

## **Jumping Plant-lice of Slovenia (Insecta: Hemiptera: Psylloidea)**

## **Bolšice Slovenije (Insecta: Hemiptera: Psylloidea)**

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### **Abstract**

A complete faunistic overview of psyllids recorded in Slovenia is presented. Altogether, 129 species are listed: Aphalaridae – 18, Calophyidae – 1, Homotomidae – 1, Liviidae – 12, Psyllidae – 50, and Triozidae – 47 species. Eighteen species recorded in Slovenia are listed here for the first time. Historical records for the species *Cacopsylla parvipennis*, *Bactericera perrisii* and *T. viridula* could not have been confirmed recently, hence their occurrence in Slovenia is doubtful. Previously published records of *Trioza kiefferi* as the causal agent of galls on leaves of *Rhamnus alpinus* subsp. *fallax* are shown here to be erroneous and concern the eriophyid mite *Calepitrimerus rhamni*. Provided herewith are distribution maps for all species, colour photographs of various developmental stages for most species as well as of their host plants.

**Key words:** Insecta, Hemiptera, Psylloidea, Slovenia, faunistics

### **Izvleček**

Napravljen je celosten favnistični pregled bolšic Slovenije, skupaj 129 vrst: Aphalaridae – 18, Calophyidae – 1, Homotomidae – 1, Liviidae – 12, Psyllidae – 50 in Triozidae – 47 vrst. Osemnajst vrst je tu za Slovenijo zabeleženih prvič. Zgodovinskih navedb za vrste *Cacopsylla parvipennis*, *Bactericera perrisii* in *T. viridula* pozneje ni bilo mogoče več potrditi in je njihovo pojavljanje v Sloveniji vprašljivo. V preteklosti objavljene navedbe vrste *Trioza kiefferi* kot povzročitelja šišek na kranjski kozji češnji (*Rhamnus alpinus* subsp. *fallax*) so bile napačne in se nanašajo na pršico šiškaričo *Calepitrimerus rhamni*. Za vse obravnavane vrste so pripravljene karte razširjenosti ter barvne fotografije različnih razvojnih stopenj za večino vrst ter njihovih gostiteljev.

**Ključne besede:** Insecta, Hemiptera, Psylloidea, Slovenija, favnistika

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## Introduction

Psyllids or jumping plant-lice (Hemiptera: Sternorrhyncha: Psylloidea) compose a relatively small group of insects. About 4000 species have been described worldwide (PERCY et al., 2018). Most Palearctic species are rather small, with body size between 1.7 and 4.0 mm. Only a few taxa are slightly larger, measuring up to 5.2 mm (e.g. *Homotoma ficus*, *Bactericera maura*). Psyllids are well characterised morphologically and easily recognisable at the superfamily level both as adults and immatures [Figs. I and II]. However, the identification of species is often much more demanding, mainly due to their great similarity, small size and a limited number of diagnostic morphological characters. Use of a good stereomicroscope with a magnification power of at least 40x is therefore required for a reliable identification down to the species level. Additional microscopic preparation of adult psyllid body parts or immatures and a use of a compound microscope with a magnification up to 400x are also essential (HODKINSON ET WHITE, 1979; OSSIANILSSON, 1992). As all psyllids are phytophagous insects, a good knowledge of plant taxonomy is also very important, as the host plant data can be helpful for identification, especially when it is based on immature stages only.



Fig. I: *Baeopelma colorata* – adult SLO

Sl. I: *Baeopelma colorata* – imago



Fig. II: *Cacopsylla albipes* – fifth instar nymph SLO

Sl. II: *Cacopsylla albipes* – nimfa pete razvojne stopnje

## Biology

Psyllids are highly specialised sap-sucking insects, mainly monophagous or narrowly oligophagous on a single or a few closely related plant species. Only very few species can exploit a wider range of plant species and can therefore be considered polyphagous (e.g. *Bactericera nigricornis*, *B. tremblayi*) (HODKINSON, 1981; TREMBLAY, 1965). All immature stages can develop only on the appropriate plant species, which are called “host plants”. Host plants of the great majority of Palearctic psyllids are various dicots. Only the representatives of the genus *Livia* are associated with monocots (*Juncus* spp., *Carex* spp.). Immatures as well as adults feed on phloem vessels. The phloem content is usually rich in sugar compounds, while it is poor in amino acids and proteins. Psyllids, especially their immatures, compensate for this disproportion in food composition by ingesting large amounts of phloem sap and secreting excessive carbohydrates in the form of honeydew. Adults of many species, however, can exploit also some other plants for temporary feeding or overwintering. Plants that are used for overwintering of adults are called “shelter plants”, while plants on which adults temporarily feed are “food plants” (BURCKHARDT et al. 2014). Almost 60% of psyllids occurring in Slovenia overwinter as adults, most of them on shelter plants. These are mainly various conifers (*Picea abies*, *Pinus* spp.,

*Juniperus communis* and others), rarely some other evergreen shrubs and trees. Adults of these species leave their host plants a few days after the emergence and move to the shelter-plants and spend the largest part of their life there. Specifically, the dietary content of their hosts becomes unsuitable for their further survival and overwintering. That's why they have to move to an appropriate shelter plant that satisfies such requirements. E.g., freshly emerged adults of *Cacopsylla melanoneura* show a strongly positive response on conifers volatiles in summer, but not on volatiles of the host plants (apple, hawthorn). In the ensuing season, the overwintering adults migrate back to the host plants and start a new reproductive cycle. In contrast, these re-immigrants are strongly attracted by apple and hawthorn volatiles in spring, but not of spruce (MAYR et GROSS, 2007). This behaviour is evolutionarily conditioned, regulates migrations and enables survival of adults in critical periods. Several species overwinter as adults on their host plants or in the litter on the ground and do not migrate (e.g. *Cacopsylla pyri*, *C. pyricola*, *C. bidens*, *Rhodochlanis bicolor*, *Euphyllura olivina*, *Spanioneura fonscolombii*, *Bactericera crithmi*, *Trioza centranthi*, *T. chenopodii*, *T. portulacoides*). Many species overwinter as eggs or immatures on their host plants. About three quarters of species occurring in Slovenia develop a single generation per year. The rest develop two or more generations, but at most four generations under the climatic conditions of Slovenia (e.g. *Cacopsylla pyri*, *Acizzia jamatonica*).

## Economic importance

Several psyllid species are well-known as harmful pests of cultivated plants and are, as such, of great economic interest. They can cause direct damage by feeding on their host plants or indirect damage by secreting honeydew on which subsequently sooty moulds develop; some species are also vectors of harmful plant pathogens (BURCKHARDT, 1994). Serious direct damages mostly provoke species that develop several generations per year. In the event of occasional gradations, some univoltine species may also cause troubles and yield loss. In Slovenia, such cases have been well-documented especially for *Cacopsylla pyri* and *Acizzia jamatonica* (VRABL et MATIS, 1977; VRABL, 1980; SELJAK, 2003; SELJAK et al., 2004). Recently, an increased phytosanitary attention has been paid to psyllid species that possess the ability to transmit harmful phytoplasmas between plants. *Cacopsylla picta* and *C. melanoneura* are well-known as the main natural vectors of *Candidatus Phytoplasma mali* the causal agent of the Apple proliferation disease (FRISINGHELLI, et al., 2000; JARAUSCH et al., 2003; TEDESCHI et al., 2002; TEDESCHI et ALMA, 2004; MEHLE et al., 2011). *Candidatus Phytoplasma pyri*, which causes the Pear decline disease, is transmitted by pear-psyllids, especially by *Cacopsylla pyri* and *C. pyricola* (DAVIES et al., 1992; LEMOINE, 1991; MEHLE et al., 2011). *Cacopsylla pruni* is responsible for a quick spread of the European stonefruit yellow disease in South and Central Europe caused by *Candidatus Phytoplasma prunorum* (CARRARO et al., 1998a, 2001; MEHLE et al., 2011). Peach, apricot and Japanese plum are particularly susceptible to this disease. As a consequence, infected trees produce few fruits of a bad quality and usually die within three to five years. In some crops, damages produced by these bacteria are more severe than provoked by all other pests and diseases together. Carrot-feeding psyllids *Trioza apicalis* and *Bactericera trigonica*, transmit the bacterium *Candidatus Liberibacter solanacearum*, which may severely damage carrot crops in Europe (MUNYANEZA et al., 2014; TERESANI et al. 2017). The same bacterium causes the “zebra chip” disease in potatoes in North America and New Zealand, transmitted by *Bactericera cockerelli* (MUNYANEZA et al., 2007). As there are no chemicals and other means for controlling these diseases themselves, the main phytosanitary measures are focused on the control of their vectors, hence psyllids. Using various insecticides against



the re-immigrants, when they return from the shelter plants to the host plants in spring, gives satisfactory results for a short time, but cannot protect crops completely (LEŠNIK et VAJS, 2017). Therefore, plants for production of propagating material of some fruit-plants (e.g. mother plants of apples, pears, peaches, apricots and plums aimed for producing cuttings or grafting scions) must be kept under an insect-proof protection to prevent access of vectors and consequently the spread of diseases (FAJT et al., 2009; AMBROŽIČ et al., 2011).

## Historical overview of studies on jumping plant-lice in Slovenia

First records on the psyllid fauna of Slovenia date back to the 18<sup>th</sup> century. Ioannes Antonius SCOPOLI mentioned in his *Entomologia Carniolica* (1763) five species that unambiguously belonged to jumping plant-lice, all under the generic name *Chermes*. These are *Cacopsylla pruni*, *C. pyri*, *Psylla alni*, *Psyllopsis fraxini* and *Trioza senecionis*. *C. pruni* and *T. senecionis* were described by him as new species, hence Slovenia is ‘terra typica’ for both. The identity of Scopoli’s ‘*Chermes pyri*’ is uncertain. His *Chermes pyri* most likely concern *Cacopsylla pyrisuga*, because he wrote: “In foliis *Pyri comm.*” (in leaves of *Pyrus communis*); probably in curled leaves, which is typical of *C. pyrisuga*, but not of *C. pyri*. Obviously, Scopoli observed nymphs of the fifth instar, since he mentioned the 5-segmented antennae with two terminal setae (“Antennae 5-nodiae: ultimo articulo duabus setulis terminato”).

Gustav A. A. von FLOR (1861a, b) recorded 10 species collected in the territory of today’s Slovenia: *Livia junci*, *Psylla alni*, *Cacopsylla melanoneura*, *C. picta* (as *Psylla costalis* sp.n.), *C. pruni*, *C. pyrisuga*, *Trichoermes walker*, *Trioza proxima*, *T. rhamnii* and *T. viridula*. The type specimens of his newly described *Psylla costalis* were collected in Ljubljana (as Laibach). The identity of his *T. viridula* from Ljubljana remains dubious and probably refers to *T. cirsii*.

In 1888, Franz LÖW published the most comprehensive overview of psyllids occurring in the former Austro-Hungarian Monarchy, which included also the entire territory of modern-day Slovenia (Löw, 1888). In that work, 42 species collected within the Slovene territory were recorded (Aphalaridae – 1, Liviidae – 7, Psyllidae – 19, and Triozidae – 16 species). Most data were provided by Andor Hensch, who worked and collected specimens in the surroundings of Gorica (=Görz in German, today’s Gorizia in Italy) and by Franz Then, who collected psyllids in the surroundings of Lesce (=Less) and Bled (=Valdes). Once politically united, the area around ‘Görz’ (Gorizia) was divided by the state border between Slovenia and Italy after World War II, therefore, all records referring to this area are applicable both for the Italian and the Slovene sides. The type material of at least three species originated from these two collecting areas. The type material of *Psyllopsis meliphila* collected by Franz Then unambiguously originates from modern-day Slovenia (Lesce, Bled), while the type locality “Görz” for *Baeopelma colorata* and *Cacopsylla intermedia* now officially belongs to Italy, but the material was probably collected on both sides of the current border.

GRÄFFE (1911) contributed eight records of psyllids that unambiguously refer to Slovenia. Most of them were from the area round Tolmin (as Tolmain) or were recorded general for the whole area of the Austrian Littoral (Küstenland), which was split between Italy (West), Slovenia (North) and Croatia (South) after World War II.

Almost exactly one hundred years after Löw’s publication, Franc JANEŽIČ summarised and published his 17-year lasting investigations on plant galls of Slovenia. In his comprehensive work also a huge amount of distributional data on 25 gall-inducing psyllid species were provided (JANEŽIČ, 1989). Some of these records are in need of verification according to the current taxonomy. Since there is no voucher collection for these records, they can only be verified in the

field by checking the combination of the host plant, gall form, locality and psyllid species. In this way, some critical host plant associations reported by JANEŽIČ (1989), particularly of *Trioza dispar* on *Aposeris foetida* and *Trioza* sp. on *Quercus cerris*, were cleared. Rearing of nymphs to adults on infested leaves of *Aposeris foetida* demonstrated that the causal agent of the leaf galls was not *Trioza dispar* but *Trioza foersteri* Meyer-Dür, 1871 (SELJAK, 2018). The galls on leaves of *Q. cerris* are produced by *Trioza soniae* (see below).

Some other reports of psyllids in Slovenia were mostly focused on crop pests, such as the pear psyllids (e.g. *Cacopsylla pyri*, *C. pyrisuga*) and their pest control management (VRABL et MATIS, 1977; VRABL, 1980; KOGOJ, 2012; VOGLAR, 2017).

The most comprehensive accounts on the psyllids of Slovenia were made by the present author who documented 107 species (SELJAK, 2006; SELJAK et al. 2008). The intention of the present account is to summarise all data on psyllids of Slovenia available to the author and, by doing so, completing the checklist of species. In addition, most psyllid species and their host plants are documented by colour photographs. However, the author is well aware that the present account is far from complete. The country has been unequally studied. Western parts of Slovenia have been systematically explored by the author, while the rest of the territory is still largely unexplored. Secondly, the author presumes that some additional material of psyllids from Slovenia is deposited in various museums abroad (e.g. in Vienna, Graz, Brno, Berlin, perhaps also Budapest), which has not been used for this study.

## Materials and methods

In this account, the most recent systematic classification of Psylloidea proposed by BURKHARDT et OUVARD (2012) has been followed. However, a more conservative approach has been adopted for the generic classification of Triozidae, especially the genus *Trioza* s.l., the detailed division of which is still pending because of its only partly resolved phylogeny (PERCY et al. 2018). As for the species nomenclature, the Psyllist database has been followed (OUVRARD, 2019). Currently accepted names for host and shelter plants of psyllids have strictly been taken from The Plant List (2013) database. Therefore, authors of plant names were omitted in the text. Information on the psyllid biology (e.g. number of generations, overwintering stage) has mainly been taken from OSSIANNILSSON (1992), CONCI et al. (1993 and 1996) or is based on the author's own observations.

Distributional data recorded by the earliest authors, e.g. FLOR (1861), LÖW (1888) and GRÄFFE (1911), have been included if they unambiguously referred to the territory of modern-day Slovenia or to an area that includes at least parts of this territory. Hence, all data related to "Görz" (today's Gorizia on the Italian side and Nova Gorica on the Slovene side) have been included, because this area, divided by the border nowadays, used to be uniform at the times of the Austro-Hungarian Monarchy.

Species newly recorded here from Slovenia are marked with an asterisk (\*). Each distributional record is presented with a topographic name of the locality and a code of the corresponding 10x10-kilometre field of the UTM grid when the locality was defined precisely enough. As the whole territory of Slovenia belongs to the grid zone 33T, the zone designation of 10 km squares is omitted. Mostly, but not always, an altitude of the locality is given as well. Distributional data for each species are also shown in a UTM map. The mapped data are grouped in three separate periods. The period prior to 1950 includes records from the times of the Austro-Hungarian Monarchy, mainly prior to 1914, and there were no records between this period and 1950. The period between 1950 and 1990 includes the data of Slovenian authors and collectors from that

period; the majority of records was provided by Franc Janežič. The post-1990 period relates almost exclusively to the author's own data. Maps were created from the author's personal database running on the Corel Paradox 11.0 platform.

For most psyllid species and their host plants, colour photographs are provided (Appendix). The following equipment was used for taking photographs: Canon EOS 70D or 60D cameras; Canon EF-S 18-135mm f/3.5-5.6, Canon EF 100mm f/2.8 Macro USM and Canon MP-E 65mm F/2.8 1-5X Macro lenses; Metz Mecablitz 15 MS-1 and Canon Speedlite 430EX III-RT flashes. Many photographs are supplemented with a scale bar. Unless stated otherwise, this bar corresponds to 1 mm.

Voucher specimens are deposited in the author's personal collection. Adults have been dry-mounted, mainly glued on cardboard slips. In some cases, additional specimens were preserved in a plastic capsule and pinned together on the same needle. Fifth instar nymphs were mounted according to HODKINSON et WHITE (1979) and OSSIANNILSSON (1992) on slides in Canada balsam. A collection acronym is added in square brackets to the records for which voucher specimens are available.

Collection acronyms:

GSPC – the author's personal collection (Gabrijel Seljak, Nova Gorica, Slovenia)

MMBC – Moravian Museum, Brno, Czech Republic;

PMSL – Slovenian Museum of Natural History, Ljubljana, Slovenia

In the list of species, taxa (families, genera and species) are sorted alphabetically. Each species in the list bears a unique serial number, which is shared with corresponding figures in Appendix.

## List of species

### APHALARIDAE Löw, 1879

*Agonoscena* Enderlein, 1914

#### 1. *Agonoscena succincta* (Heeger, 1856)

[Figs. 1.1–1.4]

**SELJAK, 2006:** Ravnica (UL99), 12.10.2003 [GSPC]; Grgar, 300 m (UL99), 18.7.2004;

**New records:** Volovja reber (VL44), 1.7.2007 [GSPC]; Grgar (UL99), 27. 05. 2012 [GSPC; Figs. 1.2 – 1.4]; Solkan (UL99), 17.8.2008 [GSPC].

**Host plant:** *Ruta graveolens* s.l. (Rutaceae).

**Biology:** Multivoltine (2 – 3 generations per year); overwintering as second or third instar nymphs on the host plant (BOSELLI, 1930).

#### 2. *Agonoscena targionii* (Lichtenstein, 1874)

[Figs. 2.1–2.3]

**JANEŽIČ, 1989:** Branik (VL07); Kostanjevica na Krasu (UL97); Osp (VL14); Vipava (VL17).

Possibly confused with *Megagonoscena gallicola* Burckhardt et Lauterer;

**SELJAK, 2006:** Vale pri Brestovici, 140m (UL97), 8.5.2005 [GSPC]; Lijak (VL09), 20.5.2006 [GSPC]; Solkan (UL99), 21.5.2006 [GSPC];

**New record:** Lokvica (UL98), 7.5.2016 [GSPC; Fig. 2.3].

**Host plants:** *Pistacia terebinthus* [Fig. 2.2]; *P. lentiscus* (Anacardiaceae) (BURCKHARDT et LAUTERER, 1989).

**Biology:** Probably multivoltine; overwintering adults on the host plant (CONCI et al., 1993; HODKINSON, 2009).

**Remark:** As far as known, *A. targionii* does not induce galls. Cecidia on *Pistacia terebinthus* recorded by JANEŽIČ (1989) were possibly induced by *Megagonoscena gallicola*, described in the same year (see below).

*Aphalara* Foerster, 1848

**3. *Aphalara avicularis* Ossiannilsson, 1981**

[Figs. 3.1–3.4]

**SELJAK, 2006:** Prvačina (UL98), 13.9.2005 [GSPC]; Žadovinec (WL38), 10.7.2004 [GSPC]; Velika vas pri Krškem (WL38), 10.7.2004 [GSPC];

**New records:** Sečovlje (UL93), 21.08.2019; Parecag (UL93), 30.9.2004; Bilje (UL98), 28.7.2008; Lijak (VL08), 20.7.2008 [GSPC]; Vremščica, 820 m (VL26), 16.7.2011 [GSPC]; Hruševje pri Postojni, 535 m (VL36), 12.9.2015 [Figs. 3.3–3.4]; Goreljek (VM23), 2.8.2017; Ljubljana (VM60), 31.7.1971 [PMSL, B. Sket leg.]; likely to be more widely distributed.

**Host plant:** *Polygonum aviculare* agg. including *P. arenastrum* (Polygonaceae) [Fig. 3.2].

**Biology:** Univoltine or perhaps bivoltine (LAUTERER et MALENOVSKÝ, 2002); adults occur from mid-June onwards and overwinter on conifers.

**4. *Aphalara calthae* (Linnaeus, 1761)**

[Figs. 4.1–4.3]

**Löw, 1888:** Ljubljana (as Laibach) (?); probably referring to some other *Aphalara* species, considering that the host plant data were given as „*Polygonum* ...und *Rumex acetosella*“;

**GRÄFFE, 1911:** Tolmin (as Tolmein);

**SELJAK, 2006:** Pokljuka (VM23), 2.9.2005 [GSPC; Fig. 4.3].

**Host plant:** *Caltha palustris* (Ranunculaceae) [Fig. 4.2].

**Biology:** Univoltine; adults occur on the host plant in April and May and then from July and August onwards and overwinter on conifers (OSSIANNILSSON, 1992).

**5. *Aphalara freiji* Burckhardt & Lauterer, 1997**

[Figs. 5.1–5.2]

**SELJAK, 2006:** Lukini (VL13), 24.9.2005 [GSPC]; Ajševica (UL98), 1.8.2004 [GSPC]; Panovec (UL98), 14.8.2005 [GSPC] and 27.12.2005; Žadovinec (WL38), 10.7.2004 [GSPC]; Juršinci (WM74), 16.9.2004 [GSPC];

**New records:** Šmihel (VL09), 31.7.2010 [GSPC]; Sabotin, 350 m (UL99), 1.8.2012; Potoče (VL08), 1.8.2012; Cimprovka, 1180 m (VM21), 26.6.2010 [GSPC]; Ivanjkovci (WM84), 28.7.2011.

**Host plants:** *Persicaria* spp. (OSSIANNILSSON, 1992; BURCKHARDT et LAUTERER, 1997); recorded from *P. lapathifolia* [Fig. 5.2] and *P. maculosa* in Slovenia (Polygonaceae).

**Biology:** Univoltine; adults occur on the host plants from June to August and move to conifers later for overwintering (OSSIANNILSSON, 1992).

## 6. *Aphalara longicaudata* Wagner & Franz, 1961

[Figs. 6.1–6.3]

**SELJAK, 2006:** Vršič, 1400 m (VM04), 23.7.2002 [GSPC];

**New record:** Mangartsko sedlo, 2100 m (UM94), 28.8.2015 [GSPC; Fig. 6.3].

**Host plant:** *Persicaria bistorta* (Polygonaceae) [Fig. 6.2] (OSSIANNILSSON, 1992).

**Biology:** Univoltine; overwintering as adults on conifers.

## 7. *Aphalara polygoni* Foerster, 1848

[Figs. 7.1–7.2]

**SELJAK, 2006:** Vipava (VL17), 3.10.2002 (as *A. crispicola*) [GSPC]; Nova Gorica (UL98), 23.12.2006 [GSPC]; Mangart, 2050 m (UM94), 15.7.2006 [GSPC];

**New record:** Ljubljana (VM60), 11.5.1971 [PMSL, B. Sket leg.].

**Host plants:** *Rumex* spp. sect. *Acetosa* and sect. *Acetosella* (Polygonaceae) (OSSIANNILSSON, 1992).

**Biology:** Univoltine; overwinters as an adult on conifers (OSSIANNILSSON, 1992).

## 8. *Aphalara sauteri* Burckhardt, 1983

[Figs. 8.1–8.4]

**SELJAK, 2006:** Lepena, 600 m (UM92), 26.8.2001 [GSPC]; Vogel – Žagarjev graben, 1500 m (VM02), 5.8.1999;

**New records:** Zadnja Trenta, 970 m (VM04), 28.7.2007 [GSPC]; Izvir Soče (VM04), 12.4.2011 [GSPC]; Mangart, 1770 m (UM94), 28.8.2015 [GSPC] and 11.9.2018 [Fig. 8.3]; Lajnar, 1500 m (VM22), 23.10.2012 [GSPC] and 23.5.2019 [Fig. 8.4]; Mlinarjevo sedlo, 1300 m (VM63), 15.8.2007 [GSPC].

**Host plant:** *Rumex scutatus* [Fig. 8.2] (Polygonaceae) (BURCKHARDT et LAUTERER, 1997).

**Biology:** Univoltine; overwintering as adults on conifers (BURCKHARDT et LAUTERER, 1997).

*Colposcencia* Enderlein, 1929

## 9. \**Colposcencia traciana* (Klimaszewski, 1970)

[Figs. 9.1–9.3]

**New records:** Škocjanski zatok (VL04), 15.5.2008 [GSPC]; Sermin (VL04), 30.4.2016 [Fig. 9.3] and 26.5.2016 [GSPC]; Ankarani (VL04), 17.5.2017 [GSPC].

**Host plant:** *Tamarix gallica* (Tamaricaceae).

**Biology:** Adults were collected in April and May.

*Craspedolepta* Enderlein, 1921

**10. *Craspedolepta bulgarica* Klimaszewski, 1961**

[Figs. 10.1–10.3]

**SELJAK et al., 2008:** Branik (VL07), 8.6.2006 [GSPC];

**New record:** Labor, 340 m (VL03), 16.05. 018 [GSPC]; Golo brdo (UM80), 20.5.2016 [GSPC]; Fig. 10.3].

**Host plants:** *Achillea* spp. other than *A. millefolium* (Asteraceae) (LAUTERER, 1993a); in Slovenia collected in dry meadows with *A. collina*.

**Biology:** Univoltine; overwintering as nymphs on roots of the host plants (CONCI et al., 1993); adults occur in May and June.

**11. *Craspedolepta conspersa* (Löw, 1888)**

[Figs. 11.1–11.3]

**SELJAK, 2006:** Dragonja (UL93), 10.8.2005; Izola (UL94), 10.8.2005 [GSPC]; Novelo (UL97), 1.9.2001; Renški vrh, 415 m (UL97), 10.6.2006 [GSPC]; Kromberk (UL99), 29.8.2003; Ajševica (VL08), 2.8.2003 and 19.8.2004 [GSPC]; Grgar (UL99), 18.6.2005 [GSPC]; Nanos, 900 m (VL27), 20.8.2004 [GSPC]; Panovec (UL98), 14.8.2005 [GSPC]; Breginj, 550 m (UM72), 22.8.2003; Lepena, 700 m (UM92), 22.8.2003;

**New records:** Izola (UL94), 27.7.2011; Miren, 48 m (UL98), 2.5.2012; Vrtojba (UL98), 21.8.2017; Nova Gorica (UL99), 17.5.2011 and 21.5.2012 [Fig. 11.3]; Solkan (UL99), 17.8.2008; Velike Žablje (VL18), 9.8.2007 [GSPC]; Robič, 250 m (UM82), 13.8.2008.

**Host plant:** *Artemisia vulgaris* [Fig. 11.2], *A. verlotiorum* (Asteraceae).

**Biology:** Univoltine; overwintering as nymphs on roots of the host plants (CONCI et al., 1993); adults from May to mid-September.

**12. *Craspedolepta flavipennis* (Foerster, 1848)**

[Figs. 12.1–12.3]

**SELJAK, 2006:** Sinji vrh, 980 m (VL18), 12.8.2001 [GSPC]; Labinje (VM21), 20.7.2003 and 22.8.2004 [GSPC]; Cimprovka, 1250 m (VM21), 24.6.2006 [GSPC]; Blegoš, 1500 m (VM31), 29.7.2001 [GSPC]; Zadnja Trenta (VM03), 24.7.2005 [GSPC]; Komna, 1520 m (VM02), 2.8.1999; Vršič, 1400 m (VM04), 23.7.2002; Smrekovec, 1350 m (VM93), 22.6.2002 [GSPC];

**New records:** Trnovski gozd, Krnica, 1000 m (VL08), 14.8.2011 [GSPC]; Vodice (Col), 920 m (VL28), 2.7.2016; Kolovrat (UM91), 16.6.2013 and 24.6.2016; Zadnja Trenta, 970 m (VM04), 8.6.2019; Porezen, 1000 m (VM21), 17.6.2017; Črni vrh nad Cerknim, 1250 m (VM21), 22.6.2013 [Fig. 12.3]; Borovška gora, 1000 m (VL74), 20.7.2013; Planina Pungrat, 1440 m (VM54), 9.8.2014; Travnja Gora (VL76), 15.6.1972 and 25.6.1972 [PMSL, B. Sket leg.].

**Host plant:** *Leontodon hispidus* [Fig. 12.2] (Asteraceae) (LAUTERER et BURCKHARDT, 2004).  
**Biology:** Univoltine; overwintering as nymphs on roots of the host plant (LAUTERER et BURCKHARDT, 2004); adults from June to mid-August.

### 13. *\*Craspedolepta malachitica* (Dahlbom, 1851)

[Figs. 13.1–13.3]

**New records:** Lokovec, 820 m (VM00), 12.8.2014 [GSPC]; Otlica, 830 m (VL18), 27.6.2015 [GSPC; Fig. 13.3].

**Host plant:** *Artemisia absinthium* (Asteraceae) [Fig. 13.2].

**Biology:** Univoltine; overwintering as nymphs on roots of the host plant (CONCI et al., 1993); adults from June to mid-August.

### 14. *\*Craspedolepta nebulosa* (Zetterstedt, 1828)

[Figs. 14.1–14.3]

**New records:** Porezen, 1600 m (VM21), 3.7.2010 (3 ♂♂) [GSPC; Fig. 14.3].

**Host plant:** *Epilobium angustifolium* [Fig. 14.2] (Onagraceae).

**Biology:** Univoltine; first instar nymphs living in leaf-roll galls, second to fourth instar nymphs on roots of the host plant, overwintering as fourth instar; adults occur from May to July (LAUTERER, 1993a).

### 15. *Craspedolepta nervosa* (Foerster, 1848)

[Figs. 15.1–15.3]

**SELJAK, 2006:** Krn, 1100 m (UM92), 5.7.2003 [GSPC]; Planina Razor, 1400 m (VM02), 7.7.2005 [GSPC];

**New records:** Nemci, 880 m (VL09), 13.6.2015 [GSPC]; Čukla, 770 m (VM01), 20.6.2014; Kolovrat, 1150 m (UM91), 16.6.2013 [GSPC; Fig. 15.3]; Planina Zappleč, 1200 m (UM92), 12.7.2015; Porezen, 1600 m (VM21), 25.6.2011 [GSPC]; Osilnica, 825 m (VL74), 20.7.2013 [GSPC].

**Host plants:** *Achillea millefolium* [Fig. 15.2], *A. ptarmica*, *Cirsium arvense* (Asteraceae) (OSSIANNILSSON, 1992).

**Biology:** Univoltine; overwintering as nymphs on roots of the host plants; adults occurring from June to August (LAUTERER, 1994).



*Megagonoscena* Burckhardt & Lauterer, 1989

### 16. *Megagonoscena gallicola* Burckhardt & Lauterer, 1989

[Figs. 16.1–16.4]

**SELJAK et al., 2008:** Vale pri Brestovici (UL97), 19.5.2006 [GSPC]; Solkan (UL99), 21.5.2006 [GSPC]; Lijak (VL09), 20.5.2006 [GSPC] and 13.4.2007;

**New record:** Lokvica (UL98), 7.5.2016 [Figs. 16.3–16.4].

**Host plant:** *Pistacia terebinthus* (Anacardiaceae) [Fig. 16.2].

**Biology:** Univoltine; overwintering as eggs on the host plant; causing strong curling of young leaves [Fig. 16.3].

*Rhinocola* Foerster, 1848

### 17. *Rhinocola aceris* (Linnaeus, 1758)

[Figs. 17.1–17.5]

**SELJAK, 2006:** Kromberk (UL99), 1.6.2006 [GSPC]; Gradišče pri Vipavi (VL17), 13.6.2006 [GSPC]; Selovec, 1200 m (VL08), 13.8.2006; Banjšice (VL09), 18.7.2004; Dolina Idrije (UM80), 11.6.2006; Korada, 620 m (UM80), 11.6.2006; Krn, 1100 m (UM92), 5.7.2003 [GSPC]; Golubinjek, 200 m (WM40), 16.6.2006; Podsreda – Socko, 300 m (WL49), 17.6.2006;

**New records:** Kromberk (UL99), 2.5.2016 [Figs. 17.3 – 17.5]; Vrtoče (UL98), 2.5.2012; Ajševica (VL08), 26.5.2013; Loke (UL99), 21.6.2017; Grgar (UL99), 30.4.2017; Baske, 600m (UL99), 22.5.2011; Skrilje (VL18), 11.5.2008 [GSPC]; Korada (UM80), 31.5.2014; Kolovrat (UM91), 16.6.2013; Soriška planina (VM22), 3.7.2008; Draga (Ig), 315 m (VL68), 20.5.2017; probably widespread in Slovenia.

**Host plants:** *Acer campestre* [Fig. 17.2], *A. platanoides*, *A. pseudoplatanus* (Sapindaceae).

**Biology:** Univoltine; overwintering as first instar nymphs in bud axils (OSSIANNILSSON, 1992); nymph [Fig. 17.5].

*Rhodochlanis* Loginova, 1964

### 18. *Rhodochlanis bicolor* (Scott, 1880)

[Figs. 18.1–18.4]

**SELJAK, 2006:** Strunjan (UL94), 12.9.2003 [GSPC]; Škocjanski zatok (VL04), 24.9.2005 [GSPC];

**New record:** Ankaran (VL04), 31.8.2017 and 28.8.2018 [Figs. 18.3–18.4].

**Host plant:** *Suaeda maritima* (Amaranthaceae) [Fig. 18.2].

**Biology:** Probably bivoltine; overwintering as eggs or nymphs on the host plant (CONCI et al. 1993); adults in May and June, August to October.

## CALOPHYIDAE Vondráček, 1957

*Calophya* Löw, 1879

### 19. *Calophya rhois* (Löw, 1877)

[Figs. 19.1–19.6]

- JANEŽIČ, 1989:** Portorož (UL94), Strunjan (UL94), Seča (UL93), Dragonja (UL93), Pacug (UL94), Sv. Peter (UL93), Šmarje pri Kopru (VL04), Vanganel (VL04), Marezige (VL04), Škofije (VL04), Pridvor (VL04), Ankaran (VL04), Gračišče (VL14), Kubed (VL14), Črni Kal (VL14), Slavnik (VL24), Divača (VL26), Kopriva na Krasu (VL07), Štanjel (VL17), Komen (VL07), Kostanjevica na Krasu (UL97), Opatje selo (UL97), Branik (VL07); Solkan (UL99), Šent Maver (UL99), Podsabotin (UL99), Grgar (UL99); Šempas (VL08), Ajdovščina (VL18), Planina pri Ajdovščini (VL17), Vipava (VL17); Col (VL28), Ljubljana (VM50); Zgornja Hrušica (LJ) (VM60), Iška (VL68), Hrastnik (WM01), Loka pri Zidanem mostu (WM10), Radeče (WM10), Velike Lašče (VL77), Jeruzalem pri Ljutomeru (WM94);
- SELJAK, 2006:** Strunjan (UL94), 22.6.2001 [GSPC]; Seča (UL93), 4.6.2006; Dragonja, 88 m (UL93), 10.8.2005; Krkavče (UL93), 2.4.2005; Stepiani (VL14), 7.7.2006; Hrvatini, Brageti, 135 m (VL04), 25.7.2006; Dutovlje (VL06), 10.6.2006; Kosovelje (VL07), 10.6.2006; Pliskovica (VL06), 10.6.2006; Renški vrh, 415 m (UL97), 10.6.2006; Štanjel (VL17), 10.6.2006; Tomaj (VL16), 10.6.2006; Opatje selo (UL98), 1.9.2001; Lokev (VL15), 22.9.2001 [GSPC]; Lokvica, 215 m (UL97), 8.5.2005; Vale pri Brestovici (UL97), 8.5.2005; Cerje (UL98), 7.5.2006; Kremenjak (UL97), 7.5.2006 [GSPC – slide]; Klariči (UL97), 19.5.2006; Grižnik, 299 m (VL07), 7.8.2005; Branik (VL07), 8.6.2006; Lukovec (VL07), 8.6.2006; Vogrsko (VL08), 1.6.2005; Slejki, 450 m (VL08), 29.4.2005; Šmihel, 450 m (VL08), 31.3.2002 [GSPC]; Osek (VL08), 31.5.2006; Vitovlje (VL08), 8.6.2006; Kromberk (UL99), 1.6.2006; Ravnica (UL99), 3.10.2004 [GSPC]; Solkan (UL99), 25.9.2005; Podsabotin (UL99), 25.4.2004; Sabotin (UL99), 23.5.1999; Cerovo (UL89), 31.5.2006; Fojana (UL89), 31.5.2006; Vedrijan (UL89), 31.5.2006; Vipolže (UL89), 31.5.2006; Fojana (UL89), 10.6.2005; Senik, 550 m (UM80), 11.6.2006; Dolga poljana, 350 m (VL18), 22.4.2005; Podnanos (VL27), 17.7.2005; Planina (VL17), 8.6.2006; Rebrnice (VL27), 13.6.2006;
- New records:** Strunjan (UL84), 26.5.2008; Korte, 170 m (UL93), 17.5.2009; Brič, 270 m (VL03), 17.5.2017; Paderna, 220 m (UL94), 1.6.2009; Kastelec (VL14), 17.7.2012; Beka (VL15), 30.6.2016; Klariči (UL97), 3.7.2013; Cerje (UL98), 7.5.2006 and 15.06.2014 [GSPC; slide; Figs. 19.2–19.6]; Trstelj, 350 m (UL98), 26.4.2019; Vrtojba (UL98), 30.6.2017; Baske, 600m (UL99), 22.5.2011; Podklanec (VL66), 15.6.2014; Mirtovički potok (VL84), 21.7.2013; Vrčice (WL17), 31.5.2007; Rogaška Slatina (WM42), 2.8.2013.
- Host plant:** *Cotinus coggygria* (Anacardiaceae).
- Biology:** Most likely univoltine; immatures [Fig. 19.6] cause strong curling and rolling of leaves [Fig. 19.2]; overwintering as eggs (CONCI et al. 1993).

