoxys basituber* (Starý & Remaudière, 1982)
*Binodoxys cupressicola* (Gahan, 1919)
*Binodoxys hirticaudatus* (Starý, 1983)
*Binodoxys hyperomyzi* (Starý, 1983)
*Binodoxys impatientini* (Starý & Remaudière, 1983)
*Binodoxys solitarius* (Starý, 1983)
*Binodoxys tamaliae* (Starý & Remaudière, 1983)
*Cristicaudus bicolor* Starý & Remaudière, 1982
*Ephedrus californicus* Baker, 1909
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus meliarhizophagi* Starý, 1983
*Lipolexis oregmae* (Gahan, 1932)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Pauesia ponderosae* (Muesebeck, 1958)
*Pauesia rufithorax* Starý & Remaudière, 1982
*Pauesia rugosa* Starý & Remaudière, 1982
*Praon exsoletum* (Nees, 1811)
*Praon latgerinae* Starý & Remaudière, 1982
*Praon occidentale* Baker, 1909
*Pseudopraon mindariphagum* Starý, 1975
*Quadrictonus luteolus* Starý & Remaudière, 1982
*Trioxys bonnevillensis* Smith, 1944
*Trioxys complanatus* Quilis, 1931
*Trioxys mexicanus* Starý & Remaudière, 1982

**MOLDOVA** [19 genera, 92 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius absinthii* Marshall, 1896
*Aphidius arvensis* (Starý, 1960)
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius hortensis* Marshall, 1896
*Aphidius megourae* Starý, 1965
*Aphidius phalangomyzi* Starý, 1963

*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius setiger* (Mackauer, 1961)
*Aphidius sonchi* Marshall, 1896
*Aphidius tanacetarius* Mackauer, 1962
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon pilosum* Mackauer, 1959
*Betuloxys hortorum* (Starý, 1960)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys similis* (Mackauer, 1959)
*Diaeretus leucopterus* (Haliday, 1834)
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus angustithoracicus* Chiriac, 1977
*Ephedrus cerasicola* Starý, 1962
*Ephedrus helleni* Mackauer, 1968
*Ephedrus hyaloptericolus* Chiriac, 1977
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus mandjuriensis* Chiriac, 1977
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Falciconus pseudoplatani* (Marshall, 1896)
*Lipolexis gracilis* Förster, 1863
*Lipolexis pakistanica* Tomanović & Kocić, 2020
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus desertorum* Starý, 1965
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus hirticornis* Mackauer, 1960
*Lysiphlebus testaceipes* (Cresson, 1880)
*Metaphidius aterrimus* (Fahringer, 1935)
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus crepidis* (Haliday, 1834)
*Paralipsis enervis* (Nees, 1834)
*Paralipsis rugosa* Tomanović & Starý, 2019
*Pauesia abietis* (Marshall, 1896)
*Pauesia akamatsucola* Takada, 1968
*Pauesia cupressobii* (Starý, 1960)
*Pauesia infulata* (Haliday, 1834)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia juniperorum* (Starý, 1960)
*Pauesia laricis* (Haliday, 1834)
*Pauesia luntervalvae* Chiriac, 1993
*Pauesia maculolachni* (Starý, 1960)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia pinicollis* (Starý, 1960)

*Pauesia silvestris* (Starý, 1960)
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon barbatum* Mackauer, 1967
*Praon bicolor* Mackauer, 1959
*Praon brevepetiolatum* Chiriac, 1995
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon longicorne* Marshall, 1896
*Praon necans* Mackauer, 1959
*Praon rosaecola* Starý, 1961
*Praon volucre* (Haliday, 1833)
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Toxares deltiger* (Haliday, 1833)
*Trioxys cirsii* (Curtis, 1831)
*Trioxys complanatus* Quilis, 1931
*Trioxys pallidus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960

**MONACO** [4 genera, 5 species]

*Binodoxys angelicae* (Haliday, 1833)
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)

**MONGOLIA** [9 genera, 27 species]

*Adialytus kaszabi* Takada, 1979
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys mongolicus* Takada, 1979
*Dyscritulus dzhungaricus* Davidian, 2019
*Ephedrus brevis* Stelfox, 1941
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus hirticornis* Mackauer, 1960
*Lysiphlebus kerzhneri* Davidian, 2013
*Pauesia pini* (Haliday, 1834)
*Praon barbatum* Mackauer, 1967
*Praon volucre* (Haliday, 1833)
*Trioxys asiaticus* Telenga, 1953
*Trioxys complanatus* Quilis, 1931
*Trioxys pannonicus* Starý, 1960
*Trioxys pappi* Takada, 1979
*Trioxys tanaceticola* Starý, 1971

## **MONTENEGRO** [15 genera, 91 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius absinthii* Marshall, 1896
*Aphidius artemisicola* Tizado & Núñez-Pérez, 1995
*Aphidius arvensis* (Starý, 1960)
*Aphidius avenae* Haliday, 1834
*Aphidius balcanicus* Tomanović & Petrović, 2011
*Aphidius banksae* Kittel, 2016
*Aphidius chaetosiphonis* Tomanović & Petrović, 2011
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius galii* Tomanović & Kavallieratos, 2002
*Aphidius geranii* Tomanović & Kavallieratos, 2010
*Aphidius hieraciorum* Starý, 1962
*Aphidius linosiphonis* Tomanović & Starý, 2001
*Aphidius matricariae* Haliday, 1834
*Aphidius megourae* Starý, 1965
*Aphidius microlophii* Pennacchio & Tremblay, 1987
*Aphidius montenegrinus* Tomanović & Kavallieratos, 2004
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rubi* Starý, 1962
*Aphidius salicis* Haliday, 1834
*Aphidius silvaticus* Starý, 1962
*Aphidius sonchi* Marshall, 1896
*Aphidius sussi* Pennacchio & Tremblay, 1989
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Aphidius viaticus* (Sedlag, 1969)
*Areopraon chaitophori* Tomanović & Petrović, 2009
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Diaeretellus macrocarpus* Mackauer, 1961
*Ephedrus cerasicola* Starý, 1962
*Ephedrus chaitophori* Gärdenfors, 1986
*Ephedrus helleni* Mackauer, 1968
*Ephedrus hyadaphidis* Kocić & Tomanović, 2019
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus lonicerae* Tomanović, Kavallieratos & Starý, 2009
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Falciconus pseudoplatani* (Marshall, 1896)
*Harkeria angustivalva* (Starý, 1959)
*Lipolexis gracilis* Förster, 1863

*Lipolexis labialis* Tomanović & Kocić, 2020
*Lipolexis pelopsi* Tomanović & Kavallieratos, 2020
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus leclanti* Tomanović & Starý, 2002
*Monoctonus montenegrinus* Petrović & Tomanović, 2023
*Monoctonus nervosus* (Haliday, 1833)
*Pauesia cupressobii* (Starý, 1960)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon barbatum* Mackauer, 1967
*Praon bicolor* Mackauer, 1959
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon longicaudus* Tomanović & Starý, 2013
*Praon longicorne* Marshall, 1896
*Praon megourae* Starý, 1971
*Praon pubescens* Starý, 1961
*Praon retusae* Tomanović & Kavallieratos, 2002
*Praon spinosum* Mackauer, 1959
*Praon uroleucon* Tomanović & Kavallieratos, 2003
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Pseudopraon mindariphagum* Starý, 1975
*Trioxys galiobii* Starý, 1974
*Trioxys pallidus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960
*Trioxys phyllaphidis* Mackauer, 1961

## **MOROCCO** [7 genera, 22 species]

*Aphidius avenae* Haliday, 1834
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904
*Lysiphlebus fabarum* (Marshall, 1896)
*Pauesia cedrobii* Starý & Leclant, 1977
*Praon barbatum* Mackauer, 1967
*Praon dorsale* (Haliday, 1833)
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Trioxys complanatus* Quilis, 1931
*Trioxys pallidus* (Haliday, 1833)

**MOZAMBIQUE** [1 genus, 1 species]

*Aphidius platensis* Brèthes, 1913

**NEPAL** [7 genera, 12 species]

*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon antiquum* Mackauer, 1967
*Binodoxys heraclei* (Haliday, 1833)
*Cristicaudus nepalensis* (Takada, 1970)
*Ephedrus himalayensis* Gärdenfors, 1986
*Ephedrus nacheri* Quilis, 1934
*Lipolexis oregmae* (Gahan, 1932)
*Praon volucre* (Haliday, 1833)

**NETHERLANDS** [19 genera, 74 species]

*Aclitus obscuripennis* Förster, 1863
*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ericaphidis* Pike & Starý, 2011
*Aphidius ervi* Haliday, 1834
*Aphidius hieraciorum* Starý, 1962
*Aphidius hortensis* Marshall, 1896
*Aphidius matricariae* Haliday, 1834
*Aphidius plocamaphidis* (Starý, 1973)
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius setiger* (Mackauer, 1961)
*Aphidius sonchi* Marshall, 1896
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon pilosum* Mackauer, 1959
*Betuloxys compressicornis* (Ruthe, 1859)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Diaeretellus ephippium* (Haliday, 1833)
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus brevis* Stelfox, 1941
*Ephedrus cerasicola* Starý, 1962
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904

*Ephedrus plagiator* (Nees, 1811)
*Ephedrus prociphili* Starý, 1982
*Ephedrus validus* (Haliday, 1833)
*Falciconus pseudoplatani* (Marshall, 1896)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus hirticornis* Mackauer, 1960
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Paralipsis enervis* (Nees, 1834)
*Paralipsis plana* van Achterberg, 2016
*Pauesia laricis* (Haliday, 1834)
*Pauesia picta* (Haliday, 1834)
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon longicorne* Marshall, 1896
*Praon necans* Mackauer, 1959
*Praon pubescens* Starý, 1961
*Praon spinosum* Mackauer, 1959
*Praon volucre* (Haliday, 1833)
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Toxares deltiger* (Haliday, 1833)
*Toxares fovealis* Tomanović & van Achterberg, 2024
*Trioxys auctus* (Haliday, 1833)
*Trioxys betulae* Marshall, 1896
*Trioxys cirsii* (Curtis, 1831)
*Trioxys lambersi* Mackauer, 1960
*Trioxys mutilus* Mackauer, 1961
*Trioxys pallidus* (Haliday, 1833)
*Trioxys phyllaphidis* Mackauer, 1961

## **NEW CALEDONIA** [1 genus, 1 species]

*Aphidius platensis* Brèthes, 1913

## **NEW ZEALAND** [8 genera, 21 species]

*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius pelargonii* Starý & Carver, 1980
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius salicis* Haliday, 1834
*Aphidius similis* Starý & Carver, 1980
*Aphidius sonchi* Marshall, 1896
*Aphidius urticae* Haliday, 1834
*Binodoxys acalephae* (Marshall, 1896)
*Choreopraon totarae* Mackauer, 2012
*Ephedrus californicus* Baker, 1909

*Ephedrus cerasicola* Starý, 1962
*Ephedrus plagiator* (Nees, 1811)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Pauesia nigrovaria* (Provancher, 1888)
*Praon barbatum* Mackauer, 1967
*Trioxys complanatus* Quilis, 1931
*Trioxys sunnysidensis* Fulbright & Pike, 2007

**NIGERIA** [1 genus, 1 species]

*Aphidius camerunensis* Mackauer, 1966

**NORTH KOREA** [8 genera, 15 species]

*Aphidius absinthii* Marshall, 1896
*Aphidius rapae* McIntosh, 1855
*Ephedrus plagiator* (Nees, 1811)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebia japonica* (Ashmead, 1906)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus koraiensis* Starý, 2002
*Lysiphlebus testaceipes* (Cresson, 1880)
*Parabioxys songbaiensis* Shi & Chen, 2001
*Pauesia abietis* (Marshall, 1896)
*Pauesia infulata* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia salignae* (Watanabe, 1939)
*Praon coreanum* Takada, 1979
*Praon yomenae* Takada, 1968

**NORTH MACEDONIA** [4 genera, 8 species]

*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius sussi* Pennacchio & Tremblay, 1989
*Lysiphlebus testaceipes* (Cresson, 1880)
*Paralipsis enervis* (Nees, 1834)
*Praon bicolor* Mackauer, 1959
*Praon volucre* (Haliday, 1833)

**NORWAY** [19 genera, 82 species]

*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius artemisicola* Tizado & Núñez-Pérez, 1995
*Aphidius asiaticus* Kim & Tomanović, 2021
*Aphidius avenae* Haliday, 1834
*Aphidius balcanicus* Tomanović & Petrović, 2011
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius gifuensis* Ashmead, 1906
*Aphidius leclanti* Tomanović & Chaubet, 2013
*Aphidius matricariae* Haliday, 1834
*Aphidius norvegicus* Tomanović & Kocić, 2024

*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rubi* Starý, 1962
*Aphidius salicis* Haliday, 1834
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius setiger* (Mackauer, 1961)
*Aphidius silvaticus* Starý, 1962
*Aphidius tanacetarius* Mackauer, 1962
*Aphidius tarsalis* van Achterberg, 2006
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon silvestre* (Starý, 1971)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Diaeretellus ephippium* (Haliday, 1833)
*Diaeretellus svalbardicum* Chaubet & Tomanović, 2013
*Diaeretus leucopterus* (Haliday, 1834)
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus borealis* Kocić & Tomanović, 2024
*Ephedrus cerasicola* Starý, 1962
*Ephedrus chaitophori* Gärdenfors, 1986
*Ephedrus gardenforsi* Kocić & Tomanović, 2024
*Ephedrus helleni* Mackauer, 1968
*Ephedrus koponeni* Halme, 1992
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Falciconus pseudoplatani* (Marshall, 1896)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus hirticornis* Mackauer, 1960
*Lysiphlebus volkli* Tomanović & Kavallieratos, 2018
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus indiscretus* Čkrkić, Petrović & Tomanović, 2020
*Paralipsis enervis* (Nees, 1834)
*Pauesia infulata* (Haliday, 1834)
*Pauesia juniperorum* (Starý, 1960)
*Pauesia similis* Starý, 1966
*Praon abjectum* (Haliday, 1833)
*Praon barbatum* Mackauer, 1967
*Praon breviantennalis* Kocić & Tomanović, 2024
*Praon dorsale* (Haliday, 1833)
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon longicorne* Marshall, 1896
*Praon necans* Mackauer, 1959
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Protaphidius wissmannii* (Ratzeburg, 1848)

*Pseudopauesia prunicola* Halme, 1986
*Toxares deltiger* (Haliday, 1833)
*Trioxys auctus* (Haliday, 1833)
*Trioxys cirsii* (Curtis, 1831)
*Trioxys pallidus* (Haliday, 1833)
*Trioxys sunnysidensis* Fulbright & Pike, 2007
*Trioxys tenuicaudus* Starý, 1978

**OMAN** [1 genus, 1 species]

*Aphidius platensis* Brèthes, 1913

**PAKISTAN** [13 genera, 44 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius avenae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon antiquum* Mackauer, 1967
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys basicurvus* (Shuja-Uddin, 1973)
*Binodoxys indicus* (Subba Rao & Sharma, 1958)
*Binodoxys rubicola* (Shuja-Uddin, 1973)
*Binodoxys shillongensis* (Starý, 1978)
*Binodoxys sinensis* Mackauer, 1962
*Ephedrus nacheri* Quilis, 1934
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus srinagarensis* Starý & Bhagat, 1978
*Kashmiria aphidis* Starý & Bhagat, 1978
*Lipolexis gracilis* Förster, 1863
*Lipolexis oregmae* (Gahan, 1932)
*Lipolexis pakistanica* Tomanović & Kocić, 2020
*Lysiphlebus desertorum* Starý, 1965
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonus fotedari* Bhagat, 1981
*Pauesia antennata* (Mukerji, 1950)
*Pauesia himalayensis* Bhagat, 1981
*Praon exsoletum* (Nees, 1811)
*Praon necans* Mackauer, 1959
*Praon pakistanum* Kirkland, 1979
*Praon volucre* (Haliday, 1833)
*Toxares macrosiphophagum* Shuja-Uddin, 1974
*Trioxys pannonicus* Starý, 1960

**PALESTINE** [11 genera, 40 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius absinthii* Marshall, 1896
*Aphidius banksae* Kittel, 2016
*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius myzocallidis* Mescheloff & Rosen, 1990
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius sonchi* Marshall, 1896
*Aphidius transcaspicus* Telenga, 1958
*Aphidius uroleuci* Mescheloff & Rosen, 1990
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Diaeretus leucopterus* (Haliday, 1834)
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus tamaricis* Tomanović & Petrović, 2016
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Monoctonia pistaciaecola* Starý, 1962
*Pauesia anatolica* Michelena, Assael & Mendel, 2005
*Pauesia pini* (Haliday, 1834)
*Pauesia silana* Tremblay, 1969
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon rosaecola* Starý, 1961
*Praon unitum* Mescheloff & Rosen, 1988
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Trioxys complanatus* Quilis, 1931
*Trioxys moshei* Mescheloff & Rosen, 1993
*Trioxys pallidus* (Haliday, 1833)

**PAPUA NEW GUINEA** [1 genus, 1 species]

*Praon volucre* (Haliday, 1833)

**PARAGUAY** [4 genera, 9 species]

*Aphidius avenae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Ephedrus plagiator* (Nees, 1811)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Praon gallicum* Starý, 1971
*Praon volucre* (Haliday, 1833)

**PERU** [2 genera, 5 species]

*Aphidius matricariae* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius smithi* Sharma & Subba Rao, 1959
*Lysiphlebus testaceipes* (Cresson, 1880)

**PHILIPPINES** [3 genera, 3 species]

*Aphidius absinthii* Marshall, 1896
*Lipolexis oregmae* (Gahan, 1932)
*Binodoxys communis* (Gahan, 1926)

**POLAND** [21 genera, 98 species]

*Aclitus obscuripennis* Förster, 1863
*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius arvensis* (Starý, 1960)
*Aphidius asteris* Haliday, 1834
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius hortensis* Marshall, 1896
*Aphidius matricariae* Haliday, 1834
*Aphidius megourae* Starý, 1965
*Aphidius phalangomyzi* Starý, 1963
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius setiger* (Mackauer, 1961)
*Aphidius sonchi* Marshall, 1896
*Aphidius tanacetarius* Mackauer, 1962
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon lepelleyi* (Waterston, 1926)
*Betuloxys hortorum* (Starý, 1960)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys genistae* (Mackauer, 1960)
*Binodoxys heraclei* (Haliday, 1833)
*Diaeretellus ephippium* (Haliday, 1833)
*Diaeretus leucopterus* (Haliday, 1834)
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus cerasicola* Starý, 1962

*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Falciconus pseudoplatani* (Marshall, 1896)
*Lipolexis gracilis* Förster, 1863
*Lipolexis oregmae* (Gahan, 1932)
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus hirticornis* Mackauer, 1960
*Lysiphlebus testaceipes* (Cresson, 1880)
*Metaphidius aterrimus* (Fahringer, 1935)
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus nervosus* (Haliday, 1833)
*Paralipsis enervis* (Nees, 1834)
*Pauesia abietis* (Marshall, 1896)
*Pauesia cupressobii* (Starý, 1960)
*Pauesia infulata* (Haliday, 1834)
*Pauesia juniperorum* (Starý, 1960)
*Pauesia laricis* (Haliday, 1834)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia silvestris* (Starý, 1960)
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon barbatum* Mackauer, 1967
*Praon bicolor* Mackauer, 1959
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon longicorne* Marshall, 1896
*Praon necans* Mackauer, 1959
*Praon pubescens* Starý, 1961
*Praon rosaecola* Starý, 1961
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Toxares deltiger* (Haliday, 1833)
*Trioxys auctus* (Haliday, 1833)
*Trioxys betulae* Marshall, 1896
*Trioxys bicuspis* Mackauer, 1960
*Trioxys cirsii* (Curtis, 1831)
*Trioxys falcatus* Mackauer, 1959
*Trioxys pallidus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960
*Trioxys parauctus* Starý, 1960
*Trioxys tenuicaudus* Starý, 1978

**PORTUGAL** [9 genera, 26 species]

*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius rosae* Haliday, 1833
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus validus* (Haliday, 1833)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonia vesicarii* Tremblay, 1991
*Paralipsis enervis* (Nees, 1834)
*Praon dorsale* (Haliday, 1833)
*Praon necans* Mackauer, 1959
*Praon volucre* (Haliday, 1833)
*Trioxys pallidus* (Haliday, 1833)

**PUERTO RICO** [2 genera, 3 species]

*Aphidius funebris* Mackauer, 1961
*Aphidius rapae* McIntosh, 1855
*Lysiphlebus testaceipes* (Cresson, 1880)

**QATAR** [1 genus, 1 species]

*Aphidius colemani* Viereck, 1912

**ROMANIA** [13 genera, 33 species]

*Adialytus salicaphis* (Fitch, 1855)
*Aphidius cingulatus* Ruthe, 1859
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius rapae* McIntosh, 1855
*Aphidius rosae* Haliday, 1833
*Aphidius rubi* Starý, 1962
*Aphidius tanacetarius* Mackauer, 1962
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Diaeretellus palustris* Starý, 1971
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904

*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus hirticornis* Mackauer, 1960
*Monoctonus nervosus* (Haliday, 1833)
*Paralipsis enervis* (Nees, 1834)
*Pauesia pini* (Haliday, 1834)
*Praon absinthii* Bignell, 1894
*Praon dorsale* (Haliday, 1833)
*Praon lemantinum* Gautier, 1922
*Praon volucre* (Haliday, 1833)
*Trioxys cirsii* (Curtis, 1831)

**RUSSIA** [32 (2 extinct) genera, 230 (4 extinct) species]

*Aclitus sappaphis* Takada & Shiga, 1974
*Adialytus ambiguus* (Haliday, 1834)
*Adialytus balticus* Starý, 1979
*Adialytus kaszabi* Takada, 1979
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Adialytus veronicaecola* (Starý, 1978)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius areolatus* Ashmead, 1906
*Aphidius artemisicola* Tizado & Núñez-Pérez, 1995
*Aphidius arvensis* (Starý, 1960)
*Aphidius asteris* Haliday, 1834
*Aphidius avenae* Haliday, 1834
*Aphidius balcanicus* Tomanović & Petrović, 2011
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius erysimi* (Starý, 1960)
*Aphidius funebris* Mackauer, 1961
*Aphidius gifuensis* Ashmead, 1906
*Aphidius hieraciorum* Starý, 1962
*Aphidius hortensis* Marshall, 1896
*Aphidius matricariae* Haliday, 1834
*Aphidius medvedevi* Davidian, 2010
*Aphidius megourae* Starý, 1965
*Aphidius microlophii* Pennacchio & Tremblay, 1987
*Aphidius phalangomyzi* Starý, 1963
*Aphidius plocamaphidis* (Starý, 1973)
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rubi* Starý, 1962
*Aphidius salicis* Haliday, 1834
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius setiger* (Mackauer, 1961)

*Aphidius silvaticus* Starý, 1962
*Aphidius sonchi* Marshall, 1896
*Aphidius stigmaticus* Rakhshani & Tomanović, 2011
*Aphidius sussi* Pennacchio & Tremblay, 1989
*Aphidius tanacetarius* Mackauer, 1962
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Aphidius viaticus* (Sedlag, 1969)
*Areopraon chaitophori* Tomanović & Petrović, 2009
*Areopraon helleni* (Starý, 1981)
*Areopraon lepelleyi* (Waterston, 1926)
*Areopraon pilosum* Mackauer, 1959
*Areopraon rasnitsyni* Davidian, 2011
*Areopraon tricolor* Davidian, 2021
*Areopraon vladivostoki* Davidian, 2021
*Betuloxys compressicornis* (Ruthe, 1859)
*Betuloxys hortorum* (Starý, 1960)
*Betuloxys kamijoi* (Takada, 1968)
*Betuloxys kostyukovi* Davidian, 2005
*Betuloxys sugonyaevi* Davidian, 2005
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys carinatus* (Starý & Schlinger, 1967)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys communis* (Gahan, 1926)
*Binodoxys crataegi* Davidian, 2022
*Binodoxys ekaterinae* Davidian, 2022
*Binodoxys genistae* (Mackauer, 1960)
*Binodoxys heraclei* (Haliday, 1833)
*Binodoxys indicus* (Subba Rao & Sharma, 1958)
*Binodoxys letifer* (Haliday, 1833)
*Binodoxys staryi* Davidian, 2007
*Binodoxys struma* (Gahan, 1926)
*Binodoxys tobiasi* (Davidian, 2004)
*Binodoxys toxopterae* (Takada, 1966)
*Calaphidius elegans* Mackauer, 1961
*Chaetopauesia mackaueri* Davidian, 2007
*Diaeretellus ephippium* (Haliday, 1833)
*Diaeretellus heinzei* (Mackauer, 1959)
*Diaeretellus macrocarpus* Mackauer, 1961
*Diaeretellus palustris* Starý, 1971
*Diaeretellus tremulae* Davidian, 2024
*Diaeretus leucopterus* (Haliday, 1834)
*Dyscritulus dzhungaricus* Davidian, 2019
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus antennalis* Tomanović, 2020
*Ephedrus brevis* Stelfox, 1941
*Ephedrus carsteni* Davidian, 2023 [Fossil]
*Ephedrus cerasicola* Starý, 1962
*Ephedrus chaitophori* Gärdenfors, 1986
*Ephedrus helleni* Mackauer, 1968
*Ephedrus koponeni* Halme, 1992
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus longistigmus* Gärdenfors, 1986
*Ephedrus nacheri* Quilis, 1934

*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus orientalis* Starý & Schlinger, 1967
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus vaccinii* Gärdenfors, 1986
*Ephedrus validus* (Haliday, 1833)
*Ephedrus zaikai* Davidian, 2023 [Fossil]
*Falciconus longiradius* (Takada, 1966)
*Falciconus pseudoplatani* (Marshall, 1896)
*Harkeria angustivalva* (Starý, 1959)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebia japonica* (Ashmead, 1906)
*Lysiphlebus alpinus* Starý, 1971
*Lysiphlebus balcanicus* Starý, 1998
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus desertorum* Starý, 1965
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus hirticornis* Mackauer, 1960
*Lysiphlebus kipyatkovi* Davidian, 2013
*Lysiphlebus orientalis* Starý & Rakhshani, 2010
*Lysiphlebus testaceipes* (Cresson, 1880)
*Lysiphlebus ussuriensis* Chiriac, 1979
*Metaphidius aterrimus* (Fahringer, 1935)
*Monoctonia japonica* Rakhshani & Tomanović, 2015
*Monoctonia pistaciaecola* Starý, 1962
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus leclanti* Tomanović & Starý, 2002
*Monoctonus nervosus* (Haliday, 1833)
*Monoctonus sambuci* Davidian, 2024
*Paralipsis eikoae* (Yasumatsu, 1951)
*Paralipsis enervis* (Nees, 1834)
*Pauesia abietis* (Marshall, 1896)
*Pauesia akamatsucola* Takada, 1968
*Pauesia cupressobii* (Starý, 1960)
*Pauesia eugenii* Davidian, 2015
*Pauesia goidanichi* Starý, 1966
*Pauesia grossa* (Fahringer, 1937)
*Pauesia holmani* Starý, 2001
*Pauesia infulata* (Haliday, 1834)
*Pauesia inouyei* (Watanabe, 1941)
*Pauesia japonica* (Ashmead, 1906)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia juniperorum* (Starý, 1960)
*Pauesia konoi* (Watanabe, 1941)
*Pauesia kunashirensis* Davidian, 2007
*Pauesia laricis* (Haliday, 1834)
*Pauesia maculolachni* (Starý, 1960)
*Pauesia montana* Starý, 1966
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia pinicollis* (Starý, 1960)
*Pauesia sachalinensis* Davidian, 2007
*Pauesia salignae* (Watanabe, 1939)