## HOMOTOMIDAE Heslop-Harrison, 1958

*Homotoma* Guérin-Méneville, 1844

### 20. *Homotoma ficus* (Linnaeus, 1758)

[Figs. 20.1–20.6]

**GRÄFFE, 1911:** Tolmin (as Tolmein);

**SELJAK, 2006:** Strunjan (UL94), 12.9.2003; Brje pri Komnu (VL07), 7.6.2003; Nova Gorica (UL99), 10.6.1999 and 18.7.2001 [GSPC]; Kromberk (UL99), 2.9.2004 and 31.5.2006 [GSPC]; Kozana (UL89), 17.5.2003; Kanal (UM90), 5.6.2005; Most na Soči (VM01), 16.8.2003;

**New records:** Fjesa (UL84), 26.5.2008; Portorož (UL84), 26.5.2008; Seča (UL93), 4.6.2006; Parecag (UL93), 23.10.2006; Labor (VL03), 16.6.2017; Koper (VL04), 3.11.2003; Spodnje Škofije (VL04), 23.10.2006; Sočerga (VL13), 16.6.2017; Stepani (VL14), 7.7.2006; Osp (VL14), 27.4.2008; Kazlje, 340 m (VL17), 23.9.2017; Pliskovica (VL06), 10.6.2006; Škrbina na Krasu (VL07), 14.5.2007; Dobrovo (UL89), 10.7.2005; Vogrsko (VL08), 2.7.2006 [Fig. 20.5]; Stara Gora (UL98), 31.7.2005; Nova Gorica, 110 m (UL99), 11.09.2019 [GSPC; Figs. 20.3–20.4]; Ravnica (UL99), 18.6.2015; Vitovlje (VL08), 8.6.2006; Kucelj, 1150 m (VL08), 13.8.2006 in 16.9.2012 [GSPC]; Gaberje (VL17), 8.6.2006; Planina (VL17), 8.6.2006; Skrilje (VL18), 11.5.2008.

**Host plant:** *Ficus carica* (Moraceae) [Fig. 20.2].

**Biology:** Univoltine; overwintering as eggs next to buds [Fig. 20.6]; nymphs [Fig. 20.5] occur from May to end July.

## LIVIIDAE Löw, 1879

*Camarotoscena* Haupt, 1935

### 21. *Camarotoscena speciosa* (Flor, 1861)

[Figs. 21.1–21.4]

**JANEŽIČ, 1989:** Dragonja (UL93)(?); Bertoki (VL04) (?); Dekani (VL04) (?); Šmarje pri Kopru (VL04) (?); Grgar (UL99) (?); Neblo (UL89) (?); Prešnica (VL14) (?); Bled (VM33); Vnanje Gorice (VL59); Stranska vas pri Ljubljani (VM50); Kranj (VM51); Trebnje (WL08); Slovenj Gradec (WM05); Vojnik (WM52); Pragersko (WM53); Poljčane (WM54); Kidričevo (WM63); Videm ob Ščavnici (WM75); Ivanjковci (WM84); Lendava (XM15).

*Note:* The records marked with a question mark (?) may also refer to *C. subrubescens*.

**SELJAK, 2006:** Ajba (UM90), 5.6.2005 [GSPC] (1 ♀).

**New record:** Miren, 60 m (UL98), 15.04.2019 [GSPC] (1 ♂) [Figs. 21.3–21.4].

**Host plants:** *Populus* spp., mainly *P. nigra* (Salicaceae); nymphs in conspicuous leaf-roll galls (OSSIANILSSON, 1992).

**Biology:** Probably bivoltine, but the lifecycle is poorly known (CONCI et al., 1993).

### 22. *Camarotoscena subrubescens* (Flor, 1861)

[Figs. 22.1–22.4]

**Löw, 1888:** Gorica (as Görz, A. Hensch leg.);

**SELJAK, 2006:** Kanal (UM90), 05.07.2003 [GSPC]; Dolga poljana, 350 m (VL18), 20.06.2003 [GSPC].

**New records:** Solkan (UL99), 7.7.2005 [GSPC; Fig. 22.3] and 26.06.2018 [GSPC; Fig. 22.4]; Panovec (UL99), 9.7.2005 [GSPC]; Morsko (UM90), 6.7.2016 [GSPC].

**Host plant:** *Populus nigra* (Salicaceae) [Fig. 22.2].

**Biology:** Life cycle largely unknown (CONCI et al., 1993), nymphs probably in leaf-roll galls similar to *C. speciosa*.

*Diaphorina* Löw, 1880

### 23. *Diaphorina chobauti* Puton, 1898

[Figs. 23.1–23.6]

**SELJAK, 2006:** Lokvica (UL97), 29.5.2004 [GSPC]; Lijak (VL09), 1.10.2005 [GSPC]; Solkan (UL99), 21.5.2006 [GSPC – slide];

**New records:** Dragonja (UL93), 26.5.2016 [GSPC]; Kastelec (VL14), 3.7.2017; Črni Kal (VL14), 9.6.2011; Vale pri Brestovici (UL97), 19.5.2006; Lukovec (VL07), 8.6.2006;

Branik (VL07), 10.6.2008 and 25.5.2014; Grižnik (VL07), 10.6.2008 [GSPC]; Vrtovin, 480 m (VL08), 11.10.2019; Solkan (UL99), 27.4.2007 [GSPC – slide; Figs. 23.3 – 23.6]; Golo brdo (UM80), 23.6.2014 and 21.6.2015.

**Host plant:** *Convolvulus canthabrica* (Convolvulaceae) [Fig. 23.2].

**Biology:** At least bivoltine; adults occur from April to October; overwintering stage unknown; first deposited eggs [Fig. 23.6] were found in April; nymphs [Fig. 23.5].

*Euphyllura* Foerster, 1848

## 24. *Euphyllura olivina* (O. G. Costa, 1839)

[Figs. 24.1–24.4]

**SELJAK, 2006:** Fjesa (UL84), 16.06.1997; Seča (UL93), 16.08.2004 [GSPC]; Gažon (UL94), 25.06.1994;

**New records:** Dragonja, 88 m (UL93), 10.8.2005; Parecag (UL93), 4.6.2006 [GSPC]; Rtič Ronek, 80 m (UL94), 10.8.2005 [GSPC]; Gažon 170 m (UL94), 9.7.2015; Belveder nad Izolo (UL94), 5.6.2017; Ankarani (VL04), 27.6.2017; Brič, 280 m (VL03), 17.5.2017; Kubed (VL14), 5.6.2017; Gabrovica pri Črnem Kalu (VL14), 18.07.2018 [GSPC; Figs. 24.3 – 24.4]; Vrtojba (UL98), 28.5.2010; Podsabotin (UL99), 14.5.2019; Kojško (UL99), 4.5.2007; Šmartno v Brdih (UL89), 10.5.2009. Probably more widely distributed in southwestern Slovenia.

**Host plant:** *Olea europaea* (Oleaceae) [Fig. 24.2].

**Biology:** Bivoltine; overwintering as adults on the host plant; occasionally a minor pest in olive plantations.

## 25. \**Euphyllura phillyreae* Foerster, 1848

[Figs. 25.1–25.5]

**New records:** Dragonja (UL93), 17.5.2017, 31.8.2017 [GSPC] and 15.5.2018 [Figs. 25.3–25.5].

**Host plants:** *Phillyrea latifolia* [Fig. 25.2]. *Olea europaea* (Oleaceae).

**Biology:** Univoltine; overwintering as adults on the host plants (CONCI et al. 1993); nymph [Fig. 25.5].

*Livia* Latreille, 1802

## 26. *Livia junci* (Schränk, 1789)

[Figs. 26.1–26.4]

**FLOR, 1861b:** Poljčane (as Pöltschach);

**LÖW, 1888:** Gorica (as Görz; A. Hensch leg.); Lesce (as Lees; F. Then leg.); Ljubljana (as Laibach);

**JANEŽIČ, 1989:** Podsabotin (UL99);

- SELJAK, 2006:** Panovec (UL98), 10.09.2000; Podčela (UM83), 16.09.2002 [GSPC]; Planinsko polje (VL47), 28.06.2001 [GSPC]; Tolmin (VM01), 12.10.2002 [GSPC];
- New records:** Nova Gorica (UL98), 18.6.2005 and 9.10.2005; Šmihel (VL08), 8.4.2005 [GSPC]; Gradišče pri Vipavi (VL17), 1.10.2017, 13.6.2018 and 16.8.2018; Vodice, 930 m (VL28), 25.7.2018; Tolmin (VM01), 24.6.2016 [Figs. 26.3–26.4]; Vojsko – Gačnik, 920 m (VM10), 12.7.2016; Staro selo, 240 m (UM82), 24.8.2016; Jelovica (VM32), 3.9.2005; Pokljuka (VM23), 2.9.2005 [GSPC]; Žejna dolina, 560 m (VL39), 4.12.2018; Zakraj (Bloška planota), 750 m (VL67), 17.7.2017; Rakitna, 800 m (VL58), 12.9.2008 [GSPC]; Mirtovički potok (VL84), 21.7.2013; Volovjek, 1040 m (VM72), 30.7.2005 [GSPC]; Puščava (WL18), 17.6.2006.
- Host plants:** Oligophagous on *Juncus* spp. (Juncaceae) [Fig. 26.2]; inducing leaf deformations and rosette-like galls.
- Biology:** Univoltine; overwintering as adults, often on conifers (OSSIANNILSSON, 1992).

*Psyllopsis* Löw, 1879

### 27. *\*Psyllopsis discrepans* (Flor, 1861)

[Figs. 27.1–27.4]

- New records:** Ankaran (VL04), 17.5.2017 and 16.05.2018 [GSPC; Figs. 27.3 – 27.4].
- Host plants:** *Fraxinus angustifolia* [Fig. 27.2] and other *Fraxinus* spp. (Oleaceae) (OSSIANNILSSON, 1992).
- Biology:** Possibly bivoltine; overwintering as eggs; nymphs in leaf galls.

### 28. *Psyllopsis distinguenda* Edwards, 1913

[Figs. 28.1]

- SELJAK, 2006:** Bled (VM33), 19.8.2002, 2 ♀ [GSPC; det. P. Lauterer].
- Host plant:** *Fraxinus excelsior* (Oleaceae).
- Biology:** Bivoltine; overwintering as eggs (LAUTERER, 1982).
- Remark:** The occurrence of this species in Slovenia is poorly documented. The two females in the author's collection identified as *P. distinguenda* by P. Lauterer may belong to *P. fraxini*.

### 29. *Psyllopsis fraxini* (Linnaeus, 1758)

[Figs. 29.1–29.4]

- SCOPOLI, 1763:** Carniola (central part of modern-day Slovenia); sub *Chermes fraxini*;
- LÖW, 1888** Lesce (as Lees, leg. F. Then);
- GRÄFFE, 1911:** Tolmin (as Tolmein);
- VONDRÁČEK, 1951:** Bovec (as Flitsch) [MMBC, in coll. L. Melichar];
- JANEŽIČ, 1989:** Beltinci (WM96), Bohinjska Bistrica (VM12), Borovnica (VL58), Brežice (WL48), Cankova (WM77), Cerknica (VL57), Črna na Koroškem (VM84), Dol

pri Ljubljani (VM70), Dravograd (WM05), Fara (VL66), Grad v Prekmurju (WM88), Ilirska Bistrica (VL44), Izlake (VM91), Kanal (UM90), Kobarid (UM92), Kočevje (VL85), Komen (VL07), Kranj (VM51), Laško (WM11), Lendava (XM15), Litija (VM8601), Ljubljana – Rožna dolina (VL59), Ljutomer (WM95), Logatec (VL48), Maribor (WM45), Mengeš (VM61), Metlika (WL25), Miklavž pri Ormožu (WM94), Mojstrana (VM14), Most na Soči (VM01), Novo mesto (WL17), Ormož (WM83), Pivka (VL36), Podbrdo (VM21), Podlehnik (WM63), Polhov Gradec (VM40), Preddvor (VM52), Ptuj (WM64), Rakek (VL47), Rakitna (VL58), Ribnica (VL76), Rogaška Slatina (WM42), Selnica ob Dravi (WM35), Sevnica (WL29), Slovenj Gradec (WM05), Središče (WM93), Škofja Loka (VM41), Veržej (WM95), Vinica (WL23), Vitanje (WM23), Vurberk (WM64), Zbilje (VM51), Žiri (VM30);

**SELJAK, 2006:** Panovec (UL98), 21.08.2001 and 29.08.2003 [GSPC]; Breginj – Planina na Klinu, 900 m (UM72), 22.08.2003 [GSPC]; Log Čezsoški (UM83), 16.09.2002 [GSPC]; Vojsko, 1050 m (VL19), 22.08.2003; Studeno (VL37), 06.06.1999; Bohinjska Bistrica (VM12), 19.08.2002 [GSPC]; Nemški Rovt, 750 m (VM22), 14.08.2003 [GSPC]; Lesce (VM33); Bled (VM33), 19.08.2002;

**New records:** Ajba (UM90), 5.6.2005 [GSPC]; Kucelj, 1140 mm (VL08), 30.8.2018; Podkraj (VL28), 4.6.2018 [Fig. 29.3]; Hruševje pri Postojni, 535 m (VL36), 12.9.2015 [GSPC]; Črni vrh, 850 m (VL28), 12.6.2009; Kozaršče (VM01), 24.5.2018 [Fig. 29.4]; Grant, 700 m (VM11), 12.6.2010 [GSPC]; Bukovo (VM11), 3.8.2008 [GSPC] and 12.6.2010; Labinje, 850 m (VM21), 17.6.2017 and 1.11.2018; Gorenji Novaki, 1030 m (VM21), 4.7.2009; Bohinjsko jezero (W) (VM12), 12.8.2008; Osilnica (VL74), 20.7.2013; Podsreda, Socko, 300 m (WL49), 17.6.2006 [GSPC]; Golobinjek ob Sotli, 200 m (WM40), 16.6.2006.

Common and widely distributed all over Slovenia.

**Host plants:** *Fraxinus excelsior* (Oleaceae) [Fig. 29.2] and some other *Fraxinus* spp.

**Biology:** Bivoltine; overwintering as eggs; nymphs in galls on leaves.

### 30. *Psyllopsis fraxinicola* (Foerster, 1848)

[Figs. 30.1–30.4]

**Löw, 1888:** Kranjska (as Krain, central part of modern-day Slovenia);

**SELJAK, 2006:** Banjšice (UL99), 18.07.2004; Krn, 1100 m (UM92), 05.07.2003 [GSPC]; Bukovo (VM11), 13.07.2002 [GSPC]; Dolenji Novaki (VM21), 20.07.2003 [GSPC]; Ljubljana (VL69), 22.05.2003 [GSPC – slide];

**New records:** Ankaran (VL04), 16.05.2018 [Figs. 30.3–30.4]; Senožeče (VL26), 19.6.2005 and 16.7.2011; Kromberk (UL99), 6.6.2010; Ajševica (UL99), 26.05.2018; Dolina Idrije (UM80), 11.6.2006; Ajba (UM90), 5.6.2005 [GSPC]; Kanal (UM90), 5.6.2005; Gabrje pri Tolminu, 180 m (UM91), 3.7.2008; Podkraj (VL27), 20.6.2008 [GSPC – slide] and 04.06.2018; Črni vrh, 850 m (VL28), 12.6.2009; Mrzli Log (VL28), 27.6.2015; Grant, 700 m (VM11), 12.6.2010 [GSPC – slide]; Labinje, 500 m (VM21), 22.6.2013; Golubinjek, 200 m (WM40), 16.6.2006; Šmartno na Pohorju (WM44), 08.07.1986 [PMSL, B. Sket leg.].

**Host plant:** *Fraxinus excelsior* (Oleaceae) [Fig. 30.2].

**Biology:** Likely bivoltine; overwintering as eggs; nymphs living freely, not inducing galls.

### 31. *Psyllopsis meliphila* Löw, 1881

[Figs. 31.1–31.5]

**Löw, 1888:** Lesce (as Lees, the type locality; F. Then leg.);

**SELJAK, 2006:** Matenja vas (VL36), 05.10.2004; Sabotin, 600 m (UL99), 10.09.2002 [GSPC]; Grgar, 300 m (UL99), 16.07.2004; Rabotnica (VL07), 30.06.2002 [GSPC]; Železna vrata (VL07), 27.06.2003; Nanos, Rebernice 600 m (VL27), 06.07.2002 [GSPC]; Vrsno (UM91), 05.07.2003 [GSPC];

**New records:** Dragonja (UL93), 26.5.2016 and 31.8.2017; Paderna, 220 m (UL94), 1.6.2009; Kavaliči, 250 m (VL04), 9.7.2015; Rakitovec (VL13), 11.9.2016; Črni kal (VL14), 9.6.2011; Klariči (UL97), 3.7.2013; Kozina, 540 m (VL15), 28.08.2018 [Fig. 31.4]; Grgar, 300 m (UL99), 16.7.2004; Kromberk (UL99), 11.6.2005 [GSPC], 26.05.2013 [Fig. 31.5] and 26.9.2019 [Fig. 31.3]; Vogrsko (VL08), 2.7.2006; Osek (VL08), 2.7.2006; Ravnica (UL99), 18.6.2015; Gornje Cerovo (UL89), 10.7.2005; Golo brdo (UM80), 11.6.2006; Dolina Idrije (UM80), 11.6.2006; Korada (UM80), 19.10.2013; Gradišče pri Vipavi (Mlake) (VL17), 17.06.2018; Rebrnice, 500 m (VL27), 17.06.2018; Malo Polje (VL28), 27.6.2015; Labinje (VM21), 17.9.2011 [GSPC]; Kozja peč, 400 m (WL59), 16.6.2006; Virštanj (WM40), 16.6.2006 [GSPC].

**Host plants:** *Fraxinus ornus* [Fig. 31.2], *F. pensylvanica*, probably also other *Fraxinus* species (Oleaceae).

**Biology:** Bivoltine; overwintering as eggs; nymphs [Fig. 31.5] of the first generation in May and June, the second in August and September; not inducing galls on leaves.

*Strophingia* Enderlein, 1914

### 32. *Strophingia ericae* (Curtis, 1835)

[Figs. 32.1–32.4]

**Löw, 1888:** Gorica (as Görz, A. Hensch leg.);

**SELJAK, 2006:** Smrečje (VL39), 12.06.2002 on *Erica carnea* [GSPC]; Smrekovec, 1500 m (VM94), 22.06.2002 [GSPC];

**New records:** Stara Gora (UL98), 17.6.2011 [GSPC] and 9.5.2014 [Figs. 32.3 – 32.5]; Porezen, 1250 m (VM21), 25.6.2011 [GSPC].

**Host plants:** *Calluna vulgaris* [Fig. 32.2], *Erica carnea* (Ericaceae) (LAUTERER, 1977).

**Biology:** Univoltine, overwintering as instar larvae; adults from May to July.



## PSYLLIDAE Latreille, 1807

### Acizziinae White & Hodkinson, 1985

*Acizzia* Heslop-Harrison, 1961

#### 33. *Acizzia acaciaebaileyanae* (Froggatt, 1901)

[Figs. 33.1–33.2]

SELJAK et al., 2004; SELJAK, 2006: Vrtojba (UL98), 6.5.2002 [GSPC; Fig. 33.1].

**Host plant:** *Acacia baileyana* (Fabaceae).

**Biology:** Multivoltine, overwintering on the host plant (RAPISARDA, 1985).

**Remark:** An alien species, native to Australia; in Slovenia, recorded only transitionally in a nursery with ornamental plants, but not established.

#### 34. *Acizzia jamatonica* (Kuwayama, 1908)

[Figs. 34.1–34.5]

SELJAK, 2003; SELJAK et al., 2004; SELJAK, 2006: Nova Gorica (UL99), 27.07.2002, 02.08.2002 and 26.3.2006 [GSPC]; Solkan (UL99), 09.09.2002; Sabotin (UL99), 10.09.2002; Vrtovče (VL17), 24.07.2003; Slap pri Vipavi (VL17), 12.07.2004; Strunjan (UL94), 12.09.2003; Koper (VL04), 11.09.2002; Lucija (VL04), 11.07.2003; Vipolže (UL89), 25.04.2004; Paljevo (UL99), 20.09.2003;

**New records:** Vale pri Brestovici (UL97), 6.8.2005; Šempeter pri Gorici (UL98), 2.11.2008 and 22.9.2013; Nova Gorica (UL99), 15. 11. 2015 [GSPC – slide; Figs. 34.3–34.5] and 17.8.2018 [Fig. 34.4]; Kozana (UL89), 23.6.2005; Fojana (UL89), 10.7.2005; Višnjevnik (UL89), 10.7.2005; Ročinj (UM90), 8.9.2005;

As the vagrants on other plants far away from the host plant: Korada, 620 m (UM80), 11.6.2006; Krnica, 1050 m (VL08), 28.9.2008; Čaven, 1250 m (VL18), 28.9.2008.

**Host plant:** *Albizia julibrissin* (Fabaceae) [Fig. 34.2].

**Biology:** Multivoltine, up to four generations per year; overwinters as an adult on its host plant and on conifers.

**Psyllinae Latreille, 1807***Arytaina* Förster, 1848**35. *Arytaina genistae* (Latreille, 1805)**

[Figs. 35.1–35.3]

**SELJAK, 2006:** Počehova (WM55), 10.8.2004, a male trapped on a yellow sticky trap [J. Miklavc leg.];

**New record:** Dragomer (VL59), 3.06.2019 on *Cytisus praecox* [A. Kuhelj leg.], [GSPC; Fig. 35.3].

**Host plants:** *Cytisus scoparius* [Fig. 35.2], *C. praecox*; according to OSSIANNILSSON (1992) also *C. austriacus*, *C. heufelli*, *Genista tinctoria* and *Ulex europaeus* (Fabaceae).

**Biology:** Multivoltine, with 2–3 generations per year; overwintering as adults on the host plant (CONCI et al., 1993).

**Remark:** The species may be expected to occur more commonly in the north-eastern part of Slovenia, where *Cytisus scoparius* grows more commonly.

*Arytainilla* Loginova, 1972**36. \**Arytainilla spartiophila* (Foerster, 1848)**

[Figs. 36.1–36.5]

**New records:** Panovec (UL99), 6.5.2019 [GSPC; Fig. 36.5] and 22.5.2019 [Figs. 36.3–36.4].

**Host plant:** *Cytisus scoparius* (Fabaceae) [Fig. 36.2].

**Biology:** Univoltine; overwintering as eggs on the host plant (CONCI et al., 1993).

*Baeopelma* Enderlein, 1926**37. *Baeopelma colorata* (Löw, 1888)**

[Figs. 37.1–37.4]

**Löw, 1888:** Gorica (as Görz, the type locality, A. Hensch leg.);

**SELJAK, 2006:** Lijak (UL99), 02.05.2002 [GSPC – slide]; Kromberk (UL99), 11.06.2005; Solkan (UL99), 05.05.2002 [GSPC]; Nova Gorica (UL99), 02.08.2002 [GSPC] and 18.05.2003; Ravnica (UL99), 25.07.2003; Orlek, 345 m (VL05), 19.06.2005; Železna vrata (VL07), 27.06.2003; Črniške Ravne (VL08), 03.07.2004; Ajdovščina – Hubelj (VL18), 01.06.2002; Nanos, 950 m (VL27), 06.07.2002 [GSPC] and 16.07.2004; Col, 720 m (VL28); 14.07.2001; Spodnje Bukovo (VM11), 13.07.2002; Labinje, 700 m (VM21), 20.07.2003 and 22.08.2004 [GSPC];

**New records:** Korte, 170 m (UL93), 17.5.2009; Kubed (VL14), 17.7.2012; Krvavi potok, 550 m (VL15), 6.7.2008; Rodik (VL15), 6.7.2008; Kozina (VL15), 2.6.2011; Pared

(Kačiče), 450 m (VL25), 19.5.2018; Lokev, 425 m (VL15), 13.5.2017; Gabrče, 610 m (VL26), 19.5.2018; Dolenja vas, 560 m (VL26), 19.5.2018; Planina (VL17), 8.6.2006; Stomaž, 400 m (VL18), 11.5.2008; Rebrnice (VL27), 2.7.2011 and 17.06.2018 [Fig. 37.3]; Malo Polje (VL28), 27.6.2015; Kromberk (UL99), 2.05.2016 [Fig. 37.4]; Sabotin (UL99), 15.6.2008; Kuk nad Anhovim, 640 m (UL99), 25.7.2009; Grgar (UL99), 27.5.2012; Dolina Idrije (UM80), 11.6.2006; Golo brdo (UM80), 11.6.2006; Korada, 620 m (UM80), 11.6.2006 and 31.5.2014; Senik, 550 m (UM80), 11.6.2006; Slap Boka (UM83), 15.7.2006; Kobilica, 680 m (VM00), 17.8.2006 and 8.7.2007; Čepovan (Velike Vrše), 850 m (VM00), 9.7.2007; Rut, 980 m (VM11), 12.6.2010; Kojca, 670 m (VM11), 8.8.2010; Orehek (VM11), 5.6.2015; Labinje (VM21), 17. 09. 2011 [GSPC]; Draga (Ig) (VL68), 20.5.2017; Osilnica, 825 m (VL74), 20.7.2013; Zgornji Čačič (VL74), 20.7.2013; Straška gora (WL06), 31.5.2007; Blatnik pri Črmošnjicah (WL15), 1.6.2007; Kozja peč, 400 m (WL59), 16.6.2006; Vetrnik, 700 m (WM40), 17.6.2006 [GSPC].

**Host plant:** *Ostrya carpinifolia* (Betulaceae) [Fig. 37.2].

**Biology:** Univoltine; overwintering as eggs, adults from late April to mid-August on the hostplant, vagrants also on other plants; nymph [Fig. 37.4].

### 38. *Baeopelma foersteri* (Flor, 1861)

[Figs. 38.1–38.4]

**Löw, 1888:** Gorica (as Görz, A. Hensch leg.); Hrašče pri Postojni (as Hrasche); Lesce (as Lees, F. Then leg.);

**GRÄFFE, 1911:** Tolmin (as Tolmein);

**SELJAK, 2006:** Nova Gorica (UL98), 12.07.2003 [GSPC]; Kromberk (UL99), 11.06.2005; Banjšice (VL09), 8.07.2004 [GSPC]; Postojna (VL37), 06.06.1999; Labinje, 800 m (VM21), 22.08.2004 [GSPC]; Muriša (XM24), 26.07.2004.

**New records:** Vogrsko (VL08), 8.7.2010; Šempas (VL08), 21.07.2019 [Figs. 38.3–38.4]; Baske, 600m (UL99), 22.5.2011 [GSPC – slide]; Kanalski vrh, 640 m (UM90), 6.7.2016; Gradišče pri Vipavi (VL17), 13.6.2006; Podraga (VL17), 18.7.2016; Landol, 530 m (VL37), 18.7.2016; Hotedršica, 560 m (VL38), 26.8.2016; Dolnji Zemon (VL44), 1.7.2007; Spodnje Bukovo, 390 m (VM11), 12.6.2010; Spodnje Bukovo (VM11), 24.7.2016; Gorje, 580 m (VM21), 8.8.2010 and 5.6.2015; Labinje, 900 m (VM21), 18.8.2012; Gorenji Novaki (VM21), 7.7.2018 [GSPC]; Bukovščica (VM42), 17.7.2010; Draga (Ig), 315 m (VL68), 19.5.2017; Osilnica (VL74), 20.7.2013; Preval pri Podutiku (VM50), 6.6.2012; Preloge, 360 m (WL15), 31.5.2007; Blatnik pri Črmošnjicah (WL15), 1.6.2007; Golubinjek, 200 m (WM40), 16.6.2006.

**Host plants:** *Alnus glutinosa* [Fig. 38.2], *A. incana* (Betulaceae).

**Biology:** Univoltine; overwinters as eggs (OSSIANNILSSON, 1992), adults from May to August on the host plants.

*Cacopsylla* Ossiannilsson, 1970

### 39. *Cacopsylla affinis* (Löw, 1880)

[Figs. 39.1–39.3]

**SELJAK, 2006:** Labinje, 670 m (VM21), 20.07.2003; Hoče pri Mariboru (WM45), 10.04.2002 [leg. Lešnik];

**New records:** Snežnik, 1600 m (VL54), 27.7.2017 [GSPC]; Vogrsko (VL08), 10.3.2007; Kromberk (UL99), 17.5.2016 [GSPC]; Baske (UL99), 5.5.2016 [GSPC]; Korada, 620 m (UM80), 11.6.2006 [GSPC]; Škofje, 960 m (VM21), 17. 02. 2019 [GSPC]; Dol pri Borovnici (VL48), 10.5.2017 [leg. R. Šturm]; Ljubljana (VM60), 17.6.1971 [PMSL, B. Sket leg.]; Selo pri Prosenjakovcih, 277 m (WM97), 1.4.2015 [GSPC].

**Host plants:** *Crataegus* spp. (Rosaceae) [Fig. 39.2].

**Biology:** Univoltine; adults occur nearly throughout the year; from March to June on the host plants, later on shelter plants (conifers), on which they overwinter.

### 40. *Cacopsylla albipes* (Flor, 1861)

[Figs. 40.1–40.6]

**Löw, 1888:** Trnovski gozd (as Tarnovanerwald, A. Hensch leg.);

**SELJAK, 2006:** Kromberk (UL99), 21.03.2002 and 04.04.2004 [GSPC];

**New records:** Kromberk, 330 m (UL99), 06.05.2012 [GSPC – slide; Figs. 40.5–40.6] and 15.03.2019 [Figs. 40.3–40.4]; Vitovski vrh, 900 m (VL08), 22.4.2007 [GSPC]; Cimprovka, 1250 m (VM21), 23.10.2012 [GSPC].

**Host plants:** *Sorbus aucuparia*, *S. domestica* [Fig. 40.2] (Rosaceae).

**Biology:** Univoltine; adults occur almost throughout the year; from March to June on its host plant, later on shelter plants – conifers. Immatures cause leaf and shoot malformations [Fig. 40.6].

### 41. *Cacopsylla ambigua* (Foerster, 1848)

[Figs. 41.1–41.4]

**Löw, 1888:** Gorica (as Görz, A. Hensch leg); Bela peč (as Weissenfels);

**SELJAK, 2006:** Kromberk (UL99), 28.4.2002 [GSPC]; Panovec (UL98), 9.7.2005 [GSPC]; Zadnja Trenta (VM03), 24.7.2005 [GSPC];

**New records:** Vrtojba (UL98), 11.4.2017; Solkan (UL99), 21.5.2006 [GSPC]; Baske, 600m (UL99), 22.5.2011 and 5.5.2016; Kanalski vrh (UM90), 18.5.2013; Banjšice (VL09), 13.5.2006 [GSPC]; Kozaršče (VM01), 24.5.2018; Kolovrat (UM91), 16.6.2013 and 24.6.2016; Robič (UM82), 14.4.2007; Slap Boka (UM83), 15.7.2006 [GSPC] and 12.4.2011 [GSPC – slide]; Soča (UM93), 12.4.2011 and 30.5.2018; Trenta (VM04), 9.7.1984 [PMSL, B. Sket leg.]; Rut, 1200 m (VM11), 12.6.2010; Spodnje Bukovo (VM11), 24.4.2011 [GSPC]; Cimprovka, 1200 m (VM21), 27.5.2017; Gorenji Novaki, 1025 m (VM21), 27.5.2017; Soriška planina (VM22), 3.7.2008; Črni vrh, 850 m (VL28), 12.6.2009; Grobišče, 523 m (VL36), 7.5.2018

[Fig. 41.4]; Hotedršica (VL38), 15.5.2017 and 23.06.2018 [GSPC; Fig. 41.3]; Godovič (VL29), 10.05.2019; Bukovščica (VM42), 17.7.2010; Preval pri Podutiku (VM50), 6.6.2012; Volčje, 750 m (VL67), 18.05.2019.

**Host plants:** *Salix* spp., particularly *S. eleagnos* [Fig. 41.2], *S. cinerea*, *S. caprea* and *S. appendiculata* (Salicaceae).

**Biology:** Bivoltine; overwintering as the first and second instar nymphs on the host plants (LAUTERER, 1976), adults occur from April to August.

**Remark:** Two colour morphs that may belong to two distinct species but are morphologically indistinguishable were reported by LAUTERER et BURCKHARDT (1997). Both forms also occur in Slovenia: an ochraceous morph on *S. eleagnos* [Fig. 41.3] and a light green morph on willows (*S. caprea*, *S. appendiculata*, *S. cinerea*) [Fig. 41.4].

## 42. *Cacopsylla bidens* (Šulc, 1907)

[Figs. 42.1–42.4]

**SELJAK, 2006:** Vedrijan (UL89), 26.5.2003 [GSPC]; Nova Gorica (UL98), 9.5.2002 [GSPC];

**New records:** Dragonja (UL93), 14.4.2011 [GSPC]; Kromberk (UL99), 4.7.2006 [GSPC], 17.5.2016 [GSPC] and 1.5.2018 [GSPC; Figs. 42.3–42.4].

**Host plant:** *Pyrus communis* [Fig. 42.2], according to BURCKHARDT et HODKINSON (1986) also *P. pyraster* and *P. syriaca* (Rosaceae).

**Biology:** Multivoltine, with 3–5 generations per year; adults occur throughout the year and overwinter on the host plant (BURCKHARDT et HODKINSON, 1986; CONCI et al., 1993).

## 43. *Cacopsylla brevantennata* (Flor, 1861)

[Figs. 43.1–43.4]

**SELJAK, 2006:** Kromberk (UL99), 10.12.2000 [GSPC] and 08.02.2001 [GSPC]; Šmihel, 600 m (VL08), 31.03.2002; Kopitnik, 940 m (VL08), 31.12.2004; Lijak, 500 m (VL09), 02.05.2002; Pri Peči (VL09), 02.05.2004; Trnovo (VL09), 31.12.2004; Nanos, 900 m (VL26), 16.10.2001 [GSPC]; Podkraj (VL28), 12.05.2002 and 30.05.2002; Strmica – Zaplana (VL48), 12.05.2002; Hudournik (VM10), 20.05.2001; Spodnje Bukovo (VM11), 11.03.2001 [GSPC] and 29.04.2001; Orehek (VM11), 25.04.1999; Labinje (VM21), 13.10.2002; Dravograd, 04.05.2004;

**New records:** Bertoki (VL04), 22.6.2007; Staro, 670 m (VL33), 7.02.2019; Podgrad, 550 m (VL34), 7.02.2019; Trstelj, 350 m (UL98), 26.04.2019; Gradišče pri Vipavi, 115 m (VL17), 29.9.2016; Stomaž, 500 m (VL18), 11.5.2008; Lokavec, 710 m (VL18), 23.10.2015 [GSPC – slide; Fig. 43.4]; Rebrnice, 520 m (VL26), 16.4.2011 [GSPC]; Prelože (VL35), 28.3.2014; Sviščaki, 680 m (VL44), 11.2.2016; Slejki, 450 m (VL08), 29.4.2005; Baske, 600 m (UL99), 20.10.2007 and 05.05.2018; Ravnica (UL99), 4.11.2007; Grgar (UL99), 5.5.2016; Korada (UM80), 19.10.2013; Lig, 625 m (UM90), 19.10.2013; Kolovrat, 1150 m (UM91), 16.6.2013 and 15.11.2018 [Fig. 43.3]; Vitovski vrh (VL08), 21.4.2007; Kucelj (VL08), 16.9.2012 and 18.10.2015; Banjšice (VL09), 13.5.2006 and 19.3.2014; Čepovanska reber

(VL09), 9.5.2015; Lokovec (VL09), 8.4.2018; Podgozd (VL09), 7.12.2016; Lazna, 970 m (VL09), 7.12.2016; Mrzli Log, 875 m (VL28), 4.12.2018; Žejna dolina, 560 m (VL39), 4.12.2018; Kolovrat, 1060 m (UM91), 15.11.2018; Izvir Soče, 920 m (VM04), 12.4.2011; Ponikve – Zagomilica, 760 m (VM11), 26.12.2019; Bukovski vrh, 820 m (VM11), 26.02.2019; Škofje, 960 m (VM21), 17.02.2019; Blegoš, 1500 m (VM31), 17.10.2019; Cimprovka, 1250 m (VM21), 23.10.2012; Lajnar, 1500 m (VM22), 23.10.2012; Draga (Ig) (VL68), 20.5.2017.

**Host plant:** *Sorbus aria* (Rosaceae) [Fig. 43.2].

**Biology:** Most likely bivoltine; overwintering as adults on conifers; adults occur on the host plant from April to June and then in September and October; the last nymphs [Fig. 43.4] were observed in late October.

#### 44. *Cacopsylla brunneipennis* (Edwards, 1896)

[Figs. 44.1–44.4]

**SELJAK, 2006:** Panovec (UL98), 12.05.2005; Črni vrh (Cerkno), 1230 m (VM21), 20.07.2003 [GSPC]; Pohorski dvor (WM45), 12.05.2002, M. Lešnik leg. [GSPC];

**New records:** Ankaran (VL04), 17.5.2017; Bilje (UL98), 19.04.2018; Miren (UL98), 14.02.2019 [Fig. 44.3]; Nova Gorica (UL99), 1. 05. 2006 [GSPC – slide]; Ajševica (UL99), 28.04.2006 [GSPC] and 20.04.2013 [GSPC – slide]; Baske (UL99), 5.5.2016; Kanal, 95 m (UM90), 23.02.2019; Kanalski vrh (UM90), 18.5.2013; Kolovrat, 1100 m (UM91), 8.9.2012, 2.4.2016 and 25.8.2019 [Fig. 44.4]; Kucelj, 1150 m (VL08), 13.8.2006 and 18.10.2015; Selovec, 1200 m (VL08), 13.8.2006; Mala Lazna (VL09), 9.5.2015; Nemci, 880 m (VL09), 13.6.2015; Trnovo (VL09), 6.9.2015; Dolga Poljana (VL18), 26.4.2016; Mrzli Log (VL28), 27.6.2015; Hotedršica (VL38), 15.5.2017; Matajur, 1300 m (UM81), 24.8.2016; Zadnja Trenta, 970 m (VM03), 28.7.2007; Vršič, 1400 m (UM04), 15.8.2012; Slap ob Idrijci, 180 m (VM00), 26.02.2019; Spodnje Bukovo (VM11), 24.4.2011 [GSPC]; Labinje, 680 m (VM21), 9.9.2006 [GSPC]; Porezen, 1300 m (VM21), 25.6.2011 and 27.5.2017; Cimprovka, 1250 m (VM21), 23.10.2012; Gorenji Novaki (VM21), 27.5.2017; Blegoš, 1500 m (VM31), 17.10.2019; Sviščaki, 680 m (VL44), 11.2.2016; Snežnik, 1600 m (VL54), 27.7.2017; Grobišče (VL36), 07.05.2018; Dolenje Jezero, 550 m (VL56), 23.03.2019; Ljubljana – Rakova Jelša, 300 m (VL69), 19.02.2019; Mlinarjevo sedlo, 1300 m (VM63), 15.8.2007; Runtole, 270 m (WM22), 6.03.2019; Maribor – Sp. Radvanje, 285 m (WM45), 6.03.2019; Selo pri Prosenjakovcih, 260 m (WM97), 4.2.2016.

**Host plants:** *Salix* spp.; in Slovenia recorded on *S. purpurea*, *S. cinerea* [Fig. 44.2], *S. caprea* and *S. appendiculata* (Salicaceae).

**Biology:** Univoltine; overwintering as adults on conifers; adults occur on the hostplants from February to July.

#### 45. \**Cacopsylla corcontum* (Šulc, 1909)

[Figs. 45.1–45.3]

**New records:** Mala Lazna (VL09), 23.6.2011 [GSPC; Fig. 45.3]; Blegoš, 1300 m (VM21), 8.8.2009 [GSPC]; Porezen, 1360 m (VM21), 27.5.2017 [GSPC].

**Host plant:** *Sorbus aucuparia* (Rosaceae) [Fig. 45.2].

**Biology:** Univoltine; overwintering as adults on conifers; adults occur on the host plant from May to August, nymphs in May to July (OSSIANILSSON, 1992).

#### 46. *Cacopsylla crataegi* (Schrank, 1801)

[Figs. 46.1–46.4]

**Löw, 1888:** Gorica (as Görz, A. Hensch leg); Nanos (as Berg Nanos); Lesce (as Lees, F. Then leg.);

**GRÄFFE, 1911:** Primorska (as Küstenland);

**SELJAK, 2006:** Skalnica, 320 m (UL99), 13.06.1999; Ravnica (UL99), 17.06.2001; Kromberk (UL99), 04.04.2004; Šmihel (VL08), 31.03.2002 [GSPC]; Sanabor (VL28), 10.05.2002; Gozd, 800 m (VL18), 25.05.1999; Vojsko, 1050 m (VL19), 23.08.2003 [GSPC]; Podkraj, 850 m (VL28), 05.07.1999;

**New records:** Škodelin (UL93), 15.5.2005; Parecag (UL93), 4.6.2006; Nova vas nad Dragonjjo (VL04), 27.4.2012; Korte, 170 m (UL93), 17.5.2009 [GSPC – slide]; Belvedere (UL94), 25.5.2008; Petrinjski kras (VL14), 27.4.2008; Črnotiče (VL14), 27.4.2008; Črni kal (VL14), 14.4.2011; Kreplje, 300 m (VL06), 16.04.2019; Vremšičica (VL25), 16.7.2011; Zavrhek (VL25), 26.3.2012; Dolenja vas, 560 m (VL26), 19.05.2018; Senadole (VL26), 19.6.2005; Lokvica, 215 m (UL97), 8.5.2004; Klariči (UL97), 3.7.2013; Nova Gorica (UL98), 23.12.2006; Renče (UL98), 6.4.2008; Ravnica (UL99), 4.11.2007; Vitovlje, 100 m (VL08), 20.4.2008; Baske (UL99), 5.5.2016; Prilesje (UL99), 27.04.2018 [Fig. 46.4]; Senik, 550 m (UM80), 11.6.2006; Kolovrat, 1110 m (UM91), 2.4.2016; Lokovec, 830 m (VM00), 10.5.2014; Selovec, 1200 m (VL08), 13.8.2006 [GSPC]; Krnica, 1050 m (VL08), 28.9.2008; Kucelj (VL08), 16.9.2012; Banjšice (VL09), 13.5.2006; Trnovo, 700 m (VL09), 22.4.2007; Mala Lazna, 1110 m (VL09), 23.10.2015; Čaven, 1250 m (VL18), 28.9.2008; Dolga poljana, 350 m (VL18), 22.4.2005; Rebrnice, 520 m (VL26), 16.4.2011; Poreče pri Podnanosu (VL27), 20.6.2006; Orehek pri Postojni (VL36), 07.05.2018; Nanos (VL27), 2.7.2011 [GSPC]; Sviščaki, 680 m (VL44), 11.2.2016; Petelinjsko jezero (VL46), 14.07.2019; Planinsko polje, 450 m (VL47), 23.03.2019; Dolenje Jezero, 550 m (VL56), 23.03.2019; Podcerkev, 620 m (VL56), 17.05.2019; Labinje, 750 m (VM21), 13.04.2019 [Fig. 46.3]; Sečje selo, 170 m (WL13), 3.6.2007; Kozja peč, 400 m (WL59), 16.6.2006; Selo pri Prosenjakovcih, 277 m (WM97), 1.4.2015.

**Host plants:** *Crataegus* spp. (Rosaceae) [Fig. 46.2].

**Biology:** Univoltine; overwintering as adults on conifers; adults occur on the host plants from April to mid-July.

**47. \**Cacopsylla elegantula* (Zetterstedt, 1840)**

[Figs. 47.1–47.3]

**New records:** Izvir Soče, 920 m (VM04), 12.4.2011, P. Lauterer leg. et det. [GSPC]; Lajnar, 1500 m (VM22), 23.10.2012 [GSPC].

**Host plants:** *Salix* sect. *Capreae* [Fig. 47.2] (Salicaceae) (OSSIANNILSSON, 1992).

**Biology:** Univoltine; overwintering as adults on conifers (OSSIANNILSSON, 1992); adults occur on the host plants in April to May and in August.

**48. *Cacopsylla fulguralis* (Kuwayama, 1908)**

[Figs. 48.1–48.4]

**SELJAK, 2017:** Nova Gorica, 100 m (UL99), 16.4.2015 [GSPC; Fig. 48.4] and 10.4.2019 [Fig. 48.3]; Kromberk (UL99), 19.4.2015, 26.2.2016 and 24.4.2017 [GSPC]; Ajševica (UL99), 21.6.2017.

**Host plant:** *Elaeagnus* spp. (DEN BIEMAN et al. 2019), in Slovenia recorded on *E. × submacrophylla* (Elaeagnaceae) [Fig. 48.2].

**Biology:** Multivoltine; overwintering as adults on the host plant (DEN BIEMAN et al. 2019).

**49. *Cacopsylla intermedia* (Löw, 1888)**

[Figs. 49.1–49.2]

**Löw, 1888:** Gorica (as Görz – the type locality, A. Hensch leg.).

**Host plant:** *Salix purpurea* [Fig. 49.2], *S. viminalis* (Salicaceae) (LAUTERER, 1999).

**Biology:** Univoltine; overwinters as eggs; adults occur from June to September (LAUTERER, 1999).

**Remark:** Since Löw (1888), the species has not been recorded in the region on the Italian-Slovenian borders again (CONCI et al., 1993).

**50. *Cacopsylla iteophila* (Löw, 1876)**

[Figs. 50.1–50.5]

**SELJAK, 2006:** Kanal ob Soči (UM90), 03.04.2005 and 05.06.2005 [GSPC]; Tolmin (VM01), 11.04.2004 [GSPC] and 03.04.2005;

**New records:** Miren, 55 m (UL98), 2.5.2012 and 12.03.2019 [Fig. 50.3–50.5]; Kanal, 95 m (UM90), 23.02.2019; Bača pri Modreju, 150 m (VM01), 17.3.2012; Kamno, 190 m (UM92), 15.03.2019; Volarje, 180 m (UM91), 15.03.2019; Robič, 240 m (UM82), 14.4.2007 [GSPC]; Slap Boka, 350 m (UM83), 14.4.2007, Soča – V Klancu, 500 m (UM93), 30.5.2018.

**Host plants:** *Salix eleagnos* [Fig. 50.2]; also *S. euxina* (Salicaceae) (CONCI et al., 1993).

**Biology:** Univoltine; overwintering as adults on conifers (CONCI et al., 1993).



## 51. *Cacopsylla mali* (Schmidberg, 1836)

[Figs. 51.1–51.3]

**Löw, 1888:** Bela peč (as Weissenfels); Lesce (as Lees, F. Then leg.);

**SELJAK, 2006:** Ušnik (VM01), 13.07.2002; Čadrg (VM01), 26.06.2004; Lepena, 700 m (UM92), 22.08.2003; Spodnje Bukovo (VM11), 13.07.2002 [GSPC]; Črni vrh (Cerkno), 1230 m (VM21), 20.07.2003; Vojsko, 1050 m (VL19), 23.08.2003; Strmica pri Zaplani (VL48), 12.05.2002 [GSPC]; Rakitnica (VL85), 25.08.2003;

**New records:** Vremščica (VL25), 16.7.2011; Krnica, 1000 m (VL08), 14.8.2011; Čaven, 1240 m (VL18), 14.8.2011; Velike Vrše, 850 m (VM00), 8.7.2007 [GSPC]; Grant, 700 m (VM11), 12.6.2010; Rut, 750 m (VM11), 12.6.2010 [GSPC]; Labinje, 700 m (VM21), 18.8.2012; Lopata 260 m (WM12), 28.9.2010; Virštanj (WM40), 16.6.2006; Selo pri Prosenjakovcih (WM97), 6.5.2016.

**Host plant:** *Malus* spp. (Rosaceae) [Fig. 51.2], but vagrant specimens were swept from several other trees (e.g. *Pyrus* spp. *Sorbus aucuparia*, *Betula pendula*, *Quercus* spp.).

**Biology:** Univoltine; overwintering as eggs; oviposition in September and October (LAUTERER, 1994).

## 52. *Cacopsylla melanoneura* (Foerster, 1848)

[Figs. 52.1–52.6]

**FLOR, 1861a:** Ljubljana (as Laibach; as *Psylla pityophila* Flor, 1861);

**Löw, 1888:** Ljubljana (after FLOR, 1861a); Gorica (as Görz, A. Hensch leg.);

**SELJAK, 2006:** Škodelin (UL93), 15.5.2005; Kastelec (VL14), 30.5.2004; Socerb (VL14), 30.5.2004; Senadole (VL26), 19.6.2005; Panovec (UL98), 16.4.2000; Kromberk (UL99), 10.4.1999; Loke (UL99), 11.4.1999; Sabotin, 300 m (UL99), 1.5.2001; Šmihel, 450 m (VL08), 31.3.2002 [GSPC]; Lijak (VL09), 9.11.2003; Dolga poljana, 350 m (VL18), 22.4.2005; Hotedrščica (VL38), 11.6.2003; Volče, 175 m (VM01), 3.4.2005; Jesenica (VM11), 25.4.1999; Labinje, 670 m (VM21), 20.7.2003 [GSPC]; Črni vrh (Cerkno), 1230 m (VM21), 20.7.2003 [GSPC]; Soriška planina, 1300 m (VM22), 19.8.2002 and 19.9.2004 [GSPC]; Smrekovec, 1350 m (VM94), 22.6.2002 [GSPC]; Pohorski dvor (WM45), 22.3.2001 [GSPC]; Hoče pri Mariboru (WM45), 10.4.2002;

**New records:** Dragonja (UL93), 14.4.2011; Zazid, 420 m (VL13), 19.5.2018; Črnotiče (VL14), 27.4.2008; Petrinjski kras (VL14), 27.4.2008; Pared (Kačiče), 450 m (VL25), 19.5.2018; Zavrhek (VL25), 26.3.2012; Kreplje, 300 m (VL06), 16.04.2019; Lipa na Krasu (VL07), 6.4.2008; Gabrče, 610 m (VL26), 19.5.2018; Podgrad, 550 m (VL34), 7.02.2019; Orehek pri Postojni (VL36), 7.5.2018; Planinsko polje, 450 m (VL47), 23.03.2019; Sviščaki, 680 m (VL44), 11.2.2016; Snežnik, 1600 m (VL54), 27.7.2017; Podcerkev, 620 m (VL56), 17.05.2019; Golec (VL07), 8.6.2006; Renče (UL98), 6.4.2008; Vogrsko (VL08), 10.3.2007; Solkan (UL99), 21.5.2006; Baske, 600m (UL99), 22.5.2011, 5.5.2016 and 7.5.2018 [Fig. 52.4]; Lokovec, 830 m (VM00), 10.5.2014; Selovec, 1200 m (VL08), 13.8.2006; Kucelj, 1150 m (VL08), 13.8.2006; Vitovski vrh, 880 m (VL08), 28.9.2008; Krnica, 1050 m (VL08), 28.9.2008; Kucelj (VL08), 16.9.2012; Banjšice (VL09), 13.5.2006; Trnovo (VL09), 22.4.2007; Mala Lazna (VL09), 1.8.2010; Voglarji (Zavrh) (VL09), 1.8.2010;

Nemci, 880 m (VL09), 13.6.2015; Stomaž, 510 m (VL18), 11.5.2008; Rebrnice, 520 m (VL26), 16.4.2011; Kolovrat, 1100 m (UM91), 8.9.2012; Zatulmin, 270 m (VM01), 30.3.2008; Krnsko jezero, 1400 m (UM92), 1.8.2009; Zadnja Trenta, 970 m (VM03), 28.7.2007; Vršič, 1400 m (VM04), 15.8.2012; Ponikve – Zagomilica, 760 m (VM11), 26.12.2019; Spodnje Bukovo (VM11), 12.4.2009; Škofje, 960 m (VM21), 17.02.2019 [Figs. 52.5–52.6]; Porezen, 1300 m (VM21), 25.6.2011; Cimprovka, 1250 m (VM21), 23.10.2012; Blegoš, 1500 m (VM31), 17.10.2019; Soriška planina, 1500 m (VM22), 3.8.2008; Lajnar, 1500 m (VM22), 23.10.2012; Planinsko polje, 450 m (VL47), 23.03.2019; Dol pri Borovnici (VL48), 10.5.2017; Ljubljana (VM60), 2. 06. 1971, 17.6.1971 and 18.6.1971 [PMSL, B. Sket leg.]; Ljubljana (VM50), 21.03.2019; Grčarice (VL84), 21.7.2013; Preval pri Podutiku (VM50), 6.6.2012; Mlinarjevo sedlo, 1300 m (VM63), 15.8.2007; Olševa (VM74), 20. 07. 1974 [PMSL, B. Sket leg.]; Drankovec (WM56), 7.5.2017; Janški vrh (WM63), 15.3.2007; Selo pri Prosenjakovcih (WM97), 1.4.2015; Fokovci (WM97), 1.4.2015.

**Host plants:** *Crataegus* spp., *Malus* spp. (Rosaceae) [Fig. 52.2].

**Biology:** Univoltine; overwintering as adults on conifers; adults occur on the host plants from March to the end of June.

**Remark:** Probably widely distributed and common all over Slovenia. Known as a vector of *Candidatus* Phytoplasma mali, the causal agent of the Apple proliferation disease of apple trees.

### 53. \**Cacopsylla myrthi* (Puton, 1876)

[Figs. 53.1–53.4]

**New records:** Strunjan (UL94), 22.5.2008, 24.7.2008 [GSPC], 21.11.2008 [GSPC], 11.4.2011 and 15.5.2018 [Figs. 53.2–53.4].

**Host plant:** *Rhamnus alaternus* (Rhamnaceae) [Fig. 53.2].

**Biology:** Multivoltine; overwintering as adults on the host plant.

**Remark:** Common in Mediterranean countries; probably alien in Slovenia as the host plant, *R. alaternus*, is not native to Slovenia but is grown only as an ornamental plant scattered in the coastal area.

### 54. *Cacopsylla nigrita* (Zetterstedt, 1828)

[Figs. 54.1–54.4]

**SELJAK et al., 2008:** Mangart, 2050 m (UM94), 15.7.2006 [GSPC];

**New records:** Porezen, 1620 m (VM21), 25.6.2011 [GSPC]; Lajnar, 1500 m (VM22), 23.05.2019 [GSPC; Figs. 54.3–54.4]; Vršič, 1620 m (VM04), 12.4.2011, I. Malenovský leg. et det. [GSPC].

**Host plants:** *Salix* spp., mostly *S. waldsteiniana* [Fig. 54.2] and *S. appendiculata* (Salicaceae).

**Biology:** Univoltine; overwintering as adults on conifers (OSSIANNILSSON, 1992); in Slovenia restricted to high altitudes.

### 55. *Cacopsylla parvipennis* (Löw, 1878)

**GRÄFFE, 1911:** Tolmin (as Tolmein).

**Host plant:** *Salix rosmarinifolia* (Salicaceae) (OSSIANNILSSON, 1992).

**Biology:** Univoltine; overwintering as adult among mosses (OSSIANNILSSON, 1992).

**Remark:** The occurrence of this species in the area given by GRÄFFE (1911) could not have been confirmed recently and the only host plant, *Salix rosmarinifolia*, is absent there too (JOGAN et al., 2001; I. DAKSKOBLER, pers. comm.). Since no other records from neighbouring areas in Italy are available (CONCI et al., 1993), Gräffe's record should be considered as doubtful. A misidentification or confusion with *Cacopsylla saliceti* or *C. iteophila* cannot be excluded. Particularly the latter species is common on *Salix eleagnos* on the banks of the river Soča around Tolmin in spring; however, it was not recorded by GRÄFFE (1911).

### 56. *Cacopsylla peregrina* (Foerster, 1848)

[Figs. 56.1–56.4]

**SELJAK, 2006:** Kromberk (UL99), 26.08.2002 [GSPC]; Banjšice, 700 m (UL99), 18.07.2004; Col, 750 m (VL28), 16.06.2004; Most na Soči (VM01), 16.08.2003; Labinje, 670 m (VM21), 20.07.2003 [GSPC] and 22.08.2004; Smrečje (VL39), 12.06.2002; Škofja Loka – Puštal, 360 m (VM41), 02.06.2003 [GSPC];

**New records:** Gradišče pri Vipavi (VL17), 17.6.2018 [Fig. 56.4]; Grgar, 320 m (UL99), 26.05.2019 [Fig. 56.3]; Baske, 600 m (UL99), 20.10.2007, 25.7.2009 and 22.5.2011; Puštale, 530 m (VL09), 8.7.2007; Spodnji Lokovec, 790 m (VM00), 12.8.2014; Korada, 620 m (UM80), 11.6.2006; Kanalski vrh, 640 m (UM90), 6.7.2016; Kozaršče (VM01), 24.5.2018; Kolovrat, 1100 m (UM91), 8.9.2012; Senadole (VL26), 19.6.2005; Podkraj, 870 m (VL27), 10.9.2008 and 4.6.2018; Sovič, 1020 m (VL28), 30.7.2006; Dole, 740 m (VL39), 23.6.2018; Žejna dolina (VL39), 26.8.2016; Petelinjsko jezero (VL46), 14.07.2019; Planinsko polje, 450 m (VL47), 31.8.2008 [GSPC]; Črni vrh nad Cerknem, 1270 m (VM21), 5.8.2007; Rakitna, 800 m (VL58), 12.9.2008; Pohorski dvor (WM45), 19.5.2015 [GSPC – slide]; Ptujška Gora (WM53), 19.5.2015 [GSPC – slide].

**Host plants:** *Crataegus monogyna* [Fig. 56.2] and other *Crataegus* spp. (Rosaceae).

**Biology:** Univoltine; overwintering as eggs; adults occur on the host plants from mid-May to the beginning of September.

### 57. *Cacopsylla picta* (Foerster, 1848)

[Figs. 57.1–57.5]

**FLOR, 1861a:** Ljubljana (as Laibach; as *Psylla costalis* Flor, the type locality for *P. costalis*);

**Löw, 1888:** Ljubljana (after FLOR, 1861a);

**SELJAK, 2006:** Kromberk (UL99), 07.04.2002 [GSPC] and 04.04.2004 [GSPC]; Podkraj (VL28), 12.05.2002 [GSPC]; Jesenica (VM11), 25.04.1999; Golubinjek, 200 m (WM40), 27.04.2005 [GSPC];

**New records:** Zavrhek (VL25), 29.3.2012; Stomaž na Krasu, 400 m (VL17), 16.04.2019 [Fig. 57.4]; Bilje (UL98), 19.4.2018; Nova Gorica (UL98), 2.6.2012 z [Fig. 57.5] and 11.4.2017; Vogrsko (VL08), 10.3.2007; Podlaka (VL09), 13.5.2006 [GSPC]; Kucelj, 1150 m (VL08), 30.12.2018 [GSPC]; Kolovrat – 1060 m (UM91), 15.11.2018 [GSPC]; Spodnje Bukovo (VM11), 24.4.2011 [GSPC] and 27.3.2016 [present photos]; Podlanišče, 700 m (VM20), 1.5.2007; Labinje, 680 m (VM21), 9.9.2006 [GSPC] and 13.04.2019 [GSPC; Fig. 57.3]; Cimprovka, 1250 m (VM21), 23.10.2012 [GSPC]; Senovica (WM31), 22.4.2006 [GSPC]; Ljubljana (VM50), 21.03.2019 [GSPC]; Ljubljana (VM50), 21.03.2019; Ljubljana (VM60), 17.06.1971 [PMSL, B. Sket leg.]; Fokovci (WM97), 1.4.2015 and 28.3.2017; Selo pri Prosenjakovcih, 277 m (WM97), 1.4.2015.

**Host plant:** *Malus* spp. (Rosaceae) [Fig. 57.2].

**Biology:** Univoltine; overwintering as adults on conifers; adults occur on their host plants from March to mid-June.

**Remark:** This species was for a long time known under the name of *Psylla costalis* Flor, 1961. It was described by FLOR (1861a) based on material collected around Ljubljana. *Cacopsylla picta* is well known as a vector of *Candidatus* Phytoplasma mali, the causal agent of the Apple proliferation disease of apple trees.

## 58. *Cacopsylla pruni* (Scopoli, 1763)

[Figs. 58.1–58.6]

**SCOPOLI, 1763:** Kranjska (as Carniola, as *Chermes pruni* Scopoli; the type locality probably Idrija);

**FLOR, 1861a:** Ljubljana (as Laibach);

**LÖW, 1888:** Ljubljana (after FLOR, 1861a); Gorica (as Görz, A. Hensch leg.); Lesce (as Lees, F. Then leg.);

**SELJAK, 2006:** Krkavče (UL93), 02.04.2005; Škocjan (VL04), 01.06.2001; Črnotiče (VL14), 30.05.2004 and 19.06.2004 [GSPC]; Stara Gora (UL98), 15.07.2000; Skalnica, 320 m (UL99), 13.06.1999; Kromberk (UL99), 04.04.2004; Nova Gorica (UL99), 11.04.2004; Ajševica (VL08), 03.05.2003; Sinji vrh, 980 m (VL18), 12.08.2001; Vremška dolina (VL35), 07.07.2000; Postojna (VL37), 06.06.1999; Hotedršica (VL38), 25.05.1999 and 10.05.2002; Spodnje Bukovo (VM11), 29.04.2001 [GSPC]; Poče (VM21), 25.04.1999; Krn, 1100 m (UM92), 05.07.2003; Hoče pri Mariboru (WM45), 10.04.2002, M. Lešnik leg.;

**New records:** Škodelin (UL93), 15.5.2005; Fjesa (UL84), 2.04.2019; Črni kal (VL14), 14.4.2011; Petrinjski kras (VL14), 27.04.2008 [GSPC]; Kreplje, 300 m (VL06), 16.04.2019; Slivje (VL24), 29.3.2012; Zavrhek (VL25), 26.3.2012; Dolenja vas, 560 m (VL26), 19.5.2018; Grobišče, 523 m (VL36), 7.5.2018; Orehek pri Postojni (VL36), 7.5.2018; Prelože (VL35), 29.3.2012; Petelinjsko jezero (VL46), 9.7.2006 and 14.07.2019; Planinsko polje, 450 m (VL47), 23.03.2019; Dolenje Jezero, 550 m (VL56), 23.03.2019; Vrtoče (UL98), 2.5.2012 [GSPC – slide + present photos]; Vrtojba (UL98), 29.3.2014; Vogrsko (VL08), 22.3.2005; Nova Gorica (UL98), 31. 05. 2011 [GSPC – slide] and 04.07.2013 [Figs. 58.4–58.5]; Kromberk (UL99), 12. 04. 2012 [GSPC – slide; Fig. 58.3 and Fig. 58.6]; Šempas (VL08), 29.4.2005 [GSPC]; Vitovlje (VL08), 9.6.2006; Vitovski vrh, 880 m (VL08), 28.9.2008;

Krnica, 1000 m (VL08), 14.8.2011; Kucelj (VL08), 16.9.2012; Gradišče pri Vipavi (VL17), 13.6.2006; Ajdovščina (VL18), 14.5.2005; Stomaž, 510 m (VL18), 11.5.2008; Ustje (VL18), 24.7.2008; Poreče pri Podnanosu (VL27), 20.6.2006; Podnanos (VL27), 18.4.2014; Snežatno (UL89), 1.6.2005; Vedrijan (UL89), 16.6.2005; Kanal (UM90), 5.6.2005 [GSPC – slide]; Kolovrat, 1100 m (UM91), 8.9.2012; Slejki, 400 m (VL08), 29.4.2005; Banjšice (VL09), 13.5.2006 [GSPC] and 10.5.2014; Planina Razor (VM02), 2.9.2006; Labinje, 680 m (VM21), 9.9.2006 and 13.04.2019; Črni vrh nad Cerknem, 1270 m (VM21), 5.8.2007; Petelinjsko jezero (VL46), 14.07.2019; Planinsko polje, 450 m (VL47), 23.03.2019; Dolenje Jezero, 550 m (VL56), 23.03.2019; Ljubljana (VM60), 11.05.1971, 17.06.1971 and 18.06.1971 [PMSL, B. Sket leg.]; Straška gora (WL06), 31.5.2007; Virštanj (WM40), 16.6.2006 [GSPC]; Vetrnik, 700 m (WM40), 17.6.2006; Podčetrtek, 205 m (WM41), 27.4.2005; Olimje (WM41), 16.6.2006; Fokovci (WM97), 1.4.2015 and 28.3.2017; Selo pri Prosenjakovcih, 277 m (WM97), 1.4.2015 [GSPC].

**Host plants:** *Prunus spinosa* [Fig. 58.2], *P. domestica*, *P. instititia*, *P. cerasifera* (Rosaceae).

**Biology:** Univoltine; overwintering as adults on conifers; adults occur on the host plants from March to the beginning of July (SELJAK et ROT, 2013).

**Remark:** Probably widely distributed all over Slovenia. It is well-known as a vector of *Candidatus* Phytoplasma prunorum, the causal agent of the European stone-fruit yellows disease on susceptible host plants (*P. persica*, *P. armeniaca*, *P. salicina*). *Prunus domestica*, *P. instititia* and *P. spinosa* are tolerant and do not show symptoms even though infected (CARRARO et al., 1998a, 1998b, 2001, 2002; MEHLE et al., 2011).

### 59. *Cacopsylla pulchella* (Löw, 1877)

[Figs. 59.1–59.5]

**SELJAK, 2006:** Snežatno (UL89), 01.06.2005; Kromberk (UL99), 13.05.1999; Nova Gorica (UL99), 28.04.2001 and 04.05.2002 [GSPC]; Lijak (UL99), 01.12.2002 [GSPC]; Duplje (VL17), 04.05.1999;

**New records:** Koper (VL04), 17.5.2017; Nova Gorica (UL99), 6.5.2012 [Fig. 59.3]; Cerovo (UL89), 31.5.2006; Vipolže (UL89), 31.5.2006; Višnjevnik (UL89), 31.5.2006 and 26.5.2010; Solkan (UL99), 21.5.2006; Sabotin, 200 m (UL99), 4.2.2007; Baske, 600 m (UL99), 20.10.2007; Osek (VL08), 31.5.2006; Velike Žablje (VL18), 9.5.2018 [Fig. 59.4]; Ljubljana (VM60), 26.4.2016 [Fig. 59.5];

On shelter plants outside the range of its host plant occurrence: Kucelj, 1150 m (VL08), 13.8.2006; Nemci, 880 m (VL09), 6.9.2015; Vitovski vrh (VL09), 18.10.2015; Planina Razor, 1300 m (VM02), 8.7.2005 [GSPC]; Porezen, 1300 m (VM21), 25.6.2011 [GSPC].

**Host plant:** *Cercis siliquastrum* (Fabaceae) [Fig. 59.2].

**Biology:** Univoltine; overwintering as adults on conifers and some other evergreen trees (e.g. *Quercus ilex*); adults occur on the host plant from the end of March to mid-June.

## 60. *Cacopsylla pulchra* (Zetterstedt, 1838)

[Figs. 60.1–60.5]

**SELJAK, 2006:** Dragonja (UL93), 02.04.2005; Loke (UL99), 03.05.2003; Nova Gorica (UL99), 17.04.2004 [GSPC]; Ajševica (VL08), 06.05.2001 [GSPC] and 14.03.2004 [GSPC]; Trnovo (VL09), 31.12.2004; Kanal ob Soči (UM90), 03.04.2005; Tolmin (VM01), 11.04.2004, 03.04.2005;

**New records:** Dragonja (UL93), 14.04.2011 [GSPC]; Krkavče (UL93), 2.4.2005; Snežnik, 1600 m (VL54), 27.7.2017; Miren (UL98), 2.5.2012; Vrtojba (UL98), 11.4.2017 and 11.2.2018 [Fig. 60.4]; Nova Gorica (UL98), 1. 05. 2006 [GSPC – slide] and 3.3.2019 [Fig. 60.5]; Solkan (UL99), 21.5.2006; Osek, 120 m (VL08), 20.4.2008; Črniče, 140 m (VL08), 13.01.2019; Kucelj (VL08), 18.10.2015; Poreče pri Podnanosu (VL27), 23.4.2007; Kanal, 95 m (UM90), 23.02.2019; Ajba (UM90), 3.4.2005; Bača pri Modreju (VM01), 27.4.2007 and 17.3.2012; Slap ob Idrijci, 180 m (VM00), 26.02.2019; Tolmin, 150 m (VM01), 30.3.2008; Kolovrat – 1120 m (UM91), 15.11.2018; Volarje, 180 m (UM91), 15.03.2019; Kamno, 190 m (UM92), 15.03.2019; Spodnje Bukovo (VM11), 18.2.2017; Blegoš, 1230 m (VM21), 6.9.2008; Blegoš, 1500 m (VM31), 17.10.2019; Cimprovka, 1180 m (VM21), 26.6.2010 and 23.10.2012; Lajnar, 1500 m (VM22), 23.10.2012; Soča (UM93), 12.4.2011 [GSPC]; Trenta (VM03), 12.4.2011; Zadnja Trenta (VM04), 30.5.2018 and 8.06.2019; Žejna dolina (VL39), 1.06.2019; Dolenje Jezero, 550 m (VL56), 23.03.2019; Ljubljana – Rakova jelša, 300 m (VL69), 19.02.2019; Ljubljana – Rožna dolina (VM50), 21.03.2019; Runtole, 270 m (WM22), 6.03.2019; Maribor – Sp. Radvanje, 285 m (WM45), 6.03.2019; Janški vrh (WM63), 15.3.2007.

**Host plants:** *Salix* spp., mostly *S. purpurea* [Fig. 60.2], but also *S. alba*, *S. appendiculata*, *S. caprea* and *S. cinerea* (Salicaceae).

**Biology:** Univoltine; overwintering as adults on conifers; adults occur on their host plants from February to the end of June.

## 61. *Cacopsylla pyri* (Linnaeus, 1761)

[Figs. 61.1–61.5]

**SCOPOLI, 1763:** Kranjska (as Carniola, as *Chermes pyri* =? *Cacopsylla pyrisuga*);

**Löw, 1888:** Kranjsko (as Krain, probably after SCOPOLI, 1763); Gorica (as Görz, A. Hensch leg.)

**VRABL, 1977:** Miren (UL98), 20.5.1975; Leskovec pri Krškem (WL38), 2.6.1974; Slovenska Bistrica (WM43), 24.5.1975; Maribor (WM45), 17.4.1974;

**SELJAK, 2006:** Common in intensively managed pear orchards and widespread throughout Slovenia;

**Detailed records:** Dragonja (UL93), 2.4.2005; Škodelin (UL93), 19.7.2005; Koper (VL04), 12.6.1988; Beka (VL14), 17.5.1989; Branik (VL08), 12.5.1986 and 5.6.2003; Prvačina (UL98), 8.5.1998; Renče (UL98), 25.7.2012 [GSPC; Fig. 61.5]; Bukovica (UL98), 11.5.2001; Bilje (UL98), 3.5.1999 and 11.5.2001 [GSPC]; Miren (UL98), 31.5.2005 [GSPC – slide] and 10.05.2019 [Figs. 61.3–61.4]; Nova Gorica (UL99), 9.3.2003 [GSPC]; Kromberk, 380 m (UL99), 29.05.2003 [GSPC – slide] and 17.05.2016 [GSPC]; Vedrijan (UL89), 26.5.2003 [GSPC]; Gornje Cerovo (UL89), 16.6.2005 [GSPC]; Vipolže (UL89), 31.5.2006; Staro selo (UM82), 9.6.2003;

Ljubljana, Bežigrad (VM60), 4.9.2006; Lenart v Slov. Goricah (WM65), 17.5.1975 (rec. G. Matis); Sebeborci (WM97), 17.7.1974 (rec. G. Matis).