*Pauesia silana* Tremblay, 1969
*Pauesia silvestris* (Starý, 1960)
*Pauesia similis* Starý, 1966
*Pauesia soranumensis* Watanabe & Takada, 1965
*Pauesia spatulata* Sedlag & Starý, 1980
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon athenaeum* Kavallieratos & Lykouressis, 2000
*Praon barbatum* Mackauer, 1967
*Praon bicolor* Mackauer, 1959
*Praon cavariellae* Starý, 1971
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavicorne* Starý, 1971
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon lemantinum* Gautier, 1922
*Praon longicorne* Marshall, 1896
*Praon minor* Starý, 1971
*Praon necans* Mackauer, 1959
*Praon rosaecola* Starý, 1961
*Praon spinosum* Mackauer, 1959
*Praon taisetsuzanum* Takada, 1968
*Praon uroleucon* Tomanović & Kavallieratos, 2003
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Protaphidius belokobylskiji* Davidian, 2007
*Protaphidius nawaii* (Ashmead, 1906)
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Protoctonus groehni* Davidian, 2022 [Fossil]
*Pseudopauesia prunicola* Halme, 1986
*Pseudopraon mindariphagum* Starý, 1975
*Sakhalinoctonus alexrasnitsyni* Davidian, 2021 [Fossil]
*Sergeyoxys monoceratus* Davidian, 2016
*Toxares deltiger* (Haliday, 1833)
*Trioxys ademuzi* Michelena & Sanchis, 1994
*Trioxys annae* Davidian, 2005
*Trioxys artistigma* Takada, 1966
*Trioxys asiaticus* Telenga, 1953
*Trioxys asyae* Davidian, 2005
*Trioxys auctus* (Haliday, 1833)
*Trioxys belokobylskiji* Davidian, 2005
*Trioxys betulae* Marshall, 1896
*Trioxys bicuspis* Mackauer, 1960
*Trioxys chaetosiphonis* Starý, 1971
*Trioxys chasanicus* Davidian, 2005
*Trioxys cirsii* (Curtis, 1831)
*Trioxys complanatus* Quilis, 1931
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys falcatus* Mackauer, 1959
*Trioxys galiobii* Starý, 1974
*Trioxys glaber* Starý, 1967
*Trioxys hokkaidensis* Takada, 1968
*Trioxys humuli* Mackauer, 1960
*Trioxys inulaecola* Starý & Remaudière, 1987
*Trioxys iziphyae* Mackauer, 1967
*Trioxys japonicus* Takada, 1966

*Trioxys kasparyani* Davidian, 2014
*Trioxys lambersi* Mackauer, 1960
*Trioxys liui* Chou & Chou, 1993
*Trioxys longicaudi* Starý, 1978
*Trioxys macroceratus* Starý, 1960
*Trioxys microceratus* Mackauer, 1968
*Trioxys pallidus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960
*Trioxys parauctus* Starý, 1960
*Trioxys phyllaphidis* Mackauer, 1961
*Trioxys rokkoensis* Davidian, 2007
*Trioxys tamarae* Davidian, 2005
*Trioxys tanaceticola* Starý, 1971
*Trioxys tatianae* Davidian, 2020
*Trioxys tenuicaudus* Starý, 1978
*Trioxys udalovi* Davidian, 2005
*Xenostigmus takadai* Davidian, 2007

**RÉUNION** [1 genus, 7 species]

*Aphidius camerunensis* Mackauer, 1966
*Aphidius colemani* Viereck, 1912
*Aphidius matricariae* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius rosae* Haliday, 1833
*Aphidius seyrigi* Granger, 1949

**RWANDA** [1 genus, 1 species]

*Aphidius bertrandi* Benoit, 1955

**SAO TOME & PRINCIPE** [1 genus, 1 species]

*Lipolexis oregmae* (Gahan, 1932)

**SAUDI ARABIA** [5 genera, 11 species]

*Aphidius avenae* Haliday, 1834
*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Binodoxys angelicae* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904
*Lysiphlebus fabarum* (Marshall, 1896)
*Praon barbatum* Mackauer, 1967
*Praon exsoletum* (Nees, 1811)

**SERBIA** [19 genera, 126 species]

*Aclitus obscuripennis* Förster, 1863
*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961

*Aphidius artemisicola* Tizado & Núñez-Pérez, 1995
*Aphidius arvensis* (Starý, 1960)
*Aphidius avenae* Haliday, 1834
*Aphidius balcanicus* Tomanović & Petrović, 2011
*Aphidius banksae* Kittel, 2016
*Aphidius cingulatus* Ruthe, 1859
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ericaphidis* Pike & Starý, 2011
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius hortensis* Marshall, 1896
*Aphidius linosiphonis* Tomanović & Starý, 2001
*Aphidius matricariae* Haliday, 1834
*Aphidius megourae* Starý, 1965
*Aphidius microlophii* Pennacchio & Tremblay, 1987
*Aphidius phalangomyzi* Starý, 1963
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rubi* Starý, 1962
*Aphidius salicis* Haliday, 1834
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius setiger* (Mackauer, 1961)
*Aphidius silvaticus* Starý, 1962
*Aphidius sonchi* Marshall, 1896
*Aphidius sussi* Pennacchio & Tremblay, 1989
*Aphidius tanacetarius* Mackauer, 1962
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Aphidius viaticus* (Sedlag, 1969)
*Areopraon chaitophori* Tomanović & Petrović, 2009
*Areopraon lepelleyi* (Waterston, 1926)
*Areopraon silvestre* (Starý, 1971)
*Betuloxys compressicornis* (Ruthe, 1859)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Binodoxys similis* (Mackauer, 1959)
*Diaeretus leucopterus* (Haliday, 1834)
*Dyscritulus europaeus* Kocić & Tomanović, 2023
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus cerasicola* Starý, 1962
*Ephedrus chaitophori* Gärdenfors, 1986
*Ephedrus helleni* Mackauer, 1968
*Ephedrus hyadaphidis* Kocić & Tomanović, 2019
*Ephedrus koponeni* Halme, 1992
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Falciconus pseudoplatani* (Marshall, 1896)

*Harkeria angustivalva* (Starý, 1959)
*Lipolexis gracilis* Förster, 1863
*Lipolexis labialis* Tomanović & Kocić, 2020
*Lysiphlebus alpinus* Starý, 1971
*Lysiphlebus balcanicus* Starý, 1998
*Lysiphlebus brachycaudi* Starý & Tomanović, 2018
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus hirticornis* Mackauer, 1960
*Lysiphlebus orientalis* Starý & Rakhshani, 2010
*Lysiphlebus testaceipes* (Cresson, 1880)
*Lysiphlebus volkli* Tomanović & Kavallieratos, 2018
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus leclanti* Tomanović & Starý, 2002
*Paralipsis enervis* (Nees, 1834)
*Pauesia anatolica* Michelena, Assael & Mendel, 2005
*Pauesia cupressobii* (Starý, 1960)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia juniperorum* (Starý, 1960)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia silvestris* (Starý, 1960)
*Pauesia similis* Starý, 1966
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon barbatum* Mackauer, 1967
*Praon bicolor* Mackauer, 1959
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon longicorne* Marshall, 1896
*Praon necans* Mackauer, 1959
*Praon nonveilleri* Tomanović & Kavallieratos, 2003
*Praon pubescens* Starý, 1961
*Praon rosaecola* Starý, 1961
*Praon sambuci* Tomanović & Starý, 2013
*Praon spinosum* Mackauer, 1959
*Praon staticobii* Tomanović & Petrović, 2014
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Trioxys acericola* Starý & Mackauer, 1971
*Trioxys auctus* (Haliday, 1833)
*Trioxys betulae* Marshall, 1896
*Trioxys chaetosiphonis* Starý, 1971
*Trioxys cirsii* (Curtis, 1831)
*Trioxys complanatus* Quilis, 1931
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys falcatus* Mackauer, 1959
*Trioxys galiobii* Starý, 1974
*Trioxys humuli* Mackauer, 1960
*Trioxys pallidus* (Haliday, 1833)

*Trioxys pannonicus* Starý, 1960
*Trioxys parauctus* Starý, 1960
*Trioxys tanaceticola* Starý, 1971
*Trioxys ulmi* Čkrkić & Tomanović, 2021

**SINGAPORE** [1 genus, 1 species]

*Lipolexis oregmae* (Gahan, 1932)

**SLOVAKIA** [20 genera, 91 species]

*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius arvensis* (Starý, 1960)
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius erysimi* (Starý, 1960)
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius hortensis* Marshall, 1896
*Aphidius linosiphonis* Tomanović & Starý, 2001
*Aphidius matricariae* Haliday, 1834
*Aphidius microlophii* Pennacchio & Tremblay, 1987
*Aphidius phalangomyzi* Starý, 1963
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius setiger* (Mackauer, 1961)
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius tanacetarius* Mackauer, 1962
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon silvestre* (Starý, 1971)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys genistae* (Mackauer, 1960)
*Diaeretus leucopterus* (Haliday, 1834)
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus cerasicola* Starý, 1962
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus prociphili* Starý, 1982
*Falciconus pseudoplatani* (Marshall, 1896)
*Harkeria angustivalva* (Starý, 1959)
*Lipolexis gracilis* Förster, 1863

*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus hirticornis* Mackauer, 1960
*Metaphidius aterrimus* (Fahringer, 1935)
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus nervosus* (Haliday, 1833)
*Paralipsis enervis* (Nees, 1834)
*Pauesia cupressobii* (Starý, 1960)
*Pauesia infulata* (Haliday, 1834)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia juniperorum* (Starý, 1960)
*Pauesia laricis* (Haliday, 1834)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon barbatum* Mackauer, 1967
*Praon bicolor* Mackauer, 1959
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon longicorne* Marshall, 1896
*Praon necans* Mackauer, 1959
*Praon pubescens* Starý, 1961
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Pseudopraon mindariphagum* Starý, 1975
*Toxares deltiger* (Haliday, 1833)
*Trioxys betulae* Marshall, 1896
*Trioxys cirsii* (Curtis, 1831)
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys falcatus* Mackauer, 1959
*Trioxys glaber* Starý, 1967
*Trioxys pallidus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960
*Trioxys parauctus* Starý, 1960
*Trioxys spinosus* Starý, 1963

**SLOVENIA** [10 genera, 49 species]

*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius avenae* Haliday, 1834
*Aphidius banksae* Kittel, 2016
*Aphidius cingulatus* Ruthe, 1859
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hortensis* Marshall, 1896
*Aphidius matricariae* Haliday, 1834
*Aphidius microlophii* Pennacchio & Tremblay, 1987

*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius sonchi* Marshall, 1896
*Aphidius staticobii* Tomanović & Petrović, 2012
*Aphidius sussi* Pennacchio & Tremblay, 1989
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Ephedrus cerasicola* Starý, 1962
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus tamaricis* Tomanović & Petrović, 2016
*Lipolexis gracilis* Förster, 1863
*Lipolexis labialis* Tomanović & Kocić, 2020
*Lipolexis peregrina* Tomanović & Kocić, 2020
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Praon abjectum* (Haliday, 1833)
*Praon barbatum* Mackauer, 1967
*Praon exsoletum* (Nees, 1811)
*Praon necans* Mackauer, 1959
*Praon staticobii* Tomanović & Petrović, 2014
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Trioxys auctus* (Haliday, 1833)
*Trioxys pallidus* (Haliday, 1833)

## **SOUTH AFRICA** [6 genera, 14 species]

*Aphidius angustastigmatus* Čkrkić & Tomanović, 2024
*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius matricariae* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius transcaspicus* Telenga, 1958
*Ephedrus persicae* Froggatt, 1904
*Lipolexis oregmae* (Gahan, 1932)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Pauesia bicolor* (Ashmead, 1889)
*Pauesia cinaravora* Marsh, 1991
*Praon exsoletum* (Nees, 1811)

**SOUTH KOREA** [20 genera, 72 species]

*Aclitus sappaphis* Takada & Shiga, 1974
*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius areolatus* Ashmead, 1906
*Aphidius asiaticus* Kim & Tomanović, 2021
*Aphidius breviflagellaris* Tomanović & van Achterberg, 2024
*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius gifuensis* Ashmead, 1906
*Aphidius longicarpus* Kim & Tomanović, 2021
*Aphidius longipetiolus* Takada, 1968
*Aphidius longistigmus* Kim & Tomanović, 2021
*Aphidius pleotrichophori* (Takada, 1966)
*Aphidius rapae* McIntosh, 1855
*Aphidius salicis* Haliday, 1834
*Aphidius sonchi* Marshall, 1896
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys communis* (Gahan, 1926)
*Binodoxys koreanus* Starý, 2009
*Binodoxys odinae* Paik, 1976
*Binodoxys orientalis* (Starý & Schlinger, 1967)
*Bioxys japonicus* Starý & Schlinger, 1967
*Diaeretus leucopterus* (Haliday, 1834)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Lipolexis depressiceps* Kim & Kim, 2025
*Lipolexis gracilis* Förster, 1863
*Lipolexis longipetiolata* Kim & Kim, 2025
*Lipolexis oregmae* (Gahan, 1932)
*Lipolexis peregrina* Tomanović & Kocić, 2020
*Lipolexis sulcata* Kim & Kim, 2025
*Lysiphlebia japonica* (Ashmead, 1906)
*Lysiphlebia rugosa* Starý & Schlinger, 1967
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Monoctonus koreanus* Kim, Čkrkić & Tomanović, 2024
*Papilloma luteum* Wang, 1989
*Parabioxys songbaiensis* Shi & Chen, 2001
*Paralipsis triangulata* Kim & Yoon, 2026
*Pauesia abietis* (Marshall, 1896)
*Pauesia gwangleungensis* Starý, 2001
*Pauesia holmani* Starý, 2001
*Pauesia infulata* (Haliday, 1834)
*Pauesia japonica* (Ashmead, 1906)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia koraiensis* Starý, 2001

*Pauesia pini* (Haliday, 1834)
*Pauesia salignae* (Watanabe, 1939)
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon coreanum* Takada, 1979
*Praon dorsale* (Haliday, 1833)
*Praon orientale* Starý & Schlinger, 1967
*Protaphidius nawaii* (Ashmead, 1906)
*Tanytrichophorus koreanus* Davidian, 2026
*Toxares deltiger* (Haliday, 1833)
*Toxares koreanus* Tomanović, Kim & Petrović, 2022
*Trioxys annae* Davidian, 2005
*Trioxys betulae* Marshall, 1896
*Trioxys liui* Chou & Chou, 1993
*Trioxys remaudierei* Starý & Rakhshani, 2017
*Trioxys tamarae* Davidian, 2005

**SPAIN** [22 genera, 113 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius artemisicola* Tizado & Núñez-Pérez, 1995
*Aphidius arvensis* (Starý, 1960)
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius eglanteriae* Haliday, 1834
*Aphidius erodii* Michelena & Tomanović, 2021
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius hortensis* Marshall, 1896
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rubi* Starý, 1962
*Aphidius salicis* Haliday, 1834
*Aphidius santolinae* (Michelena & Sanchis, 1995)
*Aphidius setiger* (Mackauer, 1961)
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius sonchi* Marshall, 1896
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Archephedrus stolamissus* Ortega-Blanco, Bennett, Delclòs & Engel, 2009 [Fossil]
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Binodoxys letifer* (Haliday, 1833)
*Diaeretellus heinzei* (Mackauer, 1959)

*Diaeretus leucopterus* (Haliday, 1834)
*Dyscritulus europaeus* Kocić & Tomanović, 2023
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus cerasicola* Starý, 1962
*Ephedrus chaitophori* Gärdenfors, 1986
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Falciconus hispanicus* Tomanović & Michelena, 2023
*Falciconus pseudoplatani* (Marshall, 1896)
*Harkeria angustivalva* (Starý, 1959)
*Lipolexis gracilis* Förster, 1863
*Lipolexis labialis* Tomanović & Kocić, 2020
*Lipolexis peregrina* Tomanović & Kocić, 2020
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus desertorum* Starý, 1965
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus hirticornis* Mackauer, 1960
*Lysiphlebus testaceipes* (Cresson, 1880)
*Metaphidius aterrimus* (Fahringer, 1935)
*Monoctonia pistaciaecola* Starý, 1962
*Monoctonia vesicarii* Tremblay, 1991
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus hispanicus* Tizado, 1992
*Paralipsis enervis* (Nees, 1834)
*Paralipsis tibiator* van Achterberg & Ortiz de Zugasti, 2016
*Pauesia abietis* (Marshall, 1896)
*Pauesia cupressobii* (Starý, 1960)
*Pauesia goidanichi* Starý, 1966
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia juniperorum* (Starý, 1960)
*Pauesia laricis* (Haliday, 1834)
*Pauesia maculolachni* (Starý, 1960)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia pinicollis* (Starý, 1960)
*Pauesia silana* Tremblay, 1969
*Pauesia silvestris* (Starý, 1960)
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon barbatum* Mackauer, 1967
*Praon bicolor* Mackauer, 1959
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon longicorne* Marshall, 1896
*Praon rosaecola* Starý, 1961
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Protaphidius wissmannii* (Ratzeburg, 1848)

*Pseudopraon mindariphagum* Starý, 1975
*Toxares deltiger* (Haliday, 1833)
*Trioxys ademuzi* Michelena & Sanchis, 1994
*Trioxys auctus* (Haliday, 1833)
*Trioxys betulae* Marshall, 1896
*Trioxys chaetosiphonis* Starý, 1971
*Trioxys cirsii* (Curtis, 1831)
*Trioxys complanatus* Quilis, 1931
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys liui* Chou & Chou, 1993
*Trioxys moshei* Mescheloff & Rosen, 1993
*Trioxys pallidus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960
*Trioxys phyllaphidis* Mackauer, 1961
*Trioxys remaudierei* Starý & Rakhshani, 2017
*Trioxys tenuicaudus* Starý, 1978

**SRI LANKA** [2 genera, 2 species]

*Aphidius rapae* McIntosh, 1855
*Binodoxys indicus* (Subba Rao & Sharma, 1958)

**SUDAN** [1 genus, 1 species]

*Trioxys complanatus* Quilis, 1931

**SURINAME [1 genus, 1 species]**

*Lipolexis gracilis* Förster, 1863

**SWEDEN** [16 genera, 73 species]

*Adialytus ambiguus* (Haliday, 1834)
*Aphidius absinthii* Marshall, 1896
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ericaphidis* Pike & Starý, 2011
*Aphidius ervi* Haliday, 1834
*Aphidius hieraciorum* Starý, 1962
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon lepelleyi* (Waterston, 1926)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Calaphidius elegans* Mackauer, 1961
*Diaeretellus ephippium* (Haliday, 1833)
*Diaeretellus macrocarpus* Mackauer, 1961
*Ephedrus brevis* Stelfox, 1941
*Ephedrus cerasicola* Starý, 1962
*Ephedrus chaitophori* Gärdenfors, 1986

*Ephedrus helleni* Mackauer, 1968
*Ephedrus koponeni* Halme, 1992
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus prociphili* Starý, 1982
*Ephedrus vaccinii* Gärdenfors, 1986
*Ephedrus validus* (Haliday, 1833)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus hirticornis* Mackauer, 1960
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus crepidis* (Haliday, 1834)
*Paralipsis enervis* (Nees, 1834)
*Pauesia abietis* (Marshall, 1896)
*Pauesia alpina* Starý, 1966
*Pauesia cupressobii* (Starý, 1960)
*Pauesia infulata* (Haliday, 1834)
*Pauesia jezoensis* (Watanabe, 1941)
*Pauesia juniperorum* (Starý, 1960)
*Pauesia laricis* (Haliday, 1834)
*Pauesia maculolachni* (Starý, 1960)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia pinicollis* (Starý, 1960)
*Pauesia silvestris* (Starý, 1960)
*Pauesia similis* Starý, 1966
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon dorsale* (Haliday, 1833)
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon spinosum* Mackauer, 1959
*Praon volucre* (Haliday, 1833)
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Toxares deltiger* (Haliday, 1833)
*Trioxys auctus* (Haliday, 1833)
*Trioxys complanatus* Quilis, 1931
*Trioxys macroceratus* Starý, 1960
*Trioxys pallidus* (Haliday, 1833)

**SWITZERLAND** [11 genera, 42 species]

*Aphidius absinthii* Marshall, 1896
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902

*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius setiger* (Mackauer, 1961)
*Areopraon silvestre* (Starý, 1971)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys genistae* (Mackauer, 1960)
*Dyscritulus planiceps* (Marshall, 1896)
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Harkeria angustivalva* (Starý, 1959)
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonus cerasi* (Marshall, 1896)
*Pauesia cupressobii* (Starý, 1960)
*Pauesia grossa* (Fahringer, 1937)
*Pauesia infulata* (Haliday, 1834)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Praon abjectum* (Haliday, 1833)
*Praon barbatum* Mackauer, 1967
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Trioxys betulae* Marshall, 1896
*Trioxys pallidus* (Haliday, 1833)

**SYRIA** [6 genera, 13 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius avenae* Haliday, 1834
*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904
*Lysiphlebus fabarum* (Marshall, 1896)
*Praon bicolor* Mackauer, 1959
*Praon volucre* (Haliday, 1833)

**TAJIKISTAN** [12 genera, 49 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912

*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius rapae* McIntosh, 1855
*Aphidius ribis* Haliday, 1834
*Aphidius salicis* Haliday, 1834
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius transcaspicus* Telenga, 1958
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys communis* (Gahan, 1926)
*Binodoxys heraclei* (Haliday, 1833)
*Binodoxys toxopterae* (Takada, 1966)
*Diaeretus leucopterus* (Haliday, 1834)
*Ephedrus helleni* Mackauer, 1968
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus desertorum* Starý, 1965
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus hirticornis* Mackauer, 1960
*Monoctonia pistaciaecola* Starý, 1962
*Monoctonus tianshanensis* Starý, 1978
*Pauesia antennata* (Mukerji, 1950)
*Pauesia juniperina* Starý, 1979
*Praon abjectum* (Haliday, 1833)
*Praon barbatum* Mackauer, 1967
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon longicorne* Marshall, 1896
*Praon volucre* (Haliday, 1833)
*Pseudaclitus dysaphidis* Starý, 1974
*Trioxys asiaticus* Telenga, 1953
*Trioxys auctus* (Haliday, 1833)
*Trioxys cirsii* (Curtis, 1831)
*Trioxys complanatus* Quilis, 1931
*Trioxys pallidus* (Haliday, 1833)
*Trioxys pannonicus* Starý, 1960
*Trioxys phyllaphidis* Mackauer, 1961

**TANZANIA** [2 genera, 2 species]

*Aphidius colemani* Viereck, 1912
*Lipolexis oregmae* (Gahan, 1932)

**THAILAND** [13 genera, 18 species]

*Aphidius autriquei* Starý, 1985
*Archaphidus greenideae* Starý & Schlinger, 1967
*Areopraon thailandicum* Starý, 2008
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys communis* (Gahan, 1926)
*Binodoxys indicus* (Subba Rao & Sharma, 1958)

*Bioxys japonicus* Starý & Schlinger, 1967
*Diaeretus leucopterus* (Haliday, 1834)
*Ephedrus lacertosus* (Haliday, 1833)
*Fissicaudus confucius* (Mackauer, 1962)
*Fissicaudus thailandicus* Starý & Rakhshani, 2010
*Indaphidius curvicaudatus* Starý, 1979
*Ishtarella thailandica* Martens, 2021
*Lipolexis gracilis* Förster, 1863
*Lipolexis khaoyaiensis* Kerkig, Quicke & Butcher, 2025
*Lipolexis oregmae* (Gahan, 1932)
*Parabioxys songbaiensis* Shi & Chen, 2001
*Toxares shigai* Takada, 1965

**TONGA** [2 genera, 2 species]

*Aphidius platensis* Brèthes, 1913
*Lipolexis oregmae* (Gahan, 1932)

**TRINIDAD & TOBAGO** [2 genera, 2 species]

*Ephedrus incompletus* (Provancher, 1886)
*Lysiphlebus testaceipes* (Cresson, 1880)

**TRISTAN DA CUNHA** [1 genus, 1 species]

*Aphidius colemani* Viereck, 1912

**TUNISIA** [7 genera, 21 species]

*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius rosae* Haliday, 1833
*Aphidius sonchi* Marshall, 1896
*Aphidius transcaspicus* Telenga, 1958
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Diaeretus leucopterus* (Haliday, 1834)
*Ephedrus persicae* Froggatt, 1904
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus desertorum* Starý, 1965
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Pauesia antennata* (Mukerji, 1950)
*Pauesia silana* Tremblay, 1969
*Praon barbatum* Mackauer, 1967
*Praon volucre* (Haliday, 1833)

**TÜRKIYE** [11 genera, 66 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Adialytus veronicaecola* (Starý, 1978)
*Aphidius absinthii* Marshall, 1896

*Aphidius artemisicola* Tizado & Núñez-Pérez, 1995
*Aphidius avenae* Haliday, 1834
*Aphidius banksae* Kittel, 2016
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hortensis* Marshall, 1896
*Aphidius matricariae* Haliday, 1834
*Aphidius microlophii* Pennacchio & Tremblay, 1987
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius setiger* (Mackauer, 1961)
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius sonchi* Marshall, 1896
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Ephedrus cerasicola* Starý, 1962
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus nacheri* Quilis, 1934
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Pauesia abietis* (Marshall, 1896)
*Pauesia akamatsucola* Takada, 1968
*Pauesia anatolica* Michelena, Assael & Mendel, 2005
*Pauesia picta* (Haliday, 1834)
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon athenaeum* Kavallieratos & Lykouressis, 2000
*Praon barbatum* Mackauer, 1967
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon longicorne* Marshall, 1896
*Praon nonveilleri* Tomanović & Kavallieratos, 2003
*Praon pubescens* Starý, 1961
*Praon rosaecola* Starý, 1961
*Praon uroleucon* Tomanović & Kavallieratos, 2003
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968

*Toxares deltiger* (Haliday, 1833)
*Trioxys complanatus* Quilis, 1931
*Trioxys humuli* Mackauer, 1960
*Trioxys pallidus* (Haliday, 1833)

**TURKMENISTAN** [4 genera, 10 species]

*Aphidius colemani* Viereck, 1912
*Aphidius funebris* Mackauer, 1961
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus desertorum* Starý, 1965
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Praon barbatum* Mackauer, 1967
*Praon dorsale* (Haliday, 1833)
*Trioxys asiaticus* Telenga, 1953

**UKRAINE** [16 genera, 69 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius asteris* Haliday, 1834
*Aphidius avenae* Haliday, 1834
*Aphidius cingulatus* Ruthe, 1859
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hieraciorum* Starý, 1962
*Aphidius hortensis* Marshall, 1896
*Aphidius matricariae* Haliday, 1834
*Aphidius megourae* Starý, 1965
*Aphidius phalangomyzi* Starý, 1963
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius setiger* (Mackauer, 1961)
*Aphidius tanacetarius* Mackauer, 1962
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon silvestre* (Starý, 1971)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Diaeretellus ephippium* (Haliday, 1833)
*Diaeretus leucopterus* (Haliday, 1834)
*Ephedrus cerasicola* Starý, 1962
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)

*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus fritzmuelleri* Mackauer, 1960
*Lysiphlebus hirticornis* Mackauer, 1960
*Paralipsis enervis* (Nees, 1834)
*Pauesia abietis* (Marshall, 1896)
*Pauesia akamatsucola* Takada, 1968
*Pauesia cupressobii* (Starý, 1960)
*Pauesia laricis* (Haliday, 1834)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia pinicollis* (Starý, 1960)
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon bicolor* Mackauer, 1959
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon longicorne* Marshall, 1896
*Praon megourae* Starý, 1971
*Praon necans* Mackauer, 1959
*Praon pubescens* Starý, 1961
*Praon volucre* (Haliday, 1833)
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Toxares deltiger* (Haliday, 1833)
*Trioxys atriplecis* Ivanov, 1925
*Trioxys betulae* Marshall, 1896
*Trioxys cirsii* (Curtis, 1831)
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys pallidus* (Haliday, 1833)
*Trioxys tanaceticola* Starý, 1971

## **UNITED ARAB EMIRATES** [5 genera, 9 species]

*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus fabarum* (Marshall, 1896)
*Trioxys complanatus* Quilis, 1931

## **UNITED KINGDOM** [21 genera, 117 species]

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus salicaphis* (Fitch, 1855)
*Adialytus thelaxis* (Starý, 1961)
*Aphidius absinthii* Marshall, 1896
*Aphidius aquilus* Mackauer, 1961
*Aphidius arvensis* (Starý, 1960)
*Aphidius asteris* Haliday, 1834
*Aphidius avenae* Haliday, 1834
*Aphidius banksae* Kittel, 2016
*Aphidius cingulatus* Ruthe, 1859