**Host plants:** *Pyrus* spp., especially *P. communis* (Rosaceae) [Fig. 61.2].

**Biology:** Multivoltine, 4–5 generations per year (VRABL et MATIS, 1977), 2–8 generations per year (HODKINSON, 2009); overwintering as adults on the host plants and in the litter.

**Remarks:** Often a serious pest in pear orchards (VRABL et MATIS, 1977); also known as a vector of *Candidatus Phytoplasma pyri*, which causes the Pear decline disease on pear trees (MEHLE et al., 2011).

## 62. *Cacopsylla pyricola* (Foerster, 1848)

[Figs. 62.1–62.6]

**LÖW, 1888:** Lesce (as Lees, F. Then leg.);

**JANEŽIČ, 1989:** Scattered all over Slovenia; no detailed localities recorded;

**SELJAK, 2006:** Nova Gorica (UL99), 09.03.2003 [GSPC]; Tolmin (VM01), 12.10.2002 [GSPC] and 25.05.2003 [GSPC]; Čadrg (VM01), 26.06.2004; Spodnje Bukovo (VM11), 11.03.2001 [GSPC] and 13.07.2002 [GSPC]; Labinje, 700 m (VM21), 20.07.2003;

**New records:** Jakovce, 555 m (VL27), 3.10.2018 [Fig. 62.5]; Kromberk (UL99), 4.2.2018; Baske, 600m (UL99), 22.5.2011 [GSPC]; Kuk nad Anhovim, 640 m (UL99), 25.7.2009; Avče, 160 m (UM90), 24.5.2018 [Fig. 62.3]; Lig, 625 m (UM90), 19.10.2013; Kolovrat, 1100 m (UM91), 8.9.2012; Most na Soči (VM01), 27.4.2007; Trebuša, 450 m (VM00), 17.8.2006; Grant, 700 m (VM11), 12.6.2010; Rut, 750 m (VM11), 12.6.2010; Mrzli Log, 875 m (VL28), 04.12.2018; Osilnica (VL74), 20.7.2013; Olimje (WM41), 16.6.2006 [GSPC].

**Host plants:** *Pyrus* spp. (Rosaceae) [Fig. 62.2].

**Biology:** Multivoltine, 3–5 generations per year (CONCI et al., 1993); overwintering as adult on the host plants.

**Remark:** Well-known as a vector of *Candidatus Phytoplasma pyri*, the causal agent of the Pear decline disease on pear trees.

In the coastal area of Slovenia, a similar pear psyllid, *C. notata* (Flor, 1861) [Fig. 62.6], might also occur. It was collected on *Pyrus amygdaliformis* in the adjacent Croatian part of Istria, Baderna – 260 m (VL00), 13.07.2018.

## 63. *Cacopsylla pyrisuga* (Foerster, 1848)

[Figs. 63.1–63.6]

**FLOR, 1861a:** Ljubljana (as Laibach), Poljčane (as Pöltschach; as *Psylla austriaca* Flor, 1861);

**LÖW, 1888:** Ljubljana (after FLOR, 1861a), Gorica (as Görz, A. Hensch leg.);

**JANEŽIČ, 1989:** Tomaj, Cerovo, Fojana, Vipolže, Ljubljana, Stari trg ob Kolpi, Novo mesto, Bizeljsko, Rače pri Mariboru, Tišina, Kapela pri Radencih;

**SELJAK, 2006:** Škodelin (UL93), 15.05.2005; Bilje (UL98), 03.05.1999; Nova Gorica (UL99), 02.05.2001 [GSPC]; Kromberk (UL99), 04.04.2004; Kanal (UM90), 05.06.2005; Podkraj (VL28), 12.05.2002; Tolmin (VM01), 25.05.2003 [GSPC – slide]; Čadrg (VM01), 26.06.2004; Želin (VM10), 25.06.2003; Spodnje Bukovo (VM11), 29.04.2001 [GSPC]; Labinje (VM21), 25.04.1999;

**New records:** Dragonja (UL93), 14.4.2011 [GSPC]; Osp (VL14), 27.4.2008; Prelože (VL35), 28.3.2014; Rebrnice, 520 m (VL26), 16.4.2011 [GSPC]; Vogrsko (VL08), 25.3.2007; Nova Gorica (UL98), 22.05.2005 [GSPC – slide] and 13.4.2012 [Fig. 63.5]; Kromberk, 300 m (UL99), 20.04.2019 [Figs. 63.3–63.4]; Kucelj (VL08), 18.10.2015; Nemci, 880 m (VL09), 13.6.2015 [GSPC]; Kolovrat, 1100 m (UM91), 8.9.2012; Most na Soči (VM01), 27.4.2007; Soriška planina – 1500 m (VM22), 23.05.2019; Dolenje Jezero, 550 m (VL56), 23.03.2019; Podcerkev, 640 m (VL56), 17.05.2019; Ljubljana (VM60), 5.6.1971 [PMSL, B. Sket leg.]; Straška gora (WL06), 31.5.2007; Celje (WM22), 20.6.2006; Olimje (WM41), 16.6.2006; Pohorski dvor (WM45), 24.3.2015; Selo pri Prosenjakovcih, 277 m (WM97), 1.4.2015; Fokovci (WM97), 1.4.2015 and 28.3.2017.

**Host plants:** *Pyrus* spp. (Rosaceae) [Fig. 63.2]; egg-laying females causes leaf curling.

**Biology:** Univoltine; overwintering as adults on conifers; adults occurring on the host plants from March to mid-June.

#### 64. *Cacopsylla rhamnicola* (Scott, 1876)

[Figs. 64.1–64.4]

**SELJAK, 2006:** Matenja vas (VL36), 05.10.2004 [GSPC]; Nanos, 900 m (VL27), 26.07.2002 [GSPC]; Krn, 1100 m (UM92), 05.07.2003 [GSPC]; Planina Razor (VM02), 07.07.2005; Črni vrh nad Cerknim, 1240 m (VM21), 20.07.2003;

**New records:** Kastelec (VL14), 26.5.2016; Podgrad, 550 m (VL34), 7.02.2019; Sviščaki, 680 m (VL44), 11.2.2016; Rebrnice, 520 m (VL26), 16.4.2011 [GSPC]; Kromberk (UL99), 24.2.2016; Lijak (VL09), 20.5.2006; Ravnica (UL99), 4.11.2007; Grgar (UL99), 27.5.2012 [GSPC – slide]; Kucelj, 1150 m (VL08), 13.8.2006 and 30.12.2018; Selovec, 1200 m (VL08), 13.8.2006 [GSPC]; Vitovski vrh, 900 m (VL08), 21.4.2007; Krnica, 1000 m (VL08), 14.8.2011; Kucelj (VL08), 16.9.2012; Nemci, 880 m (VL09), 13.6.2015; Mala Lazna (VL09), 23.10.2015; Podlaka (VL09), 13.5.2006 [GSPC]; Banjšice (VL09), 19.03.2014 [Figs. 64.3–64.4]; Lokovec, 830 m (VM00), 10.5.2014; Korada, 620 m (UM80), 11.6.2006; Škofje, 960 m (VM21), 17.02.2019; Mrzli Log, 875 m (VL28), 4.12.2018 [GSPC]; Hrušica (VL37), 28.3.2007; Hotedršica (VL38), 15.5.2017; Planinsko polje, 450 m (VL47), 23.03.2019; Draga (Ig), 315 m (VL68), 19.5.2017.

**Host plants:** *Rhamnus cathartica* [Fig. 64.2], *R. alpina* ssp. *fallax* (Rhamnaceae).

**Biology:** Univoltine; overwintering as adults on conifers; adults occur on the host plants from mid-March to the beginning of August.

#### 65. *Cacopsylla saliceti* (Förster, 1848)

[Figs. 65.1–65.4]

**Löw, 1888:** Gorica (as Görz; A. Hensch leg.);

**SELJAK, 2006:** Soriška planina, 1300 m (VM22), 19.09.2004 [GSPC]; Črno jezero, 1200 m (WM34), 25.07.2004 [GSPC];

**New records:** Ankaran (VL04), 16.05.2018; Snežnik, 1600 m (VL54), 27.7.2017 [GSPC]; Nova Gorica (UL98), 28.5.2006 [GSPC]; Vogrsko (VL08), 5.6.2011 [GSPC]; Kucelj



(VL08), 16.9.2012 [GSPC]; Kozaršče (VM01), 24.05.2018 [Figs. 65.3–65.3]; Kolovrat – 1120 m (UM91), 15.11.2018; Soča (UM93), 30.05.2018; Mangartsko sedlo (UM94), 20.06.2019; Škofje, 960 m (VM21), 17.02.2019; Cimprovka, 1250 m (VM21), 23.10.2012 [GSPC]; Lajnar, 1500 m (VM22), 23.10.2012; Selo pri Prosenjakovcih, 260 m (WM97), 4.2.2016 [GSPC] and 1.3.2017; Fokovci (WM97), 28.3.2017.

**Host plants:** *Salix* spp., e.g. *S. alba*, *S. appendiculata* [Fig. 65.2], *S. caprea*, *S. cinerea*, *S. eleagnos*, *S. euxina* (Salicaceae).

**Biology:** Univoltine; overwintering as adults on conifers; adults occur on the host plants from April to July.

### 66. *Cacopsylla sorbi* (Linnaeus, 1767)

[Figs. 66.1–66.4]

**SELJAK, 2006:** Zadnja Trenta (VM03), 24.07.2005; Cimprovka, 1200 m (VM21), 30.06.2000 and 23.08.2004 [GSPC]; Soriška planina, 1300 m (VM22), 19.08.2002 [GSPC]; Gorjuše, 1000 m (VM22), 14.08.2003 [GSPC];

**New records:** Vremščica, 850 m (VL25), 16.7.2011; Snežnik, 1600 m (VL54), 27.7.2017; Mala Lazna (VL09), 23.6.2011; Planina Kuk (VM01), 2.9.2006; Planina Razor (VM02), 2.9.2006; Kojca, 1300 m (VM11), 27.8.2009; Gorenji Novaki, 1030 m (VM21), 4.7.2009; Blegoš, 1230 m (VM21), 8.8.2009 [GSPC]; Porezen, 1600 m (VM21), 3.7.2010 and 07.07.2018 [Figs. 66.3–66.4]; Mrzlica, 950 m (WM01), 5.8.2018; Kalvarija nad Mariborom (WM45), 1.8.2007.

**Host plant:** *Sorbus aucuparia* (Rosaceae) [Fig. 66.2].

**Biology:** Univoltine; overwintering in the egg stage; adults occur on the host plant and as vagrants also on other plants (e.g. *Pinus mugo*) from June to September.

### 67. *Cacopsylla ulmi* (Foerster, 1848)

[Figs. 67.1–67.3]

**SELJAK, 2006:** Kromberk (UL99), 02.08.2002 [GSPC]; Nova Gorica (UL99), 26.08.2002 [GSPC]; Smrekovec, 1350 m (VM94), 22.06.2002 [GSPC];

**New records:** Kucelj (VL08), 18.10.2015; Podlaka (VL09), 13.5.2006 [GSPC]; Porezen, 1300 m (VM21), 25.6.2011 and 7.7.2018 [Fig. 67.3]; Cimprovka, 1260 m (VM21), 24.6.2006 [GSPC]; Planinsko polje, 450 m (VL47), 31.8.2008 [GSPC]; Ljubljana (VM60), 20.5.1971, 18.06.1971 and 31.7.1971 [PMSL, B. Sket leg.]; Ljubljana (VL69), 22.5.2003 [GSPC]; Mrzlica, 950 m (WM01), 5.8.2018 [GSPC]; Vetrnik (WM40), 17.6.2006 [GSPC]; Lutverci (WM77), 25.6.2006 [GSPC – slide; A. Kapla leg.].

**Host plants:** *U. glabra*, *U. laevis* and *Ulmus minor* [Fig. 67.2] (Ulmaceae).

**Biology:** Univoltine; overwintering in the egg stage (OSSIANNILSSON, 1992).

**68. *Cacopsylla viburni* (Löw, 1876)**

[Figs. 68.1–68.4]

**SELJAK, 2006:** Kromberk (UL99), 02.08.2002 [GSPC]; Lijak (VL09), 06.04.2003 [GSPC – slide]; Pri peči (VL09), 12.07.2002 [GSPC]; Godovič (VL38), 16.06.2004 [GSPC];

**New records:** Ravnica, 500 m (UL99), 25.5.2008 [GSPC]; Grgar (UL99), 27.5.2012; Kobilica, 450 m (VM00), 17.8.2006; Čezsoča (UM83), 28.7.2007; Dole, 740 m (VL39), 23.6.2018; Godovič, 600 m (VL29), 1.06.2019 [Fig. 68.4]; Hotedršica, 580 m (VL38), 23.6.2018 [fig. 68.3]; Logatec (VL48), 15.5.2012; Draga (Ig) (VL68), 19.5.2017 [GSPC].

**Host plant:** *Viburnum lantana* (Adoxaceae) [Fig. 68.2].

**Biology:** Univoltine; overwinters in the egg stage; adults occur from mid-May to the end of July.

**69. *Cacopsylla visci* (Curtis, 1835)**

[Figs. 69.1–69.4]

**SELJAK, 2006:** Poklek, 350 m (WL49), 27.04.2005 [GSPC]; Golubinjek, 200 m (WM40), 27.04.2005 [GSPC]; Ptujška Gora (WM53), 05.05.2001, M. Lešnik leg. [GSPC];

**New records:** Rebrnice, 520 m (VL26), 26.5.2008, on *Loranthus europaeus* [GSPC]; Spodnje Bukovo (VM11), 3.8.2008 [GSPC] and 27.3.2016 [GSPC; Figs. 69.3–69.4]; Senovica (WM31), 22.4.2006 [GSPC]; Virštanj (WM40), 16.6.2006 [GSPC]; Selo pri Prosenjakovcih (WM97), 1.4.2015 [GSPC].

**Host plants:** *Viscum album* [Fig. 69.2] (Santalaceae), *Loranthus europaeus* (Loranthaceae).

**Biology:** Probably two generations per year; overwintering as nymphs; adults occur between March and September (CONCI et al., 1993; LAUTERER 1999).

*Chamaepsylla* Ossiannilsson, 1970

**70. *Chamaepsylla hartigii* (Flor, 1861)**

[Figs. 70.1–70.4]

**SELJAK, 2006:** Nova Gorica (UL99), 17.05.2003 [GSPC]; Čadrg (VM01), 26.06.2004 [GSPC];

**New records:** Golič (VL13), 16.6.2017; Baske, 600 m (UL99), 22.5.2011 [GSPC] and 05.05.2018 [Fig. 70.4]; Kanalski vrh (UM90), 18.5.2013; Kolovrat (UM91), 16.6.2013; Spodnje Bukovo (VM11), 4.6.2017; Porezen, 1300 m (VM21), 25.6.2011; Cimprovka, 1250 m (VM21), 21.6.2008 [GSPC]; Gorenji Novaki, 1000 m (VM21), 21.6.2008 [GSPC] and 07.07.2018 [Fig. 70.3]; Črni vrh nad Cerknim (VM21), 22.6.2013; Preval pri Podutiku (VM50), 6.6.2012; Straška gora, 300 m (WL06), 31.5.2007 [GSPC]; Olimje (WM41), 16.6.2006 [GSPC].

**Host plant:** *Betula pendula* [Fig. 70.2] and other *Betula* spp. (Betulaceae).

**Biology:** Univoltine; overwintering as eggs or the first instar nymphs (LAUTERER, 1998); adults from May to July on the host plants.

*Livilla* Curtis, 1836

### 71. *Livilla horvathi* (Scott, 1879)

[Figs. 71.1–71.3]

**LÖW, 1888:** Hrašče pri Postojni (as Hrasche bei Adelsberg);

**GRÄFFE, 1911:** Kras (as Karst);

**New records:** Lukini, 310 m (VL13), 20.8.2013; Branik (VL07), 8.6.2006 [GSPC]; Gradišče pri Vipavi (VL17), 13.6.2006 [GSPC]; Grgar (UL99), 27.5.2012 [GSPC; Fig. 71.3]; Tolminski Lom, 770 m (VM01), 20.6.2014.

**Host plants:** *Genista tinctoria* [Fig. 71.2]; *Cytisus austriacus* (HODKINSON et HOLLIS, 1987) and *Genista sericea* (Fabaceae) (CONCI et al. 1993).

**Biology:** Univoltine; overwintering as eggs or first instar nymphs (CONCI et al., 1993).

### 72. \**Livilla radiata* (Foerster, 1848)

[Figs. 72.1–72.3]

**New records:** Orešje na Bizeljskem (Kozja peč), 400 m (WL59), 16.6.2006 [GSPC]; Kozje (Vetnik), 700 m (WM40), 17.6.2006 [GSPC; Fig. 72.3].

**Host plants:** *Cytisus* spp., *Lembotropis nigricans* [Fig. 72.2] (Fabaceae) (HODKINSON et HOLLIS, 1987).

**Biology:** Univoltine; overwintering stage unknown, probably as eggs or early instar nymphs (CONCI et al., 1993).

### 73. *Livilla spectabilis* (Flor, 1861)

[Figs. 73.1–73.3]

**SELJAK, 2006:** Šmarje pri Kopru (VL04), 22.05.2002 and 11.09.2002; Šeki (VL13), 11.05.2000 [GSPC, S. Brelih leg.]; Sokoliči (VL13), 24.9.2005 [GSPC];

**New records:** Parecag (UL93), 4.6.2006; Korte, 170 m (UL93), 17.5.2009; Strunjan (UL94), 14.10.2007; Belvedere (UL94), 26.5.2008; Brič (VL03), 31.8.2017; Šmarje pri Kopru (VL04), 27.4.2012 [Fig. 73.3]; Kavaliči, 250 m (VL04), 9.7.2015; Sermin (VL04), 17.5.2017; Hrvatini, Brageti, 135 m (VL04), 25.7.2006; Spodnje Škoflje (VL04), 24.7.2008 and 22.10.2010; Movraž, 240 m (VL13), 6.6.2014; Kubed (VL14), 5.6.2017; Trsek, 270 m (VL03), 16.5.2018.

**Host plant:** *Spartium junceum* (Fabaceae) [Fig. 73.2].

**Biology:** Univoltine; overwintering as eggs (CONCI et al., 1993).

**Remark:** GRÄFFE (1911) recorded this species from Trieste and Muggia in Italy, which geographically share the same coastal area in south-western Slovenia.

**74. *Livilla ulicis* Curtis, 1836**

[Figs. 74.1–74.4]

**Löw, 1888:** Gorica (Görz, A. Hensch leg.);**VONDRÁČEK, 1951:** Bovec (as Flitsch) [MMBC, in coll. L. Melichar];**SELJAK, 2006:** Orehek (VM11), 25.04.1999 [GSPC];**New records:** Baske, 600m (UL99), 22.5.2011 [GSPC] and 05.05.2018 [Fig. 74.3]; Podlaka, 750 m (VL09), 13.5.2006 [GSPC], 10.5.2014 and 9.5.2015 [Fig. 74.4]; Kolovrat (UM91), 16.6.2013 and 24.6.2016; Cimprovka, 1250 m (VM21), 24.6.2006 [GSPC] and 27.5.2017; Godovič, 600 m (VL29), 1.06.2019.**Host plants:** *Genista tinctoria* [Fig. 74.2], *G. januensis* (Fabaceae).**Biology:** Univoltine; adults from April to June; probably overwintering as eggs (CONCI et al., 1993).**75. *Livilla variegata* (Löw, 1881)**

[Figs. 75.1–75.4]

**SELJAK, 2006:** Sabotin, 400 m (UL99), 01.05.2001 [GSPC]; Krn, 1100 m (UM92), 05.07.2003 [GSPC]; Planina Stador, 1040 m (VM01), 07.07.2005 [GSPC]; Črni vrh nad Cerknim, 1000 m (VM21), 20.07.2003 [GSPC]; Labinje, 800 m (VM21), 22.08.2004;**New records:** Golo brdo (UM80), 11.6.2006; Kolovrat (UM91), 16.6.2013; Lijak (VL09), 20.5.2006 [GSPC]; Zadlog, 710 m (VL28), 31.7.2006; Čepovan (Kobilica), 450 m (VM00), 17.8.2006; Planina Stador, 1040 m (VM01), 7.7.2005; Kojca, 1000 m (VM11), 27.8.2009; Rut, 1100 m (VM11), 12.6.2010 [GSPC]; Labinje – 850 m (VM21), 18. 08. 2012 [Fig. 75.4]; Davča, 1050 m (VM21), 21.6.2008; Soriška planina, 1250 m (VM22), 23.8.2004 [GSPC]; Vršič, 1000 m (VM04), 30.5.2018 [Fig. 75.3].**Host plants:** *Laburnum alpinum* [Fig. 75.2], *L. anagyroides* (Fabaceae).**Biology:** Univoltine; overwintering in the egg stage or as early instar nymphs on the host plants (CONCI et al. 1993), adults from April to August.**76. *Livilla vicina* (Löw, 1886)**

[Figs. 76.1–76.4]

**SELJAK, 2006:** Lepena, 700 m (UM92), 22.08.2003 [GSPC];**New records:** Planina Razor (VM02), 2.9.2006; Rut, 1100 m (VM11), 12.6.2010 [GSPC]; Cimprovka, 1250 m (VM21), 23.10.2012; Soriška planina, 1500 m (VM22), 3.8.2008 [GSPC]; Lajnar, 1500 m (VM22), 23.10.2012 and 23.5.2019 [Fig. 76.3]; Krn, 1400 m (UM92), 26.8.2011; Mangart, 1770 m (UM94), 15.7.2006 [GSPC], 28.8.2015 [GSPC – slide] and 11.9.2018 [Fig. 76.4]; Zadnja Trenta, 970 m (VM03), 28.7.2007.**Host plant:** *Genista radiata* (Fabaceae) [Fig. 76.2].**Biology:** Univoltine; adults throughout the year and overwintering on the host plant, rarely on conifers (CONCI et al., 1993).

## 77. *Livilla vittipennella* (Reuter, 1875)

[Figs. 77.1–77.3]

**LÖW, 1888:** Triglav (as Terglou, J. A. Palmén leg.);

**SELJAK, 2006:** Lepena, 700 m (UM92), 22.08.2003 [GSPC]; Planina Razor, 1400 m (VM02), 07.07.2005; Izvir Soče (VM04), 23.07.2002 [GSPC]; Kojca, 1000 m (VM11), 09.07.2000; Labinje, 800 m (VM21), 22.08.2004 [GSPC];

**New records:** Čepovan (Kobilica), 450 m (VM00), 17.8.2006; Rut, 1100 m (VM11), 12.6.2010; Labinje, 700 m (VM21), 18. 08. 2012 [Fig. 77.3]; Porezen, 1550 m (VM21), 25.6.2011; Soriška planina, 1500 m (VM22), 3.8.2008; Planina Razor (VM02), 2.9.2006; Krn, 1400 m (UM92), 26.8.2011; Krnsko jezero, 1400 m (UM92), 1.8.2009; Mangart, 1770 m (UM94), 15.7.2006 and 28.8.2015 [GSPC]; Zadnja Trenta, 970 m (VM03), 28.7.2007; Vršič, 1620 m (VM04), 27.7.2008; Planica (VM04), 15.8.2012.

**Host plant:** *Genista radiata* (Fabaceae) [Fig. 77.2].

**Biology:** Univoltine; overwintering as first instar nymphs on the host plant (CONCI et al., 1993), adults from June to September.

*Psylla* Geoffroy, 1762

## 78. *Psylla alni* (Linnaeus, 1758)

[Figs. 78.1–78.6]

**SCOPOLI, 1763:** Kranjska (as Carniola);

**FLOR, 1861b:** Postojna (as Adelsberg);

**LÖW, 1888:** Postojna (after FLOR, 1961b), Razdrto (as Präwald);

**GRÄFFE, 1911:** Tolmin (as Tolmein);

**SELJAK, 2006:** Vodice (UL99), 20.09.2003; Banjšice (VL09), 18.07.2004; Podnanos (VL27), 15.05.2002 [GSPC]; Postojna (VL37); 06.06.1999; Planinsko polje (VL47), 28.06.2001 [GSPC]; Spodnje Bukovo (VM11), 13.07.2002; Jesenica, 800 m (VM11), 10.07.2000; Labinje (VM21), 13.10.2002 and 22.08.2004 [GSPC]; Dolenji Novaki (VM21), 28.05.2000; Nemški rovt, 750 m (VM22), 14.08.2003; Bohinjska Bistrica (VM12), 19.08.2002; Bistra (VL48), 16.06.2004;

**New records:** Dolnji Zemon (VL44), 1.7.2007; Baske (UL99), 5.05.2018 [Figs. 78.3–78.4]; Lig – 660 m (UM90), 14.10.2018 [GSPC]; Kanalski vrh, 640 m (UM90), 6.7.2016; Gradišče pri Vipavi (VL17), 13.6.2006; Grobišče, 523 m (VL36), 7.05.2018; Prestranek (VL36), 8.8.2012; Landol, 530 m (VL37), 18.7.2016; Gorje, 580 m (VM21), 8.8.2010 and 5.6.2015; Gorenji Novaki, 1025 m (VM21), 7.07.2018 [Figs. 78.5–78.6]; Ljubljana (VM60), 5.6.1971 and 2.9.1971 [PMSL, B. Sket leg.]; Draga (Ig), 315 m (VL68), 19.5.2017; Davča, 1050 m (VM21), 21.6.2008; Bukovščica (VM41), 8.7.2006 and 17.7.2010; Zgornje Jezersko, 890 m (VM63), 15.8.2007; Sela pri Osilnici (VL74), 5.7.1979 [PMSL, B. Sket leg.]; Preloge, 360 m (WL15), 31.5.2007; Blatnik pri Črmošnjicah (WL15), 1.6.2007; Golubinjek, 200 m (WM40), 16.6.2006. Probably widespread and common all over Slovenia.

**Host plants:** *Alnus glutinosa* [Fig. 78.2], *A. incana* (Betulaceae).

**Biology:** Univoltine; overwintering as eggs (OSSIANNILSSON, 1992); adults from May to September (October) on the host plants, vagrants sometimes also on other plants.

### 79. *Psylla alpina* Foerster, 1848

[Figs. 79.1–79.4]

**SELJAK, 2006:** Porezen, 1600 m (VM21), 18.08.1999; Cimprovka, 1200 m (VM21), 28.05.2000 [GSPC] and 23.08.2004; Smrekovec, 1370 m (VM94), 22.06.2002 [GSPC];

**New records:** Planina Stador, 1040 m (VM01), 7.7.2005; Planina Razor (VM02), 7.7.2005; Kojca, 1300 m (VM11), 27.8.2009; Porezen – 1500 m (VM21), 3. 07. 2010 [GSPC – slide] and 07.07.2018 [Figs. 79.3–79.4]; Blegoš, 1230 m (VM21), 8.8.2009; Planina Pungrat, 1440 m (VM54), 9.8.2014.

**Host plant:** *Alnus alnobetula* (Betulaceae) [Fig. 79.2].

**Biology:** Univoltine; overwintering as eggs; adults from June to September on the host plant.

### 80. *Psylla buxi* (Linnaeus, 1758)

[Figs. 80.1–80.4]

**JANEŽIČ, 1989:** recorded from 67 localities throughout the whole territory; e.g.: Portorož (UL94); Strunjan (UL94); Šmarje pri Kopru (VL04); Sežana (VL16); Zemono (VL17), 7.8.2005; Pivka (VL36); Ilirska Bistrica (VL44); Nova Gorica (UL98); Dobrovo (UL89); Rakek (VL47); Borovnica (VL58); Ljubljana (VL59); Fara (VL66); Žiri (VM30); Bled (VM33); Golnik (VM43); Vače (VM80); Gornji Grad (VM82); Črna na Koroškem (VM84); Vransko (VM91); Gradac (WL15); Novo mesto (WL17); Mokronog (WL18); Brežice (WL48); Dobrna (WM13); Zreče (WM33); Rogaška Slatina (WM42); Poljčane (WM54); Ptuj (WM64); Središče (WM93); Veržej (WM95); Lendava (XM15);

**SELJAK, 2006:** Gorjansko, 197 m (UL97), 06.08.2005 [GSPC]; Nova Gorica (UL99), 27.04.1998 [GSPC – slide] and 03.07.2003; Vipava (VL17), 07.08.2005; Bled (VM33), 19.08.2002 [GSPC];

**New records:** Nova Gorica (UL99), 7.08.2018 [GSPC; Fig. 80.3]; Solkan, 90 m (UL99), 30.8.2008; Kromberk (UL99), 27.04.2015 [Fig. 80.4]; Ptujška Gora (WM53), 19.5.2015.

**Host plant:** *Buxus sempervirens* (Buxaceae) [Fig. 80.2].

**Biology:** Univoltine; overwintering as the first instar nymphs in leaf-galls (OSSIANNILSSON, 1992); adults from April to August.

### 81. *Psylla fusca* (Zetterstedt, 1828)

[Figs. 81.1–81.4]

**Löw, 1888:** Stol (as Stou);

**SELJAK, 2006:** Črni vrh (Cerkno), 1200 m (VM21), 20.07.2003 [GSPC]; Košutnik (Karavanke) (VM54) [GSPC, S. Brelih leg.];

**New records:** Baske, 600 m (UL99), 25.7.2009 [GSPC]; Gorenji Novaki, 1030 m (VM21), 4.7.2009 [GSPC] and 7.7.2018 [Figs. 81.3–81.4]; Sela pri Osilnici (VL74), 5.7.1979 [PMSL, B. Sket leg.]; Logarska dolina, 790 m (VM73), 30.7.2005 [GSPC]; Koprivna (VM84), 21.7.1974 [PMSL, B. Sket leg.]; Topla (VM84), 21.7.1974 [PMSL, B. Sket leg.]; Nazarje (VM92), 25.6.2000 [PMSL, S. Hudoklin leg.]; Podsreda – Socko, 300 m (WL49), 17.6.2006 [GSPC].

**Host plant:** *Alnus incana* (Betulaceae) [Fig. 81.2].

**Biology:** Univoltine; overwintering as eggs on the host plant (OSSIANNILSSON, 1992); adults from June to August.

*Spanioneura* Foerster, 1848

### 82. *Spanioneura fonscolombii* Foerster, 1848

[Figs. 82.1–82.4]

**SELJAK, 2006:** Gorjansko, 200 m (UL97), 06.08.2005 [GSPC];

**New records:** Kromberk (UL99), 27.4.2015 [GSPC – slide]; Nova Gorica (UL99), 7.8.2018 [GSPC; Figs. 82.3–82.4] and 03.03.2019 [GSPC].

**Host plant:** *Buxus sempervirens* (Buxaceae) [Fig. 82.2].

**Biology:** Univoltine; adults occur throughout the year and overwinter on the host plant (CONCI et al. 1993).

## TRIOZIDAE Löw, 1879

*Bactericera* Puton, 1876

### 83. *Bactericera albiventris* (Foerster, 1848)

[Figs. 83.1–83.4]

**Löw, 1888:** Gorica (as Görz, A. Hensch leg.);

**SELJAK, 2006:** Dragonja (UL93), 02.04.2005; Krkavče (UL93), 02.04.2005 [GSPC]; Kromberk (UL99), 08.02.2001 [GSPC]; Nova Gorica (UL99), 19.01.2003 [GSPC] and 13.03.2005 [GSPC]; Kromberk, 300 m (UL99), 04.04.2004 [GSPC]; Kopitnik, 940 m (VL08), 31.12.2004; Trnovo (VL09), 31.12.2004 [GSPC]; Tolmin (VM01), 03.04.2005; Podčetrtek, 205 m (WM41), 27.04.2005;

**New records:** Dragonja (UL93), 14.4.2011 [GSPC]; Ankaran (VL04), 17.5.2017 and 16.05.2018; Vipolže (UL89), 31.5.2006; Volčja Draga (UL98), 25.7.2012; Prvačina (UL98), 10.6.2006; Vogrsko (VL08), 31.3.2006; Nova Gorica (UL99), 28.10.2006 [GSPC – slide]; Lijak (VL09), 2.3.2008; Ravnica (UL99), 4.11.2007; Lig, 625 m (UM90), 19.10.2013; Ajševica (VL08), 2.7.2006; Črniče, 140 m (VL08), 13.01.2019; Mala Lazna, 1110 m (VL09), 23.10.2015; Sviščaki, 680 m (VL44), 11.2.2016; Planinsko polje, 450 m (VL47), 31.8.2008; Kozaršče (VM01), 24.05.2018 [Figs. 83.3–83.4]; Spodnje Bukovo (VM11), 24.4.2011; Blegoš, 1230 m (VM21), 6.9.2008; Cimprovka, 1250 m (VM21), 24.6.2006; Ljubljana – Rakova jelša, 300 m (VL69), 19.02.2019; Golubinjek, 200 m (WM40), 16.6.2006; Podčetrtek, 205 m (WM41), 27.4.2005.

**Host plants:** *Salix* spp., e.g. *S. alba* [Fig. 83], *S. caprea* and *S. euxina* (Salicaceae).

**Biology:** Univoltine; overwintering as adults on conifers; adults occurring throughout the year, on the host plants between April and October (OSSIANNILSSON, 1992).

### 84. \**Bactericera bohémica* (Šulc, 1913)

[Figs. 84.1–84.3]

**New records:** Mangartsko sedlo, 2100 m (UM94), 28.8.2015 (2 ♂♂, 3 ♀♀) [GSPC]; Zadnja Trenta, 970 m (VM04), 30.5.2018 (1 ♀) [GSPC; Fig. 84.3]; both times on *Geum montanum*.

**Host plants:** *Geum montanum* [Fig. 84.2] and *G. rivale* (Rosaceae) (OSSIANNILSSON, 1992).

**Biology:** Univoltine; overwintering as adults on conifers; adults occur on the host plants from May to September (OSSIANNILSSON, 1992).



### 85. \**Bactericera crithmi* (Löw, 1880)

[Figs. 85.1–85.6]

**New records:** Izola (UL94), 16.5.2018 (3 ♂♂) [GSPC] and 02.04.2019 (2 ♂♂, 1 ♀), [GSPC; Figs. 85.3–85.5].

**Host plant:** *Crithmum maritimum* (Apiaceae) [Fig. 85.2];

**Biology:** Univoltine; adults occur on the host plant from October to June (CONCI et al., 1996).

**Remark:** Also reported by GRÄFFE (1911) from the vicinity of Trieste.

### 86. *Bactericera curvatineris* (Foerster, 1848)

[Figs. 86.1–86.4]

**Löw, 1888:** Lesce (as Lees, F. Then leg.);

**SELJAK, 2006:** Nova Gorica (UL98), 13.5.1999; Ajševica (VL08), 28.4.2006 [GSPC];

**New records:** Volčja Draga (UL98), 7.10.2007 [GSPC]; Vogrsko (UL98), 23.2.2014; Vrtojba (UL98), 11.4.2017 [GSPC]; Kucelj (VL08), 16.9.2012; Krnica, 1050 m (VL08), 28.9.2008; Vitovski vrh, 900 m (VL08), 21.4.2007 [GSPC]; Lig, 625 m (UM90), 19.10.2013; Kolovrat, 1100 m (UM91), 8.9.2012, 16.6.2013 and 15.11.2018 [Fig. 86.4]; Hotedršica (VL38), 15.5.2017; Vojsko – Gačnik, 920 m (VM10), 12.7.2016; Kojca, 670 m (VM11), 8.8.2010; Cimprovka, 1200 m (VM21), 24.6.2006 [GSPC] and 27.5.2017; Čeplez (VM21), 2.4.2011; Gorenji Novaki (VM21), 27.5.2017; Sorica, 1000 m (VM22), 28.4.2018 [Fig. 86.3]; Soriška planina, 1280 m (VM22), 3.7.2008; Lajnar, 1500 m (VM22), 23.10.2012; Slap Boka (UM83), 15.7.2006 [GSPC] and 14.4.2007; Zadnja Trenta, 970 m (VM03), 28.7.2007 [GSPC]; Vršič, 1620 m (VM04), 12.4.2011, I Malenovský leg. et det. [MMBC].

**Host plants:** *Salix* spp.: *S. appendiculata*, *S. cinerea*, *S. caprea* [Fig. 86.2], *S. eleagnos*, *S. purpurea* and *S. waldsteiniana* (Salicaceae).