*Aphidius colemani* Viereck, 1912
*Aphidius dimidiatus* Curtis, 1831
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius eglanteriae* Haliday, 1834
*Aphidius ericaphidis* Pike & Starý, 2011
*Aphidius ervi* Haliday, 1834
*Aphidius fumatus* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius hortensis* Marshall, 1896
*Aphidius linosiphonis* Tomanović & Starý, 2001
*Aphidius matricariae* Haliday, 1834
*Aphidius microlophii* Pennacchio & Tremblay, 1987
*Aphidius norvegicus* Tomanović & Kocić, 2024
*Aphidius plocamaphidis* (Starý, 1973)
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rubi* Starý, 1962
*Aphidius salicis* Haliday, 1834
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius setiger* (Mackauer, 1961)
*Aphidius sonchi* Marshall, 1896
*Aphidius tanacetarius* Mackauer, 1962
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon lepelleyi* (Waterston, 1926)
*Areopraon silvestre* (Starý, 1971)
*Betuloxys compressicornis* (Ruthe, 1859)
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Binodoxys letifer* (Haliday, 1833)
*Diaeretellus ephippium* (Haliday, 1833)
*Diaeretellus macrocarpus* Mackauer, 1961
*Diaeretus leucopterus* (Haliday, 1834)
*Dyscritulus planiceps* (Marshall, 1896)
*Dyscritulus pygmaeus* Mackauer, 1961
*Ephedrus brevis* Stelfox, 1941
*Ephedrus californicus* Baker, 1909
*Ephedrus cerasicola* Starý, 1962
*Ephedrus helleni* Mackauer, 1968
*Ephedrus koponeni* Halme, 1992
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus laevicollis* (Thomson, 1895)
*Ephedrus longistigmus* Gärdenfors, 1986
*Ephedrus nacheri* Quilis, 1934
*Ephedrus niger* Gautier, Bonnamour & Gaumont, 1929
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus validus* (Haliday, 1833)
*Falciconus pseudoplatani* (Marshall, 1896)
*Harkeria rufa* Cameron, 1900
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)

*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus dissolutus* (Nees, 1811)
*Lysiphlebus fabarum* (Marshall, 1896)
*Monoctonia vesicarii* Tremblay, 1991
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus cerasi* (Marshall, 1896)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus indiscretus* Čkrkić, Petrović & Tomanović, 2020
*Monoctonus leclanti* Tomanović & Starý, 2002
*Monoctonus nervosus* (Haliday, 1833)
*Paralipsis enervis* (Nees, 1834)
*Pauesia abietis* (Marshall, 1896)
*Pauesia infulata* (Haliday, 1834)
*Pauesia juniperorum* (Starý, 1960)
*Pauesia laricis* (Haliday, 1834)
*Pauesia maculolachni* (Starý, 1960)
*Pauesia picta* (Haliday, 1834)
*Pauesia pini* (Haliday, 1834)
*Pauesia unilachni* (Gahan, 1926)
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon barbatum* Mackauer, 1967
*Praon bicolor* Mackauer, 1959
*Praon cavariellae* Starý, 1971
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon longicorne* Marshall, 1896
*Praon necans* Mackauer, 1959
*Praon simulans* (Provancher, 1886)
*Praon spinosum* Mackauer, 1959
*Praon uroleucon* Tomanović & Kavallieratos, 2003
*Praon volucre* (Haliday, 1833)
*Praon yomenae* Takada, 1968
*Protaphidius wissmannii* (Ratzeburg, 1848)
*Toxares deltiger* (Haliday, 1833)
*Trioxys auctus* (Haliday, 1833)
*Trioxys betulae* Marshall, 1896
*Trioxys cirsii* (Curtis, 1831)
*Trioxys complanatus* Quilis, 1931
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys falcatus* Mackauer, 1959
*Trioxys humuli* Mackauer, 1960
*Trioxys ibis* Mackauer, 1961
*Trioxys lambersi* Mackauer, 1960
*Trioxys macroceratus* Starý, 1960
*Trioxys pallidus* (Haliday, 1833)
*Trioxys sunnysidensis* Fulbright & Pike, 2007
*Trioxys tenuicaudus* Starý, 1978

**USA** [20 genera, 167 species]

*Acanthocaudus bicolor* Kula, 2017
*Acanthocaudus caudacanthus* (Smith, 1944)
*Acanthocaudus tissoti* (Smith, 1944)
*Aclitus wyomingensis* Martens, 2026

*Adialytus ambiguus* (Haliday, 1834)
*Adialytus fuscicornis* (Ashmead, 1891)
*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius adelocarinus* Smith, 1944
*Aphidius alius* Muesebeck, 1958
*Aphidius amphorophori* Liu, 1977
*Aphidius areolatus* Ashmead, 1906
*Aphidius atropetiolatus* Ashmead, 1890
*Aphidius avenae* Haliday, 1834
*Aphidius avenaphis* (Fitch, 1861)
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius coloratus* Baker, 1909
*Aphidius confusus* Ashmead, 1889
*Aphidius delicatus* Baker, 1909
*Aphidius ericaphidis* Pike & Starý, 2011
*Aphidius ervi* Haliday, 1834
*Aphidius ferruginosus* Baker, 1909
*Aphidius floridaensis* Smith, 1944
*Aphidius funebris* Mackauer, 1961
*Aphidius gifuensis* Ashmead, 1906
*Aphidius glacialis* Ashmead, 1902
*Aphidius hortensis* Marshall, 1896
*Aphidius kakimiaphidis* Smith, 1944
*Aphidius leclanti* Tomanović & Chaubet, 2013
*Aphidius liriodendrii* Liu, 1977
*Aphidius lupini* Liu, 1977
*Aphidius matricariae* Haliday, 1834
*Aphidius microlophii* Pennacchio & Tremblay, 1987
*Aphidius montanus* Ashmead, 1890
*Aphidius montereyensis* Liu, 1977
*Aphidius multiarticulatus* (Ashmead, 1889)
*Aphidius nigripes* Ashmead, 1901
*Aphidius obscuripes* Ashmead, 1889
*Aphidius ohioensis* Smith, 1944
*Aphidius pisivorus* Smith, 1941
*Aphidius platensis* Brèthes, 1913
*Aphidius polygonaphis* (Fitch, 1855)
*Aphidius propinquus* Ashmead, 1902
*Aphidius pteridis* Liu, 1977
*Aphidius ramithyrus* Smith, 1944
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius rosaphidis* Smith, 1944
*Aphidius salicis* Haliday, 1834
*Aphidius schimitscheki* (Starý, 1960)
*Aphidius segmentatus* Pike & Starý, 2000
*Aphidius setiger* (Mackauer, 1961)
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Areopraon chaitophori* Tomanović & Petrović, 2009
*Betuloxys alnicolus* Pike & Starý, 2000

*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys carolinensis* (Smith, 1944)
*Binodoxys clydesmithi* Pike & Starý, 1996
*Binodoxys communis* (Gahan, 1926)
*Binodoxys conei* Pike & Starý, 1995
*Binodoxys coruscanigrans* (Gahan, 1911)
*Binodoxys cupressicola* (Gahan, 1919)
*Binodoxys grafi* Pike & Starý, 1996
*Binodoxys kelloggensis* Pike, Starý & Brewer, 2007
*Binodoxys nearctaphidis* Mackauer, 1965
*Binodoxys palmerae* (Smith, 1944)
*Binodoxys rhagii* (Ashmead, 1889)
*Diaeretellus nymphaealis* Tomanović, Čkrkić & Petrović, 2022
*Diaeretellus palustris* Starý, 1971
*Diaeretus essigellae* Starý & Zuparko, 2002
*Ephedrus brevis* Stelfox, 1941
*Ephedrus californicus* Baker, 1909
*Ephedrus cerasicola* Starý, 1962
*Ephedrus chaitophori* Gärdenfors, 1986
*Ephedrus clavicornis* Pike & Starý, 1999
*Ephedrus incompletus* (Provancher, 1886)
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus longistigmus* Gärdenfors, 1986
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Harkeria rufa* Cameron, 1900
*Lipolexis oregmae* (Gahan, 1932)
*Lysiphlebus distinctus* Mackauer, 1960
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus flavidus* Gahan, 1911
*Lysiphlebus knowltoni* (Smith, 1944)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Lysiphlebus utahensis* (Smith, 1944)
*Monoctonus allisoni* Pike & Starý, 2003
*Monoctonus brachyradius* Čkrkić, Petrović & Tomanović, 2019
*Monoctonus campbellianus* Pike & Starý, 2000
*Monoctonus canadensis* Čkrkić, Petrović & Tomanović, 2019
*Monoctonus caricis* (Haliday, 1833)
*Monoctonus crepidis* (Haliday, 1834)
*Monoctonus nervosus* (Haliday, 1833)
*Monoctonus pacificus* Pike & Starý, 2000
*Monoctonus paulensis* (Ashmead, 1902)
*Monoctonus washingtonensis* Pike & Starý, 1995
*Pauesia ahtanumensis* Pike & Starý, 1996
*Pauesia bicolor* (Ashmead, 1889)
*Pauesia californica* (Ashmead, 1889)
*Pauesia cinaravora* Marsh, 1991
*Pauesia columbiana* Pike & Starý, 2002
*Pauesia decurrens* Starý & Zuparko, 2005
*Pauesia gillettei* (Gahan, 1911)
*Pauesia juniperaphidis* (Gahan, 1911)
*Pauesia macrogaster* (Ashmead, 1891)
*Pauesia nigrovaria* (Provancher, 1888)
*Pauesia pahtonis* Pike & Starý, 1996
*Pauesia pinaphidis* (Ashmead, 1891)
*Pauesia ponderosae* (Muesebeck, 1958)

*Pauesia ponderosaecola* Pike & Starý, 1996
*Pauesia procephali* (Ashmead, 1889)
*Pauesia pseudotsugae* Pike & Starý, 1996
*Pauesia salignae* (Watanabe, 1939)
*Pauesia takomaensis* (Smith, 1944)
*Pauesia varigata* (Smith, 1944)
*Pauesia xanthothera* (Smith, 1944)
*Praon alaskense* Ashmead, 1902
*Praon americanum* (Ashmead, 1889)
*Praon artemisaphis* Smith, 1944
*Praon artemisicola* Pike & Starý, 1997
*Praon callaphis* Mackauer & Sullivan, 1982
*Praon cerasaphis* (Fitch, 1855)
*Praon coloradense* Ashmead, 1890
*Praon coniforme* Pike & Starý, 2000
*Praon cowiche* Hollingbery & Pike, 2012
*Praon exsoletum* (Nees, 1811)
*Praon fulvum* Pike & Starý, 2000
*Praon gallicum* Starý, 1971
*Praon humulaphidis* Ashmead, 1889
*Praon occidentale* Baker, 1909
*Praon pakistanum* Kirkland, 1979
*Praon pequodorum* Viereck, 1917
*Praon simulans* (Provancher, 1886)
*Praon unicum* Smith, 1944
*Praon volucre* (Haliday, 1833)
*Praon yakimanum* Pike & Starý, 1996
*Pseudopraon mindariphagum* Starý, 1975
*Toxares deltiger* (Haliday, 1833)
*Trioxys ameraceris* Smith, 1944
*Trioxys artemisiarum* Pike & Starý, 1997
*Trioxys betulae* Marshall, 1896
*Trioxys bonnevillensis* Smith, 1944
*Trioxys californicus* Starý & Zuparko, 1995
*Trioxys cirsii* (Curtis, 1831)
*Trioxys complanatus* Quilis, 1931
*Trioxys curvicaudus* Mackauer, 1967
*Trioxys exareolatus* (Viereck, 1917)
*Trioxys gahani* Smith, 1944
*Trioxys infrequens* Smith, 1944
*Trioxys latgei* Starý & Remaudière, 1977
*Trioxys monelliopsis* Starý & Marsh, 1982
*Trioxys ovalis* (Provancher, 1886)
*Trioxys pallidus* (Haliday, 1833)
*Trioxys rosae* Pike & Starý, 1996
*Trioxys setaceus* Pike & Starý, 2000
*Trioxys sunnysidensis* Fulbright & Pike, 2007
*Trioxys tenuicaudus* Starý, 1978
*Xenostigmus bifasciatus* (Ashmead, 1891)

## **URUGUAY** [1 genus, 4 species]

*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855

**UZBEKISTAN** [12 genera, 50 species]

*Adialytus salicaphis* (Fitch, 1855)
*Aphidius absinthii* Marshall, 1896
*Aphidius cingulatus* Ruthe, 1859
*Aphidius colemani* Viereck, 1912
*Aphidius eadyi* Starý, González & Hall, 1980
*Aphidius ervi* Haliday, 1834
*Aphidius funebris* Mackauer, 1961
*Aphidius matricariae* Haliday, 1834
*Aphidius popovi* Starý, 1978
*Aphidius rapae* McIntosh, 1855
*Aphidius rhopalosiphi* de Stefani-Perez, 1902
*Aphidius ribis* Haliday, 1834
*Aphidius rosae* Haliday, 1833
*Aphidius salicis* Haliday, 1834
*Aphidius smithi* Sharma & Subba Rao, 1959
*Aphidius transcaspicus* Telenga, 1958
*Aphidius urticae* Haliday, 1834
*Aphidius uzbekistanicus* Luzhetzki, 1960
*Binodoxys acalephae* (Marshall, 1896)
*Binodoxys angelicae* (Haliday, 1833)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys heraclei* (Haliday, 1833)
*Diaeretellus macrocarpus* Mackauer, 1961
*Diaeretus leucopterus* (Haliday, 1834)
*Ephedrus lacertosus* (Haliday, 1833)
*Ephedrus persicae* Froggatt, 1904
*Ephedrus plagiator* (Nees, 1811)
*Lipolexis gracilis* Förster, 1863
*Lysiphlebus cardui* (Marshall, 1896)
*Lysiphlebus confusus* Tremblay & Eady, 1978
*Lysiphlebus desertorum* Starý, 1965
*Lysiphlebus fabarum* (Marshall, 1896)
*Lysiphlebus testaceipes* (Cresson, 1880)
*Monoctonus nervosus* (Haliday, 1833)
*Monoctonus tianshanensis* Starý, 1978
*Pauesia antennata* (Mukerji, 1950)
*Pauesia hazratbalensis* Bhagat, 1981
*Praon abjectum* (Haliday, 1833)
*Praon absinthii* Bignell, 1894
*Praon barbatum* Mackauer, 1967
*Praon dorsale* (Haliday, 1833)
*Praon exsoletum* (Nees, 1811)
*Praon flavinode* (Haliday, 1833)
*Praon gallicum* Starý, 1971
*Praon volucre* (Haliday, 1833)
*Trioxys asiaticus* Telenga, 1953
*Trioxys auctus* (Haliday, 1833)
*Trioxys complanatus* Quilis, 1931
*Trioxys pallidus* (Haliday, 1833)

**VENEZUELA** [2 genera, 4 species]

*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Aphidius rosae* Haliday, 1833
*Binodoxys brevicornis* (Haliday, 1833)

**VIETNAM** [9 genera, 30 species]

*Aphidius autriquei* Starý, 1985
*Aphidius brevis* Tomanović & van Achterberg, 2026
*Aphidius colemani* Viereck, 1912
*Aphidius ervi* Haliday, 1834
*Aphidius rapae* McIntosh, 1855
*Aphidius rosae* Haliday, 1833
*Aphidius tonkinensis* Tomanović & van Achterberg, 2026
*Aphidius urticae* Haliday, 1834
*Binodoxys basicurvus* (Shuja-Uddin, 1973)
*Binodoxys brevicornis* (Haliday, 1833)
*Binodoxys centaureae* (Haliday, 1833)
*Binodoxys communis* (Gahan, 1926)
*Binodoxys greenideae* (Starý & van Harten, 1983)
*Binodoxys longipetiolatus* Tomanović & van Achterberg, 2026
*Binodoxys rubicola* (Shuja-Uddin, 1973)
*Binodoxys shillongensis* (Starý, 1978)
*Cristicaudus ninhbinhensis* Tomanović & van Achterberg, 2026
*Ephedrus brevistigmus* Tomanović & van Achterberg, 2026
*Ephedrus nacheri* Quilis, 1934
*Ephedrus plagiator* (Nees, 1811)
*Ephedrus trichosiphoniellae* Takada, 1968
*Ephedrus vietnamensis* Tomanović & van Achterberg, 2026
*Lipolexis hirsutus* Tomanović & van Achterberg, 2026
*Lipolexis oregmae* (Gahan, 1932)
*Lysiphlebia mirzai* Shuja-Uddin, 1975
*Praon tonkinensis* Tomanović & van Achterberg, 2026
*Toxares brevistigmus* Tomanović & van Achterberg, 2026
*Toxares flavus* Tomanović & van Achterberg, 2026
*Trioxys breviflagellaris* Tomanović & van Achterberg, 2026
*Trioxys glabrirostris* Tomanović & van Achterberg, 2026

**YEMEN** [6 genera, 10 species]

*Aphidius ervi* Haliday, 1834
*Aphidius matricariae* Haliday, 1834
*Aphidius platensis* Brèthes, 1913
*Aphidius rapae* McIntosh, 1855
*Binodoxys acalephae* (Marshall, 1896)
*Ephedrus persicae* Froggatt, 1904
*Pauesia antennata* (Mukerji, 1950)
*Praon exsoletum* (Nees, 1811)
*Praon yomenae* Takada, 1968
*Trioxys complanatus* Quilis, 1931

**ZIMBABWE** [1 genus, 1 species]

*Aphidius matricariae* Haliday, 1834

## Faunal Analyses – Global patterns

The aim of this analytical framework is to provide a country-level basis for interpreting global patterns of Aphidiinae richness, while recognizing that these patterns reflect both genuine biogeographical variation and uneven sampling or taxonomic effort. Accordingly, the map and comparative plots should not be interpreted simply as direct measures of true diversity. Instead, they are used as complementary indicators, combining total species richness, genus richness, species density, country area, ranked contribution to global richness, and continental-level distributions. Together, these metrics help to identify centers of documented diversity, detect countries that are richer or poorer than expected from their area or generic representation, and highlight regions where low recorded richness is likely to reflect limited collecting, incomplete inventories, or gaps in faunistic knowledge. Overall, this framework provides a consistent basis for comparing countries and continents, supports a more cautious interpretation of global Aphidiinae richness patterns, and helps to define priority areas for future surveys and taxonomic research.

The richness of the recorded Aphidiinae is highly uneven geographically (Fig. 73). The highest values are concentrated in parts of the Palaearctic and other well-studied temperate regions, with Russia, the USA, France, India, and China standing out strongly. Europe appears especially dense in medium-to-high richness records, which likely reflects a combination of real diversity and stronger historical sampling and taxonomic effort. In contrast, many countries in Africa, South America, and Oceania have low recorded richness, but that should not automatically be interpreted as genuinely low biodiversity, because country totals are also sensitive to collecting effort and taxonomic coverage. Country area alone is a weak predictor of recorded Aphidiinae richness (Fig. 74). The overall trend is positive, but shallow, with substantial scatter around the regression line. That means some relatively small countries support many recorded species, while some very large countries remain less rich than expected from area alone. The densest points are mostly small territories or microstates; therefore density is strongly inflated when the area considered is very small. Biologically, this suggests that geographic area is only one driver, and that climate, habitat heterogeneity, host availability, and especially sampling efforts likely explain much of the remaining variation. Species richness increases almost linearly with the number of genera, with a very high correlation (Fig. 75). This is the strongest pattern in the dataset. In practical terms, countries with broader generic representation almost always also have higher total species counts. That suggests country-level Aphidiinae richness is structured primarily by taxonomic breadth: as more genera are represented, species numbers rise predictably. Countries above the fitted line may have unusually high species richness within genera, while those below the line may have relatively fewer species per genus or incomplete inventory coverage.

A classic long-tail distribution in country-level Aphidiinae species richness is presented in Figure 76. A few countries at the beginning of the ranking have very high recorded species richness, while most countries have much lower values. The solid curve declines sharply at first, showing that the top-ranked countries are substantially richer than the rest, and then gradually flattens, reflecting the large number of countries with low to very low recorded richness. The dashed cumulative curve shows how quickly the total recorded fauna is accumulated: it rises steeply at low ranks because the richest countries contribute a large proportion of all recorded species, then levels off as additional countries add progressively fewer species to the total. Together, these patterns highlight both the concentration of currently known richness in a limited number of countries and the uneven global state of taxonomic and faunistic knowledge. Big continental differences were also found in country-level richness distributions of Aphidiinae (Fig. 77). Europe has the highest median and the broadest upper range, indicating both consistently higher recorded richness and several very species-rich countries. Asia is the second-richest continent overall, but with a wider spread and lower median than Europe. Africa, South America, Oceania, and North America all have low medians, although North America has strong high-value outliers driven mainly by some areas in the USA and Canada. The contrast between median and outliers is important here: some continents appear poor at the country level not because they lack richness entirely, but because richness is concentrated in only one or a few very well-documented countries. Despite the substantial amount of research conducted globally, many regions in various countries remain unexplored.

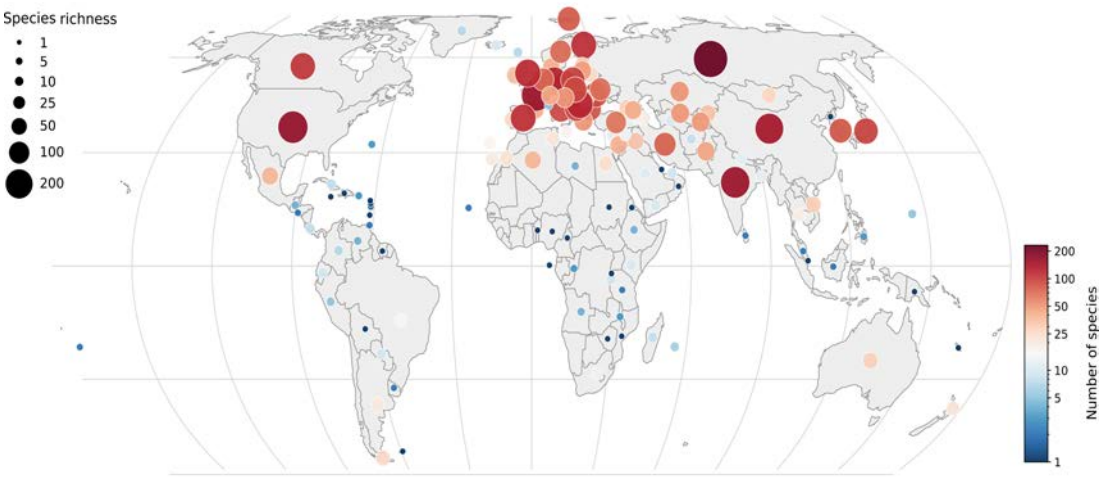



**Figure 73.** Global distribution of Aphidiinae richness by country. Each bubble represents a country or territory, positioned at its geographic centroid; bubble area is proportional to the number of recorded species, and bubble color indicates species richness on a logarithmic scale, with warmer colors representing higher values. Total sample size: n = 142 countries/territories.

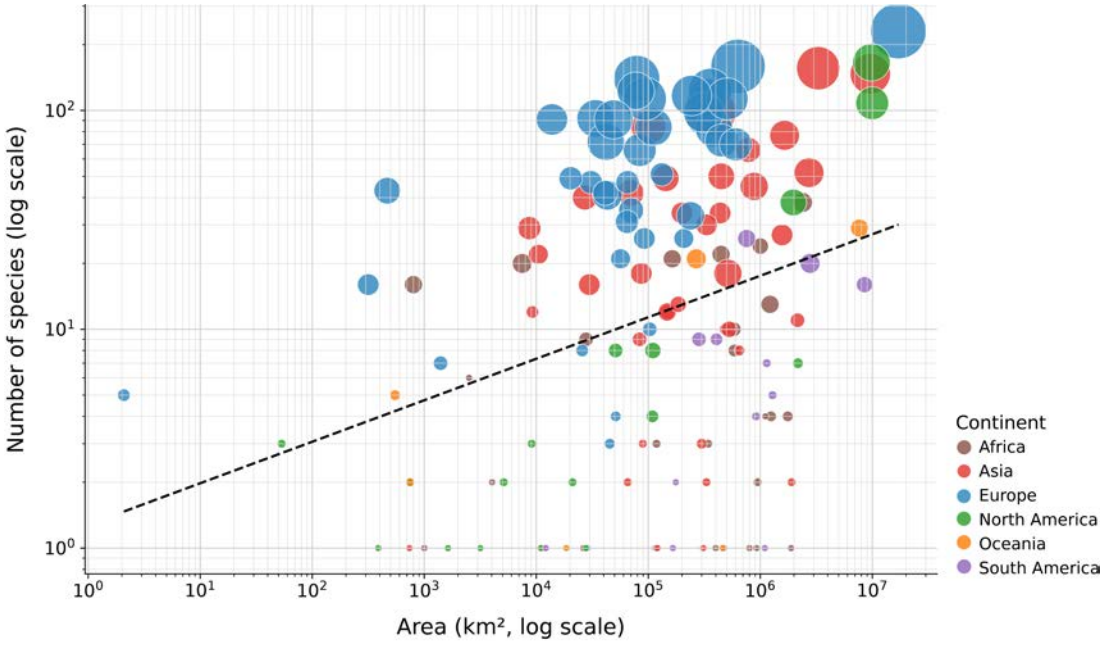



**Figure 74.** Species–area relationship of Aphidiinae richness at the country level. Relationship between country area and recorded Aphidiinae species richness on log–log axes. Each point represents a country or territory; bubble size is proportional to the number of genera, and point color indicates continent. The dashed line shows the fitted log–log regression, illustrating a weak positive species–area relationship. Selected countries are labeled to highlight notable departures from the overall trend.

Although some countries may, based on biogeographical affinities, possess faunal compositions similar to those of well-studied neighboring areas, there are still several countries across different continents for which no records of Aphidiinae wasp distribution have been published to date. These include: AFRICA – Djibouti, Eswatini (Swaziland), Lesotho, Seychelles, South Sudan; ASIA – Bahrain, Brunei, Cambodia, Laos, Maldives, Myanmar (Burma), Timor-Leste (East Timor); EUROPE – Vatican, Liechtenstein, San Marino; OCEANIA – Micronesia, Nauru, Palau, Samoa, Solomon Islands, Vanuatu; SOUTH AMERICA – Guyana, as well as various dependent or independent islands.

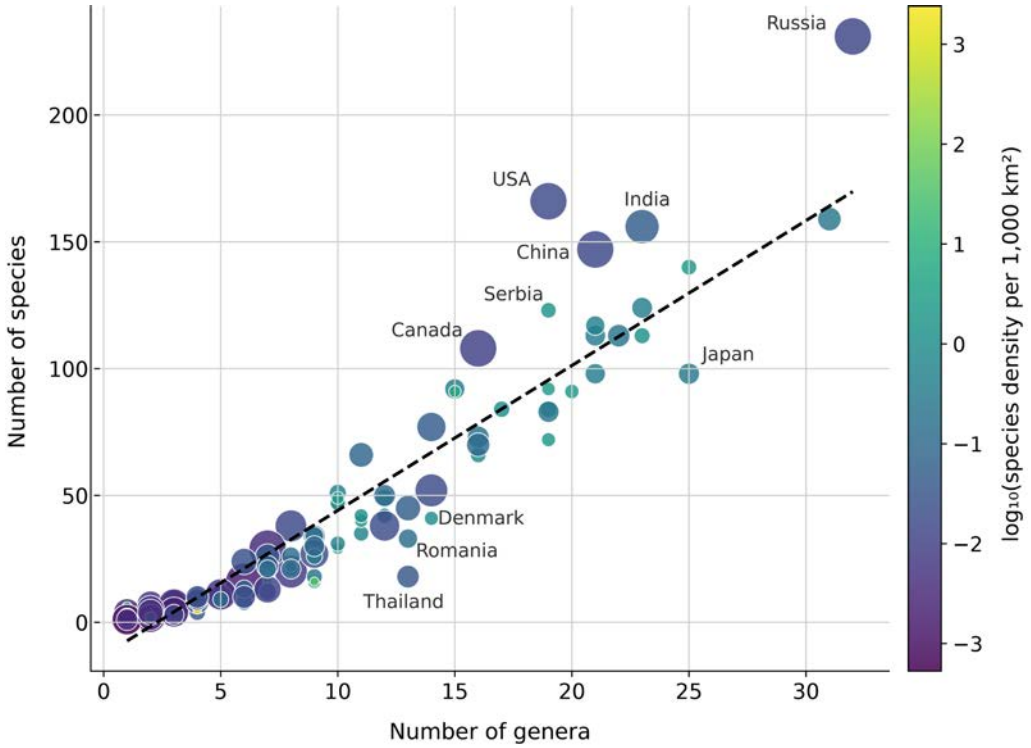



**Figure 75.** Relationship between species richness and genus richness in Aphidiinae. Country-level Aphidiinae species richness plotted against the number of recorded genera. Point color represents log-transformed species density (species per 1,000 km²), and marker area is scaled approximately to country area. The dashed line indicates the fitted linear regression, showing a strong positive association between species richness and genus richness, such that countries with more genera also tend to contain more species.

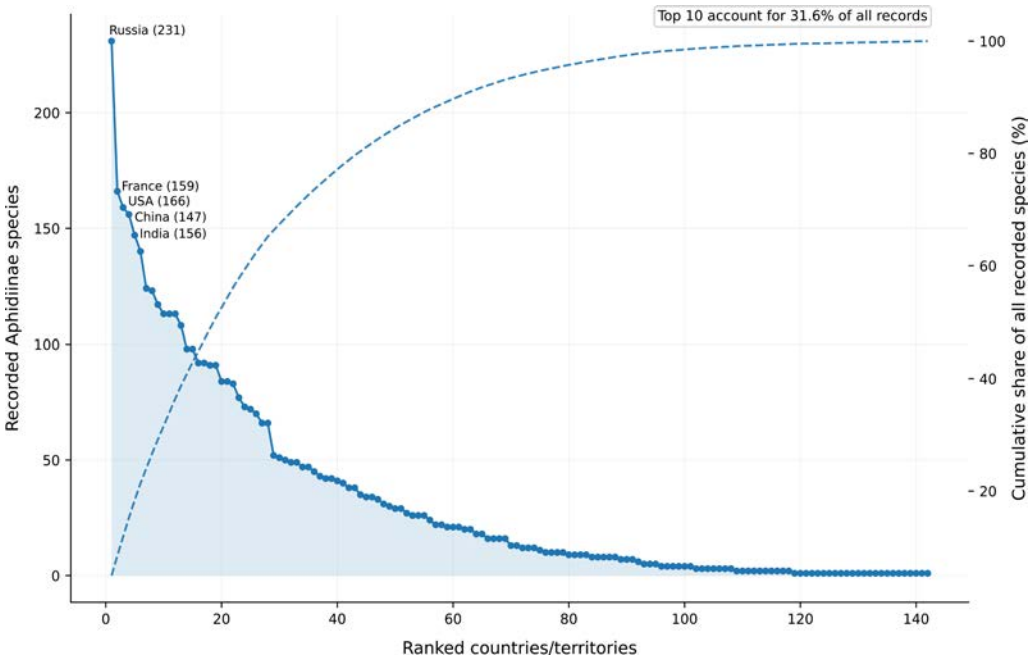



**Figure 76.** Ranked richness profile of Aphidiinae across countries. The solid line and shaded area show country-level Aphidiinae species richness ranked from highest to lowest, while the dashed line shows the cumulative percentage of all recorded species. The steep early decline and rapid cumulative increase indicate that a small number of countries account for a disproportionately large share of the known richness, followed by a long tail of countries with low recorded richness.

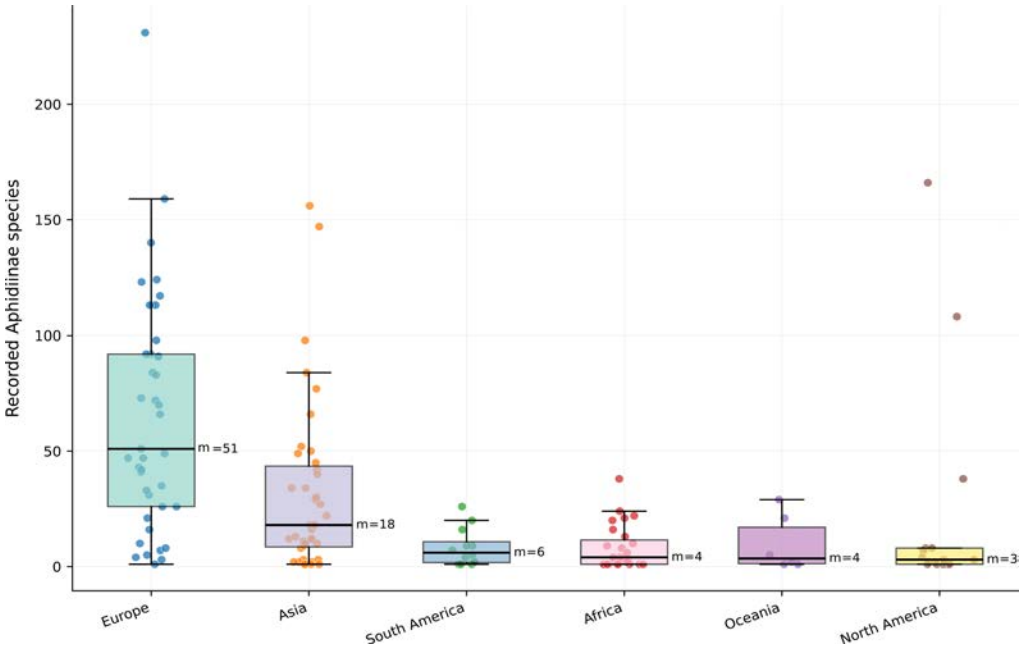



**Figure 77.** Continental variation in country-level Aphidiinae richness. Distribution of Aphidiinae species richness among continents shown as box-and-strip plots, with each point representing a country or territory. Boxes summarize the median and interquartile range, whereas points show the dispersion of individual country values. This figure highlights marked geographic variation in richness and the presence of highly species-rich outlier countries within some continents. m = median.

## DISCUSSION

According to the overall statistics presented in this catalog, the subfamily Aphidiinae comprises 733 species distributed across 67 valid genera. Of these, 704 species belonging to 54 genera are the extant taxa. This distribution highlights that the vast majority of aphidiine diversity is represented by living species, while only a small fraction is known from the fossil record. The fossil record of Aphidiinae currently comprises 29 species assigned to 15 genera (14 fossils + *Ephedrus*), predominantly from the Oligocene (Quilis 1940; Timon-David 1944; Starý 1973b), the Eocene (Starý 1973b; Davidian et al. 2021a, 2021b, 2023a, 2023b), and, in some cases, the Cretaceous (Ortega-Blanco et al. 2009). Five fossil species are attributed to the genus *Ephedrus*, many representatives of which remain extant. The limited and fragmentary nature of the available data does not permit robust conclusions regarding the history or timing of the extinction of the fossil taxa. A recently described species, *Paleolebus davois* Žalohar, Hitij & Gašparič, 2025, from the Lower Sarmatian Miocene deposits of Slovenia (Žalohar et al. 2025), should be classified within the subfamily Alysiinae rather than Aphidiinae. Similarly, *Aphidius maximus* Théobald, 1937, cannot be considered a valid member of Aphidiinae. The genus *Aphidius* is the most diverse within the subfamily Aphidiinae, including a total of 138 species. Following *Aphidius*, the genus *Trioxys* ranks second with 83 species. Closely related to *Aphidius* is the genus *Pauesia*, which contains 81 species. *Binodoxys* ranks closely behind with 76 species. Among the more basal lineages, the genera *Praon* and *Ephedrus* contribute further diversity, with 76 and 56 species, respectively. Details presented in Figure 78 indicate that 34 genera (both extant and extinct) are represented by only a single described species. Additionally, 12 genera have 2 to 3 species each.

In general, Figure 78 highlights the rich diversity and varying levels of speciation within the Aphidiinae genera. A small number of genera occupy the center of the plot as the largest circles, indicating that they contain a disproportionately large share of the known diversity, whereas numerous other genera are represented by much smaller circles toward the periphery. This pattern suggests a marked concentration of species richness in only a few dominant genera, together with a long tail of species belonging to species-poor genera. The color coding further clarifies this structure by showing that most genera belong to the lower richness categories, especially monotypic, very low, and low-richness classes, while relatively few genera fall into the high and very high classes.

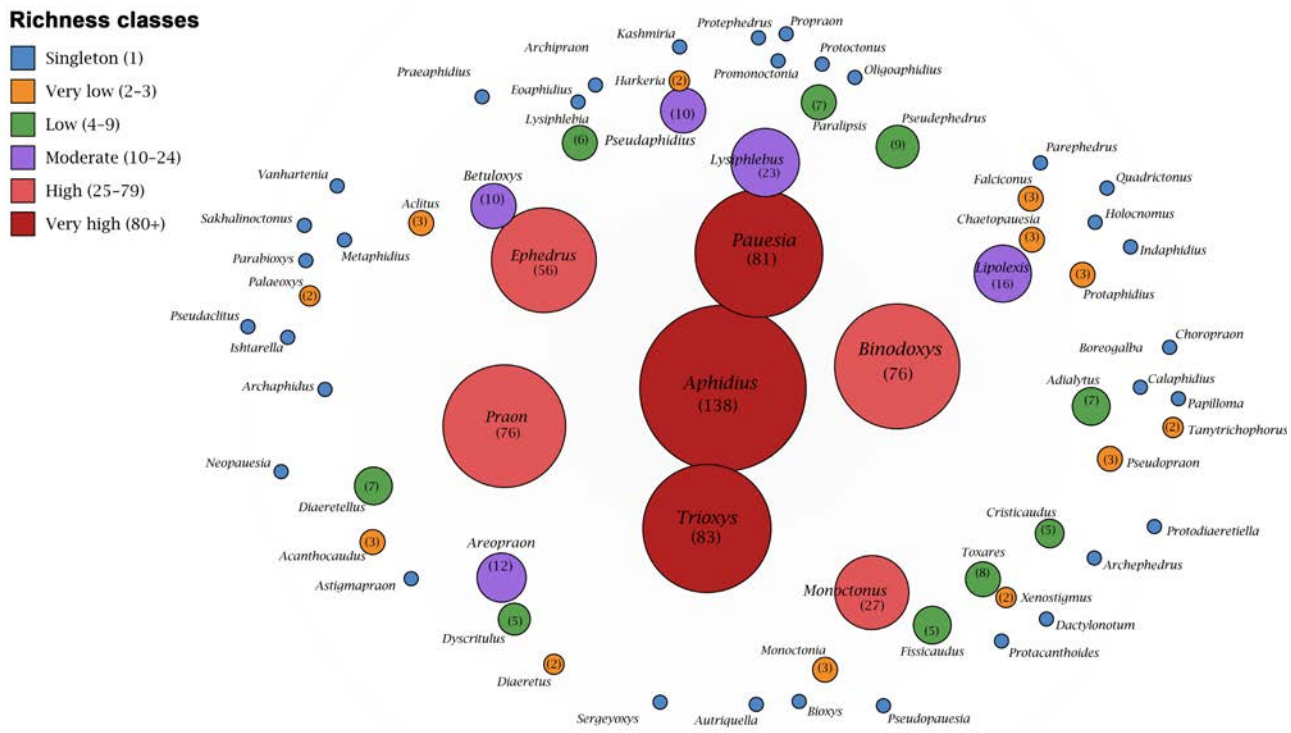



**Figure 78.** Radial bubble plot of Aphidiinae genera arranged by species richness. Each circle represents one genus, and circle size is proportional to the number of recorded species in that genus. Genera are positioned radially, with the most species-rich genera placed nearer the center and species-poorer genera distributed farther outward. Circle colors indicate richness classes: Singleton (1 species), Very low (2–3 species), Low (4–9 species), Moderate (10–24 species), High (25–79 species), and Very high (80+ species). Names of the genera are shown outside the circles and connected by leader lines for readability.

Thus, Aphidiinae generic diversity appears taxonomically imbalanced, with many genera represented by only one or a few species and only a limited number of genera acting as major centers of species richness. This segregated pattern can largely be attributed to the rate of divergence of these parasitoids as they adapt to their specific hosts and exclusive habitats found in both the Northern and Southern Hemispheres (Starý & Schlinger 1967; Starý 1976d, 1979b, 1988a; Starý & Carver 1971; Starý & van Harten 1974; Belshaw et al. 2000; Mackauer & Finlayson 2012). The adaptive process has resulted in significant morphological and ecological divergence throughout the evolutionary history of these insects as well (Mackauer 1967b; Tobias & Chiriac 1971; Starý 1978a; Le Ralec et al. 1996, 2010; Smith & Kambhampati 2000; Belshaw et al. 2003). Visually, the figure also emphasizes the intermediate role of the moderate-sized genera that form a transition between the highly diverse central genera and the numerous species belonging to poor peripheral genera.

## Questionable and erroneous records

In numerous cases, the records of parasitoid species in association with specific host aphids are either questionable or clearly incorrect (e.g., Ataeva 1961; Choi & Kim 2018; Zhang et al. 2020; Sadat et al. 2019; Oğuzoğlu & Avcı 2025). These cases may occur for several reasons, but the most common issues arise from the misidentification of parasitoid species and aphid hosts. In many instances, colonies of different aphid species may overlap on a single host plant, making it difficult, often impossible, to determine from which aphid species the parasitoid emerged. During sampling, each colony or even each individual aphid should be kept separately until parasitoid emergence (Starý 1970a). In such cases, examining the characteristics of mummified aphids can also aid in accurately identifying the host. A protective behavior has evolved in aphid colonies that causes the isolation of parasitized individuals, whereby a parasitized aphid may separate from the colony and migrate to nearby leaves or plants (Chow & Mackauer 1999a).

In some cases, the parasitized aphid may even enter a completely different aphid colony. Ultimately, rearing the latter aphid colony may yield a parasitoid species that has no biological relationship with that aphid species. A similar phenomenon occurs when parasitized aphids fall from the leaves and branches of the top trees onto the undergrowth plants (Starý 1985), where they become mummified (Villagra et al. 2002; Le Ralec et al. 2010).

On the other hand, aphid colonies on plants, especially in cases of leaf-curling species, serve as a focal point for various other insects that may be directly associated with aphids (predators or honeydew feeders) or feed independently on that plant, and in turn, are subject to attack by generalist or specialist predators and parasitoids. In all cases, when collecting and preserving aphid samples, it is essential to ensure that no other insect species, eggs, pupae, or leaf miner larvae are present in the collected material. Otherwise, the resulting data will be highly misleading (Gahan 1911a). There are numerous cases in which parasitoid species have been incorrectly recorded as belonging to other subfamilies or families in association with aphids in this way. In the most serious cases, new genera or species have been described (Samanta et al. 1983a, 1983b), with uncertain taxonomic and biological status. Mymarids (Chalcidoidea, Mymaridae) have also been erroneously recorded as aphid parasitoids (UCD 2025), whereas these wasps are exclusively egg parasitoids of other insects. Rearing the mixed aphid colonies led to documentation of odd host associations, e.g., *Stigmella benanderella* (Wolff) (Lep., Nepticulidae) (Szócs 1979); *Lauritrioza alacris* (Flor) (Hemi., Triozidae) (Jensen 1957); *Rabdophaga rosaria* (Loew) (Dipt., Cecidomyiidae) (Giraud & Laboulbène 1877) for Aphidiinae. On the other hand, the presence of ladybird larvae, lacewings, and predatory bugs causes significant aphid mortality and the destruction of larval or pupal stages of parasitoids within mummified aphids (Colfer & Rosenheim 2001; Dou et al. 2023).

Ultimately, accurate identification of the host aphid is a challenging task that requires the expertise of a skilled aphid taxonomist, even when the colony is entirely free from other species. Records of aphids in association with host plants far from their known range are the first evidence of a misidentification (Sadat et al. 2019). Consequently, the host aphid names appearing in non-bold in this catalog are considered questionable until further investigation is conducted. This type of distinction is solely based on long-term empirical evidence, and additional cases may also have similar limitations. In similar instances, where the parasitoid species may not have been accurately identified, they are retained in the faunistic list of each country and should be taken into account in future studies. AI tools and deep learning frameworks are also under development for accurate and automated identification of the parasitic Hymenoptera (Shirali et al. 2024; Pinheiro et al. 2026) for reliable biodiversity assessment. However, these approaches are not yet sufficiently mature for routine identification of Aphidiinae.

Uneven application of various characters has resulted in doubtful separation of species, mainly due to a lack of understanding of the degree of intraspecific variation. In some cases, taxa have been described based on the males, singletons, small series of specimens, or poorly associated but presumed male-female conspecific material. In addition, inadequate numbers of reared specimens have led to assumptions about host specificity and morphological variation that proved to be incorrect when additional material was studied. Some species (e.g., *Aphidius colemani*, *A. platensis* and even *A. transcaspicus*) were frequently synonymized (Benelli et al. 2014; Tomanović et al. 2014), so the distributional and host records cannot be exactly recognized until the original material is re-examined.

## Excluded non-Aphidiinae taxa

Several names historically associated with Aphidiinae are excluded because their original combinations, later interpretations, or subsequent taxonomic placements show that they belong to other hymenopteran groups rather than to Aphidiinae. These include species now placed in Ichneumonidae or in other braconid subfamilies. Their presence in older literature mainly reflects historical misplacement, broad early use of aphidiine-like generic names, or later changes in subfamily classification. Therefore, these names are best treated as excluded taxa to prevent their inclusion in the Aphidiinae catalog.

*Aphidius dipsaci* (Schrank, 1802) – Ichneumonidae (Genus *Ichneumon* Linnaeus, 1758) (Yu & Horstmann 1997).
*Aphidius flavipes* Ratzeburg, 1844 – Alysiinae (Genus *Orthostigma* Ratzeburg, 1844) (Viereck 1914).
*Aphidius fulvus* Cresson, 1865 – Alysiinae (Genus *Aphaereta* Förster, 1863) (Starý 1981a).
*Aphidius fuscoventris* Cresson, 1865 – Helconinae (Starý 1981a).
*Aphidius inclusus* Ratzeburg, 1852 – Alysiinae (Mackauer 1964b).

*Aphidius lactucaphis* Fitch, 1855 – Blacinae (Gahan 1911a).
*Aphidius longicornis* Cresson, 1865 – Alysiinae (Starý 1981a).
*Aphidius pallipes* Cresson, 1865 – Doryctinae (Starý 1981a).
*Aphidius maximus* Theobald, 1937 [Fossil] – (Mackauer 1968a).
*Diospilites brevicornis* Brues, 1933 [Fossil] – Diospilitinae (Tobias 1987).
*Dyscritulus suffolciensis* (Morley, 1933). Other Braconidae/Ichneumonidae (Starý 1959c).
*Ephedrus completus* Provancher, 1886 – Hormiinae (Gahan 1910).
*Indoephedrus neoficicola* Samanta, Pramanik & Raychaudhuri, 1983 (Samanta et al. 1983a) – Other Braconidae.
*Indoephedrus reticulatus* Samanta, Pramanik & Raychaudhuri, 1983 (Samanta et al. 1983a) – Other Braconidae.
*Lorenzoa solani* de Stefani-Perez, 1909 – Opiinae/Braconinae (Starý 1958).
*Neoephedrus helichrysi* Samanta, Tamili, Saha & Raychaudhuri, 1983 (Samanta et al. 1983b) – Alysiinae.
*Neoephedrus kalimpongensis* Samanta, Tamili, Saha & Raychaudhuri, 1983 (Samanta et al. 1983b) – Alysiinae.
*Scotioneurus stenostimga* Provancher, 1886 – Alysiinae (Gahan 1913a).
*Toxares triticaphis* Fitch, 1861 – Alysiinae (see Gahan 1911a).

## Phylogeny and Classification

Molecular phylogenetic analyses of Aphidiinae have provided important insights into the evolutionary history of the subfamily, partly supporting the classical framework proposed by Mackauer (1968a), while also revealing several areas of instability (Fig. 79). The principal sources of incongruence concern Aphidiini (*sensu lato*), a morphologically heterogeneous and taxonomically complex assemblage in which the limits and ranks of Aphidiini, Trioxini, Monoctonina/Monoctonini, Protaphidiina/ Protaphidiini, and related lineages have not been consistently resolved (Belshaw & Quicke 1997; Smith et al. 1999; Kambhampati et al. 2000). This uncertainty probably reflects a combination of incomplete taxon sampling, limited gene sampling, long-branch effects, and homoplastic substitutions, rather than a single source of phylogenetic bias (Sanchis et al. 2000). Although the exclusion of some unstable or poorly sampled genera, especially taxa historically assigned to Protaphidiina, can increase resolution in some analyses, it also leaves the evolutionary placement of these omitted taxa unresolved. Fossil Aphidiinae provide important morphological and biogeographic evidence (Quilis 1940; Mackauer 1959a; Starý 1970a, 1973b; Timon-David 1944; Davidian et al. 2021a, 2021b, 2023a, 2023b), but their relationships with extant genera cannot be evaluated directly using molecular data because recoverable DNA is unavailable from these taxa.

Before the advent of molecular data, Ephedrini, particularly *Ephedrus*, was widely regarded as one of the most ancient lineages of Aphidiinae, largely because of its relatively complete forewing venation and other plesiomorphic morphological characters (Mackauer 1968a). Early molecular studies produced conflicting interpretations of this basal position. Belshaw & Quicke (1997) recovered Ephedrini as basal in their combined analysis, whereas Smith et al. (1999) recovered Praini as the basal lineage, and Kambhampati et al. (2000) found *Aclitus* to occupy a basal position in some analyses, with Praini basal relative to Ephedrini. The inclusion of rare Southern Hemisphere genera, such as *Pseudephedrus* and *Choreopraon*, further complicated these interpretations and suggested that early-diverging aphidiine lineages may have had a more complex biogeographic history than previously assumed (Belshaw et al. 2000). However, because none of these studies incorporated a complete sampling matrix, interpretations of these critical basal nodes must remain provisional.

The placement of the highly divergent genera such as *Toxares* within the tribe Ephedrini lacks strong phylogenetic support (Kim et al. 2022b). In the most recent integrative phylogenetic analysis (Kim et al. 2026a), Ephedrini was repeatedly reconstructed as paraphyletic, primarily due to the position of *Toxares*, which was recovered as a highly derived lineage between the tribes Aphidiini and Praini. The newly proposed tribe Toxarini may represent a lineage that includes some of the enigmatic genera restricted to the Southern Hemisphere, including *Choreopraon* from New Zealand, *Parephedrus* from Australia, *Pseudephedrus* from South America, and *Vanhartenia* from Africa. Species of these genera are associated with aphids of Drepanosiphinae or related ancient aphid lineages (Mackauer & Finlayson 2012). These genera may represent one or more early-diverging lineages within Aphidiinae, although the hypothesis of a Gondwanan origin requires further testing in light of fossil evidence and incomplete phylogenetic sampling.

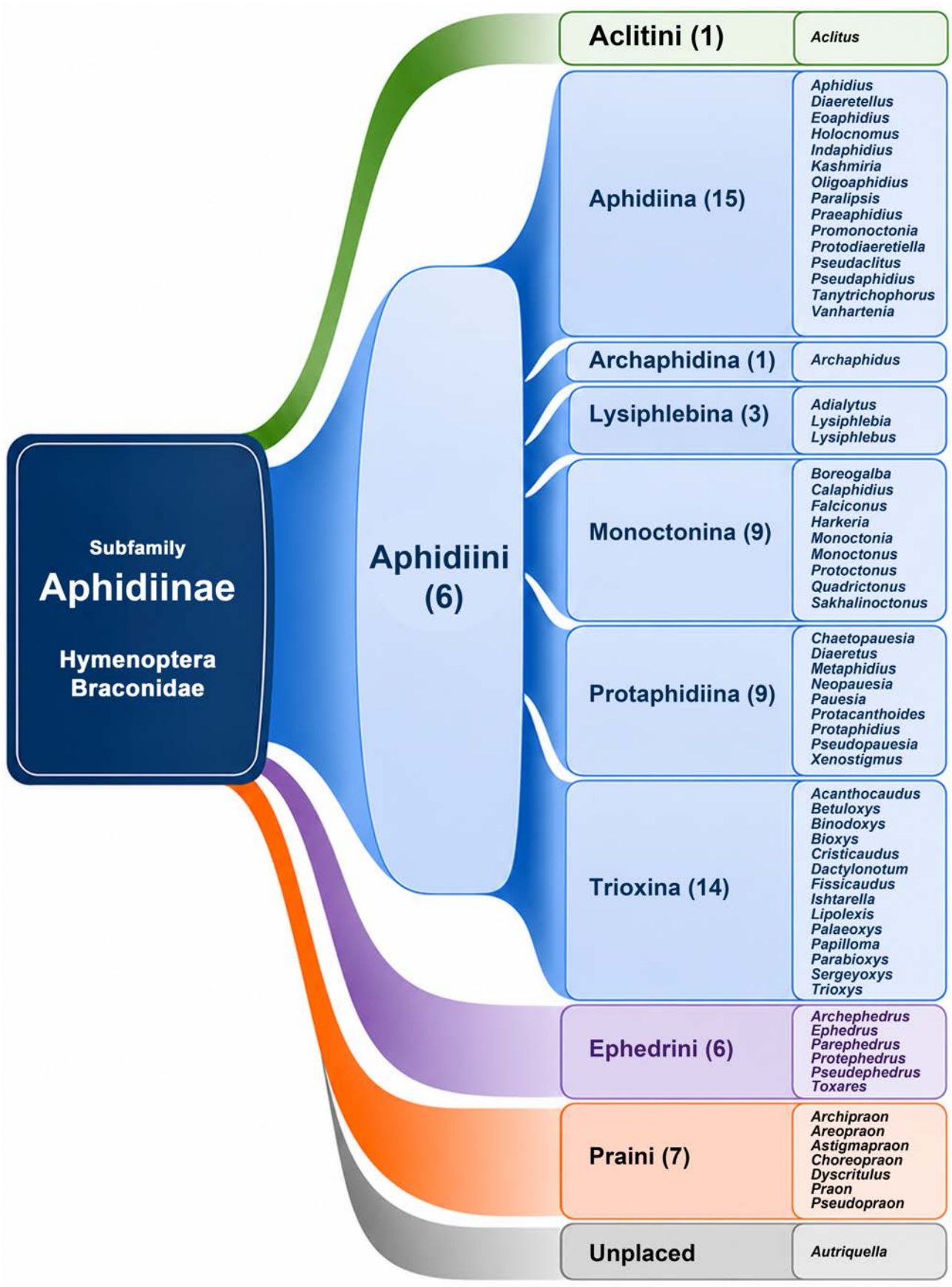



**Figure 79.** Schematic summary of the classification of Aphidiinae genera adopted in this study, showing their placement in tribes and, within Aphidiini, subtribes. Tribes, subtribes, and genera are listed alphabetically. Numbers in parentheses indicate the number of included genera.

Similarly, the Southeast Asian distribution, specialization on Greenideinae aphids, and distinctive morphological traits of *Archaphidus*, *Eoaphidius*, and *Indaphidius*, particularly in wing venation and ovipositor structure, suggest that these genera may form a phylogenetically separate lineage within Aphidiinae. The enigmatic genus *Aclitus,* possessing both basal and derived characters (Kambhampati et al. 2000; Kim et al. 2026a), may also be relevant in resolving the early divergences. Overall morphological similarities between the genera *Autriquella* Starý, 1988 and *Aclitus* (see Kim et al. 2026a), including reduced eyes and the fore tibial cleaning apparatus, may indicate a close relationship and a possible association with subterranean aphid species (Starý 1988; Kim et al. 2025b). These similarities suggest that *Autriquella* may be related to Aclitini, although its inclusion in this tribe remains tentative pending further phylogenetic evidence. Robust reconstruction of these relationships will require additional taxon sampling, inclusion of rare and geographically restricted genera, integration of fossil morphology, and multilocus or phylogenomic datasets less affected by homoplasy and single-gene incongruence.

## Taxonomic perspectives

Aphid parasitoids represent one of the most taxonomically challenging groups within Hymenoptera, owing to their extensive diversity, morphological plasticity, and complex host associations. Over the past century, intensive research by expert taxonomists has significantly broadened our understanding of species-level variation and host specificity in this group. Fundamental studies conducted between 1900 and 2000 established the core framework for species delimitation, while more recent investigations have refined diagnostic characters and illuminated the identity of cryptic or insufficiently known taxa (Kavallieratos et al. 2005b, 2015a; Kos et al. 2011; Mitrovski-Bogdanović et al. 2013, 2014, 2021; Tomanović et al. 2014, 2018; Ilić-Milošević et al. 2015; Derocles et al. 2016; Lazarević et al. 2017; Čkrkić et al. 2019a, 2024; Kocić et al. 2020). Despite these advances, several long-standing uncertainties still persist. One major source of ambiguity arises from species described exclusively from male specimens. Since these taxa are rare in nature, corresponding female specimens have often remained unavailable. Thus, females lacking confirmed biological association with a described male have been treated as a separate species (e.g., *Chaetopauesia talis,* ♀ *vis C. crassicornis*, ♂ – Mackauer 1967a). Such taxonomic fragmentation complicates species-level resolution and obscures the evolutionary relationships.