**Biology:** Univoltine; overwintering as adults on conifers (OSSIANNILSSON, 1992).

### 87. *Bactericera femoralis* (Foerster, 1848)

[Figs. 87.1–87.4]

**Löw, 1888:** Trnovski gozd (as Tarnovanerwald, A. Hensch leg.); Lesce (as Lees, F. Then leg.);

**SELJAK, 2006:** Planina Razor, 1310 m (VM02), 07.07.2005 [GSPC]; Zadnja Trenta, 970 m (VM03), 24.07.2005; Vršič, 1400 m (VM04), 23.07.2002 [GSPC]; Vojsko, 1040 m (VL19), 18.08.2001 [GSPC] and 23.08.2003 [GSPC]; Nemški rovt, 750 m (VM22), 14.08.2003 [GSPC]; Grajska planina (VM23), 2.9.2005 [GSPC]; Velika Planina, 1260 m (VM72), 30.07.2005; Smrekovec (VM93), 22.06.2002 [GSPC]; Pesek, 1380 m (WM24), 25.07.2004 [GSPC]; Kisovec, 1260 m (VM72), 30.07.2005 [GSPC];

**New records:** Mala Lazna, 1110 m (VL09), 13.6.2015 [GSPC – slide; Fig. 87.5] and 23.10.2015; Hrušica, 880 m (VL37), 11.7.2007; Vodice, 930 m (VL28), 25.7.2018; Cimprovka, 1250 m (VM21), 24.6.2006 [GSPC]; Porezen, 1550 m (VM21), 25.6.2011 [GSPC]; Blegoš, 1500 m (VM31), 8.8.2009 and 17.10.2019; Lajnar, 1500 m (VM22),

23.10.2012; Soriška planina (VM22), 3.7.2008 [GSPC]; Kobariški Stol, 1370 (UM82), 8.9.2013; Mangart, 1770 m (UM94), 15.7.2006; Mangart, 2050 m (UM94), 15.7.2006 [GSPC], 7.7.2017, 11.09.2018 [Fig. 87.3] and 16.9.2019 [Fig. 87.4]; Vršič, 1620 m (VM04), 12.4.2011, I. Malenovský leg. et det. [MMBC]; Vršič, 1400 m (VM04), 15.8.2012.

**Host plants:** *Alchemilla* spp., e.g. *A. subcrenata* (Rosaceae) [Fig. 87.2].

**Biology:** Univoltine; overwintering as adults on conifers.

### 88. *Bactericera harrisoni* (Wagner, 1955)

[Figs. 88.1–88.2]

**SELJAK, 2006:** Zadnja Trenta, 970 m (VM03), 24.07.2005 (1 ♂) [GSPC]; Pokljuka, 1200 m (VM23), 2.9.2005 (3 ♂♂) [GSPC]; Jelovica, 1130 m (VM32), 3.9.2005 (1 ♂, 1 ♀) [GSPC].

**New records:** ?Blegoš, 1230 m (VM21), 6.9.2008 (1 ♀) [GSPC]; ?Soriška planina, 1400 m (VM22), 3.8.2008 (1 ♀) [GSPC] and 28.04.2018 (1 ♀) [GSPC] on *Picea abies*; Mangart, 2050 (UM94), 11.9.2018 (1 ♂, 2 ♀♀) [GSPC; Fig. 88.2], probably on *Geum montanum*.

**Host plant:** Unknown, possibly *Geum* spp. according to CONCI et al. (1996).

**Biology:** Univoltine; overwintering as adults on conifers.

**Remark:** Females cannot be reliably distinguished from *B. bohémica*. They were identified deductively according to males collected at the same place and time.

### 89. *Bactericera kratochvili* Vondráček, 1957

[Figs. 89.1–89.4]

**SELJAK, 2006:** Črni kal (VL14), 24.9.2005 [GSPC]; Sabotin (UL99), 10.09.2002 [GSPC]; Skalnica (UL99), 21.05.2005 [GSPC]; Črniške Ravne (VL08), 03.07.2004 [GSPC]; Nanos, 950 m (VL27), 06.07.2002 [GSPC]; Col, 720 m (VL28), 14.07.2001 [GSPC]; Lepena, 700 m (UM92), 22.08.2003 [GSPC]; Škrljevica (VL26), 20.06.2005 [GSPC];

**New records:** Kubed (VL14), 17.7.2012 [GSPC – slide] and 6.6.2014; Kastelec (VL14), 26.5.2016; Petrinjski kras (VL14), 27.4.2008; Beka (VL15), 30.6.2016; Branik (VL07), 8.6.2006 [GSPC]; Baske, 600m (UL99), 22.5.2011; Grgar (UL99), 27.5.2012 [Figs. 89.3–89.4]; Golo Brdo, 150 m (UM80), 23.6.2014 and 21.6.2015; Gradišče pri Vipavi, 115 m (VL17), 29.9.2016 [GSPC]; Nanos (VL27), 1.8.2015; Malo Polje (VL28), 27.6.2015.

**Host plant:** *Allium senescens* [Fig. 89.2] (Amaryllidaceae);

**Biology:** Multivoltine, 3–4 generations; overwintering as adults or as fourth or fifth instar nymphs on the host plant (LAUTERER, 1965).

## 90. *Bactericera lyrata* Seljak, Malenovský & Lauterer, 2008

[Figs. 90.1–90.7]

**SELJAK et al., 2008:** Vogrsko, 50 m (UL98), 13.9.2005, 10.6.2006, 8.8.2007 and 7.10.2007 (the type locality) [GSPC, PMSL – holotype and paratypes]; Prvačina (UL98), 5.8.2005 [GSPC]; Nova Gorica (UL99), 11. 7. 2001 [GSPC]; Velike Žablje (VL18), 8.8.2007 [GSPC]; Poreče pri Podnanosu (VL27), 17.7.2005 and 20.6.2006 [GSPC]; Škocjanski zatok (VL04), 24. 9.2005 [GSPC].

**New records:** Vogrsko (UL98), 1.1.2014 [Fig. 90.4] Ceglo (UL89), 11.9.2008 [GSPC]; Bilje (UL98), 6.9.2017, 28.10.2017 and 11.02.2018 [GSPC]; Nova Gorica (UL99), 29.9.2012 [Fig. 90.5] and 27.10.2012 [GSPC – slide; Fig. 90.6]; Panovec (UL98), 15.9.2012 [GSPC; Fig. 90.3]; Vrtojba (UL98), 11.7.2017 [GSPC]; Kromberk (UL99), 21.6.2017 [GSPC]; Gradišče pri Vipavi, 115 m (VL17), 29.9.2016 [GSPC] and 1.10.2017.

**Host plant:** *Potentilla reptans* (Rosaceae) [Fig. 90.2] (SELJAK et MALENOVSKÝ, 2014).

**Biology:** Multivoltine, 3 generations (SELJAK et MALENOVSKÝ, 2014); overwintering as adults, probably on the host plant or in litter.

**Remark:** This recently described species has also been recorded from the Czech Republic and Hungary (MALENOVSKÝ et LAUTERER, 2012).

## 91. *Bactericera modesta* (Foerster, 1848)

[Figs. 91.1–91.5]

**Löw, 1888:** Gorica (as Görz, as *Trioza recondita* Flor, 1861, A. Hensch leg.);

**SELJAK, 2006:** Nanos, 900 m, 26.07.2002 [GSPC]; Grgar (UL99), 31.08.2002 [GSPC]; Trnovo (VL09), 31.12.2004 [GSPC];

**New records:** Izola, 130 m (UL94), 3.11.2008 [GSPC]; Paderna, 220 m (UL94), 1.6.2009; Škocjanski zatok (VL04), 26.5.2016; Ankaran (VL04), 16.5.2018; Kastelec (VL14), 26.5.2016; Beka (VL15), 30.6.2016; Starod, 670 m (VL33), 7. 02. 2019; Hrušica pri Podgradu (VL34), 6.7.2008; Auber (VL16), 26.7.2011; Branik (VL07), 8.6.2006 [GSPC] and 10.6.2008; Zalošče (VL08), 30.6.2017; Gaberje (VL17), 8.6.2006; Planina (VL17), 8.6.2006; Gradišče pri Vipavi (VL27), 3.10.2018; Podnanos (VL17), 5.7.2014 and 24.9.2006; Šempeter pri Gorici (UL98), 25.9.2011; Vrtojba (UL98), 30.6.2017; Nova Gorica (UL99), 9.10.2011 [GSPC – slide; Fig. 91.5]; Ravnica, 500 m (UL99), 25.5.2008 [GSPC]; Grgar (UL99), 26.05.2019 [Figs. 91.3–91.4]; Golo Brdo (UM80), 23.06.2014 [GSPC]; Unec, 540 m (VL47), 31.8.2008; Idrijski Log, 670 m (VL29), 23.6.2018; Labinje 660 m (VM21), 1.11.2013 [GSPC]; Labinjske Lehe, 1000 m (VM21), 17.6.2017.

**Host plant:** *Sanguisorba minor* s. l. [Fig. 91.2] and *S. officinalis* (Rosaceae) (LAUTERER, 1991).

**Biology:** Multivoltine, at least 2 or possibly 3 generations per year; overwintering as adults on conifers (LAUTERER, 1991).

## 92. *Bactericera nigricornis* (Foerster, 1848)

[Figs. 92.1–92.3]

**Löw, 1888:** Gorica (as Görz, A. Hensch leg.); Hrašče (as Hrasche bei Adelsberg);

**SELJAK, 2006:** Vrtojba (UL98), 19.11.2003 and 20.11.2003 [GSPC]; Nova Gorica (UL99), 05.10.2002 [GSPC]; Kanal (UM90), 05.07.2003 [GSPC]; Lokve (VL09), 25.07.2003; Banjšice (VL09), 18.07.2004; Slap pri Vipavi (VL17), 03.10.2002 [GSPC – slide]; Nanos, 950 m (VL27), 06.07.2002 [GSPC]; Malo polje (VL28), 21.09.2003; Ratečevo brdo (VL35), 16.10.2003; Vojsko, 1050 m (VL19), 23.08.2003 [GSPC – slide]; Turški vrh (WM83), 20.09.2002 [GSPC];

**New records:** Izola (UL94), 27.7.2011; Bilje (UL98), 17.3.2008; Prvačina (UL98), 14.4.2006 [GSPC]; Stara Gora (UL98), 29.6.2011 [GSPC]; Kromberk (UL99), 17.3.2007; Sabotin, 350 m (UL99), 1.8.2012; Baske, 600 m (UL99), 20.10.2007; Deskle (UM90), 25.5.2007 [GSPC – slide]; Branik, 370 m (VL07), 25.5.2014; Potoče, 75 m (VL08), 1.8.2012; Gaberje (VL17), 9.6.2006; Razguri, 560 m (VL17), 23.9.2017; Čaven, 1250 m (VL18), 28.9.2008; Dolga poljana, 340 m (VL18), 11.7.2007; Ustje (VL18), 24.7.2008; Mala Lazna, 1111 m (VL09), 13.6.2015; Vitovski vrh (VL09), 18.10.2015; Dolnje Ležeče (VL25), 13.5.2017; Hruševje pri Postojni, 535 m (VL36), 12.9.2015 [GSPC + present photo]; Hrušica, 880 m (VL37), 11.7.2007; Unec, 540 m (VL47), 31.8.2008; Trebuša, 460 m (VM00), 17.8.2006; Spodnje Bukovo (VM11), 28.8.2011; Cimprovka, 1250 m (VM21), 23.10.2012; Škofje, 960 m (VM21), 17.02.2019; Gorenji Novaki, 1090 m (VM21), 28.8.2016; Labinje (VM21), 17.9.2011; Porezen, 1330 m (VM21), 27.5.2017; Zadnja Trenta, 970 m (VM04), 8.06.2019; Ljubljana (VM60), 31.07.1971 [PMSL, B. Sket leg.]; Rateče (VM05), 15.8.2012; Zgornje Jezersko, 890 m (VM63), 15.8.2007 [GSPC]; Ivanjkovci (WM84), 28.7.2011.

**Host plants:** Polyphagous (e.g. *Capsicum annuum*, *Cichorium intybus* [Fig. 92.2], *Persicaria maculosa*, *Solanum tuberosum*, *Xanthium orientale* subsp. *italicum*)

**Biology:** Multivoltine, 2 or possibly 3 generations per year; overwintering as adults on conifers (CONCI et al. 1996).

## 93. \**Bactericera parastricola* Conci, Ossiannilsson & Tamanini, 1988

[Figs. 93.1–93.3]

**New records:** Porezen, 1600 m (VM21), 3.7.2010 and 25.6.2011 [GSPC]; Soriška planina, 1450 m (VM22), 3.7.2008 [GSPC]; Mangartsko sedlo, 2100 m (UM94), 28.8.2015 [GSPC].

**Host plant:** *Salix waldsteiniana* [Fig. 93.2]; *S. appendiculata*, *S. caprea* (LAUTERER et MALENOVSKÝ, 2002), according to OSSIANNILSSON (1992) also some other *Salix* spp. (Salicaceae) not occurring in Slovenia.

**Biology:** Univoltine; overwintering as adults on conifers, adults occur on the host plants between May and August (CONCI et al. 1996).

**Remark:** According to Conci et al. (1996), *B. parastricola* is an orophilous species that lives in higher altitudes, mainly on *Salix waldsteiniana* and some other *Salix* species. In Slovenia as well, specimens that share all morphological characteristics of *B. parastricola* given by OSSIANNILSSON (1992) have always been collected in the subalpine zone on *S. waldsteiniana*. However, in the south-western sub-Mediterranean

ranean part of Slovenia (perhaps also in adjacent parts of north-eastern Italy), a lowland population occurs that is similar to *P. parastriola* with which it shares most morphological features, but slightly differs in the shape of paramere, male proctiger and aedeagus. It is also associated with different willow species. This morph needs a further study and is not included in this account.

#### 94. *Bactericera perrisii* Puton, 1876

[Figs. 94.1]

**Löw, 1888:** Gorica (as Görz), Trnovski gozd (as Tarnovanerwald, A. Hensch leg.).

**Host plants:** *Artemisia alba*, *A. campestris* (Asteraceae) (LAUTERER, 1982; CONCI et al., 1996).

**Biology:** Multivoltine, 2–3 generations; overwintering as adults (LAUTERER, 1982).

**Remark:** Recently, this species could not have been found in the area specified by Löw. These records need verification, because they might refer to *B. kratochvili*, which is common in the area.

#### 95. *Bactericera striola* (Flor, 1861)

[Figs. 95.1–95.3]

**Löw, 1888:** Gorica (as Görz, A. Hensch leg.); Lesce (as Lees, F. Then leg.);

**GRÄFFE, 1911:** Tolmin (as Tolmein);

**SELJAK, 2006:** Lukini (VL13), 24.9.2005; Nova Gorica (UL99), 03.04.2005; Ajševica (VL08), 02.08.2003 and 24.03.2005; Trnovo (VL09), 31.12.2004; Podnanos (VL27), 17.07.2005; Tolmin (VM01), 03.04.2005; Jelovica (VM32), 3.9.2005 [GSPC]. These records (except the last one) are not supported by voucher specimens. Therefore, they need further field verification because likely confused with the species near *B. parastriola* discussed under species number 93;

**New records:** Vodice, 930 m (VL28), 25.07.2018 and 4.08.2019 [GSPC; Figs. 95.3]; Hotedršica (VL38), 23.06.2018; Planinsko polje, 450 m (VL47), 31.08.2008; Cerknjiško jezero, 550 m (VL56), 27.06.2017; Dolenje Jezero, 550 m (VL56), 17.07.2017; Kranjska gora, 840 m (VM04), 27.07.2008; Labinje, 670 m (VM21), 1.11.2016; Sorica, 1000 m (VM22), 28.04.2018; Blegoš, 1500 m (VM31), 8.08.2009.

**Host plants:** *Salix* spp.: e.g. *S. appendiculata*, *S. aurita*, *S. caprea* [Fig. 95.2], *S. cinerea*, *S. euxina*, *S. glabra*, *S. hastata*, *S. purpurea* (Salicaceae) (OSSIANNILSSON, 1992).

**Biology:** Possibly bivoltine (CONCI et al., 1996); overwintering as adults on conifers.

#### 96. *\*Bactericera trigonica* (Hodkinson, 1981)

[Figs. 96.1–96.4]

**New records:** Strunjan (UL94), 28.8.2018; Nanos, 1000 m (VL27), 1.8.2015; Nova Gorica, 100 m (UL99), 26.8.2018 [GSPC; Figs. 96.3–96.4]; Golo Brdo, 150 m (UM80), 23.6.2014 [GSPC], 21.6.2015 and 20.5.2016 [GSPC]; Lig, 660 m (UM90), 14.10.2018.

**Host plants:** *Daucus carota* [Fig. 96.2], *Libanotis daucifolia*, *Orlaya grandiflora* (Apiaceae).

**Biology:** Multivoltine, 2–3 generations; overwintering as adults (LAUTERER, 1993a).

*Phyllopecta* Riley, 1884**97. *Phyllopecta trisignata* (Löw, 1886)**

[Figs. 97.1–97.4]

**SELJAK, 2006:** Parecag (UL93), 18.10.2004 [GSPC];**New record:** Kromberk (UL99), 31. 10. 2011 [Fig. 97.3].**Host plants:** *Rubus* spp. (Rosaceae) [Fig. 97.2].**Biology:** Univoltine (?); overwintering as adults on conifers or on the host plants, nymphs occur between August and October (CONCI et al., 1996).*Trichoermes* Kirkaldy, 1904**98. *Trichoermes walkeri* (Foerster, 1848)**

[Figs. 98.1–98.4]

**FLOR, 1861b:** Postojna (VL37) (as Adelsberg);**Löw, 1888:** Gorica (as Görz, UL98, UL99, A. Hensch leg.); Postojna (VL3; after FLOR, 1861b); Lesce (VM33; F. Then leg.).**GRÄFFE, 1911:** Primorska (as Küstenland);**JANEŽIČ, 1989:** at 134 sites throughout Slovenia: Ajdovščina, Bistričica, Bled, Boč, Bohinjska Bistrica, Bovec, Braslovče, Brežice, Col, Čatež pri Strugah, Čepovan, Črna na Koroškem, Črnomelj, Divača, Dobljče, Dobovec, Dobrna, Dolenja vas pri Cerknici, Dolenja vas pri Ribnici, Gorenje pri Divači, Gornji Grad, Gornji Ig, Grgar, Grgar, Hruševje pri Postojni, Idrija, Jezersko, Kačiče-Pared, Kamnik, Knežja Lipa, Kobarid, Kočevje, Kot pri Ribnici, Kozina, Kranj, Kriška vas, Križna Gora, Laško, Latkova vas, Lipica, Lisca nad Sevnico, Ljubljana – Rožnik, Logatec, Medvode, Mengeš, Metlika, Mojstrana, Morava, Most na Soči, Motnik, Naklo, Novo mesto, Pijava gorica, Pivka, Polhov Gradec, Poljčane, Postojna, Preddvor, Prestranek, Prevalje, Rakek, Rakitna, Ravbarkomanda, Rogač, Senožeče, Sežana, Slap Savica, Slavnik, Slovenija, Smuka, Stahovica, Stari trg pri Ložu, Stična, Sv. Primož pri Kamniku, Svečina, Šentvid pri Stični, Šmarje pri Sežani, Šmarna gora, Trebnje, Trzin, Tržič, Tržič, Turjak, Velike Lašče, Velike Lašče, Vinica, Vipava, Vipolže, Volče, Vransko, Vrhnika, Zasavska Sveta gora, Zgornja Bistrica, Žiri, Žlebič, Žužemberk.**SELJAK, 2006:** Log Čezsoški (UM83), 16.09.2002 [GSPC]; Lepena, 700 m (UM92), 22.08.2003 [GSPC]; Vojsko, 1050 m (VL19), 23.08.2003; Nanos (VL27), 10.08.2000; Bohinjsko jezero (VM12), 03.08.1999;**New records:** Vitovski vrh (VL09), 18.10.2015; Podkraj, 870 m (VL27), 10.9.2008; Spodnji Lokovec, 790 m (VL09), 12.8.2014; Korada (UM80), 19.10.2013; Kolovrat, 1100 m (UM91), 8.9.2012; Trebuša, 450 m (VM00), 17.8.2006; Hrušica, 880 m (VL38), 30.07.2019; Mašun, 1000 m (VL45), 27.7.2017; Babno polje, 750 m (VL65), 16.8.2018; Kozarišče, 575 m (VL56), 16.8.2018 [GSPC; Figs. 98.3–98.4];

Planinsko polje, 450 m (VL47), 31.8.2008; Unec, 540 m (VL47), 31.8.2008; Hotedršica (VL39), 23.6.2018 [Fig. 98.2]; Dole, 740 m (VL39), 23.6.2018.

**Host plant:** *Rhamnus cathartica* (Rhamnaceae).

**Biology:** Univoltine; overwintering as eggs (LAUTERER, 1982); nymphs in leaf roll galls [Fig. 98.2]; adults occur between August and September.

*Trioza* Foerster, 1848

### 99. *Trioza abdominalis* Flor, 1861

[Figs. 99.1–99.2]

**SELJAK et al., 2008:** Črni vrh nad Cerknim, 1270 m (VM21), 5.8.2007 [GSPC];

**New record:** Peca (VM85), 22.7.1974 [PMSL, B. Sket leg.].

**Host plant:** *Achillea millefolium* (OSSIANILSSON, 1992); according to CONCI et al. (1996) also on *Anthemis* spp. (Asteraceae).

**Biology:** Univoltine, overwintering as adults on conifers.

### 100. *Trioza alacris* (Flor, 1861)

[Figs. 100.1–100.6]

**SELJAK, 2006:** Snežatno (UL89), 01.06.2005; Fojana (UL89), 10.06.2005; Gornje Cerovo (UL89), 10.06.2005; Kromberk (UL99), 11.06.2005; Nova Gorica (UL99), 06.06.2000, 13.5.2002 [GSPC] and 09.06.2003; Pliskovica (VL06), 07.06.2003 [GSPC];

**New records:** Portorož (UL84), 15.12.2006 and 23.5.2014; Korte, 100 m (UL93), 17.5.2009; Parecag (UL93), 20.10.2005; Seča (UL93), 4.6.2006; Strunjan (UL94), 26.5.2008; Lazaret (VL05), 3.7.2017; Nova Gorica (UL99), 23.05.2005 [Fig. 100.3], 4.05.2012 and 16.7.2019 [Figs. 100.4–100.6]; Vipolže (UL89), 31.5.2006; Sabotin, 200 m (UL99), 4.2.2007; Budanje (VL18), 16.7.2007; Vipava (VL17), 1.7.2009.

**Host plant:** *Laurus nobilis* (Lauraceae). Egg-laying females induce strong curling and malformation of leaf margins [Fig. 100.3]. After the eggs hatch, the galls in which immatures dwell, increase rapidly (CONCI et TAMANINI, 1985).

**Biology:** Multivoltine, 2–5 generations; overwintering as adults on the host plant (CONCI et al., 1996).

### 101. *Trioza anthrisci* Burckhardt, 1886

[Figs. 101.1–101.4]

**SELJAK, 2006:** Kucelj (VL08), 02.09.2002 [GSPC]; Podkraj (VL28), 12.05.2002; Laniše (VL38), 12.05.2002; Spodnje Bukovo (VM11), 14.05.2000 [GSPC] and 13.07.2002;

**New records:** Grgarske Ravne (UL99), 13.5.2006 [GSPC]; Kucelj, 1150 m (VL08), 30.12.2018 [GSPC]; Mala Lazna, 1100 m (VL09), 1.8.2010, 23.6.2011 [GSPC], 13.6.2015 and 23.10.2015; Čaven, 1240 m (VL18), 14.8.2011; Hrušica, 880 m (VL38),

30.07.2019; Kolovrat, 1060 m (UM91), 15.11.2018 [Fig. 101.3]; Grahovo ob Bači (VM11), 4.6.2017 [GSPC] and 23.5.2019 [Fig. 101.4]; Podlanišče, 700 m (VM20), 1.5.2007 [GSPC]; Cimprovka, 1180 m (VM21), 26.6.2010 [GSPC]; Zgornje Jezersko, 890 m (VM63), 15.8.2007 [GSPC]; Svečina (WM46), 15.8.2007.

**Host plants:** *Anthriscus sylvestris*, *Chaerophyllum hirsutum* (Apiaceae); according to BURCKHARDT (1985) also on *Angelica sylvestris* and *Heracleum sphondylium*.

**Biology:** Univoltine; overwintering as adults on conifers, adults have been found on the host plants from May to the beginning of September (OSSIANNILSSON, 1992).

## 102. *Trioza apicalis* Foerster, 1848

[Figs. 102.1–102.3]

**Löw, 1888:** Gorica (as Görz, A. Hensch leg.), Ljubljana (as Laibach), Nanos (as Berg Nanos);

**JANEŽIČ, 1973:** Pleterje (WL49); Šentjernej (WL27);

**SELJAK, 2006:** Krn, 1100 m (UM92), 05.07.2003 [GSPC]; Labinje, 670 m (VM21), 13.10.2002 [GSPC];

**New records:** Lazna, 970 m (VL09), 7.12.2016 [GSPC]; Mrzli Log (VL28), 16.5.2017; Labinje, 680 m (VM21), 9.09.2006 [GSPC] and 01.11.2006 [GSPC]; Cimprovka, 1250 m (VM21), 23.10.2012; Čeplez (VM21), 2.4.2011; Gorenji Novaki, 1030 m (VM21), 4.7.2009 [GSPC]; Kolovrat (UM91), 15.11.2018 [Fig. 102.3]; Planina Zapleč, 1200 m (UM92), 12.7.2015; Mangartsko sedlo, 2100 m (UM94), 28.8.2015 [GSPC]; Topla (VM84), 21.7.1974 [PMSL, B. Sket leg.].

**Host plants:** *Daucus carota*, *Chaerophyllum* spp.; according to LÁSKA (1974) also on *Petroselinum crispum* and *Carum carvi* (Apiaceae);

**Biology:** Univoltine, overwintering as adults on conifers. Locally a serious pest on carrots causing strong curling and malformations of infested leaves; vector of *Candidatus Liberibacter solanacearum* on carrot (MUNYANEZA et al., 2014; TERESANI et al. 2017).

**Remark:** Historical records by Löw (1888) should be revised as they may concern also other species from the *T. apicalis*-complex *sensu* BURCKHARDT (1986).

## 103. *Trioza centranthi* (Vallot, 1829)

[Figs. 103.1–103.6]

**JANEŽIČ, 1976, 1977, 1988 and 1989:** Seča (UL93); Piran (UL84); Fjesa (UL84); Strunjan (UL94); Cerovo (UL89);

**New records:** Piran (UL84), 2.04.2019; Debeli Rtič (UL94), 15.5.2008; Izola (UL94), 30.4.2011; Šmarje pri Kopru (UL94), 17.5.2009 [GSPC]; Štanjel (VL17), 8.10.2011; Bukovica (UL98), 23.4.2011; Kromberk, 300 m (UL99), 25.5.2006 [GSPC], 3.7.2006 [GSPC], 26.11.2006 [GSPC], 1.4.2007 [GSPC], 14.02.2018 and 1.5.2018 [Figs. 103.3–103.6]; Vitovlje (VL08), 14.7.2009 [GSPC].

**Host plants:** *Centranthus ruber* [Fig. 103.2]; according to OSSIANNILSSON (1992) also on *Valerianella* spp. and *Fedia cornucopiae* (Caprifoliaceae);

**Biology:** Multivoltine; overwintering as adults or nymphs on the host plants; in mild climates of south-western Slovenia it develops on *Centranthus ruber* continuou-



sly also during the winter. Egg-laying females and immatures cause strong rolling of leaf-margins and severe malformations on leaves [Fig. 103.7].

#### 104. *Trioza cerastii* (Linnaeus, 1758)

[Figs. 104.1–104.4]

**JANEŽIČ, 1976:** Križna gora (VM41);

**SELJAK, 2006:** Labinje, 670 m (VM21), 20.07.2003 [GSPC];

**New records:** Kucelj (VL08), 13.08.2006 [GSPC], 16.9.2012 [GSPC] and 18.10.2015 [Fig. 104.3]; Mrzli Log (VL28), 27.6.2015; Velike Vrše, 850 m (VM00), 8.7.2007 [GSPC]; Tolminski Lom, 770 m (VM01), 20.6.2014; Kobariški Stol, 1370 (UM82), 8.9.2013; Kolovrat, 1100 m (UM91), 8.9.2012 [GSPC] and 15.11.2018 [GSPC]; Vršič, 1620 m (VM04), 12.4.2011; Bukovski vrh, 820 m (VM11), 26.02.2019; Labinje, 680 m (VM21), 9.09.2006 [GSPC] and 01.11.2006 [GSPC]; Cimprovka, 1180 m (VM21), 24.6.2006 [GSPC] and 26.6.2010 [GSPC]; Črni vrh nad Cerknim, 1270 m (VM21), 5.8.2007 [GSPC]; Porezen, 1600 m (VM21), 3.7.2010 and 25.6.2011; Blegoš, 1500 m (VM31), 17.10.2019.

**Host plants:** *Cerastium* spp., mostly *C. arvense* s.l. (Caryophyllaceae) (OSSIANNILSSON, 1992);

**Biology:** Univoltine; overwintering as adults on conifers; immatures cause strong malformations on leaves, shoots and inflorescences (OSSIANNILSSON, 1992).

#### 105. *Trioza chenopodii* Reuter, 1876

[Figs. 105.1–105.2]

**JANEŽIČ, 1989:** Fjesa (UL84); Strunjan (UL94); Koper (VL04); Ribnica na Pohorju (WM25); Vinski vrh pri Ormožu (WM94);

**SELJAK, 2006:** Počehova (WM55), 10.8.2004 [J. Miklavc leg.];

**Host plants:** *Atriplex patula*, *A. prostrata* subsp. *calotheca*, *Chenopodium album* (JANEŽIČ, 1989) [Fig. 105.2]; also *A. portulacoides* and *Spinacia oleracea* (Amaranthaceae) (OSSIANNILSSON, 1992).

**Biology:** Multivoltine, 2–3 generations; overwintering as adults in the host plant's debris (LAUTERER, 1982); immatures cause curling of leaf margins (OSSIANNILSSON, 1992).

#### 106. *Trioza chrysanthemi* Löw, 1878

[Figs. 106.1–106.2]

**Löw, 1888:** Lesce (as Lees, F. Then leg.);

**JANEŽIČ, 1989:** Strunjan (UL94).

**Host plant:** *Leucanthemum* spp. (Asteraceae) [Fig. 106.2], e.g. *L. platylepis* (JANEŽIČ, 1989).

**Biology:** Univoltine; immatures living in shallow pits on the lower side of leaves; overwintering as adults on conifers (OSSIANNILSSON, 1992).

**Remark:** This species may be quite rare. Its occurrence in Slovenia could not have been confirmed recently.

**107. *Trioza cirsii* Löw, 1881**

[Figs. 107.1–107.4]

**SELJAK, 2006:** Ratečevo brdo (VL35), 16.10.2003 [GSPC];**New records:** Kucelj, 1150 m (VL08), 13.8.2006 [GSPC]; Mala Lazna (VL09), 9.5.2015; Rebrnice, 520 m (VL26), 20.9.2007 [GSPC]; Hrušica, 880 m (VL38), 30.07.2019 [Figs. 107.3–107.4]; Cimprovka (VM21), 23.10.2012 [GSPC]; Soriška planina (VM22), 3.7.2008; Lajnar, 1500 m (VM22), 23.10.2012; Ljubljana (VM50), 31. 07. 1971 [PMSL, B. Sket leg.]; Mlinarjevo sedlo, 1300 m (VM63), 15.8.2007 [GSPC].**Host plants:** *Cirsium* spp., (Asteraceae) (OSSIANILSSON, 1992); in Slovenia mainly on *C. oleraceum*.**Biology:** Univoltine; overwintering as adults on conifers.**Remark:** FLOR's (1861b) record of *T. viridula* from Ljubljana (as Laibach) probably refers to *T. cirsii*.**108. *Trioza flavipennis* Foerster, 1848**

[Figs. 108.1–108.5]

**JANEŽIČ, 1989:** Dekani (VL04); Podsabotin (UL99); Tolmin (VM01); Kobarid (UM92); Trnovo ob Soči (UM82); Cerklje (VM21); Logatec (VL48); Ravbarkomanda (VL47); Verd (VL48); Borovnica (VL48); Vrhnika (VL48); Horjul (VL49); Pijava Gorica (VL68); Turjak (VL68); Kompolje (VL77); Muljava (VL88); Stična (VL88); Višnja Gora (VL88); Trebnje (VL98); Gabrovka (VL99); Spodnje Mojstrana (VM14); Dolenji Novaki (VM21); Jesenice (VM24); Jesenice (VM24); Planina pod Golico (VM24); Žiri (VM30); Bled (VM33); Mošnje (Podvin) (VM33); Posavec (VM42); Topol pri Medvodah (VM50); Brnik (VM51), 15.6.1973; Preddvor (VM52); Jezersko (VM63); Zalog (VM70); Kamnik (VM71); Stahovica (VM72); Sv. Primož pri Kamniku (VM72); Litija (VM80); Krašnja (VM81); Ljubno ob Savinji (VM83); Vransko (VM91); Prevalje (VM95); Novo mesto (WL17); Vinica (WL23); Gospodična na Gorjancih (WL26); Pletenje pri Šentjerneju (WL27); Kostanjevica na Krki (WL37); Leskovec pri Krškem (WL38); Brežice (WL48); Trbovlje (WM00); Braslovče (WM02); Velenje (WM03); Celje (WM12); Dobrna (WM13); Vinska Gora (WM13); Muta (WM16); Brezno ob Dravi (WM26); Planina pri Sevnici (WM30); Slovenske Konjice (WM33); Ožbalt (WM36); Ožbalt (WM36); Podčetrtek (WM41); Fram (WM44); Radvanje pri Mariboru (WM45); Poljčane (WM54); Ptuj (WM64); Vurberk (WM64); Gornja Radgona (WM76); Murska Sobota (WM86); Grad v Prekmurju (WM88); Vinski vrh pri Ormožu (WM94); Lendava (XM15);**SELJAK, 2006:** Spodnje Bukovo (VM11), 11.03.2001 [GSPC]; Zgornje Pijavško (VM63), 01.05.2003 [GSPC].**New records:** Panovec (UL98), 27.12.2005 [GSPC]; Stomaž, 450 m (VL18), 11.5.2008 [GSPC]; Vitovski vrh (VL09), 18.10.2015 [GSPC] and 9.11.2018 [Fig. 108.3]; Mala Lazna (VL09), 23.10.2015 [GSPC]; Hrušica (VL38), 21.4.2017; Vodice, 930 m (VL28), 25.7.2018; Medvedje Brdo, 650 m (VL39), 1.06.2019; Ponikve – Zagomilica, 760 m (VM11), 26.12.2019; Zakriž (VM11), 5.6.2015 [Fig. 108.4]; Labinje, 660 m (VM21), 9.9.2006 [GSPC], 1.11.2015 and 1.11.2016; Soriška planina (VM22), 28.4.2018; Podutik (VM50), 3.6.2013; Draga (Ig) (VL68), 20.5.2017 [Fig. 108.5].**Host plant:** *Aegopodium podagraria* [Fig. 108.2] (Apiaceae).

**Biology:** Univoltine; overwintering as adults on conifers (mainly *Picea abies*) (OSSIANILSSON, 1992); adults occur on the host plant from March to September. Immatures live in shallow pit-galls on the lower leaf-sides; these galls are produced by egg-laying females [Fig. 108.4–108.5].

### 109. *\*Trioza flixiana* Burckhardt & Lauterer, 2002

[Figs. 109.1–109.2]

**New records:** Soriška planina, 1300 m (VM22), 3. 07. 2008 (1 ♂) [GSPC] on *Picea abies*.

**Host plant:** Probably *Cirsium spinosissimum* (BURCKHARDT et LAUTERER, 2002).

**Biology:** Univoltine; overwintering as adults on conifers; otherwise life history largely unknown (BURCKHARDT et al., 2007).