A second source of complexity stems from the historical and ongoing movement of plant material containing aphids and their parasitoids. Parasitoids usually disperse as pupae developing within mummified aphids, and both accidental and intentional transfers of infested plant material have occurred even recently (Rakhshani et al. 2017a, 2020). These events have facilitated the establishment of non-native (alien) parasitoid species outside their native ranges, creating biogeographic mosaics where closely related taxa exploit the same aphid host in different regions. For example, distinct but closely allied species (in the Nearctic and Palaearctic regions), i.e., *Praon pequodorum* Viereck, 1917 and *Praon barbatum* Mackauer, 1967, have been recorded from the same aphid host species (*Acyrthosiphon pisum*), which itself occurs in both regions following invasion (Mackauer & Finlayson 1967). Such patterns suggest the presence of parallel host association complexes across continents. In these cases, the host aphids (and sometimes the host plant) often exhibit strong taxonomic affinity, because they frequently belong to the same genus. The representative examples can be associations of *Aphidius kakimiaphidis* Smith, 1944 (Nearctic)/*Aphidius hieraciorum* Starý, 1962 (Palaearctic) with *Nasonovia* aphids; *Pauesia nigrovaria* (Provancher, 1888) (Nearctic)/*Pauesia salignae* (Watanabe, 1939) (Eastern Palaearctic) with *Tuberolachnus salignus*; *Trioxys setaceus* Pike & Starý, 2000 (Nearctic)/*Trioxys asiaticus* Telenga, 1953 (Palaearctic) with *Acyrthosiphon* aphid, as well as *Praon callaphis* Mackauer & Sullivan, 1982 (Nearctic, sources from Afghanistan)/*Praon himalayense* Das & Chakrabarti, 1989 (Oriental, Himalayan) with *Panaphis juglandis* (Goeze). A similar pattern can also be considered for *Aphidius pleotrichophori* (Takada, 1966) – Eastern Palaearctic/*Aphidius viaticus* (Sedlag, 1969) – Western Palaearctic in association with *Pleotrichophorus* aphids; both were already considered in the subgenus *Lysaphidus*. The associated parasitoids may not be essentially conspecific, but only recently diverged. Yet, many species from the Eastern Palaearctic (China) need revision and comparison at least with specimens from the adjacent areas. These observations highlight the need for integrative taxonomic approaches that combine morphology, molecular data, host association patterns, and biogeographic evidence to reassess species boundaries and resolve cryptic diversity.

## Remarks on the main depositories

The National Museum of Natural History, Smithsonian Institution, Washington, USA (USNM), as one of the most comprehensive and well-curated collections, with a few exceptions, contains nearly all type specimens described from North America by various researchers, including W.H. Ashmead, C. F. Smith, C.F.W. Muesebeck, M. Mackauer, and K. Pike & P. Starý. High-quality images of the type material are also accessible through the online database of the museum. The deposition status of the type specimens of certain older taxa, such as *Aphidius colemani* Viereck, 1912, as well as specimens described more recently, such as *Lysiphlebus orientalis* Starý & Rakhshani, 2010, *Pauesia pseudotsugae* Pike & Starý, 1996, and *Praon cowiche* Hollingbery & Pike, 2012, remains uncertain. It is likely that these specimens, due to the substantial volume of material housed in the collection, have not yet been relocated to their designated storage positions. The species established by W.H. Ashmead (in USNM) were often described without the designation of a holotype (except in cases where it was mentioned that the species is established on a single specimen); consequently, many specimens of the original type series were regarded as syntypes under the provisions of the ICZN. The same approach was followed by subsequent researchers, e.g., A.B. Gahan and, sometimes, by H.L. Viereck (Fig. 80). In contrast, C.F. Smith explicitly designated holotypes and paratypes for the species he described. Similarly, C.F. Baker did not designate primary types for the Aphidiinae species he described (in CASC). Many of these specimens were later designated as lectotypes by other researchers (Cresson 1916; Gahan & Rohwer 1918; Watanabe 1957; Mackauer 1961b, 1963a, 1968a; Marsh 1977). Accordingly, to ensure nomenclatural stability, formal lectotype designations are still required for the type material on some species preserved in the USNM and CASC.

Correspondence with the Department of Biological Sciences at Simon Fraser University, where Manfred Mackauer was formerly based, indicated that the majority of his specimens were transferred to the Canadian National Collection of Insects (CNC) in Ottawa in 2017. However, the SFU collection still contains approximately 400 pinned specimens from the collection of the late M. Mackauer. These specimens were collected in Germany between 1950 and 1960, but most have not been identified to species level and therefore require further examination (Claire Gooding, pers. comm.). Léon Provancher (1820–1892) (Fig. 1J) did not designate holotypes when he named his species, so all specimens in the Entomological Collection at Laval University (ULQC) in Quebec, Canada are considered lectotypes, having been designated long after his death. Subsequent efforts have been made to identify the types within the collection for groups that were less studied. Consequently, while a type specimen of Aphidiinae may exist within the collection, its presence remains uncertain. The Aphidiinae type materials described by Das & Chakrabarti were originally deposited in the Collections of the Biosystematics Research Unit, Department of Zoology, University of Kalyani, India. These specimens were later transferred to a private laboratory established by Dr. Chakrabarti. Following his passing, the laboratory was closed, and consideration was given to transferring the type material housed there to the Zoological Survey of India (ZSI). However, the transfer has not yet been possible, and it remains uncertain when it can be completed. Accordingly, the type depository of these species is cited herein as ZSI. It was thought that the Aphidiinae collection of Telenga (Kyiv, Ukraine) had been conserved; however, some of the old material exists somewhere in the SIZK collection, and the rest had been heavily treated with pesticides. The major part of the late Petr Starý's collection (nearly 900 boxes), currently housed at IECA, is reportedly intended for transfer to the National Museum in Prague. Consequently, the current repository of the name-bearing types should be treated with caution until their deposition is confirmed by official institutional records.

Several species were described by Chou (1984a) from China (Taiwan), of which two species, including *Fissicaudus concentratus* Chou, and *Fissicaudus meifengensis* Chou, were later listed by Starý et al. (2010a) among other species associated with Greenideidae aphids and were also indexed in Taxapad (Yu et al. 2016). According to the International Code of Zoological Nomenclature (ICZN 1999), an unpublished thesis or dissertation does not constitute a published work. Consequently, any new scientific names, descriptions, or nomenclatural acts contained within such documents are not valid according to ICZN. Thus, these two species and all other taxa described by Chou (1984a) must be regarded as unavailable names until the work is formally published in a manner that satisfies the ICZN requirements.




**Figure 80.** Representative labels of type specimens (USNM, CASC) for species originally described without explicit holotype designation. Cases subsequently designated as lectotype ("holo-lectotype") by M. Mackauer are also indicated. **A.** Holotype of *Xenostigmus bifasciatus* (Ashmead, 1891); **B.** Lectotype of *Lysiphlebus testaceipes* (Cresson, 1880), subsequent designation (see the remarks in the text); **C.** Holotype of *Lipolexis oregmae* (Gahan, 1932), unnecessary subsequent designation; **D.** Holotype of *Pauesia ponderosae* (Muesebeck, 1958); **E.** Holotype of *Trioxys exareolatus* (Viereck, 1917); **F.** Lectotype of *Praon occidentale* Baker, 1909, subsequent designation.

## BIOLOGICAL ASPECTS – Current State of the Art

According to Starý (1982a), a strong dedication to taxonomy is shown as something built through years of fieldwork, rearing insects, and comparing species. Research is described as both a personal source of stability and an exciting journey, where biological understanding is valued above mere species description. The careers of taxonomists are shaped by challenging conditions and sustained by collaboration, and are committed to connecting their overall efforts with broad bioecological work. Numerous studies focusing on biological aspects of aphid parasitoids such as host range, host-location patterns, host preference, behavior, chemical ecology, physiology, competition, symbiotic associations, demography, environmental adaptation, susceptibility to pesticides, and interactions with aphid control methods have laid the foundation for their application in biological control programs. Likewise, much of the history of biological control programs reflects the work of researchers who have explored practical use of aphid parasitoids. In addition to their key importance in biological control, aphid parasitoids have long been regarded as bioecological models by many leading researchers (Figs 81–82). A small but expert group of researchers has specifically studied aphid hyperparasitoids in various regions of the world (Figs 81A–F), which is briefly outlined in subsequent sections. At the same time, experts on phylogeny (mainly molecular) (Figs 81G–J) have focused extensively on this group.

The history of classical biological control of aphids is highlighted by the contributions of highly dedicated experts who, through their leadership and collaboration with multidisciplinary teams of researchers and practitioners, implemented enduring biological control programs that have served as influential models for subsequent initiatives. Among the most notable figures are Kenneth Sverre Hagen (1919–1997) (Fig. 81K), and Robert van den Bosch (1922–1978) (Fig. 81L). Daniel González (1933–2009) (Fig. 81O), mentioned in the introduction, was particularly recognized for his expertise in the exploration and international transfer of aphid parasitoids within classical biological control programs. During his expeditions to various countries, he collected parasitoids associated with major aphid pests (as well as several other pest groups) and transported them to the University of California for further study and implementation. Leading researchers such as Donald Lee Dahlsten (1933–2003) (Fig. 81M), Russell Messing (Fig. 81N), George E. Heimpel (Fig. 81V), and Nicholas J. Mills (Fig. 81S) continued comparable efforts on the same or similar species, contributing substantially to the field through numerous outstanding publications. Consequently, the biological characteristics of aphid parasitoids have been examined from multiple perspectives over many years.

The long-term collaboration of Eline Benestad Hågvar and Trond Hofsvang (Figs 81X–Y) represents a benchmark, hypothesis-driven investigation on the bioecology of aphid parasitoids, particularly *Ephedrus cerasicola*. Their findings stand as prominent and foundational references, accompanied by numerous important studies. Extensive contributions to the applied bioecology of aphid parasitoids have also been made by Jean-Michel Rabasse (1943–2020), Thierry Hance (Fig. 81U), and their collaborators, whose research spans diverse ecological and agricultural contexts. Many biological control programs targeting aphids, through the introduction of parasitoid wasps into new regions or through mass-rearing and release in greenhouses, fields, and orchards, have been shaped by the empirical and conceptual frameworks developed by these research groups. In-depth studies on the population genetics of aphid parasitoids, aimed at comparing their efficiency and survival and at developing pesticide-resistant strains, were initiated by Marjorie Ann Hoy (1941–2020) (Fig. 81J) and subsequently pursued by other scientists. More recently, Christoph C. Vorburger (Fig. 82G) and his colleagues have advanced the understanding of the complex biological interactions between aphid endosymbiotic bacteria and their parasitoids. Their work has elucidated both direct and indirect interaction pathways, revealing novel mechanisms with significant implications for parasitoid efficacy and host–symbiont coevolution. Numerous researchers (Figs 82G, K, O–Y) have studied the ecology and behavior of aphid parasitoids as key functional traits for their application in biological control programs. Current researchers are also uncovering innovative dimensions of the bioecology of aphid parasitoids and are contributing to the development of effective and ecologically robust biological control strategies.




**Figure 81.** The leading scientists who work on the hyperparasitoids, phylogeny, genetics, and bioecology of the aphid parasitoids and their application in biological control. **A.** Hendrik Harmannus Evenhuis (1919–2008); **B.** Daniel J. Sullivan (1929–2019); **C.** Paul Dessart (1931–2001); **D.** Fred G. Andrews (1933–2019); **E.** Juli Pujade-Villar; **F.** Frank F.J.F. van Veen; **G.** Donald J. Quicke; **H.** Andrew D. Austin; **I.** Mark Dowton; **J.** Marjorie Ann Hoy (1941–2020); **K.** Kenneth Sverre Hagen (1919–1997); **L.** Robert van den Bosch (1922–1978); **M.** Donald L. Dahlsten (1933–2003); **N.** Russell H. Messing; **O.** Daniel González (1933–2009); **P.** Helmut Fritz van Emden; **Q.** Conrad Cloutier (1938–2013); **R.** Jacques Brodeur; **S.** Nicholas J. Mills; **T.** John P. Michaud; **U.** Thierry Hance; **V.** George E. Heimpel; **W.** Ross H. Miller; **X.** Eline Benestad Hågvar; **Y.** Trond Hofsvang.

[**Photo Credits: A.** from Vermeulen et al. (2009); **B.** Fordham University; **C.** Courtesy of Alain Pauly; **D.** from Gilbert et al. (2020); **E.** ZooSysEvo; **F.** Consciexeter; **J.** UF/IFAS; **K.** from Zuparko (2000); **L.** Harriett Burt; **M.** Sarah Yang; N. CTAHR - University of Hawai; **O.** Courtesy of Nickolas Mills; **P.** The Royal Entomological Society; **Q.** HG Division; **R.** Université de Montréal; **S.** UC Berkeley; **U.** RTBF; V. IOBC; **W.** University of Guam; Y. Erling Fløistad; **G. H. I. T. X.** provided by the individuals depicted.]




**Figure 82.** The leading scientists who work on the bioecology of the aphid parasitoids and their application in biological control. **A.** Ahmed-El-Heneidy; **B.** Hugh Charles Jonathan Godfray; **C.** Hugh D. Loxdale; **D.** Wolfgang Völkl (1960–2015); **E.** Wolfgang W. Weisser; **F.** Teja Tscharntke; **G.** Christoph C. Vorburger; **H.** Anthony Ragnar Ives; **I.** Emilio Guerrieri; **J.** Robert Zuparko; **K.** Tessa Grasswitz; **L.** Moses T Kairo; **M.** Izumi Ohta; **N.** Ruth A. Hufbauer; **O.** Nicolas Desneux; **P.** Ahmed Sekkat; **Q.** Kris A.G. Wyckhuys; **R.** Blas Lavandero; **S.** Eduardo Fuentes-Contreras; **T.** Arash Rasekh; **U.** Abbas Ali Zamani; **V.** Kévin Tougeron; **W.** Salah-Eddin Araj; **X.** Mehran Rezaei; **Y.** Zahra Tazerouni.

[**Photo Credits: A., C., E–F., I–K., N., P–Y.** provided by the individuals depicted; **B.** University of Oxford; **D.** Courtesy of W.W. Weisser; **E.** Planet Wissen; **G.** University of Zurich; **H.** University of Wisconsin; **L.** CSU; **M.** NAFINIA – Japan; **O.** PeerJ].

## Host range

Aphidiinae are primarily recognized as specific parasitoids, with a small number of generalist species exhibiting a broad host range. Most of these generalists are hypothesized to consist of cryptic specialist species, as indicated by species delimitation analyses revealing cryptic diversity (Němec & Starý 1985a; Žikić et al. 2009; Mitrovski-Bogdanović et al. 2013; Derocles et al. 2016; Petrović et al. 2016; Seehausen et al. 2020). Host specificity in aphid parasitoids plays a crucial role in determining their ecology and biological control efficacy, as it influences their capability to switch among different hosts. It is also important for their capacity to regulate outbreaks in aphid populations (Raymond et al. 2016). Studies on the host range of aphid parasitoids provide essential knowledge for identifying suitable biological control agents (Starý 1964b, 1981e; Hofsvang & Høgvar 1977b, 1978a; Høgvar & Hofsvang 1986; Gagić et al. 2016; Nagasaka et al. 2020) and for designing banker-plant systems (Yanagita et al. 2018; Yano 2019) that sustain their effectiveness. Generalist parasitoids exhibit flexibility in habitat utilization across seasons, influenced by the availability and suitability of environments. Their colonization of specific habitats is facilitated by spatial and temporal proximity to agricultural fields and semi-natural areas (Stilmant et al. 2008; Straub et al. 2011; Elliott et al. 2018). The host specificity may facilitate the detection of non-target species at risk and enhance the targeting of pest species (Monticelli et al. 2021; Sopow et al. 2021). Mackauer (1965c) attempted to use host–parasitoid associations as a basis for the classification of Aphidiinae, even recovering monophyletic taxa based on host associations. According to his preliminary analysis, the host plant usually has no significant effect on the potential host range of an aphid parasitoid. Recent analyses revealed that host specificity is poorly connected to the evolutionary history of Aphidiinae, suggesting that similar evolutionary traits have developed independently among different aphidiine species (Žikić et al. 2017a). If habitat preference and secondary adaptation are considered as the factors that determine the host range of parasitoids, the evolutionary traits like wing morphology (flight ability) can also evolve accordingly (Guerrieri et al. 1993, 1994; Henry et al. 2006). Wing venation patterns in Aphidiinae vary considerably among taxa, but are predominantly characteristic of specific genera, with notable exceptions exhibiting significant reduction. Evolutionary modifications in wing morphology are associated with alterations in wing size, suggesting that miniaturization influences wing shape evolution. However, host specialization does not appear to impact wing morphology within Aphidiinae (Žikić et al. 2017b). Interestingly, parasitoids that emerge from the larger host aphids manifest longer and broader forewings (Villegas et al. 2017).

The host range of aphid parasitoid species that manipulate host acceptance and host suitability is genetically determined, so that genetic fluctuations can modify the virulence of various populations (Henry et al. 2008; Monticelli et al. 2022). Physiological limitations may also shape local host ranges and drive geographic variation of the host range (Le Ralec et al. 1996, 2011). Ecological specialization of generalist parasitoids may reduce their ability to exploit the diversity of aphid species, particularly to control pest aphids (Navasse et al. 2018). The ability to use alternative host species itself creates selection pressures on parasitoid populations, leading to different evolutionary paths (Tremblay & Pennacchio 1988b). This can enhance local adaptation for better biological control of target hosts, or favor flexible traits that help them adapt to changing environments, including phenotypic plasticity (Zepeda-Paulo et al. 2013). Practically, many species of aphid parasitoids parasitize only a limited range of aphids, even when additional hosts are present. The variations in DNA sequences among individuals of the most generalist parasitoids depend on the aphid and/or host plant species. So, locally specific populations of the aphids should be considered when applying them within agroecosystems (Derocles et al. 2019). The overlap in activity of various parasitoid species in shared habitats may lead to competition and, consequently, increase the interactions or ecological complexity (Prado & Frank 2014). This phenomenon is particularly significant for biological control agents that appear in a diverse range of habitats. In an intriguing study (Ilić-Milošević et al. 2020), the competitiveness of the common species, *Ephedrus plagiator,* was analyzed using neural network models, identifying critical points of host overlap with other parasitoid species that may coexist in the same habitat. A comprehensive list of successful laboratory rearings of various parasitoid wasp species on aphid hosts other than their primary hosts was provided by Starý (2006). Although these cases are not included in the natural host range of those species because they have not been observed under field conditions, negative results do not necessarily prove that host transfer to other aphid species is impossible.

Various evolutionary and ecological factors affect the number of parasitoid species associated with each aphid species (Starý & Rejmanek 1981). The developmental stage of the aphid host selected by a parasitoid is also one of the most important factors determining its capacity to suppress aphid populations, as this choice influences the growth dynamics of both host and parasitoid (Høgvar & Hofsvang 1991a; Sequeira & Mackauer 1994). Various factors, including age and size of the female parasitoid (Askew & Shaw 1986; El-Mezain et al. 2021; Najafpour et al. 2016), and host density (Najafpour et al. 2016), determine the host suitability and host instar preference. In the case of aphid parasitoids, this assumption does not consistently apply, as host quality is shaped by additional biological factors beyond size alone (Sequeira & Mackauer 1992b). A recent survey revealed that some parasitoid wasps evolved to favor specific-stage (third-instar) nymphs, which provide a 'low-cost, high-reward' host because they contain sufficient resources for development and lack the complicated supplementary mechanisms found in adults (Zhong et al. 2025). Numerous surveys were conducted to reveal the patterns of host stage preference in various aphid parasitoid species (Sequeira & Mackauer 1987; Singh & Srivastava 1987b; Singh & Pandey 1989; Kairo & Murphy 1999; Singh et al. 2000b; Gan et al. 2003c; Rakhshani et al. 2004a; Xu et al. 2007; Latham & Mills 2012; Tepa-Yotto et al. 2013b; Hajrahmatollahi et al. 2015; Pourtaghi et al. 2018; Rasool et al. 2022; Talebi et al. 2022).

### Host location/host selection

Driven by evolutionary processes and shaped by ecological interactions, successful parasitism of aphids requires parasitoid wasps to pass through several sequential steps (Starý 1964b). In general, these stages include host habitat finding, host finding, host acceptance, and finally the parasitization (Hawkins 1994). The aphidiine wasps are associated with a certain type of habitat that they primarily seek. In the given type of habitat, they occur in various types of foci from which they spread in the environment (Starý 1964d). The female parasitoid finds a host by macro-orientation, using its antennae (stimuli) by which the host is finally tapped. In the micro-orientation that follows, various setae on ovipositor-sheaths or accessory prongs (Starý 1981c) are used. Host acceptance is an eventual step that is defined by host suitability. Main factors defining host suitability include aphid defensive mechanisms (Starý 1964a; Carver & Sullivan 1988; Völkl & Stadler 1996), i.e., instars, previous parasitism followed by physiological immunity, and subsequent interactions. Each of these steps may be influenced simultaneously by the host density and age structure of the aphid population, along with subsequent adaptive adjustments, and may in turn be affected by the physiological suitability of the internal environment of the aphid (Starý 1964a; Singh & Sinha 1982c; Dhiman & Kumar 1983, 1987; Singh & Pandey 1986b; Chow & Mackauer 1991, 1992, 1999b; Høgvar 1991; Stilmant et al. 1994; Tripathi & Singh 1994; van Emden et al. 1996; Guerrieri 1999; Daza-Bustamante et al. 2003; Le Ralec et al. 2005).

The process of host location is manipulated by both visual (Michaud & Mackauer 1994, 1995b) and chemical cues (Grasswitz & Paine 1992; Battaglia et al. 1993, 2000; Reed et al. 1994, 1995; Micha & Wyss 1995; Du et al. 1996, 1998; Grasswitz 1998a; Pareja et al. 2007, 2009; van Emden et al. 2008; Yang et al. 2009; van Emden et al. 2015). Host-searching behavior in aphid parasitoids (e.g., *Aphidius ervi*) relies strongly on visual cues, with females shifting to attack posture when a host-like object is detected at close range. Furthermore, color alone triggered oviposition in naive females, and the response intensified when color and shape were combined (Battaglia et al. 1995). Plant odors are known as effective attractants, signaling aphid parasitoids to locate their host colonies (Micha & Wyss 1996; Vaughn et al. 1996; Gabrys et al. 1998; Guerrieri et al. 2002). Aphid parasitoids showed a significant response to the aphid sex pheromone (Powell et al. 1993; Lilley et al. 1994b; Gabrys et al. 1997) that can also be regulated by previous experiences (Chow & Mackauer 1992; Grasswitz & Paine 1993a, 1993b; Du et al. 1997; Guerrieri et al. 1997; Grasswitz 1998b; Völkl 2001; Fernandez-Grandon & Poppy 2015).

Parasitoid host choice has often been examined within simplified tritrophic frameworks, where host preference is expected to align with offspring performance according to the "Mother knows best" hypothesis (Henry et al. 2005). On the basis of this approach, the female parasitoids rely on imperfect cues when assessing host suitability, leading to oviposition in hosts that do not support optimal offspring development. In this system, the second host instar provided the highest reproductive success, while older instars produced markedly poorer outcomes. Despite this, females consistently preferred older

hosts when given a choice, indicating a mismatch between preference and true host quality. This bias appears linked to the mechanisms used during host assessment and may become more pronounced when parasitoids shift between different host species across generations. However, other evidence (see also Mackauer et al. 1996; Henry et al. 2005; Monticelli et al. 2019) showed that females can identify the most beneficial aphid hosts yet initially select suboptimal plant-aphid complexes. This mismatch highlights how environmental heterogeneity can disrupt adaptive host selection behavior and influence reproductive outcomes (Chesnais et al. 2015). Body size was shown to strongly shape how aphid parasitoids select hosts, with larger individuals being able to exploit a wider range of host stages and smaller individuals gaining the most by targeting younger, less-defended hosts. These behavioral differences also influenced aphid population outcomes, indicating that within-generation decisions can cascade into population-level effects. Overall, size-dependent flexibility in host choice appears to be a common feature among parasitoids attacking free-living, well-defended hosts (Henry et al. 2009). On the other hand, body-size flexibility in generalist parasitoids influences both the size at pupation and the way hosts are selected. Parasitoids reared on different host species emerged at different sizes. This natal experience shifted how they ranked host quality, with individuals preferring hosts similar in size to those on which they developed. The larger parasitoids tended to choose larger hosts, while smaller ones targeted smaller stages, indicating that host choice is based on relative size assessment. These linked traits allow generalist parasitoids to exploit multiple host species across generations, although the fixed behavioral response within an individual's lifetime suggests adaptation to patchy host environments (Henry et al. 2006).

The newly emerged term "ecology of fear" (Kersch-Becker & Thaler 2015; Ali et al. 2025) highlights aphid behavioral shifts under risk as a potential alternative for the pest. In interactions with the parasitoid wasp, substrate-borne vibrations (produced during the interaction between aphid and parasitoid) alter aphid feeding behavior, reducing probing efficiency and delaying phloem access. These vibration-induced changes contrast with alarm pheromone responses and may influence aphid virus transmission dynamics, underscoring the role of parasitoid cues in sustainable pest management (Wu et al. 2010; Zippari et al. 2024). Nonconsumptive interactions by aphid parasitoids have been shown to suppress aphid populations through behavioral disruption rather than direct parasitism. The fitness of the aphid population can be reduced by altered feeding activity, defensive investment, or injury from unsuccessful attacks (stinging). The strength of these effects varies with species-specific defensive responses, highlighting the importance of behavioral mechanisms in shaping suppression in their population (Ingerslew & Finke 2017).

## Effects of parasitism

Parasitism begins when the ovipositor of the parasitoid penetrates the body of the aphid and an egg is deposited. Thereafter, a cascade of physiological, ecological, and behavioral changes unfolds. Defensive reactions of the aphid on one side, and the activity of specific peptide secretion in the parasitoid venom (Digilio et al. 2000) on the other, initiate a series of physiological interactions (Gan et al. 2003a) that ultimately determine which organism wins. As parasitism progresses, it induces distinct evolutionarily shaped behavioral modifications in the aphid that are not observed in healthy individuals (Villagra et al. 2002; Le Ralec et al. 2010). Dispersal patterns in parasitized aphids vary with the attacking wasp species, leading to distinct mummification sites. Most parasitoids induce a progressive loss of coordination in aphids, frequent dropping from plants, and mummification away from the colony, but near their feeding locations. These displaced aphids were unable to return, and the likelihood of off-plant mummification increased with mummy density. Mixed colonies showed no cross-influence on where aphids died. Overall, this evidence suggests that differences in parasitoid developmental dynamics best explain altered dispersal outcomes rather than a deliberate behavioral manipulation (Chow & Mackauer 1999a).

Aphid parasitoids utilize a complex and poorly understood mechanism to regulate their nutrition and metabolism within their hosts, ensuring they obtain essential amino acids for development that is related to the activity of the associated symbionts (Xue et al. 2022). Protein-based maternal secretion from the venom and ovary fluid of aphid parasitoids swiftly redirects aphid development toward fatal arrest (Digilio et al. 1998, 2000, 2004). Parasitization markedly reduces aphid fecundity and alters reproductive

duration (Polaszek 1986), with termination coinciding with parasitoid larval development. Overall, parasitization appeared to hinder oogenesis without altering the number of offspring ultimately produced (Kring & Kring 1988). These differences in host reproduction strongly influence the effectiveness of various Aphidiinae species as biological control agents (Mitsunaga et al. 2016). Winged aphids have been regarded as lower-quality hosts due to resource allocation toward wing formation. Parasitoid larvae, entirely depending on host lipids, are influenced by nutritional differences between winged and wingless morphs (Pirotte et al. 2018). Variations in host physiology affect parasitoid development and fitness (Mackauer et al. 1997), though oviposition preference remained unchanged. Parasitism in juvenile stages can suppress aphid dispersal with potential consequences for virus transmission (Pirotte et al. 2018). Survival and development of parasitized aphids (e.g., by *Praon pequodorum*) depend on the age at which parasitism occurred. Early-stage hosts may die before developing their normal life cycle, while older ones survive long enough to produce offspring, with fecundity rising sharply when parasitism occurs later in life (Sequeira & Mackauer 1988). Wing development in aphids was strongly disrupted when parasitism occurred early, leading to wingless or partially formed morphs (*Sitobion fragariae* parasitized by *Aphidius ervi*). These abnormalities pointed to interference with endocrine regulation, likely driven by parasitoid reproductive-tract fluids, eggs, or early secretions (Christiansen-Weniger and Hardie 1998). Even aphids with developing wing buds lose their ability to form normal wings when attacked. Teratocytes further contributed to developmental arrest, showing that early parasitism exerts powerful morphogenetic effects (Christiansen-Weniger & Hardie 2000). Aphids can theoretically adapt to parasitoid pressure through epigenetically mediated polyphenism (Srinivasan & Brisson 2012; Bretaudeau et al. 2017), potentially reducing the effectiveness of biological control (Müller et al. 2001). While wing and reproductive polyphenisms have been documented in some asexual lineages (Sloggett & Weisser 2002), no evidence supports their induction solely by parasitoid exposure. Instead, pseudo-crowding stress appears necessary for *Myzus persicae* to express defensive polyphenisms under parasitoid attack (Uriel et al. 2021). An in-depth understanding of the physiological interaction between the aphid and its parasitoid (Starý 1964a, 1964b) is necessary to develop artificial food resources for mass rearing of the parasitoids (Digilio et al. 1994; Digilio 1999). Lipid synthesis is a complex process in the aphid body that is directly affected through gene interaction by the existing parasitoid inside its body (Xue et al. 2021).