### 110. *Trioza foersteri* Meyer-Dür, 1871

[Figs. 110.1–110.6]

**JANEŽIČ, 1989,** (sub *Trioza dispar* Löw, 1876): Logatec (VL48); Drenov Grič (VL49); Horjul (VL49); Planina nad Horjulom (VL49); Rakitna (VL58); Vnanje Gorice (VL59); Fara (VL66); Ig (VL68); Pijava gorica (VL68); Smrjene (VL68); Kočevje (VL85); Muljava (VL88); Stična (VL88); Višnja gora (VL88), 15.7.1979; Šentlovrenc (VL98); Trebnje (VL98); Golnik (VM43); Ljubljana, Rožnik (VM60), 15.6.1978; Volčji potok (VM71); Sv. Primož pri Kamniku (VM72); Novo mesto (WL17); Prečna pri Novem mestu (WL17); Šmarješke Toplice (WL17); Raka pri Krškem (WL38); Velenje (WM03); Laze pri Velenju (WM13); Dobrna (WM13); Celje (WM22); Lipoglav (WM32); Kozje (WM40); Vojnik (WM52);

**SELJAK, 2018:** Zgornja Sorica, 1120 m (VM22), 29.7.2016 [GSPC + slides; Figs. 110.3, 110.4 and 110.6]; Draga (Ig) (VL68), 19.5.2017 [Fig. 110.5]; Mirtovički potok (VL84), 21.7.2013 [GSPC – slide]; Mrzlica, 970 m (WM01), 5.8.2018;

**New records:** Labinje, 700 m (VM21), 13.04.2019 (galls and eggs on *Lactuca muralis* and *Aposeris foetida*); Godovič, 600 m (VL29), 1.06.2019 (galls and eggs on *Lactuca muralis*); Medvedje Brdo, 650 m (VL39), 1.06.2019 (galls and eggs on *Aposeris foetida*).

**Host plants:** *Aposeris foetida* [Fig. 110.2] (SELJAK, 2018) and *Lactuca muralis* (Asteraceae) (BURCKHARDT, 1989; MALENOVSKÝ et LAUTERER, 2012).

**Biology:** Univoltine; overwintering as adults on conifers; adults occur on the host plants from March to May and in July to August; on the places where eggs are laid, pit-galls are induced on leaves [Fig. 110.6].

### 111. *Trioza galii* Foerster, 1848

[Figs. 111.1–111.3]

**LÖW, 1888:** Gorica (as Görz, UL98, UL99, A. Hensch leg.); Lesce (as Lees, VM33, F. Then leg.);

**SELJAK, 2006:** Ratečevo brdo (VL35), 16.10.2003; Gorjansko, 197 m (UL97), 6.8.2005; Kucelj (VL08), 02.09.2002; Nanos (VL27), 26.07.2002; Malo polje (VL28), Vipolže (UL89), 26.07.2005 [GSPC]; Krn, 1100 m (UM92), 05.07.2003; 21.09.2003;

- Soriška planina, 1300 m (VM22), 19.08.2002; Pokljuka (VM23), 14.08.2003; Jelovica 1100 m (VM32), 19.09.2004;
- New records:** Labor, 340 m (VL03), 16.5.2018 [GSPC]; Lukini (VL13), 24.9.2005 [GSPC]; Črni kal (VL14), 9.6.2011; Matenja vas (VL36), 20.10.2005; Dolenja vas, 560 m (VL26), 19.5.2018 [Fig. 111.3]; Cerje (UL98), 7.5.2006 [GSPC]; Rebrnice, 520 m (VL26), 20.9.2007; Hrušica (VL37), 19.9.2007 and 10.9.2008; Volovja reber (VL44), 1.7.2007; Mašun (VL45), 27.7.2017; Cerkniško jezero (VL56), 27.6.2017; Zadnja Trenta, 970 m (VM03), 28.7.2007; Bukovščica (VM41), 8.7.2006; Preddvor (VM52), 18.5.2006; Puščava (WL18), 17.6.2006.
- Host plants:** *Galium* spp. [Fig. 111.2], *Sherardia* spp. (Rubiaceae) (BURCKHARDT et LAUTERER, 2006);
- Biology:** Multivoltine (number of generations unknown); overwintering as adults (BURCKHARDT et LAUTERER, 2006).

### 112. *Trioza ilicina* (De Stefani Perez, 1901)

[Figs. 112.1–112.4]

- JANEŽIČ, 1989: Nova Gorica (UL98); Portorož (UL94);
- SELJAK et al., 2008: Solkan, 200 m (UL99), 4.2.2007 [GSPC – slide] and 8.2.2008; Lijak, 290 m (VL09), 11.2.2007; Nova Gorica (UL98), 25.2.2007 (always in the nymph stage);
- New record:** Fjesa (UL94), 2.04.2019; Izola (UL94), 2.4.2017 (galls and exuvia of immatures); Nova Gorica (UL98), 1.04.2011 [GSPC – slide], 06.03.2014 [GSPC – slide] and 19.03.2017 [Figs. 112.3–112.4];
- Host plant:** *Quercus ilex* (Fagaceae) [Fig. 112.2];
- Biology:** Univoltine; overwintering as the third or fourth instar nymphs in pit-galls on the lower leaf-side [Fig. 112.4]; adults occur from April to June.

### 113. (?) *Trioza kiefferi* Giard, 1902

[Figs. 113.1–113.4]

- JANEŽIČ, 1989: Lepena (UM93); Komna, 1500 m (VM02); Slap Savica (VM02); Stara Fužina (VM12); Uskovnica (VM13), 15.8.1978; Javorniški Rovt (VM24); Stol (VM34); Rinka (VM63); *Trioza kiefferi* misinterpreted as the causal agent of cylindrical pillar-like galls on leaves of *Rhamnus alpina* subsp. *fallax*.
- Host plant:** Monophagous on *Rhamnus alaternus* (Rhamnaceae), on which it causes pillar-like galls on leaves (RAPISARDA, 1989).
- Remarks:** So far, *T. kiefferi* has only been known from southern Italy, Malta, the Iberian Peninsula and Algeria (BURCKHARDT, 1989; RAPISARDA, 1989; CONCI et al., 1996). JANEŽIČ (1989) reported it from *Rhamnus fallax* (= *R. alpinus* subsp. *fallax*) at several localities in the Slovene Alps. As his identifications were based merely on leaf galls by using HOUARD's (1909) identification keys, JANEŽIČ (1989) probably made the same mistake as many European plant gall researchers before him. As BURCKHARDT (1983) stated, the resemblance of galls on *Rhamnus alpinus* to those on *Rhamnus alaternus* produced by *Trioza kiefferi* in the Mediterranean area has led to misidentifications [Fig. 113.4]. According to the same author, galls on *Rhamnus alpinus*

are not produced by any known psyllid (SELJAK, 2006). Author's observations on fresh material of leaves of *R. alpinus* subsp. *fallax* collected at the locality Selovec (Trnovski gozd; 45°56'3.76" N, 13°48'49.34" E) in early August 2019 strongly support this opinion. Cylindrical galls were scattered or more or less densely grouped in clusters on the upper leaf-side (some galls may occur on the lower side of leaves as well) [Fig. 113.3]. These galls are up to 3.1 mm high and up to 0.5 mm thick at the base [Fig. 113.4]. On the opposite side of the leaf, there is a small depressed opening, an entrance into the gall [Fig. 113.4, arrow]. In these openings and inside of still fresh (green) galls, various developmental stages of an eriophyid mite species were mostly observed. This indicates that these mites are the true gall-inducer in *Rh. alpina* s.l. and not *T. kiefferi*, which has already been assumed (ELLIS, 2019). An eriophyid mite *Calepitrimerus rhamni* Petanovic et Boczek, 1990 that causes identical galls on *R. alpinus* subsp. *fallax* has been recorded from Durmitor in Montenegro (PETANOVIĆ et BOCZEK, 1990). A sample of infested leaves from Selovec was sent to the acaralogist Radmila Petanović in Belgrade, Serbia, who confirmed *Calepitrimerus rhamni* as the causal agent of these galls (PETANOVIĆ, in litt.). For all these reasons, it is concluded here that the records by JANEŽIČ (1989) refer to this eriophyid mite. Therefore, *T. kiefferi* has to be considered as absent from Slovenia.

#### 114. *Trioza laserpitii* Burckhardt & Lauterer, 1982

[Figs. 114.1–114.5]

**SELJAK et al., 2008:** Cimprovka, 1258 m (VM21), 24.6.2006 [GSPC];

**New records:** Kucelj, 1150 m (VL08), 30.12.2018; Kobariški Stol, 1370 m (UM82), 8.9.2013; Kolovrat, 1100 m (UM91), 8.9.2012 [GSPC] and 15.11.2018 [GSPC; Figs. 114.3–114.4] and 25.8.2019 [Fig. 114.5]; Izvir Soče, 920 m (VM04), 12.4.2011 [GSPC]; Vršič, 1620 m (VM04), 12.4.2011, I. Malenovský leg. et det. [MMBC]; Škofje, 960 m (VM21), 17.02.2019; Cimprovka, 1250 m (VM21), 23.10.2012 [GSPC]; Soriška planina, 1250 m (VM22), 28.04.2018.

**Host plants:** *Laserpitium latifolium* [Fig. 114.2], other *Laserpitium* spp. and probably also some other Apiaceae (BURCKHARDT, 1986); adults in Slovenia were mainly found on shelter plants (mostly on *Picea abies*).

**Biology:** Univoltine; overwintering as adults on conifers; immatures [Fig. 114.5] on the lower surface of leaves in July and August (OSSIANNILSSON, 1992).

#### 115. *Trioza megacerca* Burckhardt, 1983

[Figs. 115.1–115.2]

**SELJAK et al., 2008:** Mlinarjevo sedlo, 1300 m (VM63), 15.8.2007 [GSPC]; Rebrnice, 520 m (VL26), 20.9.2007 [GSPC]; Baske, 600 m (UL99), 20.10.2007 [GSPC];

**New record:** Ilirska Bistrica (Stražnica), 680 m (VL44), 11.2.2016 [GSPC].

**Host plant:** Unknown, possibly associated with some taxon of the tribe Lactuceae (Asteraceae) (SELJAK et al., 2008); in Slovenia, always swept from *Juniperus communis* or *Picea abies*.

**Biology:** Unknown; overwintering as adults on conifers, mainly on *Juniperus communis*.

**116. *Trioza munda* Foerster, 1848**

[Figs. 116.1–116.4]

**SELJAK, 2006:** Soriška planina 1270 m (VM22), 19.09.2004 [GSPC];**New records:** Cimprovka, 1250 m (VM21), 23.10.2012 [GSPC]; Soriška planina, 1300, 1500 m (VM22), 23.10.2012 and 28.4.2018 [present photos]; Vršič, 1620 m (VM04), 12.4.2011, I. Malenovský leg. et det. [MMBC]; Selo pri Prosenjakovcih, 260 m (WM97), 4.2.2016 [GSPC].**Host plant:** *Scabiosa lucida* [Fig. 116.2]; according to OSSIANNILSSON (1992) also other *Scabiosa* spp., *Knautia* spp. and *Succisa pratensis* (Caprifoliaceae); adults in Slovenia mainly swept from the shelter plants, e.g. *Picea abies*.**Biology:** Univoltine; overwintering as adults on conifers.**117. \**Trioza portulacoides* Conci & Tamanini, 1984**

[Figs. 117.1–117.4]

**New records:** Škocjanski zatok (VL04), 27.4.2008 (1 ♂, 1 ♀) [GSPC] and 15.5.2008 (2 ♀♀) [GSPC]; Ankaran (VL04), 17.5.2017 (29 ♂♂, 21 ♀♀) [GSPC], 16.05.2018 (15 ♂♂, 11 ♀♀) [Figs. 117.3–117.4], 18.07.2018 (24 ♂♂, 19 ♀♀) [GSPC], 28.08.2018 (2 ♂♂, 5 ♀♀) and 02.04.2019.**Host plant:** *Atriplex portulacoides* (Amaranthaceae) [Fig. 117.2];**Biology:** Largely unknown; adults found on the host plant from April to August, strictly in saline seashore habitats. Most likely the whole life cycle takes place on the hostplant.**Remark:** Probably conspecific with *Trioza obionae* Loginova, 1964, but this needs verification; previously only recorded from Italy (CONCI et TAMANINI, 1984; CONCI et al., 1996).**118. *Trioza proxima* Flor, 1861**

[Figs. 118.1–118.3]

**FLOR, 1861a:** Ljubljana (as Laibach, on *Picea abies*);**LÖW, 1888:** Ljubljana (after FLOR, 1861a), Gorica (as Görz, A. Hensch leg.);**JANEŽIČ, 1989:** Razdrto (VL26, on *Hieracium pilosella*);**SELJAK, 2006:** Črni vrh, 1230 m (VM21), 20.7.2003 [GSPC];**Host plant:** *Hieracium pilosella* (Asteraceae) (BURCKHARDT, 1983)**Biology:** Univoltine; overwintering as adult on conifers; immatures in pit galls on leaves (LAUTERER et MALENOVSKÝ, 2002).

## 119. *Trioza remota* Foerster, 1848

[Figs. 119.1–119.4]

- JANEŽIČ, 1989:** Dragonja (UL93); Kostanjevica na Krasu (UL97); Volčja Draga (UL98); Ankaran (VL04); Pridvor (VL04); Dutovlje (VL06); Komen (VL07); Selo (VL08); Šempas (VL08); Kubed (VL14); Osp (VL14); Prešnica (VL14); Kozina (VL15); Šmarje pri Sežani (VL16); Čehovini (VL17); Ajdovščina (VL18); Rakitovec (VL23); Divača (VL25); Senožeče (VL26); Veliko Brdo (VL34); Prestranek (VL36); Ilirska Bistrica (VL44); Cerknica (VL57); Ljubljana, Rožna dolina (VL59); Vnanje Gorice (VL59); Gornji Ig (VL68); Pijava gorica (VL68); Ljubljana (VL69); Kot pri Ribnici (VL76); Kompolje (VL77); Velike Lašče (VL77); Gabrovka (VL99); Most na Soči (VM01); Planina pod Golico (VM24); Javorje nad Škofjo Loko (VM31); Bled (VM33); Križna Gora (VM41); Naklo (VM42); Tržič (VM43); Brnik (VM51); Reteče (VM51); Preddvor (VM52); Vodice (VM61); Vače (VM80); Moravče (VM81); Radmirje ob Savinji (VM82); Radmirje ob Savinji (VM82); Motnik (VM91); Trojane (VM91); Vransko (VM91); Mirna peč (WL07); Črnomelj (WL14); Semič (WL15); Mali Slatnik (WL17); Veliki Slatnik (WL17); Šentjanž (WL19); Šentjanž na Dolenjskem (WL19); Gosposdična na Gorjancih (WL26); Leskovec (WL38); Senuše pri Krškem (WL38); Brestanica (WL39); Latkova vas (WM02); Šoštanj (WM03); Slovenj Gradec (WM05); Dravograd (WM06); Arja vas (WM12); Dobrna (WM13); Muta (WM16); Muta (WM16); Jurklošter (WM20); Lisca nad Sevnico (WM20); Grobelno (WM31); Slovenske Konjice (WM33); Slovenske Konjice (WM33); Zreče (WM33); Šmarje pri Jelšah (WM41); Rogaška Slatina (WM42); Šmartno na Pohorju (WM44); Maribor, Studenci (WM45); Svečina (WM46); Majšperk (WM53); Podlehnik (WM63); Vurberk (WM64); Borl (WM73); Moravci (WM75); Moravci (WM75); Otovci (WM88); Otovci (WM88); Središče (WM93); Veržej (WM95); Velika Nedelja (XM05); Mačkovci (XM06); Kobilje (XM07); Kobilje (Prekmurje) (XM07); Hodoš (XM08);
- SELJAK, 2006:** Kromberk, 450 m (UL99), 10.03.2002 [GSPC], 09.11.2003 and 4.4.2004 [GSPC]; Šmihel, 600 m (VL08), 31.03.2002 [GSPC]; Pri peči (VL09), 30.04.2002; Trnovo (VL09), 31.12.2004; Labinje (VM21), 01.11.2003 [GSPC]; Podčetrtek, 205 m (WM41), 27.04.2005 [GSPC];
- New records:** Črnotiče (VL14), 27.4.2008; Starod, 670 m (VL33), 7.02.2019; Podgrad, 550 m (VL34), 7.02.2019; Vogrsko (VL08), 31.3.2006; Črniče, 140 m (VL08), 13.01.2019 [Figs. 119.3–119.4]; Nova Gorica (UL98), 26.3.2006 [GSPC] and 23.12.2006; Grgar (UL99), 5.5.2016; Ravnica (UL99), 4.11.2007; Sabotin, 200 m (UL99), 4.2.2007; Korada (UM80), 19.10.2013; Lijak (VL09), 2.3.2008; Vitovski vrh, 880 m (VL09), 9.11.2018; Rebrnice, 520 m (VL26), 16.4.2011 [GSPC]; Podnanos (VL27), 18.4.2014; Ilirska Bistrica (Stražnica), 680 m (VL44), 11.2.2016; Ponikve – Zagomilica, 760 m (VM11), 26.12.2019; Škofje, 960 m (VM21), 17.02.2019; Cimprovka, 1250 m (VM21), 23.10.2012; Žejna dolina, 560 m (VL39), 4.12.2018; Selo pri Prosenjakovcih (WM97), 1.4.2015 and 04.02.2016 [GSPC].
- Host plants:** *Q. petraea* [Fig. 119.2], *Q. pubescens* and *Quercus robur* (Fagaceae).
- Biology:** Univoltine; overwintering as adults on conifers; adults occur on the host plants in April and May and then in November; immatures in pit galls on leaves.

**120. *Trioza rhamni* (Schrank, 1801)**

[Figs. 120.1–120.5]

**FLOR, 1861b**, sub *Trioza abieticola* Foerst.: Ljubljana (as Laibach)**Löw, 1888**: Ljubljana (after FLOR, 1861b), Gorica (as Görz, A. Hensch leg.);

**JANEŽIČ, 1989**: Slavnik (VL14); Kozina (VL15); Gorenje pri Divači (VL16); Senožče (VL26); Cerovo (UL89); Vipolže (UL89); Ajdovščina (VL17); Vipava (VL17); Divača (VL25); Razdrto (VL26); Col (VL28); Bovec (UM83); Kobarid (UM92); Idrija (VL29); Hruševje pri Postojni (VL36); Pivka (VL36); Prestranek (VL36); Postojna (VL37); Dolenja vas pri Cerknici (VL47); Planina pri Postojni (VL47); Logatec (VL48); Vrhnika (VL48); Drenov Grič (VL49); Horjul (VL49); Zaplana (VL49); Stari trg pri Ložu (VL56); Cerknica (VL57); Rakitna (VL58); Vnanje Gorice (VL59); Pijava gorica (VL68); Turjak (VL68); Kot pri Ribnici (VL76); Žlebič (VL76); Kompolje (VL77); Velike Lašče (VL77); Kočevje (VL85); Čatež pri Strugah (VL87); Stična (VL88); Smuka (VL96); Most na Soči (VM01); Slap Savica (VM02); Mojstrana (VM14); Žiri (VM30); Bled (VM33); Radovljica (VM33); Polhov Gradec (VM40); Tržič (VM43); Kranj (VM51); Smednik (VM51); Preddvor (VM52); Ljubljana (VM60); Mengeš (VM61); Bistričica (VM62); Dol pri Ljubljani (VM70); Kamnik (VM71); Stahovica (VM72); Vransko (VM91); Knežja Lipa (WL04); Mirna Peč (WL07); Trebnje (WL08); Črnomelj (WL14); Metlika (WL25); Kostanjevica na Krki (WL37); Brežice (WL48), 15.8.1973; Velike Malence (WL48); Dobovec (WM00); Trbovlje (WM00); Braslovče (WM02); Latkova vas (WM02); Laško (WM11); Lisca nad Sevnico (WM20); Ožbalt (WM36); Šmarje pri Jelšah (WM41); Boč (WM42); Svečina (WM46); Poljčane (WM54); Starše (WM54); Moškanjci (WM74); Cankova (WM77); Veržej (WM95);

**SELJAK, 2006**: Nova Gorica (UL99), 09.06.2002 [GSPC]; Kromberk (UL99), 11.06.2005; Ajševica (VL08), 19.05.2002 [GSPC] and 22.04.2004; Nanos (VL27), 06.07.2002 [GSPC]; Vojsko (VL19), 23.08.2003 [GSPC – slide]; Godovič (VL38), 10.05.2002 [GSPC].

**New records**: Osek, 100 m (VL08), 20.4.2008; Lokovec, Kolenci (VL09), 8.4.2018; Rebrnice, 520 m (VL26), 16.4.2011; Hrušica, 880 m (VL38), 30.07.2019; Kozaršče (VM01), 24.5.2018; Kolovrat, 1100 m (UM91), 8.9.2012 [GSPC] and 15.11.2018 [GSPC; Figs. 120.3–120.4]; Škofje, 960 m (VM21), 17. 02. 2019; Dole, 740 m (VL39), 23.6.2018 [GSPC]; Draga (Ig), 315 m (VL68), 19.5.2017 [GSPC].

**Host plant**: *Rhamnus cathartica* (Rhamnaceae) [Fig. 120.2]. Around each freshly laid egg a pit-gall [Fig. 120.5] occurs in which the first instar nymph develops. Each next nymphal instar moves to another place on the leaf lower side (OSSIANILSSON, 1992).

**Biology**: Univoltine; overwintering as adults on conifers; adults occur on the host plant between April and September.

**121. *Trioza rotundata* Flor, 1861**

[Figs. 121.1–121.4]

**SELJAK, 2006**: Porezen, 1600 m (VM21), 18.08.1999; Soriška planina 1270 m (VM22), 19.09.2004 [GSPC]; Pokljuka (VM23), 14.08.2003 [GSPC] and 02.09.2005



[GSPC]; Blegoš, 1500 m (VM31), 29.07.2001 [GSPC]; Rogla, 1470 m (WM24), 25.07.2004;

**New records:** Mala Lazna, 1110 m (VL09), 1.8.2010 [GSPC], 9.5.2015 and 23.10.2015 [Fig. 121.3]; Kolovrat, 1060 m (UM91), 15.11.2018 [GSPC]; Cimprovka, 1250 m (VM21), 23.10.2012; Blegoš, 1500 m (VM31), 17.10.2019; Lajnar, 1500 m (VM22), 23.10.2012 [GSPC]; Soriška planina, 1500 m (VM22), 23.05.2019 [Fig. 121.4]; Vršič, 1620 m (VM04), 12.4.2011, I. Malenovský leg. et det. [MMBC].

**Host plants:** *Cardamine amara* [Fig. 121.2]; according to some authors also *C. hirsuta* (Brassicaceae) and *Stellaria nemorum* (Caryophyllaceae) (BURCKHARDT et LAUTERER, 2002).

**Biology:** Univoltine; overwintering as adults on conifers.

### 122. *Trioza saxifragae* Löw, 1888

[Figs. 122.1–122.3]

**New records:** Mangartsko sedlo, 2100 m (UM94), 28.8.2015 (1 ♂) [GSPC] and 11.09.2018 (1 ♀) [GSPC; Fig. 122.3].

**Host plant:** *Saxifraga paniculata* [Fig. 122.2] and *S. aizoides* (Saxifragaceae) (CONCI et al., 1996).

**Biology:** Univoltine; overwintering as adults on conifers (CONCI et al., 1996).

### 123. *Trioza schrankii* Flor, 1861

[Figs. 123.1–123.4]

**SELJAK, 2006:** Soriška planina, 1300 m (VM22), 19.08.2002 [GSPC]; Logarska dolina (VM73), 30.07.2005 [GSPC].

**New records:** Hrušica, 880 m (VL37), 28.3.2007 [GSPC], 11.7.2007 [GSPC] and 21.04.2017 [GSPC]; Škofje, 960 m (VM21), 17. 02. 2019; Blegoš, 1500 m (VM31), 8.8.2009; Soriška planina, 1300 m (VM22), 28.04.2018 [GSPC; Fig. 123.3]; Lajnar, 1500 m (VM22), 23.10.2012; Mangartsko sedlo, 2100 m (UM94), 28.8.2015; Vršič, 1500 m (VM04), 12.4.2011, 15.8.2012 [GSPC] and 30.05.2018 [GSPC; Fig. 123.4]; Vršič, 1620 m (VM04), 12.4.2011, I. Malenovský leg. et det. [MMBC]; Planina Pungrat, 1440 m (VM54), 9.8.2014; Jezersko (Mlinarjevo sedlo), 1300 m (VM63), 15.8.2007 [GSPC].

**Host plant:** *Astrantia major* (Apiaceae) [Fig. 123.2]; probably also *A. carniolica*, but this needs further verification.

**Biology:** Univoltine; overwintering as adults on conifers.

### 124. *Trioza scottii* Löw, 1880

[Figs. 124.1–124.6]

**Löw, 1888:** Golnik (as Grossgallenstein);

**JANEŽIČ, 1989:** Bovec (UM83), Kobarid (UM92), Divača (VL25), Kačiče-Pared (VL25), Razdrto (VL26), Črni vrh (VL28), Prestranek (VL36), Planina pri Postojni (VL47), Rakek

(VL47), 1.1.1989, Logatec (VL48), Vrhnika (VL48), Horjul (VL49), Stara Vrhnika (VL49), Gorenja Brezovica pod Krimom (VL58), Krim (VL58), Pekel pri Borovnici (VL58), Rakitna (VL58), Podpeč pri Ljubljani (VL59), Iška (VL68), Pijava gorica (VL68), Smrjene (VL68), Turjak (VL68), Sodražica (VL76), Kompolje (VL77), Velike Lašče (VL77), Velike Lašče (VL77), Kočevje (VL85), Dolenja vas pri Ribnici (VL86), Čatež pri Strugah (VL87), Stična (VL88), Višnja Gora (VL88), Most na Soči (VM01), Grahovo ob Bači (VM11), Stara Fužina (VM12), Uskovnica (VM13), Gozd Martuljek (VM14), Mojstrana (VM14), Planina pod Golico (VM24), Žiri (VM30), Bled (VM33), Križna Gora (VM41), Škofja Loka (VM41), Topol pri Medvodah (VM50), Jezersko (VM63), Ljubno ob Savinji (VM83), Sava (VM90), Zasavska Sveta gora (VM90), Trebnje (WL08), Črnomelj (WL14), Semič (WL15), Dolnja Težka Voda (WL16), Sevnica (WL29), Senuše pri Krškem (WL38), Velenje (WM03), Dravograd (WM05), Slovenj Gradec (WM05), Muta (WM16), Fala (WM35), Grad v Prekmurju (WM88);

**SELJAK**, 2006: Hotedršica (VL38), 10.05.2002 [GSPC]; Labinje, 670 m (VM21), 13.10.2002 [GSPC + slide] and 01.11.2003 [GSPC].

**New records:** Petelinjsko jezero (VL46), 14.7.2019 [Fig. 124.3]; Godovič, 600 m (VL29), 1.6.2019; Žejna dolina, 550 m (VL38), 23.6.2018 [Figs. 124.4–124.5]; Dole, 740 m (VL39), 23.6.2018; Rakitna, 800 m (VL58), 12.9.2008 [GSPC + slide];

**Host plant:** *Berberis vulgaris* (Berberidaceae) [Fig. 124.2]; on places where eggs are laid on leaves, pit-galls are induced (Fig. 124.3);

**Biology:** Univoltine; overwintering as adults on conifers.

### 125. *Trioza senecionis* (Scopoli 1763)

[Figs. 125.1–125.5]

**SCOPOLI, 1763:** Kranjska (as Carniola, most probably the surrounding countryside of Idrija; type locality);

**LÖW, 1888:** Kranjska (after SCOPOLI, 1763);

**VONDRÁČEK, 1953:** Bovec (as Flitsch) [MMBC; coll. L. Melichar].

**New records:** Kucelj, 1150 m (VL08), 28.9.2008; Trnovski gozd (VL09), 18.09.2019 [GSPC; Figs. 125.3–125.4]; Trnovski gozd (Krnica), 1050 m (VL08), 28.9.2008 [GSPC + slide]; Vitovski vrh, 880 m (VL08), 28.9.2008 [GSPC]; Kolovrat, 1120 m (UM91), 15.11.2018 [GSPC] and 25.08.2019; Ledine, 890 m (VM20), 27.09.2019 [Fig. 125.5], Blegoš, 1300 m (VM31), 17.10.2019.

**Host plant:** *Senecio ovatus* [Fig. 125.2] and *S. nemorensis* (Asteraceae).

**Biology:** Univoltine; overwintering as adults on conifers; adults were found on the host plants in September and on shelter plants from October onwards; immatures on leaf lower side, not inducing malformations.

### 126. \**Trioza soniae* Rapisarda, 1994

[Figs. 126.1–126.6]

**JANEŽIČ, 1989** sub *Trioza* sp.: Dragonja (UL93), Kubed (VL14), Prešnica (VL14), Kozina (VL15), Lipica (VL15), Gorenje pri Divači (VL16), Škocjan pri Divači (VL25),

- Divača (VL26), Podgrad (VL34), Veliko Brdo (VL34), Smrjene (VL68), Turjak (VL68), Kriška vas (VL88), Gabrovka (VL99), Dolenjske Toplice (WL06), Rožni Dol (WL15), Uršna Sela (WL16), Gospičična na Gorjancih (WL26), Rogač (VM70), Grobelno (WM31), Podčetrtek (WM41), Grad v Prekmurju (WM88);
- New records:** Brič (VL03), 8.1.2018 [GSPC]; Kozina, 540 m (VL15), 28.8.2018; Mahnič, 235 m (VL17), 14.7.2017, 22.8.2017 and 23.9.2017 [GSPC – slide]; Dolnje Ležeče (VL25), 3.10.2018 [GSPC; Fig. 126.5]; Rebrnice, 520 m (VL26), 21.9.2007; Jakovce, 555 m (VL27), 3.10.2018 [GSPC]; Korada, 640 m (UM80), 30.8.2017; Lig, 660 m (UM90), 14.10.2018 [GSPC; Figs. 126.3–126.4].
- Host plant:** *Quercus cerris* (Fagaceae) [Fig. 126.2]; on places where eggs are laid on leaves, pit-galls are induced [Fig. 126.6];
- Biology:** Univoltine; overwintering as adults on conifers; adults occur on the host plant in May and June and then from October to November; the second or third instar nymphs undergo a long summer diapause (CONCI et al. 1996).
- Remark:** This species, strictly associated with *Quercus cerris*, was described from Italy (RAPISARDA, 1994). Recently it has been recorded from Hungary (RIPKA et al., 2018). In Slovenia, JANEŽIČ (1989) recorded pit-galls on *Q. cerris* from many localities throughout the country and correctly ascribed them to an unknown *Trioza* species. Some of these localities have been checked by the present author who confirmed *T. soniae* as the causal agent of the galls on *Q. cerris*. The life history of *T. soniae* is nearly identical to *T. remota*, but morphological characters of immatures are quite different. Distinguishing both species from each other is much easier in nymphal stage than in adults.

### 127. *Trioza urticae* (Linnaeus, 1758)

[Figs. 127.1–127.4]

**Löw, 1888:** Kranjska (as Krain) and Primorska (as Küstenland)

**JANEŽIČ, 1989:** Padna (UL93), Kojško (UL99), Cerovo (UL89), Vipolže (UL89), Kanal (UM90), Ročinj (UM90), Kobarid (UM92), Kobarid (UM92), Vanganelška dolina (VL04), Kozina (VL15), Lipica (VL15), Ajdovščina (VL17), Vipava (VL17), Rakitovec (VL23), Senožeče (VL26), Podgrad (VL34), Veliko Brdo (VL34), Godovič (VL38), Vrhnika (VL48), Cerknica (VL57), Rakitna (VL58), Ljubljana, Rožna dolina (VL59), Nova vas na Blokah (VL66), Velike Lašče (VL77), Kočevje (VL85), Tolmin (VM02), Planica (VM04), Planina pod Golico (VM24), Žiri (VM30), Bled (VM33), Mošnje (VM33), Vintgar (VM33), Jesenice (VM34), Naklo (VM42), Medvode (VM50), Topol pri Medvodah (VM50), Kranj (VM51), Preddvor (VM52), 15.6.1990; Loka pri Mengšu (VM61), Prevalje (VM95), Novo mesto (WL17), Šmarješke Toplice (WL17), Kostanjevica na Krki (WL37), Leskovec pri Krškem (WL38), Brežice (WL48), Velenje (WM03), Dravograd (WM05), Slovenj Gradec (WM05), Vinska Gora (WM13), Muta (WM16), Vitanje (WM23), Ribnica na Pohorju (WM25), Selnica ob Dravi (WM35), Kozje (WM40), Šmarje pri Jelšah (WM41), Maribor (WM45), Radvanje pri Mariboru (WM45), Miklavž na Dravskem polju (WM55), Podlehnik (WM63), Ptuj (WM64), Borl (WM73), Videm ob Ščavnici (WM75), Ormož (WM83), Murska Sobota (WM86), Tišina (WM86), Grad v Prekmurju (WM88), Središče

(WM93), Jeruzalem pri Ljutomeru (WM94), Vinski vrh pri Ormožu (WM94), Beltinci (WM96), Rakičan (WM96), Sebeborci (WM97), Hotiza (XM05), Hodoš (XM08), Hodoš (XM08), Lendava (XM15);

**SELJAK, 2006:** Panovec (UL98), 13.09.2000; Nova Gorica (UL99), 14.12.1998; Paljevo (UL99), 20.09.2003; Banjšice (UL99), 18.07.2004; Breginjs, 550 m (UM72), 22.08.2003; Pl. Na Klinu, 900 m (UM72), 22.08.2003; Podočela (UM83), 16.09.2002; Krn, 1100 m (UM92), 05.07.2003; Lepena, 700 m (UM92), 22.08.2003; Na Skali (UM93) [GSPC, S. Brelih leg.]; Hruševica (VL07), 28.04.2002; Matenja vas (VL36), 05.10.2004; Laniše (VL38), 12.05.2002; Bistra (VL48), 16.06.2004; Snežnik, 1560 m (VL54), 21.07.2002 [GSPC]; Bevke (VL59), 14.07.2001; Trebnje (VL98), 10.07.2004; Most na Soči (VM01), 16.08.2003; Želin (VM10), 25.06.2003; Spodnje Bukovo (VM11), 11.03.2001 [GSPC]; Zavode (WL37), 10.07.2004; Žadovinek (WL38), 10.07.2004; Gornje Pijavško (WL39), 01.05.2003 [GSPC]; Jareninski dol (WM56), 25.07.2004; Mestni vrh pri Ptujju (WM64), 22.07.2003; Strezetina (WM84), 20.06.2003; Strezetina (WM84), 22.07.2003; Litmerk (WM84), 15.08.2004; Mali Brebrovnik (WM94), 22.07.2003; Čentiba (XM15), 27.07.2004;

**New records:** Sečovelje – Pišine (UL93), 21.08.2019; Lucija (UL94), 22.10.2010; Starod, 670 m (VL33), 7. 02. 2019; Podgrad, 550 m (VL34), 7.02.2019; Senožče (VL26), 16.7.2011; Vremščica, 850 m (VL26), 16.7.2011; Zavino (VL17), 8.8.2007; Bizjaki (VL08), 14.7.2006; Kromberk (UL99), 31.10.2011; Bate (UM90), 18.5.2013; Nemci, 880 m (VL09), 13.6.2015; Avče, 160 m (UM90), 24.5.2018; Lazna, 970 m (VL09), 7.12.2016; Mala Lazna (VL09), 1.8.2010 and 9.5.2015; Kolovrat, 1060 m (UM91), 15.11.2018 [GSPC]; Kobariški Stol, 1300 (UM82), 8.9.2013; Robič, 250 m (UM82), 13.8.2008; Log pod Mangartom, 620 m (UM93), 12.7.2008; Mangartska planina (UM94), 15.7.2006; Mrzli Log, 800 m (VL28), 27.6.2015 and 16.5.2017; Vodice, 930 m (VL28), 25.7.2018; Hrušica, 880 m (VL37), 11.7.2007 and 21.4.2017; Planinsko polje, 450 m (VL47), 31.8.2008; Snežnik, 1600 m (VL54), 27.7.2017; Kozarišče, 575 m (VL56), 16.8.2018; Zakraj (Bloška planota), 750 m (VL67), 17.7.2017; Draga (Ig) (VL68), 19.5.2017; Osilnica (VL74), 20.7.2013; Grčarice (VL85), 21.7.2013; Čukla, 770 m (VM01), 20.6.2014; Zatoľmin (VM01), 3.7.2008; Zadnja Trenta, 970 m (VM03), 28.7.2007; Zadnja Trenta (VM04), 30.5.2018; Vršič, 1400, 1620 m (VM04), 15.8.2012 and 12.4.2011; Bukovski vrh, 820 m (VM11), 26.02.2019; Grahovo ob Bači (VM11), 4.6.2017; Grant, 700 m (VM11), 12.6.2010; Rut, 1200 m (VM11), 12.6.2010; Labinje, 660 m (VM21), 1.11.2015; Podlanišče (VM20), 1.5.2007; Cimprovka, 1180, 1250 m (VM21), 26.6.2010 and 23.10.2012; Črni vrh nad Cerknem, 1270 m (VM21), 5.8.2007; Blegoš, 1400 m (VM31), 6.9.2008; Porezen, 1330, 1600 m (VM21), 3.7.2010 and 27.5.2017; Davča, 1050 m (VM21), 21.6.2008; Lajnar, 1500 m (VM22), 23.10.2012; Soriška planina, 1300 m (VM22), 3.7.2008; Bukovščica (VM41), 8.7.2006; Podcerkev, 640 m (VL56), 17.05.2019; Ljubljana – Rakova jelša, 300 m (VL69), 19.02.2019 [Figs. 127.3–127.4]; Kranjska gora, 840 m (VM04), 27.7.2008; Zgornje Jezersko, 890 m (VM63), 15.8.2007; Olševa (VM74), 20.7.1974 [PMSL, B. Sket leg.]; Koprivna (VM84), 21.7.1974 [PMSL, B. Sket leg.]; Topla (VM84), 21.7.1974 [PMSL, B. Sket leg.]; Straška gora, 300 m (WL06), 31.5.2007; Seče selo, 170 m (WL13), 3.6.2007; Marindol (WL23), 3.6.2007; Šmartno na Pohorju (WM44), 8.7.1986 [PMSL, B. Sket leg.]; Pohorski dvor (WM45), 24.3.2015; Selo pri Prosenjakovcih, 260 m (WM97), 4.2.2016.

**Host plant:** *Urtica dioica* (Urticaceae) [Fig. 127.2].

**Biology:** Multivoltine, with up to four generations a year; overwintering as adults on conifers; causing strong curling of leaves (OSSIANILSSON, 1992).

## 128. *Trioza velutina* Foerster, 1848

[Figs. 128.1–128.4]

**SELJAK, 2006:** Socerb (VL14), 30.05.2004; Črnotiče (VL14), 30.05.2004; Orlek, 345 m (VL05), 19.06.2005; Lokvica, 215 m (UL97), 08.05.2005 [GSPC]; Ajševica (UL98), 22.04.2004; Nova Gorica (UL99), 11.04.2004 [GSPC] and 18.06.2005; Podsabotin (UL99), 19.05.2004; Kromberk (UL99), 04.06.2004; Črniške Ravne (VL08), 03.07.2004; Pri peči (VL09), 12.07.2002 [GSPC] and 02.05.2004; Nanos, 1040 m (VL27), 16.07.2004; Godovič (VL38), 10.05.2002 [GSPC]; Hrušica (VL38), 30.05.2002 [GSPC]; Labinje 800 m (VM21), 23.08.2004.

**New records:** Zazid, 420 m (VL13), 19.05.2018; Petrinjski kras (VL14), 27.04.2008; Dolnje Ležeče (VL25), 13.05.2017; Dolenja vas, 560 m (VL26), 19.05.2018; Cerje, 260 m (UL98), 07.05.2006 [GSPC] and 5.06.2014; Grgar (UL99), 30.04.2017 [GSPC] and 22.04.2018 [Figs. 128.3–128.4]; Kromberk (UL99), 4.03.2017; Golo Brdo (UM80), 20.05.2016; Branik (VL07), 10.06.2008, 21.04.2016 and 25.05.2014; Razguri, 560 m (VL17), 23.09.2017; Osek, 120 m (VL08), 20.04.2008; Lokve, 920 m (VL09), 19.07.2009; Gradišče pri Vipavi – Mlake (VL17), 13.06.2018; Podnanos (VL17), 5.07.2014; Hrušica (VL28), 15.05.2012; Vodice, 930 m (VL28), 25.07.2018; Podcerkev, 640 m (VL56), 17.05.2019; Unec, 540 m (VL47), 31.08.2008; Dol pri Borovnici (VL48), 9.07.2017; Borovška gora, 1000 m (VL74), 20.07.2013; Lokovec, 830 m (VM00), 10.05.2014; Poljubin (VM01), 27.04.2007; Mangart, 2050 m (UM94), 15.07.2006 and 3.07.2018; Zadnja Trenta, 970 m (VM03), 28.07.2007 [GSPC]; Zadnja Trenta (VM04), 30.05.2018 [GSPC]; Podlanišče, 700 m (VM20), 1.05.2007; Labinje, 900 m (VM21), 18.08.2012; Cimprovka, 1250 m (VM21), 24.06.2006 [GSPC]; Zgornje Jezersko, 890 m (VM63), 15.08.2007; .

**Host plants:** *Galium* spp. (Rubiaceae) [Fig. 128.2]; adults and eggs found together on *G. lucidum* and *G. verum*.

**Biology:** Poorly known, because it was often confused with *T. galii* in the past (BURCKHARDT et LAUTERER, 2006); probably bivoltine.

## 129. *Trioza viridula* (Zetterstedt 1828)

[Figs. 129.1]

**FLOR, 1861b:** Ljubljana (as Laibach)

**Host plant:** *Cirsium heterophyllum* (Asteraceae) (OSSIANILSSON, 1992);

**Remark:** The status of this species in Slovenia remains uncertain. The only record by FLOR (1861b) is very old and could not have been verified. According to the available data, *T. viridula* is distributed in North Europe, hence its occurrence in Slovenia is not very likely. In addition, the host plant, *C. heterophyllum*, is extremely rare in Slovenia and only known from three isolated localities (JOGAN et al. 2001). FLOR's (1861b) record from Ljubljana most likely refers to *T. cirsii* (see no 107).

## Discussion and conclusions

In this account, the current knowledge on the psyllid fauna of Slovenia is summarized. The list of psyllid species recorded from Slovenia comprises 129 species: Aphalaridae – 18, Calophyidae – 1, Homotomidae – 1, Liviidae – 12, Psyllidae – 50, and Triozidae – 46 species. Eighteen species recorded in Slovenia are listed here for the first time. The occurrence of 125 species could be confirmed during this study. The historical records of three species from Slovenia, viz. *Cacopsylla parvipennis* (GRÄFFE, 1911), *Bactericera perrisii* (LÖW, 1888) and *Trioza viridula* (FLOR, 1861b), are doubtful. Records of *Trioza kiefferi* by JANEŽIČ (1989) as the causal agent of galls on leaves of *Rhamnus alpinus* subsp. *fallax* have proved to be erroneous and regard the eriophyid mite *Calepitrimerus rhamni* PETANOVIĆ et BOCZEK, 1990 (Acari, Eriophyidae).

So far, only the western part of the country has been investigated systematically by the present author. Phytogeographically, this area comprises the whole sub-Mediterranean and Dinaric regions and the western Alpine (Julian Alps) and western pre-Alpine regions. The central, southern and eastern parts of Slovenia were only visited occasionally and remain largely unexplored. Most records from these latter areas were provided by JANEŽIČ (1989) and concern gall-inducing psyllid species only.

Despite such an uneven coverage of the territory, it seems that this overview offers a relatively complete picture on the species composition of the psyllid fauna of Slovenia. Compared with the psyllid faunas of adjacent regions, Friuli-Venezia Giulia in Italy (83 species; CONCI et al., 1993 and 1996) and Carinthia in Austria (82 species; BURCKHARDT et al., 1999), the number of species recorded in Slovenia is significantly higher (Table 1). While the lists of species from Slovenia and Friuli-Venezia Giulia are almost completely consistent, the difference in species composition between Slovenia and Carinthia is slightly larger. Some typically Alpine or boreo-montane species, such as *Cyamophila prohaskai*, *Psylla betulae* and *Cacopsylla myrtilli*, are missing from the Slovenian list. Several of these species are likely to occur at higher altitudes also in Slovenia, but have not been found so far.

**Table 1:** Comparison of psyllid fauna of Slovenia with the adjacent regions in Italy and Austria

Species	Slovenia	Friuli-Ven. Giulia (Italy) (CONCI et al., 1993 et 1996)	Carinthia (Austria) (BURCKHARDT et al., 1999)
<b>APHALARIDAE</b>			
<i>Agonoscena succincta</i>	+	-	-
<i>Agonoscena targionii</i>	+	-	-
<i>Aphalara avicularis</i>	+	-	-
<i>Aphalara borealis</i>	-	+	+
<i>Aphalara calthae</i>	+	+	+
<i>Aphalara exilis</i>	-	-	+
<i>Aphalara freji</i>	+	+	-
<i>Aphalara longicaudata</i>	+	+	+
<i>Aphalara polygona</i>	+	+	+
<i>Aphalara sauteri</i>	+	+	-
<i>Colposcena traciana</i>	+	-	-

Species	Slovenia	Friuli-Ven. Giulia (Italy) (CONCI et al., 1993 et 1996)	Carinthia (Austria) (BURCKHARDT et al., 1999)
<i>Craspedolepta bulgarica</i>	+	-	-
<i>Craspedolepta carinthica</i>	-	-	+
<i>Craspedolepta conspersa</i>	+	-	-
<i>Craspedolepta flavipennis</i>	+	+	+
<i>Craspedolepta malachitica</i>	+	-	-
<i>Craspedolepta nebulosa</i>	+	-	-
<i>Craspedolepta nervosa</i>	+	+	+
<i>Megagonoscena gallicola</i>	+	-	-
<i>Rhinocola aceris</i>	+	+	+
<i>Rhodochlanis bicolor</i>	+	-	-
<b>CALOPHYIDAE</b>			
<i>Calophya rhois</i>	+	+	-
<b>HOMOTOMIDAE</b>			
<i>Homotoma ficus</i>	+	+	-
<b>LIVIIDAE</b>			
<i>Camarotoscena speciosa</i>	+	+	+
<i>Camarotoscena subrubescens</i>	+	+	-
<i>Diaphorina chobauti</i>	+	-	-
<i>Euphyllura olivina</i>	+	+	-
<i>Euphyllura phillyreae</i>	+	+	-
<i>Livia junci</i>	+	+	+
<i>Psyllopsis discrepans</i>	+	-	+
<i>Psyllopsis distinguenda</i>	+	-	-
<i>Psyllopsis fraxini</i>	+	+	+
<i>Psyllopsis fraxinicola</i>	+	+	+
<i>Psyllopsis meliphila</i>	+	+	+
<i>Strophingia ericae</i>	+	+	+
<b>PSYLLIDAE</b>			
<i>Acizzia acaciaebaileyanae</i>	transitional	-	-
<i>Acizzia jamatonica</i>	+	-	-
<i>Arytaina genistae</i>	+	-	-
<i>Arytainilla spartiophila</i>	+	-	-
<i>Baeopelma colorata</i>	+	+	+
<i>Baeopelma foersteri</i>	+	+	+
<i>Cacopsylla affinis</i>	+	+	-
<i>Cacopsylla albipes</i>	+	+	+
<i>Cacopsylla ambigua</i>	+	+	+
<i>Cacopsylla bidens</i>	+	-	-

Species	Slovenia	Friuli-Ven. Giulia (Italy) (CONCI et al., 1993 et 1996)	Carinthia (Austria) (BURCKHARDT et al., 1999)
<i>Cacopsylla brevantennata</i>	+	+	+
<i>Cacopsylla brunneipennis</i>	+	+	-
<i>Cacopsylla corcontum</i>	+	-	-
<i>Cacopsylla crataegi</i>	+	+	+
<i>Cacopsylla elegantula</i>	+	-	-
<i>Cacopsylla fulguralis</i>	+	-	-
<i>Cacopsylla intermedia</i>	+	+	-
<i>Cacopsylla hippophaes</i>	-	-	+
<i>Cacopsylla iteophila</i>	+	-	+
<i>Cacopsylla mali</i>	+	+	+
<i>Cacopsylla melanoneura</i>	+	+	+
<i>Cacopsylla myrthi</i>	+	-	-
<i>Cacopsylla myrtilli</i>	-	-	+
<i>Cacopsylla nigrita</i>	+	+	+
<i>Cacopsylla parvipennis</i>	?	-	-
<i>Cacopsylla peregrina</i>	+	+	+
<i>Cacopsylla picta</i>	+	-	-
<i>Cacopsylla pruni</i>	+	+	+
<i>Cacopsylla pulchella</i>	+	+	-
<i>Cacopsylla pulchra</i>	+	+	-
<i>Cacopsylla pyri</i>	+	+	-
<i>Cacopsylla pyricola</i>	+	+	+
<i>Cacopsylla pyrisuga</i>	+	+	+
<i>Cacopsylla rhamnocola</i>	+	-	+
<i>Cacopsylla rhododendri</i>	-	+	+
<i>Cacopsylla saliceti</i>	+	+	+
<i>Cacopsylla sorbi</i>	+	+	+
<i>Cacopsylla ulmi</i>	+	-	+
<i>Cacopsylla viburni</i>	+	-	+
<i>Cacopsylla visci</i>	+	-	-
<i>Cacopsylla zetterstedti</i>	-	-	+
<i>Chamaepsylla hartigii</i>	+	-	+
<i>Cyamophila prohaskai</i>	-	-	+
<i>Livilla horvathi</i>	+	+	-
<i>Livilla radiata</i>	+	-	+
<i>Livilla spectabilis</i>	+	+	-
<i>Livilla ulicis</i>	+	+	+
<i>Livilla variegata</i>	+	+	-



Species	Slovenia	Friuli-Ven. Giulia (Italy) (CONCI et al., 1993 et 1996)	Carinthia (Austria) (BURCKHARDT et al., 1999)
<i>Livilla vicina</i>	+	+	+
<i>Livilla vittipennella</i>	+	+	+
<i>Psylla alni</i>	+	+	+
<i>Psylla alpina</i>	+	+	+
<i>Psylla betulae</i>	-	-	+
<i>Psylla buxi</i>	+	+	-
<i>Psylla fusca</i>	+	+	+
<i>Spanioneura fonscolombii</i>	+	-	-
<b>TRIOZIDAE</b>			
<i>Bactericera acutipennis</i>	-	-	+
<i>Bactericera albiventris</i>	+	+	+
<i>Bactericera bohémica</i>	+	-	+
<i>Bactericera bucegica</i>	-	-	+
<i>Bactericera crithmi</i>	+	+	-
<i>Bactericera curvatineris</i>	+	+	+
<i>Bactericera femoralis</i>	+	+	+
<i>Bactericera harrisoni</i>	+	+	+
<i>Bactericera kratochvili</i>	+	-	-
<i>Bactericera lyrata</i>	+	-	-
<i>Bactericera modesta</i>	+	+	+
<i>Bactericera nigricornis</i>	+	+	+
<i>Bactericera parastriola</i>	+	+	-
<i>Bactericera perrisii</i>	?	+	-
<i>Bactericera salicivora</i>	-	-	+
<i>Bactericera striola</i>	+	+	+
<i>Bactericera substriola</i>	-	-	+
<i>Bactericera trigonica</i>	+	+	-
<i>Phyllopecta trisignata</i>	+	+	-
<i>Trichoermes walkeri</i>	+	+	+
<i>Trioza abdominalis</i>	+	+	+
<i>Trioza achilleae</i>	-	-	+
<i>Trioza agrophila</i>	-	-	+
<i>Trioza alacris</i>	+	+	-
<i>Trioza anthrisci</i>	+	+	-
<i>Trioza apicalis</i>	+	+	+
<i>Trioza centranthi</i>	+	+	+
<i>Trioza cerastii</i>	+	-	+
<i>Trioza chenopodii</i>	+	+	-

Species	Slovenia	Friuli-Ven. Giulia (Italy) (CONCI et al., 1993 et 1996)	Carinthia (Austria) (BURCKHARDT et al., 1999)
<i>Trioza chrysanthemi</i>	+	-	-
<i>Trioza cirsii</i>	+	-	-
<i>Trioza dispar</i>	-	+	+
<i>Trioza flavipennis</i>	+	-	+
<i>Trioza flixiana</i>	+	-	-
<i>Trioza foersteri</i>	+	-	+
<i>Trioza galii</i>	+	+	+
<i>Trioza ilicina</i>	+	-	-
<i>Trioza laserpitii</i>	+	+	-
<i>Trioza megacerca</i>	+	-	-
<i>Trioza munda</i>	+	-	+
<i>Trioza portulacoides</i>	+	-	-
<i>Trioza proxima</i>	+	+	+
<i>Trioza remota</i>	+	+	+
<i>Trioza rhamni</i>	+	+	+
<i>Trioza rotundata</i>	+	+	-
<i>Trioza rumicis</i>	-	+	-
<i>Trioza saxifragae</i>	+	-	-
<i>Trioza schrankii</i>	+	+	+
<i>Trioza scottii</i>	+	+	+
<i>Trioza senecionis</i>	+	-	+
<i>Trioza soniae</i>	+	-	-
<i>Trioza tatrensis</i>	-	+	+
<i>Trioza urticae</i>	+	+	+
<i>Trioza velutina</i>	+	-	-
<i>Trioza viridula</i>	?	-	-
Σ	125+(3?)	83	82

Since all psyllids are phytophagous insects, their occurrence and distribution should depend on the distribution of their host plants. However, in psyllids this is completely true only for species that spend their entire life on their hostplants. For species in which adults migrate to shelter plants for overwintering, the distribution picture can be slightly distorted, if also collecting data from shelter plants are considered. For instance, *Cacopsylla pulchella* is a Mediterranean species that develops on *Cercis siliquastrum* in warmer places in Slovenia, while adult specimens may overwinter in alpine spruce forests at relatively high altitudes (even over 1,000 m) and several dozens of kilometres away from where the host plant can grow (see no 72). In this account, such records are included and mapped as well.

An altitudinal distribution of psyllid species is summarised below. Psyllids have been collected in Slovenia from the sea level along the Adriatic seashore up to 2,100 m on Mt Mangart.

*Rhodochlanis bicolor*, *Bactericera crithmi* and *Trioza portulacoides* are strictly associated with halophilic vegetation, the first species with *Suaeda maritima*, the second with *Crithmum maritimum* and the third with *Atriplex portulacoides*, and only occur along the Adriatic seashore.

There are several typically Mediterranean species that predominantly or exclusively occur in the sub-Mediterranean phytogeographical region of Slovenia and many of them reach the northernmost edge of their natural distribution range there. Such species are *Agonoscena succincta*, *A. targionii*, *Colposcena traciana*, *Megagonoscena gallicola*, *Calophya rhois*, *Homotoma ficus*, *Camarotoscena subrubescens*, *Diaphorina chobauti*, *Euphyllura olivina*, *E. phillyreae*, *Cacopsylla myrthi*, *C. pulchella*, *Livilla spectabilis*, *Spanioneura fonscolombii*, *Phylloplecta trisignata*, *Trioza alacris*, *Trioza centranthi* and *T. ilicina*.

In contrast, there are several orophilous species associated with host plants restricted to upper montane and sub-Alpine zones. In the Slovene fauna, they are represented by *Aphalara longicaudata*, *A. sauteri*, *Livilla vicina*, *Psylla alpina*, *Cacopsylla corcontum*, *C. nigrata*, *Bactericera bohémica*, *B. femoralis*, *B. harrisoni*, *B. parastriola*, *Trioza flixiana*, *T. munda* and *T. saxifragae*. These species have been collected exclusively or predominantly at altitudes above 1,000 m; *T. saxifragae* only above 2,000 m.

Other species are mainly distributed in planar to sub-montane zones. Many of them occur in high numbers and are widespread all over Slovenia. Such species include e.g. *Rhinocola aceris*, *Psyllopsis fraxini*, *P. fraxinicola*, *Baeopelma foersteri*, *Psylla alni*, *Cacopsylla ambigua*, *C. breviantennata*, *C. brunneipennis*, *C. crataegi*, *C. melanoneura*, *C. picta*, *C. pulchra*, *C. pruni*, *C. pyri*, *C. pyrisuga*, *C. sorbi*, *Bactericera albiventris*, *Trioza remota* and *T. urticae*.

Three species have been introduced or have spread into Slovenia only recently: *Acizzia jamatonica*, *A. acaciaebaileyanae* and *Cacopsylla fulguralis*. However, several additional species may also be considered as alien in Slovenia, as they are associated with the host plants introduced or spread into Slovenia a very long time ago. They include *Homotoma ficus*, *Colposcena traciana*, *Euphyllura olivina*, *Spanioneura fonscolombii*, *Psylla buxi*, *Cacopsylla pulchella*, *C. myrthi* and *Trioza alacris*.

Some psyllid species have been gaining increasing economic importance due to their ability to transmit pathogenic microorganisms that cause serious diseases on some cultivated plants. In Slovenia, the following species are becoming or may become of special economic importance: *Cacopsylla picta* and *C. melanoneura* as vectors of *Candidatus Phytoplasma mali*, *Cacopsylla pyri* and *C. pyricola* as vectors of *Candidatus Phytoplasma pyri*, *Cacopsylla pruni* as a vector of *Candidatus Phytoplasma prunorum*, and *Trioza apicalis* and *Bactericera trigonica* as vectors of *Candidatus Liberibacter solanacearum*. Direct damage caused by feeding have been recorded in *Cacopsylla pyri* in pear plantations, *Trioza apicalis* on carrots, *Euphyllura olivina* on olive trees and *Acizzia jamatonica* on *Albizia julbrissin* in city parks.

The author is perfectly aware that this account on the psyllids of Slovenia, although the most comprehensive so far, is still incomplete due to the uneven exploration of the territory and a few unresolved taxonomic questions. Additional fieldwork focused on psyllids is needed especially in central and eastern parts of Slovenia and in the upper montane and subalpine zones. The unresolved taxonomic questions concern particularly the *Bactericera striola* species group and the status of distinct colour morphs of *Cacopsylla ambigua*, both associated with *Salix* spp. They can be probably solved by using additional methods, like molecular and vibrational analyses.

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## Appendix

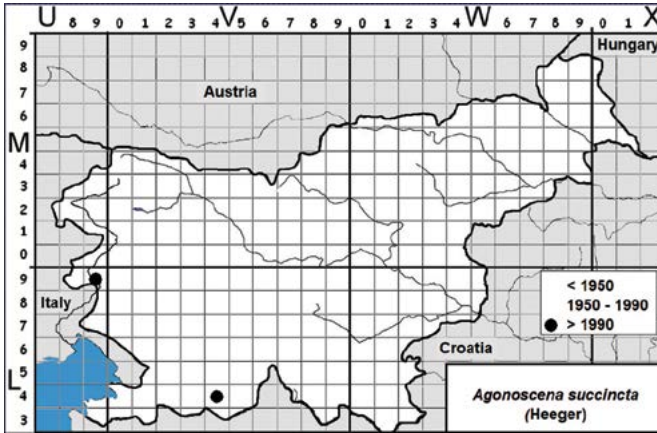


Fig. 1.1: *Agonoscena succincta* – recorded distribution in Slovenia

Sl. 1.1: *Agonoscena succincta* – znana razširjenost v Sloveniji



Fig. 1.2: *Agonoscena succincta* – heavily infested inflorescence of *Ruta divaricata*

Sl. 1.2: *Agonoscena succincta* – močno napadeno socvetje razkročene rutice



Fig. 1.3: *Agonoscena succincta* – adult; body size 1.3–1.6 mm

Sl. 1.3: *Agonoscena succincta* – imago; n. v. 1,3–1,6 mm



Fig. 1.4: *Agonoscena succincta* – an egg and nymphs of various instars

Sl. 1.4: *Agonoscena succincta* – jajčece in nimfe različnih razvojnih stopenj

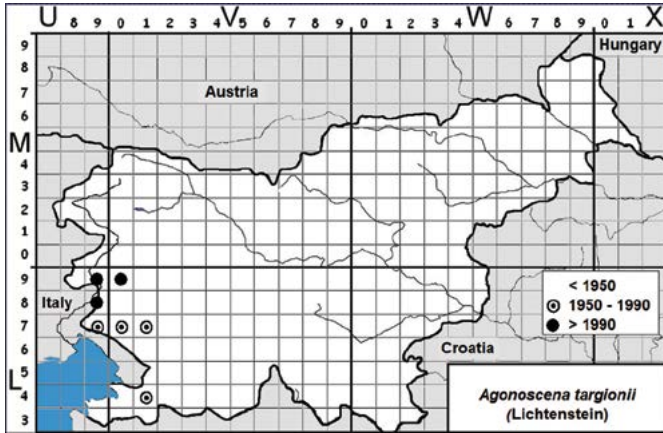


Fig. 2.1: *Agonoscena targionii* – recorded distribution in Slovenia  
Sl. 2.1: *Agonoscena targionii* – znana razširjenost v Sloveniji



Fig. 2.2: *Pistacia terebinthus*  
(photo: M. Skok)

Sl. 2.2: Terebint



Fig. 2.3: *Agonoscena targionii* – adult; body size 1.4–1.7 mm

Sl. 2.3: *Agonoscena targionii* – imago; n. v. 1,4–1,7 mm

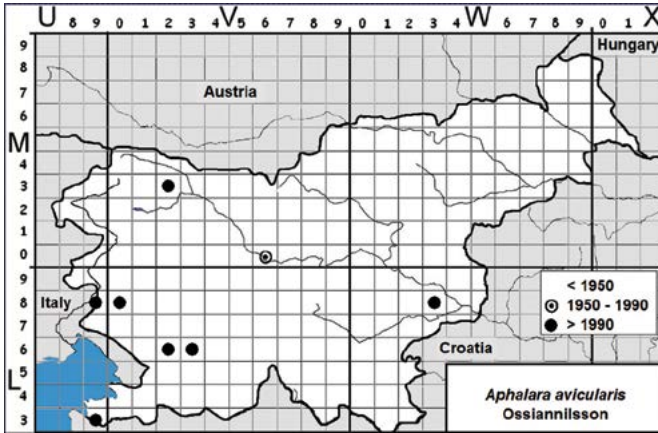


Fig. 3.1: *Aphalara avicularis* – recorded distribution in Slovenia  
 Sl. 3.1: *Aphalara avicularis* – znana razširjenost v Sloveniji



Fig. 3.2: *Polygonum aviculare*  
 Sl. 3.2: Ptičja dresen



Fig. 3.3: *Aphalara avicularis*; female; body size 2.2–2.9 mm  
 Sl. 3.3: *Aphalara avicularis*; samica; n. v. 2,2–2,9 mm



Fig. 3.4: *Aphalara avicularis* – male; body size 2.2–2.6 mm  
 Sl. 3.4: *Aphalara avicularis* – samec; n. v. 2,2–2,6 mm

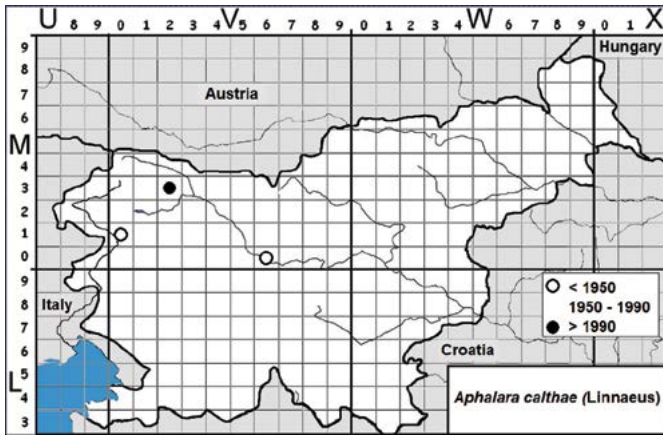


Fig. 4.1: *Aphalara calthae* – recorded distribution in Slovenia

Sl. 4.1: *Aphalara calthae* – znana razširjenost v Sloveniji



Fig. 4.2: *Caltha palustris*

Sl. 4.2: Navadna kalužnica



Fig. 4.3: *Aphalara calthae* – female; body size 3.0–3.5 mm

Sl. 4.3: *Aphalara calthae* – samica; n. v. 3,0–3,5 mm

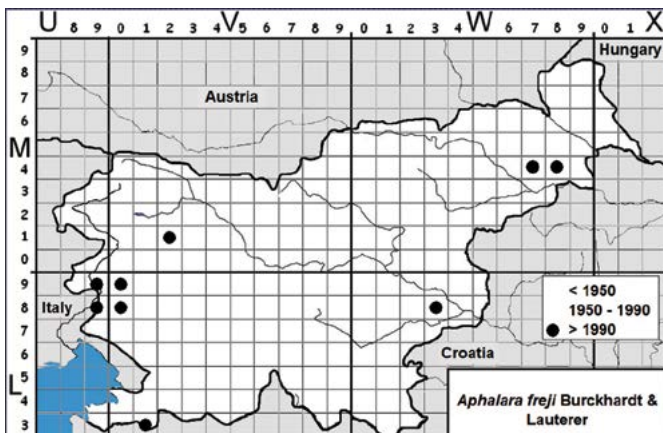


Fig. 5.1: *Aphalara freiji* – recorded distribution in Slovenia

Sl. 5.1: *Aphalara freiji* – znana razširjenost v Sloveniji



Fig. 5.2: *Persicaria lapathifolia*

Sl. 5.2: Ščavjelistna dresen

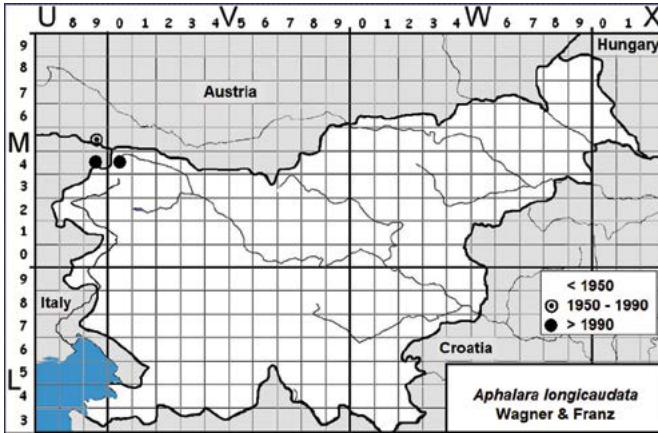


Fig. 6.1: *Aphalara longicaudata* – recorded distribution in Slovenia  
 sl. 6.1: *Aphalara longicaudata* – znana razširjenost v Sloveniji



Fig. 6.2: *Persicaria bistorta*  
 Sl. 6.2: Kačja dresen



Fig. 6.3: *Aphalara longicaudata* – female; body size 2.9–3.1 mm

Sl. 6.3: *Aphalara longicaudata* – samica; n. v. 2,9–3,1 mm

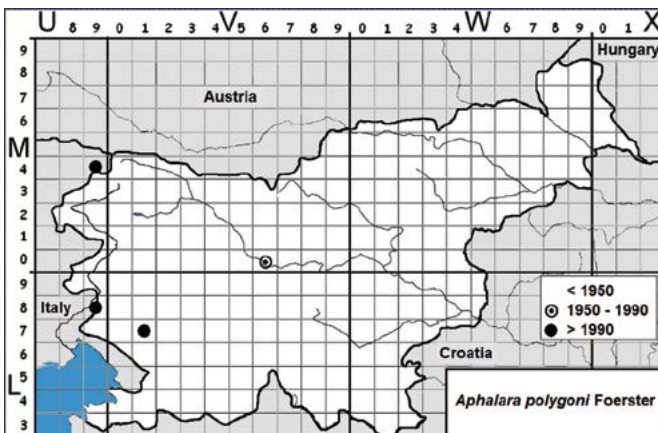


Fig. 7.1: *Aphalara polygona* – recorded distribution in Slovenia  
 Sl. 7.1: *Aphalara polygona* – znana razširjenost v Sloveniji



Fig. 7.2: *Rumex acetosella*  
 Sl. 7.2: Mala kislica

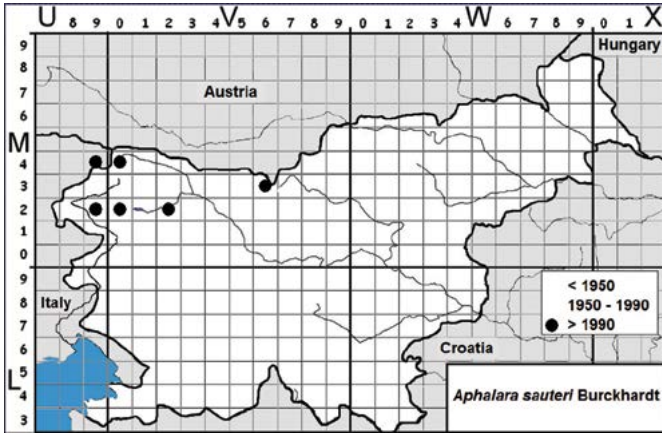


Fig. 8.1: *Aphalara sauteri* – recorded distribution in Slovenia

Sl. 8.1: *Aphalara sauteri* – znana razširjenost v Sloveniji



Fig. 8.2: *Rumex scutatus*

Sl. 8.2: Ščitasta kislica



Fig. 8.3: *Aphalara sauteri* – female; body size 2.5–2.9 mm

Sl. 8.3: *Aphalara sauteri* – samica; n. v. 2,5–2,9 mm



Fig. 8.4: *Aphalara sauteri* – male; body size: 2.3–2.6 mm

Sl. 8.4: *Aphalara sauteri* – samec; n. v. 2,3–2,6 mm



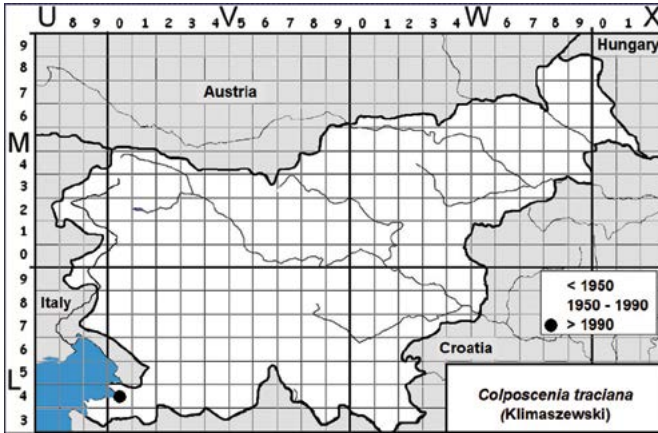


Fig. 9.1: *Colposcena traciana* – recorded distribution in Slovenia  
Sl. 9.1: *Colposcena traciana* – znana razširjenost v Sloveniji



Fig. 9.2: *Tamarix* sp  
Sl. 9.2: Tamariša



Fig. 9.3: *Colposcena traciana* – adult; body size 2.3–3.0 mm  
Sl. 9.3: *Colposcena traciana* – imago: n. v. 2,3–3,0 mm

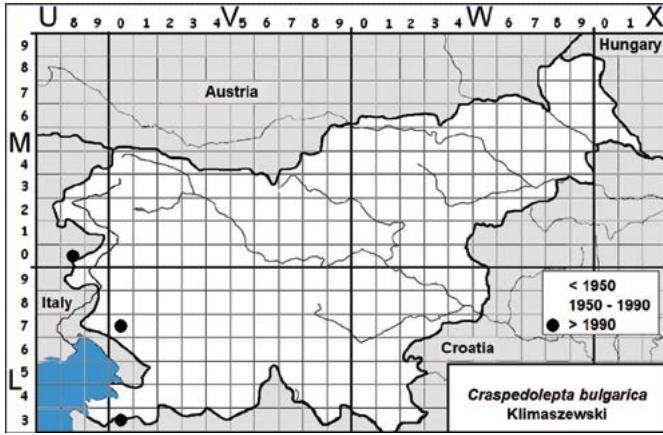


Fig. 10.1: *Craspedolepta bulgarica* – recorded distribution in Slovenia  
 Sl. 10.1: *Craspedolepta bulgarica* – znana razširjenost v Sloveniji



Fig. 10.2: *Achillea* sp  
 Sl. 10.2: Rman



Fig. 10.3: *Craspedolepta bulgarica* – female; body size 2.2–3.1 mm  
 Sl. 10.3: *Craspedolepta bulgarica* – female; n. v. size 2,2–3,1 mm

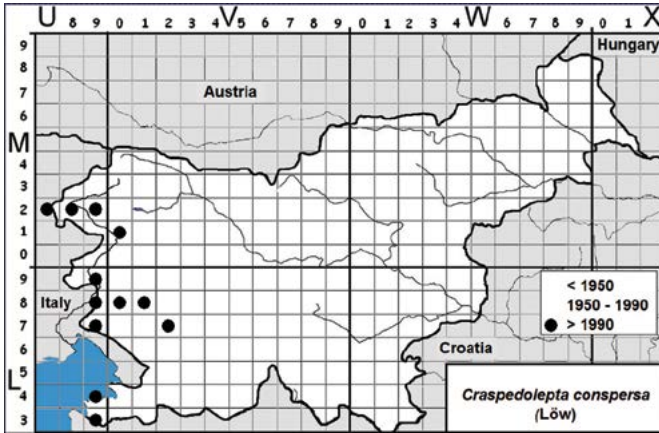


Fig. 11.1: *Craspedolepta conspersa* – recorded distribution in Slovenia  
Sl. 11.1: *Craspedolepta conspersa* – znana razširjenost v Sloveniji