Aphids can host diverse facultative bacterial endosymbionts that are reliably passed through maternal inheritance and occasionally transmitted horizontally, though not at levels sufficient for infectious spread. Their persistence depends on conferring net fitness advantages to the aphid host population (Vorburger 2014). The bacterial endosymbionts in aphids can markedly enhance resistance to parasitoid wasps, thereby undermining the efficacy of biological control strategies (Vorburger 2018). *Arsenophonus* species do not provide defense for the host aphid against its major parasitoids (Wulff et al. 2013; Zepeda-Paulo et al. 2017; Ayoubi et al. 2020; Heidari Latibari et al. 2023), while *Hamiltonella defensa* does (Heidari Latibari et al. 2026). These kinds of infections may eliminate the parasitism of some parasitoids, but with no effect on others (Asplen et al. 2014; Cayetano & Vorburger 2015; Lenhart & White 2017; Leybourne et al. 2020; Ayoubi et al. 2025; Qazi et al. 2025; Heidari Latibari et al. 2026).

Parasitoid diversity plays a pivotal role in maintaining symbiont variation within aphid populations. While interactions with a single parasitoid species generally select for a single dominant symbiont that provides maximum protection against that specific parasitoid, exposure to diverse parasitoid assemblages promotes the persistence of multiple symbionts (Hafer-Hahmann & Vorburger 2020). In contrast, a later study provided minimal support for the hypothesis that host symbiont diversity is enhanced by exposure to multiple parasitoid species (Hafer-Hahmann & Vorburger 2024). *Hamiltonella* symbionts exhibit strong host specificity, with strains rarely shared across aphid species (Dykstra et al. 2014). Symbiont-mediated coevolution between aphids and their parasitoids is supported by the observed patterns of symbiont-specific resistance and parasitoid adaptation. Some strains (of *Hamiltonella defensa*) gave strong resistance, while others may have had no effect. Consequently, parasitoids that did overcome certain symbiont strains were mostly those collected from the same host species, indicating host-linked, symbiont-specific adaptation (Henry et al. 2025). In natural populations, these symbionts are locally adapted, efficiently inherited, non-pathogenic, and cause substantial resistance to the dominant aphid parasitoids. Thus, their distribution reflects selective pressures imposed by both aphid hosts and the

parasitoid, resulting in context-dependent defensive associations that enhance host survival (Wu et al. 2022). The switching costs experienced by parasitoids promote stable coexistence of aphid populations both harboring and lacking *Hamiltonella defensa*, thereby offering a plausible mechanism for the maintenance of phenotypic diversity within host communities (Preedy et al. 2020). Resistance to generalist parasitoids has been documented in certain greenhouse aphids, including *Chaetosiphon fragaefolii*. Probably, this resistance is not mediated by symbiotic bacteria, but persists despite the aphid's weak behavioral defenses. The lack of parasitoid oviposition may instead be attributable to structural barriers such as glandular hairs, chemical cues, or intrinsic physiological mechanisms that collectively reduce the susceptibility to parasitism (Francesena et al. 2020). Facultative endosymbionts play a crucial role in structuring aphid–parasitoid–hyperparasitoid networks (Ye et al. 2018).

Defensive strategies remain largely unresolved; however, certain cases are characterized by toxin production or the activation of host immune pathways (Oliver et al. 2014). The parasitism may significantly shift the bacterial symbiont community within the ovary of the parasitized aphid (Li et al. 2023). Seasonal shifts in facultative endosymbiont infections in aphids reveal host-level selection, driven by increasing infection rates and clonal replacement, underscoring the role of host genotypic variation in shaping endosymbiont prevalence and parasitoid interactions in cereal agroecosystems (Zepeda-Paulo & Lavandero 2021). Besides symbiont-mediated defenses, aphids also exhibit intrinsic resistance mechanisms against parasitoid attack that are genetically encoded (Miao et al. 2004; Martinez et al. 2016). It is proposed that intense parasitoid pressure within organic greenhouse environments may drive the selection of aphid populations with elevated endogenous resistance (Beekman et al. 2022). In physiologically resistant aphids, key parasitoid-derived cells and their proteins failed to appear, host castration was incomplete in later instars, and normal nutrient redirection did not occur. Overall, the absence of these regulatory cells was identified as the main constraint preventing normal parasitoid development, clarifying their essential role in host manipulation and resource exploitation (Li et al. 2002). Aphid population size is influenced by both internal traits and external ecological pressures that interact to shape vulnerability to natural enemies (Hufbauer & Via 1999; Hufbauer 2002). Aphid colonies adapted to different host plants show genetically based differences in resistance to parasitism, leading to higher parasitism and lower aphid densities in less-resistant populations. Field studies demonstrate that populations with greater intrinsic resistance experience lower successful parasitism, while other mortality factors, such as fungal pathogens, vary by crop type (Hufbauer 2001).

## Ant attendance

Aphid–ant interactions are generally regarded as mutualistic associations, where aphids secrete honeydew, a carbohydrate-rich exudate that serves as a valuable nutritional resource for ants. In return, ants provide protective services by actively defending aphid colonies against natural enemies such as predators and parasitoids, thereby enhancing aphid survival and population stability (Starý 1964a; Takada & Hashimoto 1985; Starý & Völkl 1988; Völkl 1992, 1994, 1997; Herbert & Horn 2008; Maharani et al. 2020; Yamamoto et al. 2020; Staverløkk et al. 2022). This reciprocal relationship influences the ecological dynamics of both partners and shapes broader community interactions, including plant health, pest management outcomes, and structure of multitrophic networks (Völkl & Mackauer 1993; Stechmann et al. 1996; Völkl & Novak 1997; Kaneko 2002, 2003a, 2003b, 2004; Nyabuga et al. 2012b). Conversely, parasitoids that have evolved chemical mimicry (Liepert & Dettner 1996; Völkl et al. 1996) of ants can exploit ant presence to their own advantage (Pontin 1960; Rasekh et al. 2010b; Sadeghi-Namaghi & Amiri-Jami 2018). Aphid parasitoid species have been documented to mimic host cuticular hydrocarbons (Liepert & Dettner 1993; Liepert & Dettner 1996; Völkl & Novak 1997; Akino & Yamaoka 1998; Völkl & Mackauer 2000; Rasekh et al. 2010b), thereby reducing ant aggression. The mechanisms underlying this reduced aggression remain unresolved, and its effectiveness across various ant-protected aphid hosts is uncertain. Genetic divergence among populations collected from different hosts suggests that variation in chemical traits and ant responses may be shaped by host-associated genotypes (Hertaeg et al. 2023). Aphid-attending ants are known to repel intraguild predators, causing a substantial increase in the emergence rate of the parasitoids (Kaneko 2002, 2003a, 2003b, 2004).

## Competition

Interference competition represents a widespread ecological interaction in which adult females of distinct species directly contend for access to limited food resources, simultaneously striving to maximize their acquisition (Chow & Mackauer 1984, 1986; Marullo 1987; Völkl & Stadler 1991; Mackauer et al. 1992; Tazerouni et al. 2016b, 2019). Multiparasitism increased as host density declined, and species differed in how they exploited already-parasitized hosts, reflecting variation in host-detection ability and competitive strength. These dynamics allowed multiple species to coexist despite competitive interactions and overlapping resource use (Bribosia et al. 1995). Competition between parasitoid larvae has been shown to occur both within and between species when they develop inside the same aphid host. In these interactions, younger larvae of one species often eliminate older competitors, although advanced late-instar larvae of the other species may still complete development despite the presence of a rival. These patterns indicate that competitive outcomes depend strongly on the relative developmental stage of each parasitoid (Chow & Mackauer 1985; Høgvar 1988). When the aphid is parasitized by one or more conspecific females, resulting in larval competition inside the aphid body, it is called superparasitism (Force & Messenger 1965; Singh & Sinha 1981, 1982b, 1982d; Hofsvang & Høgvar 1983c; Høgvar & Hofsvang 1988; Mackauer & Chau 2001). This leads to the development of several larvae within the limited space and resources of one host, triggering fierce competition among them. The outcome of this internal struggle can influence the dominance of different strains of the same parasitoid species (Mohseni et al. 2017).

Host discrimination refers to the ability of a parasitoid to detect whether a host has already been parasitized and adjust its oviposition behavior accordingly (Starý 1964a; Hofsvang & Høgvar 1983c; Outreman et al. 2001a, 2001b). Generally, superparasitism avoidance can be described as the behavioral process through which the parasitoid reduces the likelihood of laying eggs in the host that has already been parasitized (Danyk & Mackauer 1993; Outreman et al. 2001b; Singh & Sinha 1983a; Hofsvang & Høgvar 1983c; Chow & Mackauer 1986; Hofsvang 1988; Micha et al. 1992; Outreman et al. 2001a). This avoidance is guided first by external cues left during the initial attack and later by internal changes in host quality as the parasite develops. Because these cues weaken or change over time, avoidance remains only partially effective, leading to repeated parasitism when hosts are recently attacked or when suitable hosts are scarce. Patch-use decisions are also shaped by the proportion of parasitized hosts and by prior experience, causing earlier departure from low-profit patches (Outreman et al. 2001a, 2001b).

## Mating

A comprehensive understanding of the biological and ecological dynamics of parasitoids is essential for assessing their potential as effective biological control agents. Furthermore, such knowledge is crucial for the development of the mass-rearing process (Singh & Sinha 1982a; Das & Chakrabarti 1986; Dhiman et al. 1987; Starý & Völkl 1988; Tripathi & Singh 1990c; Mishra & Singh 1993c; Kuo 1995b; Battaglia et al. 2002; Pandey & Singh 2004, 2005a; Nyabuga et al. 2012b; Boukouvala et al. 2026). It has been observed that female aphidiines engage in copulation only once throughout their lifespan. The courtship responses of males are significantly influenced by olfactory cues emitted by females that serve as critical signals in the mating process (Benelli et al. 2013; Zeni et al. 2024). Male courtship behavior in Aphidiinae is characterized by wing fanning, which is stimulated by sex pheromones released by females. Video analysis indicates that males generating high-frequency fanning signals experience greater mating success compared to those exhibiting low-frequency fanning patterns (Benelli et al. 2016). Mating strategies in aphid parasitoids are strongly shaped by mate availability, which is determined by the spatial and temporal dynamics of adult emergence (Bhatt & Singh 1991c, 1991e). Mating behavior of aphid parasitoids strongly depends on the availability of host resources and is affected by the presence of mutualistic ants on the natal patch (Nyabuga et al. 2012b). Patterns of emergence, particularly male–female asynchrony, play a critical role in minimizing inbreeding risk and promoting off-patch encounters (Bourdais & Hance 2019). Mate searching duration did not vary with male or female body size, suggesting that body size would not influence pre-copulatory interactions within the patch. Smaller males copulated significantly longer, and copulation duration increased with the sexual body size dimorphism. Body size, as an important trait for survival, plays a significant role in the evolution of species and may influence the mating behavior of parasitoids at the threshold of natural selection (Sequeira & Mackauer 1992c).

However, limited studies have shown that female body size does not significantly affect their selection by male wasps. Although mating duration is longer in smaller males (Atashdar et al. 2023), this phenomenon may ultimately lead to a higher abundance of genetically smaller individuals, resulting in reduced competitiveness.

## Foraging and oviposition behavior

Aphid parasitoids show a highly structured foraging behavior shaped by both internal state and external conditions of the host environment (Messing & Rabasse 1995; Michaud & Mackauer 1995a; Michaud 1996). Their search patterns are typically organized into bouts of active exploration, where hosts are encountered, assessed, and either accepted or rejected depending on cues such as host age prior to parasitization, host quality, and the own egg load of the parasitoid (Dieckhoff et al. 2014). Foraging intensity is strongly affected by factors such as host density, proportion of parasitized hosts, presence of chemical or physical host-derived cues, competition with other parasitoids (Hofsvang & Høgvar 1986; Høgvar & Hofsvang 1987; Ahmad 1993, 1994; Battaglia et al. 1994; Michaud 1994; Weisser et al. 1994; Weisser 1994, 1995; Murphy & Völkl 1996; Völkl & Novak 1997; Grasswitz 1998a; Outreman et al. 1999; Völkl 2000; Völkl & Sullivan 2000; Mahmoudi et al. 2010b; Rasekh et al. 2010a, 2019), and parasitoid's physiological condition, including egg depletion (Collins & Dixon 1986; Mishra & Singh 1993a).

Aphid parasitoids must navigate the constraints of their short lifespan by balancing the risks of egg limitation to optimize reproductive success, a process influenced by oviposition and egg maturation rates (Pandey et al. 1983; Dieckhoff et al. 2014), as well as other factors affecting adult longevity (Hofsvang & Høgvar 1975a; Fukui & Takada 1988). The reproductive behavior of parasitoids is fundamental in regulating host population dynamics and defining their reproductive strategies. Among various biotic and abiotic factors influencing performance, adult age is particularly significant (Srivastava & Singh 1995a; Najafpour et al. 2016; Khatri et al. 2021). The interval between emergence and the first oviposition structures a critical phase, providing valuable insight into the expected behavior and efficiency of parasitoids once released into the field (Trotta et al. 2024).

Egg limitation could occur at very high aphid densities, while the female parasitoid may buffer a continuous egg load rate over a day that can be reduced in low aphid populations caused by the absence of honeydew and other sugar resources (Dieckhoff et al. 2014). Supernumerary egg deposition is influenced by both the number of available hosts and the length of time that parasitoids remain confined with them. When host density is low, females encounter the same hosts repeatedly, and prolonged exposure increases the likelihood that additional eggs are laid into already-parasitized individuals. As host density increases, eggs are distributed more evenly, and repeated parasitism becomes less common because more suitable hosts are available. The shift from random to non-random egg distribution at high densities suggests that parasitized hosts can be recognized, but this ability weakens when few hosts are present, and females remain in the patch for extended periods (Mishra & Singh 1993a). Conversely, as the egg supply decreased, the parasitoid showed a progressive decline in oviposition because its foraging bouts became shorter, less frequent, and were separated by longer inactive periods. Although hosts continued to be encountered at a constant rate, oviposition dropped both due to repeated encounters with already-parasitized hosts and, later, due to reduced time spent searching (Collins & Dixon 1986).

## Chemical Ecology

An important item determining the success of a parasitoid species is its capacity to locate suitable hosts within complex habitats. Olfactory stimuli play a pivotal role in shaping parasitoid movement and foraging behavior during this process. Advances in mass-rearing may be achieved by integrating knowledge of mate-finding behavior and sexually selected traits, thereby enhancing reproductive success in culture. Furthermore, the aphid-derived foraging kairomones hold promise as field lures, facilitating the targeted recruitment of parasitoids into infested agro-ecosystems (Srivastava & Singh 1988a, 1988b). Volatile organic compounds (VOCs) serve as critical chemical cues for insects, including parasitoids, in regulating essential behaviors. Beyond pheromonal communication (Starý & Völkl 1988; Guo et al. 2022) and host-associated chemical cues (Höller et al. 1991; Hou & Yan 1995; Gabrys et al. 1997), parasitoids also rely on plant-derived VOCs to locate and interact with suitable hosts (Hou et al. 1996; Storeck et al.

2000; Daza-Bustamante et al. 2002). Volatile chemical signals are critical for host detection by biological control agents, and their exploitation through habitat management can strengthen trophic interactions or improve pest suppression. Aphid parasitoids rely on host-specific signals that convey both host presence and suitability. Foraging behavior, host recognition, and host acceptance in aphid parasitoids are closely influenced by chemical cues acquired from the host during their developmental stages. Practices such as sensitization and associative learning may be applied to mass-reared wasps, increasing their efficiency and reliability once released (Høgvar & Hofsvang 1994). Consequently, host preference can be altered in response to these inherited chemical signals (Ribeiro dos Santos et al. 2025). In response to aphid infestation, plants release herbivore-induced plant volatiles (HIPVs) that serve to attract parasitoids, thereby signaling the presence of potential hosts (Jobichen & Selvanarayanan 2019). Although many studies have primarily focused on the plant-derived signals, emerging evidence indicates that aphid parasitoids also perceive VOCs released by microorganisms. However, the extent to which bacterial VOCs shape parasitoid olfactory responses across trophic levels remains largely unresolved (van Neerbos et al. 2023a). These compounds represent an underappreciated component of plant–insect multitrophic interactions and warrant inclusion in future ecological investigations (Goelen et al. 2020a, 2020b, 2021). Root herbivory (by another pest) can disrupt attractive chemical cues during the early search phase, diminishing parasitoid detection and weakening trophic interactions (Tariq et al. 2013). Consequently, parasitoids exhibit higher parasitism rates on aphids inhabiting plants free from below-ground damage (Hauri et al. 2025).

The detection of aphid sex pheromone components such as nepetalactone enhances host-searching efficiency (Lilley et al. 1994a; Fernandez-Grandon & Poppy 2015). Parasitoid retention is further strengthened through the synergistic action of nepetalactone with other host-associated signals, and foraging activity is amplified either by direct exposure to nepetalactone or through prior experience linked to this compound. Future directions in biological control programs may incorporate several innovative strategies. In the course of modern biological control programs, dispensers with aphid sex pheromones could be employed as monitoring tools to improve detection and population assessment of parasitoids (Benelli et al. 2014).

Climate change is expected to complicate pest pressure through alterations in insect distribution patterns and seasonal phenology, thereby modifying herbivore–parasitoid interactions and diminishing the reliability of biological control in crop systems. Elevated atmospheric $CO_2$ ($eCO_2$) directly modifies plant physiology, growth, and biochemical composition, with cascading effects on herbivores and their associated natural enemies (Moreno-Delafuente et al. 2021a). Recent surveys have indicated that $eCO_2$ significantly affects the biological performance of aphids and their parasitoids. Specifically, parasitoid pupal survivorship and adult emergence (Moreno-Delafuente et al. 2021b), and handling time (Ahn et al. 2023) were reduced under elevated $CO_2$ conditions. Although short-term parasitism efficiency remains largely unaffected, long-term consequences may include impaired host-finding ability and population instability in aphid parasitoids. These impacts can be largely destructive to parasitoids with narrower host ranges, posing risks to the sustainability of biological control programs (Costaz et al. 2023). Plant volatile-mediated signaling is highly susceptible to disruption under climate change and pollution (Boullis et al. 2015). Stress-induced VOCs may mislead parasitoids, while pollutants degrade HIPVs or impair olfactory detection through receptor desensitization and sensilla obstruction. Understanding species-specific responses and promoting parasitoid–flower interactions are crucial for maintaining effective biological control (Pinto-Zevallos et al. 2024).

Phytoremediation has been advanced as a strategy for soil detoxification, yet its consequences for the associated insects remain underexplored. The transfer of metalloid contaminants from soil through plants to herbivores can expose parasitoids to toxic concentrations, influencing their biological performance. Such trophic transfer processes highlight potential ecological risks for natural enemies and the stability of biological control in agroecosystems. In a similar study, cadmium exposure exerts feeding-strategy-dependent effects on aphids, while parasitoid development shows no measurable impact (Konopka et al. 2013). As bioindicators, lead contamination was shown to exert cumulative and chronic impacts on the biology of pest aphids and their parasitoid *A. colemani*. Increased exposure correlated with higher mortality and reduced fitness traits, indicating that lead pollution can disrupt insect populations and compromise biological control effectiveness (Ghabeish 2014).

## APHID PARASITOIDS IN BIOLOGICAL CONTROL

Biological control represents a promising and economically viable substitute for intensive chemical insecticide use (Lau et al. 2023). Parasitoid wasps are key regulators of aphid populations across natural and agricultural systems (Boivin et al. 2012; Kaliuzhna 2017a; Rakhshani & Starý 2021; Liu & Chen 2025). Extensive research has demonstrated that aphid suppression through Aphidiinae parasitoids can effectively reduce pest pressure, especially in greenhouses (Starý 1970a; Völkl et al. 1990; Starý et al. 1996; Hance & Salin 2014; Miller 2019; Das & Chakrabarti 2023a).

Accurate identification and comprehensive knowledge of biological traits, such as fecundity, parasitization efficiency, and production cost-effectiveness, are essential for selecting appropriate aphid parasitoids as biological control agents. Suppressing the aphid population through parasitoid activity strongly depends on life-history traits of the host aphid and parasitoid, as well as the seasonal timing of their interaction (Starý 1967c, 1968g; Tremblay 1975c; Wyatt 1985; Carver 1989; Høgvar & Hofsvang 1991a; Starý et al. 1993a, 1993b; Gu et al. 2015). These factors jointly determine the extent to which parasitoids can regulate aphid population dynamics within agro-ecosystems (Khatri et al. 2017). Successful implementation of such programs further relies on effective collaboration between researchers and stakeholders within the organic production sector. Many species of aphid parasitoids are now available and commercially produced as biological control agents (Shrestha et al. 2014; Dassonville et al. 2015; Wollaeger et al. 2015; Kırışık & Erler 2017).

Modern agriculture faces escalating pest pressures that necessitate sustainable alternatives to chemical pesticides. Biological control, relying on natural enemies such as predators and parasitoids, provides an environmentally sound solution but is constrained by the complexity and cost of mass rearing. Advances in artificial intelligence (AI) are transforming this field by integrating automation, machine learning, computer vision, and real-time analytics to optimize diet formulation, environmental regulation, behavioral assessment, and quality control. These AI-driven systems enhance scalability, consistency, and adaptive refinement of production processes, while predictive modeling supports efficient deployment strategies. Although challenges remain, including high initial investment and limited datasets, AI integration offers a promising pathway toward cost-effective and resilient biological control. By strengthening natural enemy production and reducing reliance on chemical inputs, AI contributes to biodiversity conservation, sustainable crop protection, and long-term agricultural resilience (Javed et al. 2025a).

### Laboratory evaluation

A major part of biological studies on aphid parasitoids focuses on evaluating their ability to control the population of pest aphids, primarily conducted under controlled laboratory conditions (Singh & Sinha 1983b; Kring & Gilstrap 1984; Hughes et al. 1992; Singh & Agarwala 1992; Völkl et al. 1990; Quaglino et al. 2026). If successful, subsequent steps, including mass rearing and experimental release in greenhouses (Ohta & Ohtaishi 2005) or broader areas, will be conducted. A variety of biological characteristics, primarily recognized as demographic indicators, are examined at different constant or variable temperature and relative humidity, to assess the reproductive potential – **life table statistics** (Force & Messenger 1964b; Hofsvang & Høgvar 1975b; Pandey et al. 1983, 1984a, 1984b; Cohen & Mackauer 1987; Høgvar & Hofsvang 1990a; Tripathi & Singh 1990b; Bhatt & Singh 1991d; Hofsvang 1991; Mishra & Singh 1991a; Singh & Srivastava 1991; Lu et al. 1993; Pandey & Singh 1998a; Biswas & Singh 1998b; Rodrigues et al. 2003b; Ohta & Ohtaishi 2004; Mahmoudi et al. 2010a; Li et al. 2013a, 2013b; Satar et al. 2019; Rashki et al. 2020; Singh & Ahmad 2025); **functional response** (Messenger 1968; Singh et al. 1979; Pandey et al. 1982, 1984c, 1986, 1990; Hofsvang & Høgvar 1983a; Singh & Srivastava 1989; Mishra & Singh 1990a, 1993b, 1994; Tripathi & Singh 1990a, 1991a; Bhatt & Singh 1991a; Michaud 1994; Bi & Ji 1996; Stilmant 1996; Rakhshani et al. 2004a; Latham & Mills 2012; Rashki et al. 2013; Hajrahmatollahi et al. 2015; Khan et al. 2016a, 2016b; Tazerouni et al. 2016a, 2017; Pourtaghi et al. 2018; Sardarbandeh et al. 2019; Farsi et al. 2020; Rezaei et al. 2021; Talebi et al. 2022; Ahn et al. 2023, 2024; Rim et al. 2023; Du et al. 2024); **sex ratio** (Starý 1964a; Sinha & Singh 1979; Singh & Sinha 1980b; Singh & Pandey 1986a, 1997; Tripathi & Singh 1991b; Srivastava & Singh 1994, 1995b; Singh & Srivastava 1995; Biswas & Singh 1997; Pandey & Singh 1999, 2005a, 2005b, 2006; Singh et al. 2001a, 2001b, 2003; Mitsunaga et al. 2015;

Korkmaz & Karacaoğlu 2025); **rate of parasitism** (Mishra & Singh 1990b; Takanashi 1991; Feng & Nowierski 1992; Gavkare et al. 2014; Hance & Salin 2014; Nordey et al. 2021; Al-Hadi & Mansor 2025; dos Santos et al. 2025; Sinha & Ahmad 2025); **host size effects** (Sequeira & Mackauer 1992a, 1992c; Xu et al. 2008; Khatri et al. 2016; Kumar et al. 2020); **host preference** (Takada 1975; Rethwisch & Manglitz 1990; Hildebrands et al. 2000; Acebes & Messing 2013b; Vieira et al. 2019; Park et al. 2021; Khaki et al. 2022); **host selection** (Calvert 1973; Singh & Sinha 1982c; Dhiman & Kumar 1987; Chow & Mackauer 1991, 1992; Høgvar 1991; Henry et al. 2006, 2009; Hopkinson et al. 2013; Chesnais et al. 2015); **host suitability** (Elliott et al. 1994a, 1994b, 1994c; Wilson & Lambdin 1987; Jackson et al. 1974; Bribosia et al. 2004; Latham & Mills 2010; Acebes & Messing 2013b; Enkegaard et al. 2013; Pan & Liu 2014; Mercer et al. 2021; Ismail et al. 2022; Rezaei et al. 2022); **thermal requirements** (Jackson et al. 1974; Giri et al. 1983; Cohen & Mackauer 1987; Hayakawa et al. 1990; Lu et al. 1994; Miller & Gerth 1994; Tripathi & Pandey 1994; Elliott et al. 1995b, 1999; Biswas et al. 1997; Pandey & Singh 1998b; Sigsgaard 2000; Singh et al. 2000a, 2000c; Wu et al. 2000a; Royer et al. 2001; Liu & Tsai 2002; Weathersbee et al. 2004a; Zamani et al. 2007, 2012; Hughes et al. 2010; Byeon et al. 2011; Pourtaghi et al. 2016; Farsi et al. 2019; Rashki et al. 2020; Jerbi-Elayed et al. 2021; Park et al. 2021; Tougeron et al. 2021; Ismail et al. 2022; Zouari & Ben Halima Kamel 2024; Xia et al. 2025; Zepeda-Paulo et al. 2025); **mode of reproduction** (Belshaw & Quicke 2003), and also the **risk of parasitism** on non-target species (Carver 1984; Milne 1991; Tepa-Yotto et al. 2013a; Wang & Messing 2006; Paynter & Teulon 2019).

These findings are then complemented by results from other studies, especially the evaluations in the field. Ecological research on parasitoids aims to identify traits that determine their effectiveness as biological control agents. A key attribute is the functional response, defined as the relationship between host density and the number of hosts attacked by a single natural enemy within a specified time frame (Berryman 1999).

## Field evaluation

Study of the bioecology and field performance of parasitoids in regulating aphid populations is far more complex than laboratory studies, largely because natural systems contain many interacting factors that cannot be easily separated. Even so, it remains crucial to evaluate the key biological traits that are inherently shaped by fluctuating climatic conditions such as temperature and relative humidity. Some of these traits mirror laboratory metrics, like sex ratio (Mackauer 1976b; Das & Chakrabarti 1988c; Mishra & Singh 1991a; Biswas & Singh 1995; Kang et al. 2017; Akhtar et al. 2023), while others take more practical forms in the field (Hughes et al. 2011; Meisner et al. 2014; Jerbi-Elayed et al. 2015b; Rak & Litvinova 2017; Costaz et al. 2023). Although the direct study of chemical ecology and semiochemical effects is extremely difficult under natural, dynamic conditions, broader ecological outcomes linked to crop varieties and associated vegetation can still be examined meaningfully. For this reason, a large body of work focuses both on early-stage evaluations (Messenger 1964; Force & Messenger 1968; Messenger 1968, 1969; Shands et al. 1975; Sinha & Singh 1980a; Singh & Hoy 2007) and measuring the establishment of released or introduced biological-control agents (Hughes et al. 2010, 2011). Numerous approaches have been employed to assess the rate of parasitism (Evenhuis 1962; Horn 1988; Kavallieratos et al. 1997, 2002a, 2002b, 2005c, 2008a; Rakhshani et al. 2004b; Ronquim et al. 2004; Nyabuga et al. 2010; Sardarbandeh et al. 2019; Yang et al. 2022; Gagui et al. 2025); yet achieving a precise measurement continues to be difficult because of multiple constraints. It is advised to use both traditional techniques (involving rearing and taxonomic identification) and molecular methods in combination (Farrokhzadeh et al. 2017; Zhu et al. 2019; Hwang & Lee 2021).

## Conservation

Conservation biological control is a fundamental component of sustainable agricultural pest management. Its effectiveness relies foremost on minimizing non-target impacts, achieved through the safe and selective use of pesticides (Powell et al. 1990; Baker et al. 2020; Schmidt-Jeffris 2023). While incorporating nectar-producing plants into crop systems can enhance parasitoid abundance, this does not necessarily translate into greater pest suppression, as such plants may also attract species unrelated to crop pest regulation. Thus, the influence of flowering plants on parasitoid populations is shaped more by species

composition and ecological interactions than the sheer quantity of nectar available (Uesugi et al. 2024; Laffon et al. 2025). Adult parasitoid survival relies heavily on access to sugar-rich resources (Hofsvang & Høgvar 1975a; Fukui & Takada 1988; Kishinevsky & Ives 2024). They exploit various sugar resources, including honeydew (Høgvar & Hofsvang 1989, 1991b; Singh et al. 2000d; Wackers et al. 2008) and floral nectar (Jado et al. 2019), to fulfill their carbohydrate needs. The aphid parasitoid, *A. ervi,* preferentially consumes honeydew sugars and demonstrates an acquired aversion to glucose after exposure to more favored sugars, indicating the nutritional significance of honeydew-derived sugars (Lenaerts et al. 2016). Such resources can enhance the efficacy of biological control (Souza et al. 2018), when the surrounding vegetation provides both floral and honeydew sources (Charles & Paine 2016; Goelen et al. 2018).

A substantial body of research has demonstrated that access to sugar resources significantly influences the life-history traits of aphid parasitoids and enhances their parasitism efficiency (Landis et al. 2000; Jamont et al. 2013; Varennes et al. 2016; Zhu et al. 2023). Flowering plants that supply supplemental resources such as pollen, floral nectar, or extra-floral nectar play a crucial role in improving parasitoid performance and thereby strengthening biological control outcomes (Tougeron et al. 2023; Han et al. 2024; Uesugi et al. 2024). Enhancing non-crop plant diversity through habitat management within and around cultivated fields strengthens the conservation-based biological control in agroecosystems. Landscape management affects species interactions and can have notable effects on food web structure (Gagić et al. 2014; Dong et al. 2019, 2025; Elliott et al. 2024). Vegetation-rich field margins substantially bolster populations of natural enemies, including parasitoids, and strengthen aphid conservation biological control (Brewer et al. 2008; Zumoffen et al. 2021; Ndakidemi et al. 2022; Obanyi et al. 2023; Salas-Araiza et al. 2023). Cover crops function as ecological tools that promote the establishment of parasitoid populations. Inter-row cereal plantings between fruit trees provide overwintering hosts (such as *Rhopalosiphum padi*), facilitating the early colonization of the parasitoids and improving suppression of pest aphids. Host suitability must be critically evaluated, ensuring parasitoids can switch to alternative aphid species (Alvarez-Baca et al. 2020).

Restoration of the landscape is vital for reversing biodiversity loss over time (Gawecka et al. 2025). Yet, establishing ecological infrastructures within orchards faces practical constraints. As a viable alternative, insectary plants should be cultivated along orchard margins to promote natural enemy populations (Rodríguez-Gasol et al. 2019). Expanding floral diversity within sown cover crops offers an additional strategy for pest management programs (Denis et al. 2021). By supplying parasitoid populations with diverse nutritional resources, alternative hosts, and microclimatic refuges, this approach can reinforce conservation biological control and improve the stability of natural enemy communities (Damien et al. 2017). In winter, cover crops are typically established as single-species ground layers that often perish before flowering due to recurrent frost. However, climate-driven reductions in minimum temperatures now allow these plants to reach maturity and produce flowers. Such shifts in phenological patterns represent a significant ecological change with direct implications for ecosystem processes, including biological control efficiency (Damien et al. 2017).

Greenhouse agroecosystems are frequently regarded as simplified systems due to their reliance on monocultures and relative isolation from surrounding environments. Despite this, insect pests readily invade these protected crops, posing significant risks to yield. Conversely, natural enemies are also capable of establishing within greenhouses, thereby contributing to biological pest suppression. Surrounding vegetation functions as a reservoir for pest species and as shelter for their natural enemies, making it a critical component of conservation biological control. Strategic border management can either limit aphid establishment in cultivated crops or promote parasitoid and predator populations, thereby strengthening pest suppression in greenhouse systems (Doehler et al. 2025). The degree of greenhouse openness was found to shape aphid community composition while simultaneously affecting even the hyperparasitism rates within these systems (Postic et al. 2020).

The efficiency of aphid parasitoids in regulating host aphid populations is significantly influenced by their dispersal strategies. The dispersal of aphid parasitoids in both directions, into agricultural fields/ glasshouses and adjacent refuge areas, is influenced by several key elements, including wind speed, the presence of floral resources, the abundance of host aphids (Zumoffen et al. 2017), and the structural diversity of the surrounding landscape (Kramer et al. 2011; Duarte et al. 2018; Yang et al. 2022; Liu et al.

2025). Among Aphidiinae parasitoids, two primary dispersal mechanisms are recognized: the dispersal of eggs and larvae via winged aphid flight and active dispersal by adult parasitoids, with findings indicating that dispersing adult parasitoids are predominantly female (Derocles et al. 2014b). Dispersal of the aphid parasitoids in the field may largely depend on their ecological role, forming a sex-specific pattern. Through this approach, males show random flight patterns without directional bias, while females consistently move above the plant canopy, surfing through air currents to increase their dispersal rate (Asplen et al. 2016). Some chemical attractants have been successfully used to retain aphid parasitoids in greenhouse cropping systems (van Neerbos et al. 2023b).

Parasitoid wasps have developed adaptive biological rhythms enabling them to cope with alternating favorable and unfavorable environmental conditions across different temporal scales (Starý 1964a; Shuja-Uddin 1977; Krespi et al. 1987, 1994; Brodeur & McNeil 1990; Polgár et al. 1991, 1995; Christiansen-Weniger & Hardie 1999; Li et al. 1999; Polgár & Hardie 2000; Zhang et al. 2014b). Diapause represents a seasonal dormancy phase, induced by specific biotic and abiotic cues that prepare parasitoids for a period of environmental stress (Tougeron 2019; Sadafale et al. 2026). The initiation of overwintering strategies in aphid parasitoids (as ectothermic animals) may involve either continued activity or entry into diapause. The choice between these alternatives is shaped by their relative energetic and ecological costs, which can vary among populations along latitudinal gradients. Accordingly, diapause is expected to be more prevalent under colder conditions, whereas activity is favored in warmer regions. Both local adaptation and phenotypic plasticity enable certain populations to remain active throughout winter, making this a viable alternative to diapause in relatively mild and thermally stable environments (Alfaro-Tapia et al. 2021c; Satar et al. 2021).

Elevated summer temperatures represent a major constraint to the effective use of aphid parasitoids in both field and greenhouse settings (Kang et al. 2017). Diapause of aphid parasitoids represents a key adaptive mechanism, enabling effective regulation of pest populations and maintaining ecological stability under adverse environmental conditions (Shen et al. 2025). Warm winter temperatures resulted in the cessation of diapause in aphid parasitoids, leading to their continued activity and reproduction in cereal fields during the winter months (Andrade et al. 2016; Tougeron et al. 2017, 2018, 2020a). Such shifts in overwintering strategies can alter the balance of interspecific interactions, reshaping host–parasitoid dynamics and potentially influencing community structure in agricultural ecosystems (Andrade et al. 2016). Winter scarcity and reduced life expectancy drive many species toward generalist foraging, consistent with optimal foraging theory, where suboptimal resources are accepted to maximize survival. Conversely, in resource-rich seasons, specialist strategies are expected, favoring the most profitable hosts. Female parasitoids exemplify this seasonal shift: adopting opportunistic host acceptance during winter, then displaying selective host preference in spring. However, whether the chosen spring hosts truly confer superior fitness benefits remains unresolved, highlighting the need for further evaluation of host quality in relation to parasitoid performance (Eoche-Bosy et al. 2016).

Despite the great success in laboratory rearing and the efficacy of parasitoids in suppressing aphid populations, the results of field colonization may yield markedly different outcomes and can even fail. The main reason for the failure of the introduced agent is lower adaptability to the new environment, which can limit its ability to tolerate unfavorable conditions or overwintering (Gariepy et al. 2015). The complete loss of diapause has been observed in certain host-parasitoid associations, where functional traits may be lost due to selection pressures or reduced through plasticity under specific environmental conditions (Tougeron et al. 2020b; Shen et al. 2025). Laboratory rearing of parasitoids (e.g., *Binodoxys communis*), under constant temperature and photoperiod, resulted in a total loss of diapause capacity, culminating in 100% mortality upon exposure to overwintering conditions (Gariepy et al. 2015).

## Mass Rearing and Augmentation

Mass rearing of aphid parasitoid wasps is an essential component of biological-control programs, and is carried out before an effective parasitoid species is introduced into a new region. Producing high-quality populations, using efficient and economically viable methods, is often challenging, requiring long-term experiments. Related studies determine the host range of parasitoids, learn their key bioecological and

behavioral traits, and establish suitable environmental requirements for their development (Starý 1970c, 1970e, 1970f; Halfhill & Featherston 1967; Gao 1988; Takanashi 1997; Rodrigues et al. 2001; van Emden et al. 2002; Bribosia et al. 2005a; Zhang et al. 2014a; Rezaei et al. 2022; Xia et al. 2026). One of the fundamental challenges in establishing, maintaining, and strengthening mass-rearing parasitoid colonies is the balance between nutritional ecology (Sequeira & Mackauer 1992b, 1993b, 1994) and genetic factors (Baker et al. 2003; Hufbauer et al. 2001, 2004; Nyabuga et al. 2011), since both depend on the initial aphid host and its plant host. Reared parasitoids are typically released in a scheduled manner in greenhouses and crops (Shijko 1989; Yang et al. 2011; Ferrais et al. 2022), although inoculative releases, especially for introduced parasitoid species, have proven highly effective under open-field conditions (Starý 1964a, 1964c; Bribosia et al. 2005b; Zumoffen et al. 2016). Generalist aphid parasitoids are widely deployed in biological control due to their ability to exploit multiple host species and their suitability for mass-rearing. However, growing evidence indicates that populations often exhibit genetic divergence, driven by drift, local adaptation, or restriction of host range. Moreover, the artificial conditions inherent to mass-rearing erode genetic variability, ultimately diminishing the efficiency of the released parasitoids to regulate aphid pests (Postic et al. 2021).

The application of suboptimal temperature regimes, commonly known as cold storage, has become an important strategy in the mass production of aphid parasitoids (Starý 1964a; Archer et al. 1973; Archer et al. 1974b; Hofsvang & Høgvar 1977a; Singh & Srivastava 1988a; Mishra & Singh 1999; Rodrigues et al. 2003a; Mahi et al. 2014a). Maintaining mummified aphids at low temperatures provides operational flexibility by extending shelf life, facilitating transport, and enabling synchronization between parasitoid availability in insectaries and their scheduled release in target cropping systems (Lins et al. 2013). Under such conditions, individuals often enter a reversible state of dormancy, characterized by suppressed or arrested development in response to environmental stressors such as low temperature (Ismail et al. 2013; Seo et al. 2019; Kahya et al. 2025). Once returned to favorable conditions, these insects are expected to resume normal growth and behavior comparable to untreated controls (Colinet et al. 2006a, 2006b; Lins et al. 2013). Extensive research has also examined the quantitative and qualitative impacts of cold storage on parasitoid performance, including survival, fecundity, longevity, and host-parasitism efficiency (Hofsvang & Høgvar 1977a; Colinet & Hance 2010; Mahi et al. 2014b; Rezaei et al. 2020). Collectively, these studies emphasize that optimal storage conditions are species-specific and must be empirically determined to ensure the preservation of parasitoid quality and efficacy.

## Aphid parasitoids in protected crops

Protected crops, such as greenhouse systems, operate within controlled and relatively isolated environments, where ecological interactions are limited and biological cycles are short and discontinuous, with only a small portion carrying over into the next season. Nevertheless, the controlled conditions favor the operations to maintain or enhance the biological performance of crop and natural enemies, including aphid parasitoids (Tazerouni et al. 2019; Tazerouni & Talebi 2021). As a result, management practices, at least in the short term, differ substantially from those used in open-field crops or orchards. Consequently, considerable efforts have been made on the use of biological-control agents, particularly aphid parasitoids, in greenhouse systems. Numerous studies have focused on understanding the interactions and improving the effectiveness of parasitoids (Hofsvang & Høgvar 1979, 1980, 1982; Hofsvang 1985; Høgvar & Hofsvang 1990b; Starý 1993a; Araujo & Moraes 1998; Tatsumi et al. 2003; Tatsumi et al. 2005; Ohta & Ohtaishi 2005). The success of biological control introductions depends partly on whether parasitoids can adapt to new environments and newly encountered host populations. Genetic variation from natural populations allows parasitoids to parasitize natural and newly encountered hosts. Several fitness-related traits showed that a strong heritability performance against the target aphid pest could be substantially improved under greenhouse conditions (Henry et al. 2010).

*Aphidius colemani* and *A. matricariae* are among the most effective parasitoids employed in biological suppression of economically significant aphid pests (Sanchez et al. 2011; Mani 2022). However, their performance within greenhouse production systems is frequently disrupted (Van Driesche et al. 2008) by biotic and abiotic stressors. Biotic influences include aphid host plants (Aqueel et al. 2015; Pluchard et al. 2026), aphid populations, and interactions with other natural enemies, while abiotic factors encompass

environmental conditions such as temperature (Zamani et al. 2007, 2012; Jerbi-Elayed et al. 2021), relative humidity (Dhiman & Kumar 1989; Xia et al. 2025), and artificial lighting (Ham et al. 2022; Park et al. 2023) regimes. Additional constraints arise from higher trophic interactions, notably the use of fungal biological control agents and even the activity of hyperparasitoids (Nagasaka et al. 2010)

Two key parameters, parasitoid foraging efficiency and fitness, are sensitive to stressors originating at the primary trophic level, namely the aphid host plant. This dimension is especially challenging to manage, as plant growers select certain varieties on the basis of market demands (Prado et al. 2015). Morphological characteristics of plants (Price et al. 1980), their architecture (Kareiva & Sahakian 1990; Hall et al. 2021), chemical cues (Storeck et al. 2000; Kalule & Wright 2004), drought stress (Ahmed et al. 2017; Kansman et al. 2021; Shehzad et al. 2021; Rahman et al. 2025), toxic material (Ode 2006), and absence of nectar (Charles & Paine 2016) are the major properties that can adversely affect colonization and foraging efficiency of parasitoids in greenhouses. Foraging behavior of the parasitoids can be deeply affected by the environmental pressures, including resource distribution and interspecific competition. Aphid parasitoids with minimal nectar requirements may also experience intense exploitative competition (Jeavons et al. 2022). These dynamics have practical implications for the conservation of natural enemies, especially in agroecosystems where competition with honeybees is pronounced. Sticky traps, particularly yellow sticky traps, have long been employed to monitor pests and beneficial insects in greenhouse systems (Gillespie & Quiring 1987; Atakan & Canhilal 2004). They are widely used to detect pest occurrence, track changes in trap catches, and estimate population densities (Böckmann et al. 2014; Tang et al. 2016). However, their use can inadvertently capture parasitoids, highlighting the need for alternative aphid monitoring methods that avoid this drawback (Grupe et al. 2023). Reliance on yellow sticky traps as a sampling method can also lead to underestimation of their true abundance and diversity (Benthall et al. 2022)

## Banker plants

The banker plant system represents an innovative approach to biological pest management, integrating principles of both augmentative and conservation control. By supplying alternative hosts or prey and creating favorable microhabitats, banker plants enhance the persistence and reproductive success of natural enemies, thereby enabling sustained suppression of pest populations over extended periods (Pan & Liu 2019). Banker plants constitute open-rearing systems designed to sustain populations of natural enemies in greenhouse environments and are now established components of integrated pest management (IPM) (Frank 2010; Payton Miller & Rebek 2018). These systems function by supplying biological control agents with essential resources such as alternative hosts and food (Huang et al. 2011; Andorno & López 2014; Yanagita et al. 2018; Yano 2019). The predominant model employs cereal plants outside the crop system. These cereals are intentionally colonized by *Rhopalosiphum padi* L., which serves as a main alternative host, thereby sustaining populations of the selected parasitoid without posing a risk to the cultivated crop (McClure & Frank 2015; Jandricic et al. 2014). *Sitobion avenae* is also tested as an alternative host on the banker plant to support *Aphidius gifuensis* (Ohta & Honda 2010). By decoupling the reproduction and persistence of natural enemies from pest density, banker plants ensure their continuous presence in the cropping system and reduce the need for repeated augmentative releases. Nagasaka et al. (2010) documented a pronounced negative correlation between the incidence of secondary parasitoids and the effectiveness of aphid suppression within this system. Effective regulation of secondary parasitoid populations requires a comprehensive understanding of their ecological traits and interaction dynamics. Mitigation of the detrimental effects of the hyperparasitoids within banker-plant systems can be achieved through the establishment of refuges that safeguard mummified aphids and by elevating the ambient temperature surrounding the banker plants (Mitsunaga et al. 2014). Effective banker plants must be easy to cultivate, tolerant to environmental stress, capable of sustaining abundant banker prey to generate large populations of natural enemies, and resilient against damage caused by those prey. Finger millet was found to be more appropriate for extended cropping systems, rapidly proliferating aphids, and the propagated parasitoids had a high rate of fecundity or aggressive behavior, compared to those reared on barley and corn (Fauteux et al. 2024).

## Effects of light

Light conditions strongly influence the activity and behavioral responses of aphids and their parasitoids under controlled greenhouse environments (Goff & Nault 1984; Cochard et al. 2019a, 2019b; Ham et al. 2022). Walking and flight behaviors varied with light wavelength, intensity, and spectral composition, with males generally more active than females and virgin females showing reduced movement under shaded or simulated sunlight (Cochard et al. 2017). Host recognition remained effective across a wide range of light spectra, although color-based preferences weakened with experience (Cochard et al. 2019a). Artificial light at night further disrupts multi-trophic interactions, reducing parasitoid abundance through indirect effects on host plants and aphid populations (Sanders et al. 2015). Overall, illumination was demonstrated to shape parasitoid performance and may alter biological-control outcomes in protected cropping systems. The application of LED lighting with defined wavelengths in greenhouses compensates for winter light deficits, thereby supporting photosynthesis and vegetative growth in crops. Yet, alterations in light quality and photoperiod directly or indirectly influence the behavior of pest and beneficial insects reliant on plant cues. Notably, commercially available lighting systems have shown minimal disruption to the performance of aphid parasitoids (Cochard et al. 2019b). Utilizing UV or near-UV illumination enhances the retention time of parasitoids around light sources, offering a practical strategy to maintain their presence in agricultural settings and thereby strengthen pest suppression (Park et al. 2023). Artificial lighting, particularly LED systems, is increasingly optimized to enhance crop productivity and quality of protected crops. Such lighting regimes influence ecological interactions involving aphids and their parasitoids (Cochard et al. 2017; Park et al. 2023). Recent findings suggest that parasitoids in protected cropping systems exhibit resilience to substantial shifts in light conditions, indicating that modifications to optimize plant growth do not inherently undermine the effectiveness of pest regulation (Fraser et al. 2024). Ultraviolet radiation, as a component of the solar spectrum, modulates insect behavioral processes such as host orientation, landing, arrestment, and feeding activity (Dáder et al. 2015b). On the other hand, aphid parasitoids were also among the insects that were attracted to artificial light during the night, and this may disturb their functions in the neighboring environment (Dietenberger et al. 2025). By investigating the suitability of LED light sources for parasitoid quality control, significant attraction responses were observed. The application of an optimal wavelength can enhance the effectiveness of quality control systems for aphid parasitoids (Ham et al. 2022).

## Temperature

Biological traits of aphid parasitoids are influenced by temperature, which also affects the quality of host aphids under similar climatic conditions. Elucidating thermal responses of parasitoids is fundamental for refining biological control in a warming climate. Elevated temperatures impose developmental stress on parasitic larvae, with consequences that extend into adulthood, reducing both lifespan and reproductive capacity (Romo & Tylianakis 2013; Pan et al. 2024). Thermal conditions experienced during development exert profound influences on adult physiology, morphology, and behavior of aphid parasitoids (Jerbi-Elayed et al. 2021). Practically, the time allocated to resource patches (Völkl et al. 1995; Outreman et al. 2005) is shaped jointly by temperature and frequency of host encounters without oviposition, both serving as indicators of resource quality. These findings reinforce the significance of developmental thermal plasticity in modulating insect behavioral responses in temperature-fluctuating environments, underscoring its relevance in the broader context of climate change (Jerbi-Elayed et al. 2022). The effect of temperature on development, longevity, fecundity, rate of parasitism, behavioral traits (Messenger & Force 1963; Force & Messenger 1964a; Starý 1964a; Jackson et al. 1974; Giri et al. 1982, 1983; Halfhill 1982; Fukui & Takada 1988; Dhiman & Kumar 1989; Das & Chakrabarti 1990b; Guenaoui 1991; Tripathi & Tripathi 1991; Miller & Gerth 1994; Tripathi & Pandey 1994; Elliott et al. 1995b, 1999; Singh & Srivastava 1995; Biswas et al. 1997; Pandey & Singh 1998b; Sigsgaard 2000; Singh et al. 2000a, 2000c; Wu et al. 2000a, 2011; Royer et al. 2001; Rodrigues et al. 2004; Weathersbee et al. 2004a; Ohta & Ohtaishi 2006; Hughes et al. 2011; Khan et al. 2016b; Ahn et al. 2024; Xia et al. 2025), or size of the host aphid (Li & Mills 2004), have been extensively studied.

Despite the documented efficiency of aphid parasitoids in hyper-arid regions (Liu et al. 2025), extreme temperature events can strongly disrupt host–parasitoid interactions, beyond the effects of average warming. Such impacts highlight the need for community-level studies to understand their ecological consequences (Bannerman & Roitberg 2014). Temperature stress during the mummy stage

significantly impairs multiple fitness traits of aphid parasitoids. Reduced emergence, altered sex ratios, shortened lifespan, and diminished reproductive performance highlight the cumulative negative impacts of heat exposure. Such effects may compromise parasitoid population stability and limit the effectiveness of biological control programs under natural conditions (Jerbi-Elayed et al. 2015a). Physiological thermal tolerance that allows survival under adverse temperature conditions is a flexible trait shaped by multiple external factors, including the nature of the stress, the attributes of the exposed individual, and the surrounding biological and physical environment. Consequently, host species identity can influence the thermal resilience of developing parasitoids. Moreover, behavioral thermoregulation achieved through host manipulation may alter the microclimate experienced by the wasp, thereby modulating its thermal tolerance and potentially overriding intrinsic physiological limits and host-related effects (Alford et al. 2017).

## Classical Biological Control

Many aphid species were unintentionally brought to various countries across different continents through human actions over the past hundred years (Messing et al. 2007; Liu et al. 2010; Petrović-Obradović et al. 2010; Havelka et al. 2011; Wieczorek & Bugaj-Nawrocka 2014; Şenol et al. 2015; Rakhshani et al. 2017a; Stukalyuk et al. 2019; Mille et al. 2020; Casiraghi 2021; Toledo-Hernández et al. 2024; Schulze-Sylvester et al. 2025). Invasive aphid species introduced from other regions are often unable to adapt and disappear quickly, but when they do establish, they compete with native species and disrupt local ecological processes (Swezey 1926b; Messing et al. 2007). The populations of many important crop pests that fall into this category can grow rapidly and cause substantial agricultural losses in the absence of natural enemies (Elliott et al. 1995a; Havelka et al. 2011).

Considerable effort has been devoted to locate and transfer specialized aphid parasitoids from their native habitats to invaded regions (van den Bosch et al. 1959a, 1959b, 1962, 1970; Halfhill et al. 1972; Olkowski et al. 1982a, 1982b, 1982c; Wilson et al. 1982; Hughes et al. 1987; Stechmann & Völkl 1988; Autrique et al. 1989; Botto et al. 1991; Kfir & Kirsten 1991; Elliott et al. 1995a; Stufkens et al. 1995; Michaud 2002; Kfir et al. 2003; Starý et al. 2005; Adouani et al. 2017; Teklemariam et al. 2022; Mutitu & Odhiambo 2025). Despite the complexity of this work, many introductions have become successful, leading to stable parasitoid establishment and long-term suppression of invasive aphid populations, often reducing or even eliminating crop damage (Starý 1970a; Gassen & Tambasco 1983; Benelli et al. 2014; Rakhshani & Starý 2021). The success of certain parasitoid species in suppressing invasive aphids has been significant; thus, intentional introductions have contributed to their spread across multiple continents in the Northern and Southern Hemispheres. For example, *A. smithi* is an example of a successfully established biological control agent against *Acyrthosiphon pisum* in the tropics (Davis 1961; Beardsley 1961; Davis & Kraus 1962; Starý 1968a).

In some cases, parasitoids have been unintentionally transported through the movement of plant material (Ben Hamacha et al. 2017; Rakhshani et al. 2017a; Ben Halima et al. 2020, 2022) or have been established outdoors after limited use in protected crop systems due to their high adaptability, eventually spreading across large geographic areas (Starý et al. 1985a, 1988a, 2004; Žikić et al. 2015; Ayadi et al. 2017; Tomanović et al. 2023c). The ecological and competitive impacts of these expanding parasitoid populations on native species remain an important area for future research (Mitrović et al. 2013).

## Aphid Parasitoids in Integrated Pest Management (IPM)

The effectiveness of IPM is largely influenced by interactions among control strategies. Modern IPM programs for aphids increasingly rely on biological control, reflecting a global effort to minimize the use of chemical pesticides, particularly in greenhouse production, where residue concerns are critical. Because the success of biological control is tightly linked to crop management practices, the broader IPM framework is typically designed to support and enhance the performance of natural enemies. This coordination ensures that cultural practices, environmental conditions, and crop requirements align with the needs of biological control agents. Moreover, the interactions among multiple biological control agents, often including aphid parasitoids, play a significant role in determining the overall system effectiveness. Understanding and optimizing these interactions have become essential components of developing robust and sustainable pest management strategies.

## Host plant resistance

Host plants cause direct and indirect effects on the biological traits of aphid parasitoids (Pandey & Singh 1986; Bhatt & Singh 1989, 1991a, 1991b; Fuentes-Contreras et al. 1996; Fuentes-Contreras & Niemeyer 1998; Fuentes-Contreras et al. 2001; Fuentes-Contreras & Niemeyer 2002; Weathersbee et al. 2004a; Colvin & Yeargan 2013). Interactions between host plant resistance and biological control are recognized as key components in developing an effective integrated management program against aphid pests. In general, aphid-resistant cultivars are not always favorable for parasitoids (Biswas & Singh 1998a, 1998b; Pan et al. 2014; van Emden et al. 2019), since their morphological and physiological properties may adversely affect the survival rate and searching capacity of female parasitoids (Ode & Crompton 2013). Strong plant resistance to aphids can hinder parasitoid development, while certain cultivars may better support parasitoids, allowing them to effectively regulate aphid populations (Doury et al. 2015; Jafari Ahmadabadi et al. 2020; Zeb et al. 2020; Ekram et al. 2023; Alhmedi et al. 2025). Agricultural practices were shown to strongly influence at least the early-season dynamics of aphids and their parasitoids (Hou et al. 2004). Fields located near alternative host plants experienced noticeably higher aphid pressure. Overall, cropping pattern, weed management, and soil-surface management shaped both pest abundance and parasitoid presence, highlighting their importance in integrated control strategies (Horn 1986, 1988; Hou et al. 2004).

## Plant regulators

The efficacy of biological control can be compromised by plant growth regulators since they induce alterations in plant architecture and modify phytochemical profiles (Prado & Frank 2013b). Such alterations in canopy complexity strongly influence foraging efficiency (Tripathi & Kumar 1984; Weisser 1995; Prado & Frank 2013a; Rim et al. 2023), survival (Brodeur & McNeil 1991), development, body size (Prado & Frank 2013b), fecundity (Zhao et al. 2017) and, in turn, the overall effectiveness of pest suppression. A possible mechanism underlying this effect is the proliferation of concealed microhabitats within compacted foliage, providing aphids with enhanced refuge from parasitoid attack. Silicon amendments enhance plant resistance to herbivorous insects but can also alter responses of higher-trophic organisms, producing variable outcomes for biological control. In sorghum, silicon application strengthens *A. platensis* suppression of *M. sorghi*, highlighting its potential role in IPM (Domingues et al. 2025).

## Plant pathogens

Plant viruses profoundly alter host physiology and vector performance, reshaping ecological interactions within these systems. Viral infection can diminish parasitoid abundance, thereby weakening aphid biological control and exacerbating virus spread and plant damage (Joffrey et al. 2018). Plant viral infections alter VOC emissions, thereby modulating aphid vector attraction, behavior, and performance in transmission-specific ways. Parasitoid wasps utilize chemical signals emitted by aphid-infested plants to locate aphid colonies (Zhang et al. 1998; da Silva et al. 2016; Ahmed et al. 2022; Karalija et al. 2023; Chidawanyika et al. 2025). However, evidence indicates that female parasitoids do not perceive the “help signals” produced by plants infested with virus-carrying aphids. This suggests that the viruses, in some manner, manipulate parasitoid behavior to prevent them from accessing their vector aphids (Clemente-Orta et al. 2024). Plant viral infections induce substantial modifications in host phenotypes, with broad ecological consequences. In particular, infection by *Cucumber mosaic virus* (CMV) influences the interaction between aphids and their parasitoids by altering host susceptibility. Aphids feeding on virus-infected plants experience reduced nutritional quality, which diminishes their capacity to resist parasitism (Dupont et al. 2020). Consequently, virus-driven shifts in plant chemistry restructure aphid colonization and dispersal dynamics in ways that ultimately enhance opportunities for viral transmission (Mauck et al. 2015). In a similar experiment, adult females of *A. ervi* exhibited reduced oviposition when presented with viruliferous aphids. Parasitization did not diminish the capacity of aphids to transmit the barley yellow dwarf virus (BYDV). In fact, in certain trials, aphids exposed to parasitoid attack transmitted the virus at higher efficiency compared to individuals that were not parasitized (Christiansen-Weniger et al. 1998).

Inversely, some other experiments revealed that the parasitoid exhibited enhanced parasitism and survival when developing on aphids feeding from virus-infected plants compared to non-infected hosts. These findings support the hypothesis that parasitoids can detect and orient toward virus-infected plants

independently of aphid presence (Milonas et al. 2023). On the other hand, aphids harboring plant viruses were more frequently parasitized and suppressed by parasitoid wasps than virus-free individuals. Parasitoids also showed higher host acceptance and stinging activity toward infectious aphids, indicating that pathogen carriage increases vulnerability to natural enemies rather than enhancing vector performance (de Oliveira et al. 2014). The role of aphid parasitoids in transmitting plant viruses has been rejected (Noël et al. 2016), but there is some debate about their capabilities for transmission of fungi (Liu et al. 2008). Plant pathogenic fungi can alter trophic interactions between herbivorous insects and their parasitoids with consequences for biological control. On asymptomatically infected plants, parasitoids attack less frequently, and emerging wasps exhibit reduced size and starvation tolerance. Regardless of plant variety, parasitoids consistently prefer aphids feeding on uninfected hosts, underscoring pathogen impacts on control efficacy (Ngah et al. 2018, 2024).

### Multiple natural enemies

Understanding the interaction dynamics among natural enemies is fundamental to advancing research dealing with insect pest management (Khudr et al. 2020). Effective aphid management can be achieved through integrating multiple natural enemies, optimizing release schedules, and accounting for intraguild interactions (Eid et al. 2018; Colomer & Ameixa 2025). Such strategies reduce the reliance on chemical inputs and strengthen the sustainability of biological control within crop protection systems (Adly et al. 2023). One of the key points of IPM is the sustainable regulation of pest populations and the balanced interaction of their natural enemies, particularly when more than one efficient parasitoid species is present in greenhouse or field conditions. Short-term studies often fail to capture the complexity of predator-prey interactions, particularly non-consumptive effects. Multi-generation experiments revealed that *A. colemani* alone provided only transient suppression, while *A. ervi* achieved stronger but fluctuating control. However, their combined presence produced complementary and more stable regulation of *Acyrthosiphon pisum* populations, underscoring the importance of diverse natural enemy communities for long-term pest suppression (Ingerslew & Finke 2020).

Within tri-trophic networks, members of the natural enemy guild can exhibit intraguild predation (IGP) (Wheeler et al. 1968; Singh & Sinha 1980a; Wyatt 1983; Ferguson & Stiling 1996; Brodeur & Rosenheim 2000; Colfer & Rosenheim 2001; Kaneko 2007). Parasitoids and generalist predators regulate aphid populations in different ways. Generalist predators disrupt biological control by the parasitoids (Taylor et al. 1998; Snyder & Ives 2001). Parasitoids provide delayed, but substantial suppression, while predators cause rapid, but short-term reductions. When both groups are present, their effects on aphid control may be largely additive, even though predators reduce the survival of parasitoids through intraguild predation. Longer time frames may reveal more complex, non-additive dynamics, as delayed parasitoid responses intersect with predator activity (Snyder & Ives 2003). Various aphid natural enemies, including coccinellids (Colfer & Rosenheim 1995; Royer et al. 2008; Meisner et al. 2011; Simon & Gillespie 2014; Rizzo et al. 2018; Dou et al. 2023) and cecidomyiids (Mottaghinia et al. 2018; Yu et al. 2024), anthororids (Attarzadeh et al. 2019), and chrysopids (Al-Rawy et al. 1969), interfere with the efficacy of parasitoids through intraguild predation. Although intraguild predation can disrupt biological control, its negative impact may be offset by the broader benefits of generalist predators, including suppression of multiple pest species and early establishment of natural enemies before the outbreaks of pests. Advancing biological control research should therefore emphasize the role of species interactions within herbivorous arthropod communities and their associated natural enemies (Messelink et al. 2013). The nature of these interactions may even be modulated by host plant characteristics (Mottaghinia et al. 2018; Attarzadeh et al. 2019).

Entomopathogenic fungi are conventionally deployed through inundative applications aimed at rapid pest suppression. The application of entomopathogenic fungi may significantly reduce the rates of parasitism and emergence of aphid parasitoids when both agents are applied simultaneously (Li et al. 2007; da Silva et al. 2017). This suggests potential antagonistic interactions that could influence integrated pest management strategies. On the other hand, previous experiments indicated that combining entomopathogenic fungi with parasitoids can enhance aphid suppression (Mohammed & Hatcher 2017; Fernández-Grandon et al. 2020). A deeper understanding of parasitoid interactions with other biological

agents is essential for advancing sustainable crop protection strategies. Accumulating evidence indicates that entomopathogenic fungi establish endophytic associations within diverse plant species (Vega 2008; Vega et al. 2009; Quesada-Moraga 2020), thereby providing extended protection beyond the initial application period. Such endophytic colonization introduces complex tritrophic interactions, potentially influencing the performance of other natural enemies, including parasitoids (Jaber & Araj 2018; Quesada-Moraga et al. 2022; Wilberts et al. 2023).

Experimental evaluation revealed that plant colonization by *Beauveria bassiana* and *Metarhizium brunneum* did not alter key fitness parameters of *A. colemani* progenies, such as mummification rate, adult emergence, developmental duration, sex ratio, or longevity. These findings highlight the compatibility of endophytic entomopathogenic fungi with parasitoid-based biological control, offering promising integration within greenhouse IPM frameworks for aphid management (Jaber & Araj 2018; González-Mas et al. 2019). Application of entomopathogenic fungi can also modify plant defensive responses to herbivores but simultaneously influence beneficial insects; therefore, their ecological roles and suitability require context-specific evaluation (Jensen et al. 2020). *Trichoderma* species have been implicated in the activation of plant defense pathways against insect herbivores, either through direct induction of resistance or via the recruitment of natural enemies (Battaglia et al. 2013; Coppola et al. 2017). Although empirical findings remain inconsistent across studies, any stimulatory influence of entomopathogenic fungi on aphid population growth can be offset by increased parasitism, as reflected in the higher abundance of aphid mummies produced by highly efficient parasitoids (Battaglia et al. 2024).

The extension of the interval between fungal applications enhances the number of aphid mummies and the proportion of parasitoid emergence. Thus, the combined use of these two biological control agents is applicable, but the success depends on precise timing to prevent antagonistic interactions (Aqueel & Leather 2013; Emami et al. 2013; Rashki et al. 2013; Martins et al. 2014). Arbuscular mycorrhizal fungi (AMF), as key root-associated symbionts, modulate host plant physiology and indirectly influence the performance of foliar insect herbivores. These effects vary according to the herbivore's feeding mode and degree of host specialization (Cascone et al. 2024).

## Insecticide toxicity

The widespread use of insecticides has unintentionally harmed the diversity and effectiveness of parasitoids (Longley & Stark 1996), which play a crucial role in managing economically important aphid populations (Theenoor et al. 2024). Various insecticides, including those newly developed, may directly kill (Roubos et al. 2014; Payton Miller et al. 2020; Sarkar et al. 2020; Overton et al. 2023; Hwang et al. 2025) or adversely affect the efficiency of aphid parasitoids in biological control. This can undermine efforts to integrate biological and chemical methods for pest control. Various surveys tracked the direct and residual effects of both conventional and new insecticides in the field and greenhouses. The majority of the newly developed aphicides, represented by neonicotinoids, adversely affect the biological parameters (survival rate, adult longevity, fecundity, parasitism rate, emergence rate, searching behavior) of parasitoids even at sublethal concentrations (Longley & Jepson 1996a; Kang et al. 2018; Alfaro-Tapia et al. 2021a; Alfaro-Tapia et al. 2021b; Aminijam 2022; Du et al. 2022; Majidpour et al. 2022; Gao et al. 2023a, 2023b; Anjum & Wright 2023; Zhao et al. 2024). Exposure of aphids to insecticides (Mahdavi et al. 2025) may disrupt parasitoid oviposition (Tian et al. 2015), resulting in reduced egg deposition and elevated mortality risk for the host. The significant interference of insecticides in lipid and protein biosynthesis pathways has been suggested as the reason for weakening the ability of parasitoids (Gao et al. 2023b). Direct and residual effects of pesticides on biological parameters of aphid parasitoids have been thoroughly investigated (Wilson 1948; Lowe 1958; Gu 1988; Gu & Waage 1990; Gu et al. 1991; Kerns & Gaylor 1991, 1993a, 1993b; Krespi et al. 1991; Longley 1994; Longley & Jepson 1996a, 1996b, 1997; Milevoj & Stukelj 1996; Ahmad & Hodgson 1998; Wu & Jiang 2003a, 2003b; Wu et al. 2004, 2009; Wu & Miyata 2005; Ohta & Takeda 2015; Cheng et al. 2021).

Empirical studies have shown that the so-called reduced-risk bioinsecticides, such as spinosad, may exert higher detrimental effects on beneficial biological control agents than traditional synthetic insecticides. This paradox highlights the need for careful evaluation of bioinsecticide selectivity when integrating them into pest management programs (D'Ávila et al. 2018). Over the past two decades, the

development of selective insecticides (Bartlett 1958; Singh & Rawat 1981; Awchar et al. 1995; Men et al. 2003; Tremblay et al. 2008; Xu et al. 2009) has offered new options for aphid management that reduce the side effects on non-target arthropods (Majidpour et al. 2023). Flonicamid and afidopyropen remain valuable options for aphid management since their sublethal effects on parasitoids are minimal. However, further semi-field and field evaluations are strongly recommended to fully assess their impact on parasitoid populations (McDougall et al. 2024). Recent evidence indicates the adverse effect of insecticides on the bacterial symbionts associated with aphid parasitoids (Fan et al. 2025; Yu et al. 2025). The side effects and transcriptomic impacts of sublethal doses, overshadowed by the adaptation of parasitoids, may even affect the biological activity of subsequent generations (Gao et al. 2023b; Du et al. 2024; Wang et al. 2025). On the other hand, evidence from exposure to conventional pesticides revealed a significant increase in the relative abundance of the symbiont bacterium *Rhodococcus* inside the body of the aphid parasitoid, suggesting its potential role in enhancing the fitness of parasitoids under insecticide stress (Xue et al. 2025).

Efforts to improve the performance of parasitoid wasps in IPM programs have included the development of strains of parasitoids resistant to conventional insecticides (Hoy & Cave 1988, 1989a, 1989b, 1991; Hoy et al. 1989, 1990, 1991; Wu et al. 2009; Wu & Jiang 2003b; Wu & Miyata 2005). In these strains, mortality caused by insecticide exposure is substantially reduced, allowing simultaneous pesticide application and release of resistant strains during pest outbreaks. However, insecticides inevitably harm other insect populations, both beneficial and non-beneficial, as well as wild populations of the same parasitoid species (Desneux et al. 2007). Moreover, the long-term persistence of resistant parasitoid strains appears uncertain since the reduced environmental fitness and weaker competitive ability against wild populations may limit their survival (Hoy et al. 1990). Long-lasting insecticide-treated nets integrate chemical release with physical barriers to limit aphid intrusion and virus transmission in protected environments. Their design enhances greenhouse ventilation while maintaining efficacy, and they remain compatible with aphid parasitoids (Dáder et al. 2015a). Beyond their direct toxicity to natural enemies, variation in foliar residue persistence, particularly on wax-coated leaves, must be accounted for when integrating insecticides into IPM strategies (Anjum & Wright 2023). Strategic application of insecticides at optimized doses and exposure periods can strengthen biological control by mitigating fitness costs and supporting the persistence of natural enemies within the host–plant system (Khan et al. 2020; Khurshid et al. 2024). Despite the relatively broad insecticidal spectrum of pyrethrins, experimental data indicate that their application does not significantly impair parasitoid development within aphid mummies (Lami et al. 2024).

Integrating chemical pesticides with biological control agents forms a central challenge of reconciling effective pest suppression with ecological sustainability. Seed treatments, often based on neonicotinoids, are widely adopted as a perceived gentler substitute to foliar applications. Nonetheless, such treatments may even variably influence critical fitness parameters of natural enemies, including aphid parasitoids (Ward et al. 2024). Advances in nanotechnology offer novel opportunities to enhance pesticide efficiency while simultaneously minimizing residual accumulation and mitigating environmental pollution (Pascual-Villalobos et al. 2019). The coordinated deployment of nano-formulated pesticides alongside natural enemies represents a promising approach to pest management, contributing to the preservation of long-term ecological stability in agricultural systems (Wu et al. 2025). Sublethal exposure to systemic insecticides has been acknowledged as a potential risk for non-target arthropods. It is necessary to refine pesticide application for IPM within a context-specific assessment, ensuring the preservation of the ecological functions provided by biological control agents (Ricupero et al. 2020). Recent advances in the development of plant-extract-based insecticides hold promise for their combined application with biological control agents. Several studies have demonstrated the potential to integrate these two approaches in a manner that effectively reduces aphid populations while causing no detrimental effects on parasitoid wasps (Choi et al. 2013; Ketabi et al. 2014; Gholamzadeh-Chitgar & Pourmoradi 2017; Mondaca et al. 2017; Cura & Gençer 2019; Kaoutar et al. 2019; Rezaei & Moharramipour 2019; Hassan et al. 2021; Cantó-Tejero et al. 2022; Kahya et al. 2025). Although generally regarded as safe for non-target organisms, bioinsecticides may nonetheless exert detrimental impacts on aphid natural enemies,

particularly parasitoids. Comprehensive field investigations are therefore required to evaluate a wide range of sublethal effects at individual and community scales (Lisi et al. 2025). Lipopeptides derived from *Bacillus* species are recognized as novel biopesticides; among them, surfactins are known as effective insecticides. While surfactins can exert direct effects on aphid behavior, they do not alter host selection processes of parasitoid wasps (Denoirjean et al. 2022).

## Aphid hyperparasitoids

Hyperparasitoids are frequent components of aphid-parasitoid food webs (Sullivan & Völkl 1999; Poelman et al. 2022; Das & Chakrabarti 2023b). Aphid hyperparasitoids are taxonomically distributed across several hymenopteran groups including **Chalcidoidea** – Encyrtidae (Trjapitzin & Manukyan 1993; Das & Chakrabarti 2018; Ferrer-Suay 2025a; Noyes & Woolley 2025), Eulophidae (Takada & Nakamura 2010; Takada & Kamijo 2012; Das & Chakrabarti 2018; Ferrer-Suay 2025a), Pteromalidae (Kamijo & Takada 1973; Valentine 1975; Gibson & Vikberg 1998; Paik 1994; Narendran et al. 2007; Dzhanokmen 2009; Das & Chakrabarti 2018; Li et al. 2024); **Cynipoidea** – Figitidae: Charipinae (Evenhuis 1971, 1972, 1973, 1974, 1976, 1978; Evenhuis & Barbotin 1977; Quinlan 1978; Quinlan & Evenhuis 1980; Evenhuis & Chiriac 1985; Evenhuis & Barbotin 1987; Menke & Evenhuis 1991; Carver 1992; Pujade-Villar et al. 2002, 2007, 2011; Pujade-Villar & Paretas-Martínez 2006; Ferrer-Suay et al. 2012, 2013a, 2013b, 2013c, 2014, 2015, 2017, 2018, 2019, 2021, 2022, 2023a, 2023b, 2024a, 2024b, 2025a, 2025b, 2026; Labdaoui et al. 2026), and **Ceraphronoidea** – Megaspilidae (Takada 1973; Dessart 1967, 1972, 1990, 1999, 2001; Starý 1977; Dessart 1985; Dessart & Gärdenfors 1985; Das & Chakrabarti 2018). This diversity reflects distinct evolutionary patterns in the bioecological interactions of hyperparasitoids with primary parasitoid wasps, host aphids, and host plants. It is generally believed that members of Charipinae (Figitidae) represent the most evolutionarily advanced lineage of true hyperparasitoids due to their internal parasitism (Carver 1992), whereas species belonging to other hyperparasitoid groups typically exhibit external parasitism, developing inside the mummified aphid but on the surface of the primary parasitoid larva. Nevertheless, host specialization appears to be largely absent in both categories (Ferrer-Suay et al. 2014; Sullivan & Völkl 1999).

By decreasing the population of primary parasitoids, hyperparasitoids can substantially compromise biological pest control and trigger outbreaks, particularly in greenhouse systems reliant on augmentative control (Singh & Sinha 1980c; Wilson & Swincer 1984; Schooler et al. 2011). Careful assessment of the biological and ecological characteristics of candidate biological control agents is essential, as failure to consider these factors may compromise their establishment and effectiveness in a new environment. The impact of hyperparasitoids was studied as a potential obstacle for the establishment of aphid parasitoids (Acebes & Messing 2013a), indicating differences in susceptibility to hyperparasitism. Currently, no sustainable management strategies exist; however, emerging insights into chemical ecology (Buitenhuis et al. 2004, 2005; de Boer et al. 2020; Michaud 2022; Slusher et al. 2024; Plata et al. 2025; Sun et al. 2026), host selection (Gutierrez 1970; Singh & Srivastava 1987a, 1987c, 1988b; Christiansen-Weniger 1991; Grasswitz & Reese 1998); and foraging behavior (Singh & Srivastava 1988c; Völkl et al. 1994; Chow & Mackauer 1999c; Chow 2000) present novel opportunities to manipulate these organisms. Adaptive change in host aphid behavior after parasitism has been known to reduce the rate of hyperparasitism (Brodeur & McNeil 1992). The adaptive change, modulated by the internal parasitoid, increases the chance of escaping from the hyperparasitoid attack. Aphid hyperparasitoids exploit volatile signals, arising specifically from host–parasitoid interactions, to locate the concealed hosts (Bourne et al. 2025). Infochemicals may be applied to restrict food resources to primary parasitoids only or enable the early detection of hyperparasitoids in the target crop (Cusumano et al. 2020). Hyperparasitoids obtain energy from carbohydrate sources, particularly honeydew secreted by aphids. Consequently, the chemical composition of these resources, varying with aphid species and host plant, influences their performance and physiology (van Neerbos et al. 2020). Plant volatiles may confuse, rather than facilitate, the foraging activity of the extreme generalist hyperparasitoids (de Boer et al. 2020).

## AUTHOR CONTRIBUTIONS

The authors confirm their contributions to the paper as follows: **E. Rakhshani**: administration, conceptualization, figure preparation, investigation, literature review, methodology, writing – original draft, writing – review & editing; **M. Ghafouri Moghaddam**: conceptualization, data curation, image acquisition, literature review, methodology, resources, software, statistical analysis, validation, visualization, writing – review & editing; **C. van Achterberg**: data curation, resources, supervision, validation, writing – review & editing; **Ž. Tomanović**: investigation, resources, validation, writing – review & editing; **A. Polaszek**: resources, validation, writing – review & editing; **E. Davidian**: investigation, resources, validation, writing – review & editing; **M. Heidari Latibari**: data curation, methodology, software; **A.P. Martens**: administration, image acquisition, resources, validation, visualization, writing – review & editing; **F. Minab**: investigation, visualization; **S. Kim**: data curation, investigation, resources, validation, visualization, writing – review & editing; **J. Michelena Saval**: resources, validation, writing – review & editing; **M. Ferrer-Suay**: investigation, resources, writing – review & editing; **Z. Yari**: investigation, visualization; **Ö. Çetin Erdogan**, **S. Edley**, **B. Butcher**: validation, writing – review & editing; **J. Čkrkić**: visualization, writing – review & editing; **K. Kocić**: resources, validation, writing – review & editing; **K. Samartsev**: resources, visualization, writing – review & editing; **H. Barahoei**, **D. Mifsud**: investigation, validation, writing – review & editing; **X. Pons**: investigation, resources, validation, writing – review & editing; **R. Singh**, **B.C. Das**: investigation, resources, writing – review & editing; **Z. Ahmad**: writing – review & editing; **S. Barjadze**, **M. Mehrparvar**: data curation, validation, writing – review & editing; **J. Havelka**: validation, writing – review & editing; **M. Laamari**, **M.K. Ben Halima**, **M.V. Sampaio**: investigation, validation, writing – review & editing; **N.G. Kavallieratos**: conceptualization, investigation, resources, validation, writing – review & editing; **A. Petrović**: investigation, validation, visualization, writing – review & editing; **V. Žikić**: investigation, validation, writing – review & editing; **X.X. Chen**: validation, writing – review & editing; **J. Fernandez-Triana:** investigation, review & editing; **A.A. Talebi**: administration, conceptualization, writing – review & editing. All authors read and approved the final version of the manuscript.

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## AVAILABILITY OF DATA AND MATERIAL

All primary type materials and voucher specimens of the species examined or listed in this catalog are deposited in the institutional collections and museums, as specified in the section Materials and Methods. The deposited specimens remain accessible for future scientific studies subject to the regulations and policies of the respective repositories. Additional raw datasets underlying the analyses presented in this study are available from the authors upon reasonable request.

## ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study only included arthropod material, and all required ethical guidelines for the treatment and use of animals were strictly adhered to in accordance with international, national, and institutional regulations. No human participants were involved in any studies conducted by the authors for this article.

## CONSENT FOR PUBLICATION

Not applicable.

## CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this paper.

## GENERATIVE AI STATEMENT

ChatGPT was used for the restoration and improvement of historical images, while Microsoft Copilot and Grammarly were used for proofreading and refinement of the manuscript text, including spelling, grammar, and scientific style. No generative AI tools were used for the generation of scientific content, interpretation of results, data analysis, or formulation of conclusions.

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# کاتالوگ جهانی زنبورهای زیرخانوادهٔ Aphidiinae (Hymenoptera: Braconidae): پراکنش، روابط میزبانی و نکات زیست‌بوم‌شناسی

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**چکیـده:** در این مونوگراف، فهرست گونه‌های زیرخانواده Aphidiinae جهان ارایه شده است. در مجموع ۷۳۳ گونه معتبر در ۶۷ جنس ثبت شده‌اند که شامل ۷۰۴ گونهٔ زنده در ۵۴ جنس و ۲۹ گونه فسیل متعلق به ۱۵ جنس می‌باشد. منطقهٔ پالئارکتیک، دربرگیرندهٔ بیشتر تنوع گونه‌ای گزارش شده از زنبورهای Aphidiinae است. تنوع جنس‌ها به شدت نامتعادل است، به طوری که ۳۴ جنس تنها دارای یک گونه و چند جنس، غنی از گونه‌ها سهم نامتناسبی از تنوع شناخته‌شده را به خود اختصاص می‌دهند. پراکنش گونه‌ها بر اساس یک طرح تقسیم زیست‌جغرافیایی که برای این فهرست توسعه یافته، ارایه شده و به طور خاص برای مناطق آفروتروپیکال، استرالیا، هولارکتیک (پالیارکتیک + نئارکتیک)، نئوتروپیکال، اقیانوسی و خاورزمین تقسیم‌بندی شده است. این فهرست بر اساس مرور منابع اولیه شامل بیش از ۳،۳۷۰ مرجع از سال‌های ۱۸۱۸ تا ۲۰۲۶ تهیه شده است. جزییات نام‌گذاری برای جنس‌ها و گونه‌ها شامل نام‌های مترادف‌ها در هر دو سطح برای تاکسون‌های توصیف شده یا ثبت شده در سطح جهانی ارایه شده است. برای نام‌های معتبر، پراکنش گونه‌ها، همراه با داده‌های کامل از تاریخچه نامگذاری ارایه شده است. شته‌های میزبان شامل ۱،۰۷۰ گونه در ۲۱۵ جنس بودند. یک نام جایگزین، *Pauesia shii* Ghafouri Moghaddam, **nom. nov.**, برای *Pauesia rugosa* Shi, 2001، که یک هم‌نام اولیه موخر *Pauesia rugosa* Starý & Remaudière, 1982 است، پیشنهاد شد. ۱۴۶ گزارش جدید شامل جنس‌ها و گونه‌ها از ۴۸ کشور ارایه شد. به ویژه، این مطالعه اولین گزارش‌های تأیید شده از زیرخانواده Aphidiinae را از چهار کشور: جامائیکا، پاپوآ گینه نو، سائو تومه و پرنسیپ، و سورینام فراهم می‌کند. تحلیل‌های فون جانوری در ۱۴۲ کشور و سرزمین نشان داد که توزیع غنای گونه‌ای به شدت نامتعادل است: روسیه، ایالات متحده، فرانسه، هند و چین از جمله کشورهای غنی از نظر فون Aphidiinae بودند. غنای گونه‌ها به شدت با غنای جنس‌ها مرتبط بود اما تنها ارتباط ضعیفی با مساحت کشور داشت. اروپا بالاترین غنای میانگین در سطح کشورها را داشت و پس از آن آسیا قرار گرفت. پروفایل غنای گونه‌ای دنباله‌دار نشان داد که تعداد کمی از کشورها سهم نامتناسبی از تنوع گزارش‌شده را دارا هستند، در حالی که چندین کشور هنوز فاقد سوابق منتشر شده از حضور این گونه‌ها هستند. این الگوها هم بیانگر ساختار واقعی جغرافیای زیستی و هم نشان‌دهنده سوگیری‌های عمده جغرافیایی در نمونه‌برداری و پوشش مطالعات تاکسونومیک هستند. از این‌رو، می‌توانند به‌عنوان مبنایی برای پایش و تکمیل فهرست‌های زیستی آینده، بازنگری‌های تاکسونومیک و پژوهش‌های مرتبط با مهار زیستی مورد استفاده قرار گیرند. علاوه بر این موارد، تصاویر بیش از ۵۰ درصد گونه‌ها و نیز یک به‌روزرسانی از اطلاعات زیستی این زنبورها با تاکید بر کاربرد آنها در مهار زیستی ارایه شد.

**واژگـان کلیدی:** پارازیتوییدهای شته، چک‌لیست، مهار زیستی، بوم‌شناسی زیستی، تحلیل‌های جانوری، مرور جهانی، روابط میزبانی، تاکسونومیست‌های پیشگام، نام‌های اولیه، محل نمونه تیپ، نمونه‌های تیپ

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