Fig. 11.2: *Artemisia vulgaris*  
Sl. 11.2: Navadni pelin



Fig. 11.3: *Craspedolepta conspersa* – adult; body size 2.5–3.0 mm  
Sl. 11.3: *Craspedolepta conspersa* – imago; n. v. 2,5–3,0 mm

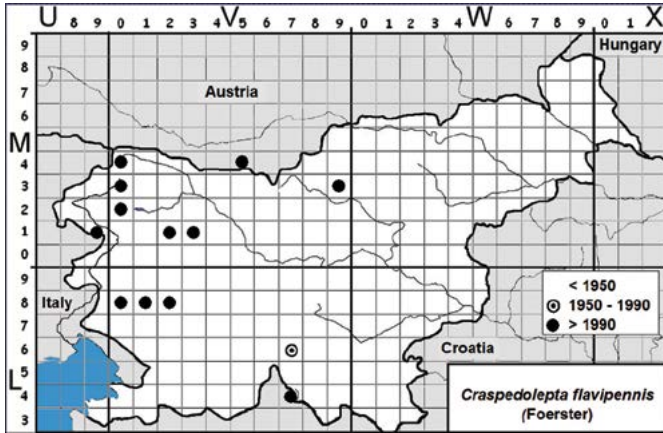


Fig. 12.1: *Craspedolepta flavipennis* – recorded distribution in Slovenia  
 Sl. 12.1: *Craspedolepta flavipennis* – znana razširjenost v Sloveniji



Fig. 12.2: *Leontodon hispidus*  
 Sl. 12.2: Navadni jajčar



Fig. 12.3: *Craspedolepta flavipennis* – female; body size 3.8–4.8 mm  
 Sl. 12.3: *Craspedolepta flavipennis* – samica; n. v. 3,8–4,8 mm

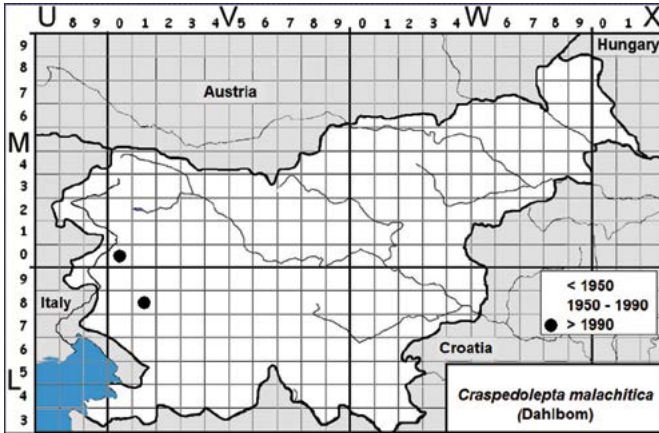


Fig. 13.1: *Craspedolepta malachitica* – recorded distribution in Slovenia  
Sl. 13.1: *Craspedolepta malachitica* – znana razširjenost v Sloveniji



Fig. 13.2: *Artemisia absinthium*  
Sl. 13.2: Pravi pelin



Fig. 13.3: *Craspedolepta malachitica* – adults; body size 2.2–3.0 mm  
Sl. 13.3: *Craspedolepta malachitica* – imaga: n. v. 2,2–3,0 mm

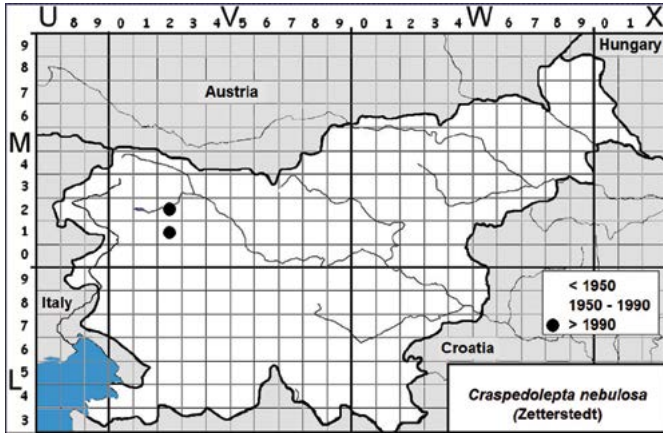


Fig. 14.1: *Craspedolepta nebulosa* – recorded distribution in Slovenia  
Sl. 14.1: *Craspedolepta nebulosa* – znana razširjenost v Sloveniji



Fig. 14.2: *Epilobium angustifolium*  
Sl. 14.2: Ozkolistno ciprje



Fig. 14.3: *Craspedolepta nebulosa* – male; body size 2.6–3.0 mm  
Sl. 14.3: *Craspedolepta nebulosa* – samec; n. v. 2,6–3,0 mm

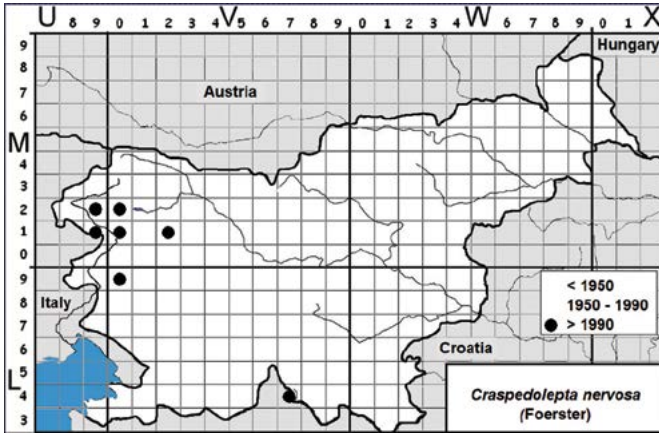


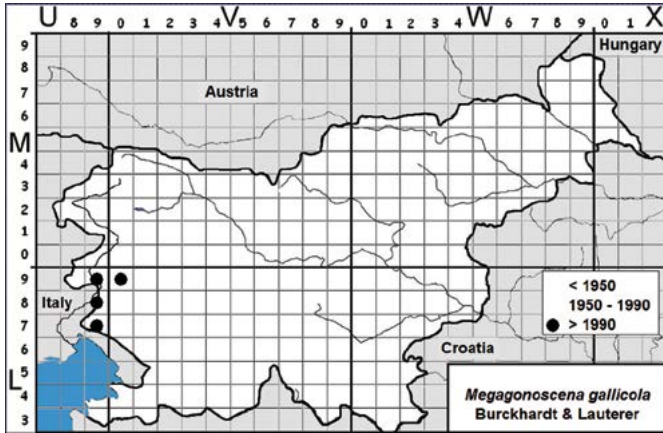
Fig. 15.1: *Craspedolepta nervosa* – recorded distribution in Slovenia  
Sl. 15.1: *Craspedolepta nervosa* – znana razširjenost v Sloveniji



Fig. 15.2: *Achillea millefolium*  
Sl. 15.2: Navadni rman



Fig. 15.3: *Craspedolepta nervosa* – female; body size 2.8–3.3 mm  
Sl. 15.3: *Craspedolepta nervosa* – samica; n. v. 2,8–3,3 mm



**Fig. 16.1:** *Megagonoscena gallicola* – recorded distribution in Slovenia  
**Sl. 16.1:** *Megagonoscena gallicola* – znana razširjenost v Sloveniji



**Fig. 16.2:** *Pistacia terebinthus*  
**Sl. 16.2:** Terebint



**Fig. 16.3:**  
*Megagonoscena gallicola* – male;  
 body size 2.0–2.2 mm

**Sl. 16.3:**  
*Megagonoscena gallicola* – samec;  
 n. v. 2,0–2,2 mm



**Fig. 16.4:**  
*Megagonoscena gallicola* –  
 strongly curled leaves of  
*P. terbinthus* inhabited by nymphs

**Sl. 16.4:**  
*Megagonoscena gallicola* – močno  
 zviti listi terebinta naseljeni z  
 nimfami



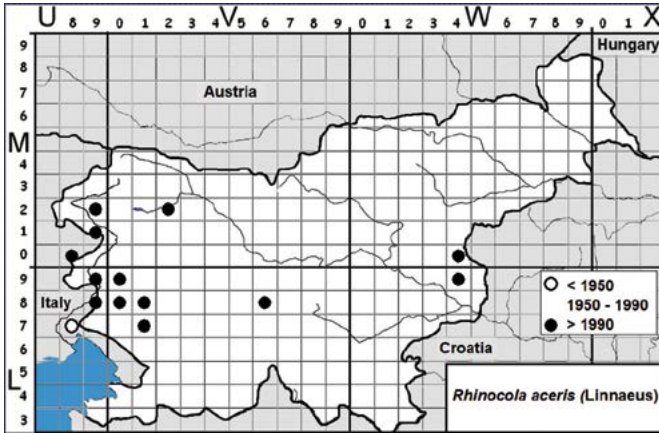


Fig. 17.1: *Rhinocola aceris* – recorded distribution in Slovenia

Sl. 17.1: *Rhinocola aceris* – znana razširjenost v Sloveniji



Fig. 17.2: *Acer Campestre*

Sl. 17.2: Maklen



Fig. 17.3: *Rhinocola aceris* – female; body size 2.3–2.9 mm

Sl. 17.3: *Rhinocola aceris* – samica; n. v. 2,3–2,9 mm



**Fig. 17.4:** *Rhinocola aceris* – male; body size 2.0–2.1 mm

**Sl. 17.4:** *Rhinocola aceris* – samec; n. v. 2,0–2,1 mm



**Fig. 17.5:** *Rhinocola aceris* – fifth instar nymph

**Sl. 17.5:** *Rhinocola aceris* – nimfa pete razvojne stopnje

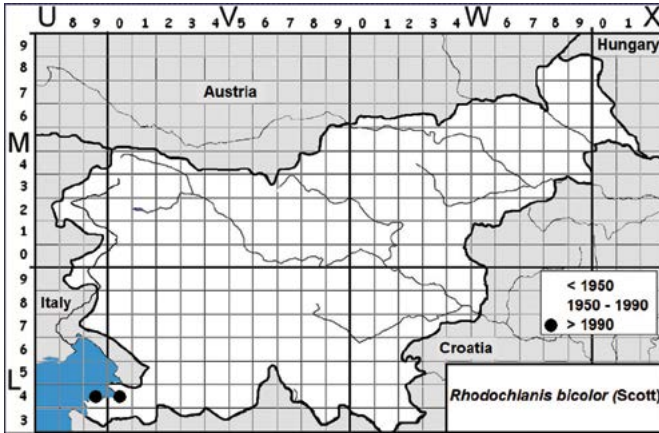


Fig. 18.1: *Rhodochlanis bicolor* – recorded distribution in Slovenia

Sl. 18.1: *Rhodochlanis bicolor* – znana razširjenost v Sloveniji



Fig. 18.2: *Suaeda maritima*

Sl. 18.2: Primorski slanorad



Fig. 18.3: *Rhodochlanis bicolor* – female; body size 1.9–2.2 mm

Sl. 18.3: *Rhodochlanis bicolor* – samica; n. v. 1,9–2,2 mm



Fig. 18.4: *Rhodochlanis bicolor* – male; body size 1.8–2.0 mm

Sl. 18.4: *Rhodochlanis bicolor* – samec; n. v. 1,8–2,0 mm

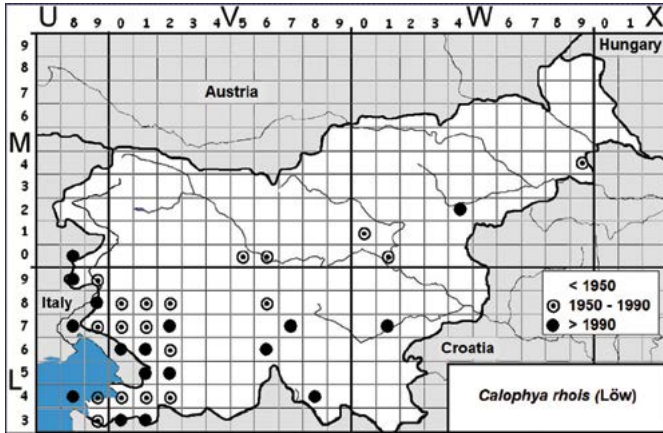


Fig. 19.1: *Calophya rhois* – recorded distribution in Slovenia

Sl. 19.1: *Calophya rhois* – znana razširjenost v Sloveniji



Fig. 19.2: *Calophya rhois* – strongly curled leaves of *Cotinus coggygria* inhabited by nymphs

Sl. 19.2: *Calophya rhois* – močno deformirani listi ruja naseljeni z nimfami



Fig. 19.3: *Calophya rhois* – female; body size 1.7–1.9 mm

Sl. 19.3: *Calophya rhois* – samica; n. v. 1,7–1,9 mm



**Fig. 19.4:** *Calophya rhois* – male; body size 1.6–1.8 mm

**Sl. 19.4:** *Calophya rhois* – samec; n. v. 1,6–1,8 mm



**Fig. 19.5:** *Calophya rhois* – mating and deposited eggs

**Sl. 19.5:** *Calophya rhois* – parjenje odraslih in odložena jajčeca



**Fig. 19.6:** *Calophya rhois* – nymphs of the fourth and fifth instars

**Sl. 19.6:** *Calophya rhois* – nimfe četrte in pete razvojne stopnje

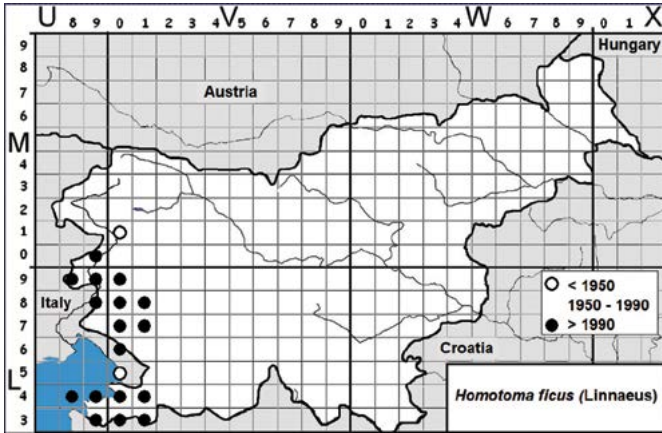


Fig. 20.1: *Homotoma ficus* – recorded distribution in Slovenia

Sl. 20.1: *Homotoma ficus* – znana razširjenost v Sloveniji



Fig. 20.2: *Ficus carica*

Sl. 20.2.: Navadni smokvovec



Fig. 20.3: *Homotoma ficus* – female; body size 4.6–5.2 mm.

Sl. 20.3: *Homotoma ficus* – samica; n. v. 4,6–5,2 mm



**Fig. 20.4** *Homotoma ficus* – male; body size 4.4–5.0 mm

**Sl. 20.4** *Homotoma ficus* – samec; n. v. 4,4–5,0 mm



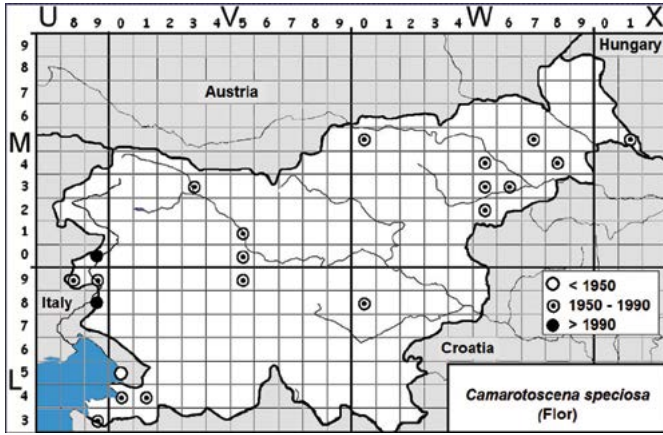
**Fig. 20.5:** *Homotoma ficus* – fifth instar nymphs; body size ~ 2.5 mm

**Sl. 20.5:** *Homotoma ficus* – nimfe pete razvojne stopnje; n. v. ~ 2,5 mm



**Fig. 20.6:** *Homotoma ficus* – overwintering eggs deposited in bud axes of figs

**Sl. 20.6:** *Homotoma ficus* – prezimujoča jajčeca so odložena v pazduhah brstov



**Fig. 21.1:** *Camarotoscena speciosa* – recorded distribution in Slovenia  
**Sl. 21.1:** *Camarotoscena speciosa* – znana razširjenost v Sloveniji



**Fig. 21.2:** *Populus nigra*  
**Sl. 21.2:** Črni topol



**Fig. 21.3:**  
*Camarotoscena speciosa* – female  
 (dorsal view)

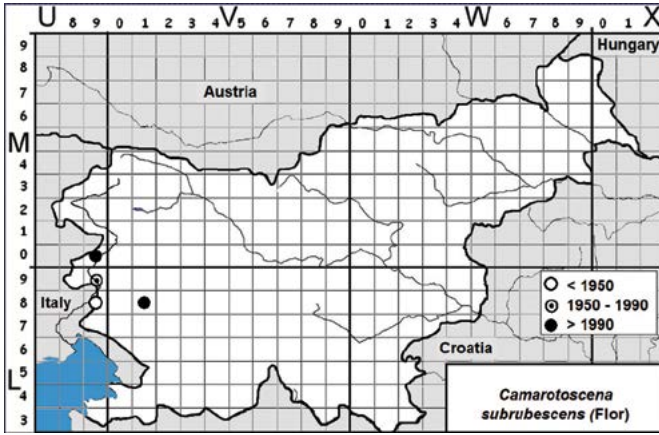
**Sl. 21.3:**  
*Camarotoscena speciosa* – samica  
 (hrbtna stran)



**Fig. 21.4:**  
*Camarotoscena speciosa* – female;  
 body size 2.0–2.5 mm

**Sl. 21.4:**  
*Camarotoscena speciosa* – samica;  
 n. v. 2,0–2,5 mm





**Fig. 22.1:** *Camarotoscena subrubescens* – recorded distribution in Slovenia  
**Sl. 22.1:** *Camarotoscena subrubescens* – znana razširjenost v Sloveniji



**Fig. 22.2:** *Populus nigra*  
**Sl. 22.2:** Črni topol



**Fig. 22.3:**  
*Camarotoscena subrubescens* – female; body size 2.2–2.5 mm

**Sl. 22.3:**  
*Camarotoscena subrubescens* – samica; n. v. 2,2–2,5 mm



**Fig. 22.4:**  
*Camarotoscena subrubescens* – mating

**Sl. 22.4:**  
*Camarotoscena subrubescens* – parjenje

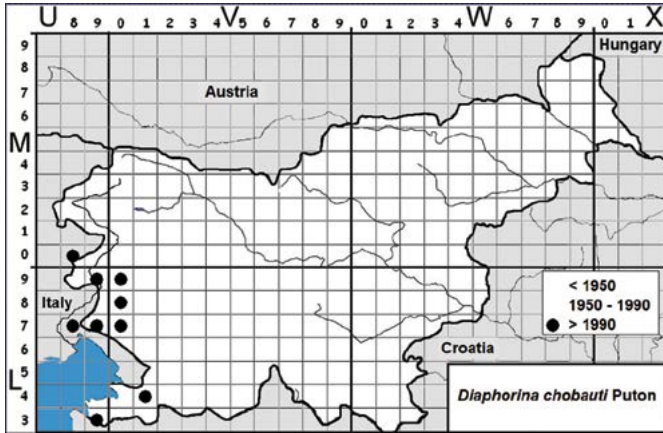


Fig. 23.1: *Diaphorina chobauti* – recorded distribution in Slovenia  
 Sl. 23.1: *Diaphorina chobauti* – znana razširjenost v Sloveniji



Fig. 23.2: *Convolvulus cantabrica*  
 Sl. 23.2: Primorski slak



Fig. 23.3: *Diaphorina chobauti*  
 adult; body size 2.2–2.5 mm

Sl. 23.3: *Diaphorina chobauti*  
 imago; n. v. 2,2–2,5 mm



Fig. 23.4: *Diaphorina chobauti* –  
 adult (dorsal view)

Sl. 23.4: *Diaphorina chobauti* –  
 imago (hrbtna stran)



**Fig. 23.5:** *Diaphorina chobauti* – nymphs  
**Sl. 23.5:** *Diaphorina chobauti* – nimfe



**Fig. 23.6:**  
*Diaphorina chobauti* – eggs  
**Sl. 23.6:**  
*Diaphorina chobauti* – jajčeca

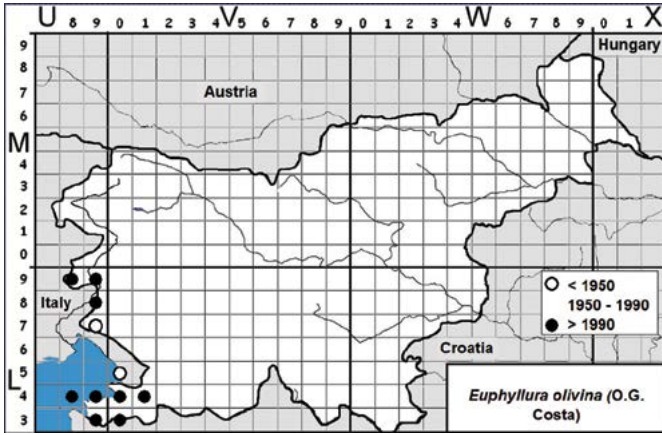


Fig. 24.1: *Euphyllura olivina* – recorded distribution in Slovenia

Sl. 24.1: *Euphyllura olivina* – znana razširjenost v Sloveniji



Fig. 24.2: *Olea europaea*

Sl. 24.2: Oljka



Fig. 24.3: *Euphyllura olivina* – adult; body size 2.1–2.6 mm

Sl. 24.3: *Euphyllura olivina* – imago; n. v. 2,1–2,6 mm



Fig. 24.4: *Euphyllura olivina* – nymphs in an olive inflorescence covered with dense waxy excretions (photo: M. Jančar)

Sl. 24.4: *Euphyllura olivina* – nimfe v socvetju oljke pokrite z gostimi vatastimi voskastimi izločki

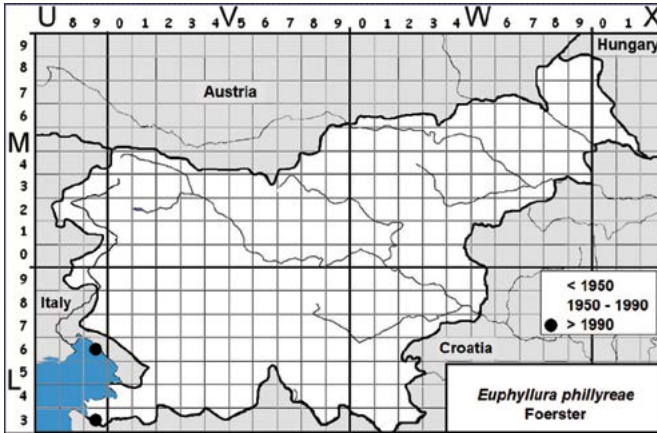


Fig. 25.1: *Euphyllura phillyreae* – recorded distribution in Slovenia  
Sl. 25.1: *Euphyllura phillyreae* – znana razširjenost v Sloveniji

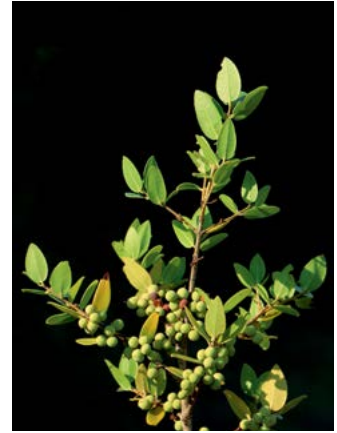


Fig. 25.2: *Phillyrea latifolia*  
Sl. 25.2: Širokolistna zelenika



Fig. 25.3: *Euphyllura phillyreae* – adults; body size 2.0–2.6 mm  
Sl. 25.3: *Euphyllura phillyreae* – imaga; n. v. 2,0–2,6 mm



Fig. 25.4: *Euphyllura phillyreae* – vertex with dorsally enclosed frontal ocellus

Sl. 25.4: *Euphyllura phillyreae* – teme s čelnim pikčastim očesom na hrbtni strani



Fig. 25.5: *Euphyllura phillyreae* – fifth instar nymph

Sl. 25.5: *Euphyllura phillyreae* – nimfa pete razvojne stopnje

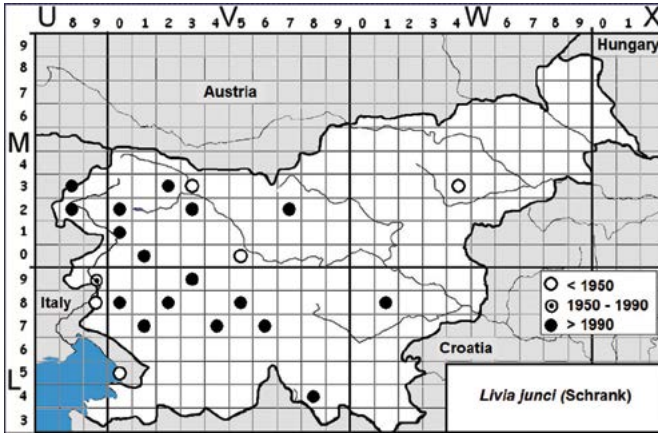


Fig. 26.1: *Livia junci* – recorded distribution in Slovenia

Sl. 26.1: *Livia junci* – znana razširjenost v Sloveniji



Fig.26.2: *Juncus* sp.

Sl.26.2: Ločje



Fig. 26.3: *Livia junci* – female;  
 body size 2.7–3.4 mm

Sl. 26.3: *Livia junci* – samica; n. v.  
 2,7–3,4 mm



Fig. 26.4: *Livia junci* – male; body  
 size 2.4–2.9 mm

Sl. 26.4: *Livia junci* – samec; n. v.  
 2,4–2,9 mm

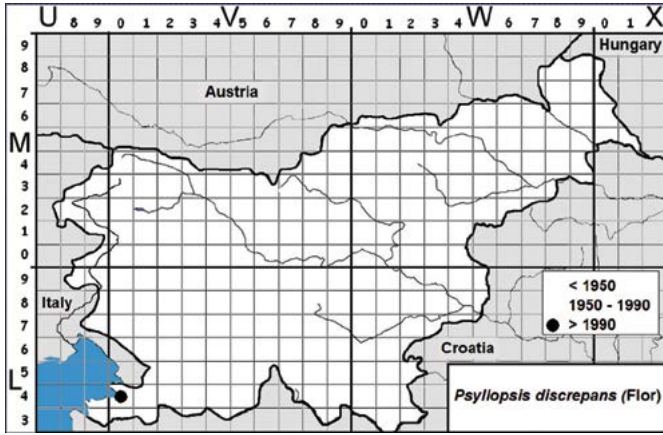


Fig. 27.1: *Psyllopsis discrepans* – recorded distribution in Slovenia

Sl. 27.1: *Psyllopsis discrepans* – znana razširjenost v Sloveniji



Fig. 27.2: *Fraxinus angustifolius*

Sl. 27.2: Ozkolistni jesen



Fig. 27.3: *Psyllopsis discrepans* – female; body size 3.3–3.8 mm

Sl. 27.3: *Psyllopsis discrepans* – samica; n. v. 3,3–3,8 mm



Fig. 27.4: *Psyllopsis discrepans* – male; body size 2.9–3.2 mm

Sl. 27.4: *Psyllopsis discrepans* – samec; n. v. 2,9–3,2 mm



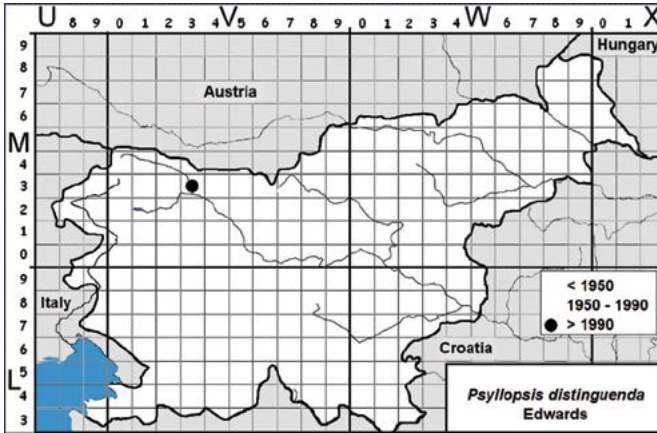


Fig. 28.1: *Psyllopsis distinguenda* – recorded distribution in Slovenia

Sl. 28.1: *Psyllopsis distinguenda* – znana razširjenost v Sloveniji

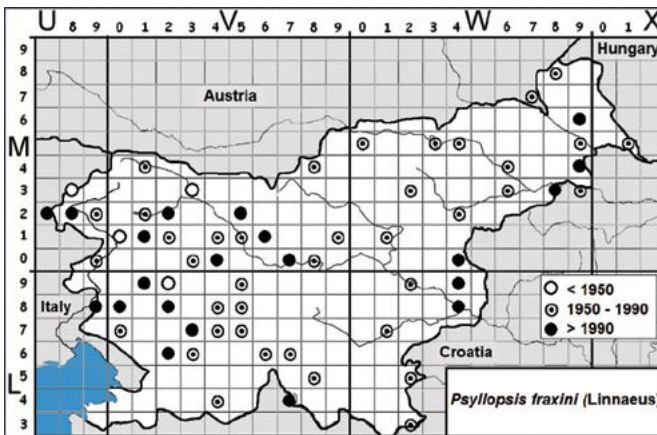


Fig. 29.1: *Psyllopsis fraxini* – recorded distribution in Slovenia

Sl. 29.1: *Psyllopsis fraxini* – znana razširjenost v Sloveniji



Fig. 29.2: *Fraxinus excelsior*

Sl. 29.2: Veliki jesen



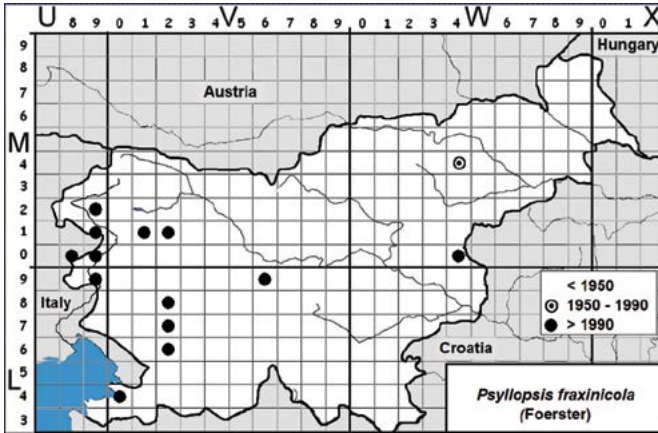
**Fig. 29.3:** *Psyllopsis fraxini* – female laying eggs; body size 3.3–3.8 mm

**Sl. 29.3:** *Psyllopsis fraxini* – samica odlaga jajčeca; n. v. 3,3–3,8 mm



**Fig. 29.4:** *Psyllopsis fraxini* – male; body size 2.9–3.4 mm

**Sl. 29.4:** *Psyllopsis fraxini* – samec; n. v. 2,9–3,4 mm



**Fig. 30.1:** *Psyllopsis fraxinicola* – recorded distribution in Slovenia  
**Sl. 30.1:** *Psyllopsis fraxinicola* – znana razširjenost v Sloveniji



**Fig. 30.2:** *Fraxinus excelsior*  
**Sl. 30.2:** Veliki jesen



**Fig. 30.3:** *Psyllopsis fraxinicola* – female; body size 3.2–3.7 mm  
**Sl. 30.3:** *Psyllopsis fraxinicola* – samica; n. v. 3,2–3,7 mm



**Fig. 30.4:** *Psyllopsis fraxinicola* – male; body size 2.9–3.2 mm  
**Sl. 30.4:** *Psyllopsis fraxinicola* – samec; n. v. 2,9–3,2 mm

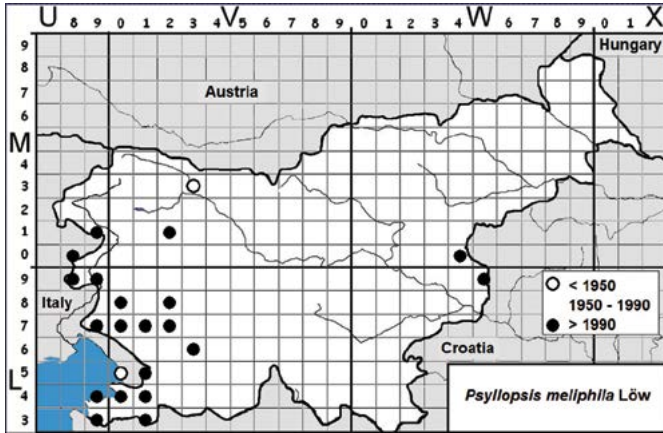


Fig. 31.1: *Psyllopsis meliphila* – recorded distribution in Slovenia

Sl. 31.1: *Psyllopsis meliphila* – znana razširjenost v Sloveniji



Fig. 31.2: *Fraxinus ornus*

Sl. 31.2: Mali jesen



Fig. 31.3: *Psyllopsis meliphila* – female; body size 2.7–3.1 mm

Sl. 31.3: *Psyllopsis meliphila* – samica; n. v. 2,7–3,1 mm



Fig. 31.4: *Psyllopsis meliphila* – male; body size 2.3–2.7 mm

Sl. 31.4: *Psyllopsis meliphila* – samec; n. v. 2,3–2,7 mm



**Fig. 31.5:** *Psyllopsis meliphila* – fifth instar nymph

**Sl. 31.5:** *Psyllopsis meliphila* – nimfa pete razvojne stopnje

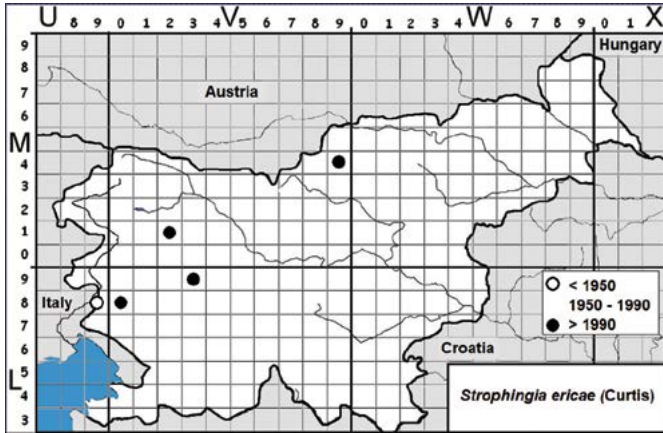


Fig. 32.1: *Strophingia ericae* – recorded distribution in Slovenia

Sl. 32.1: *Strophingia ericae* – znana razširjenost v Sloveniji



Fig. 32.2: *Calluna vulgaris*

Sl. 32.2: Jesenska vresa



Fig. 32.3: *Strophingia ericae* – adult; body size 1.2–1.9 mm

Sl. 32.3: *Strophingia ericae* – imago; n. v. 1,2–1,9 mm



Fig. 32.4: *Strophingia ericae* – adults feeding on leaves of *Calluna vulgaris*

Sl. 32.4: *Strophingia ericae* – odrasli osebki sesajo na jesenski vresi



Fig. 33.1: *Acizzia acaciaebaileyanae* – adult; body size 1.6–1.7 mm

Sl. 33.1: *Acizzia acaciaebaileyanae* – imago; n. v. 1,6–1,7 mm



Fig. 33.2: *Acacia* sp

Sl. 33.2: Akacija

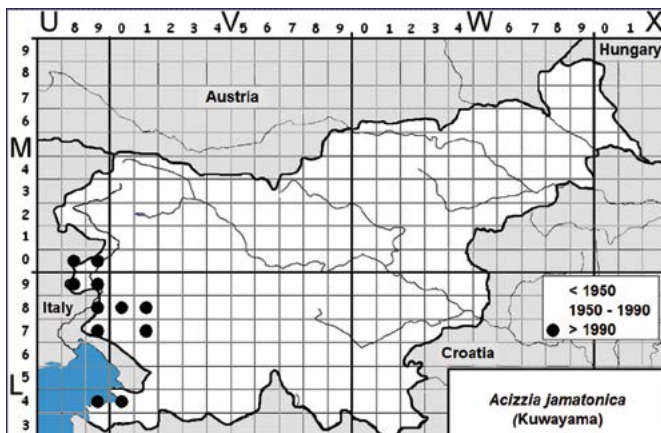


Fig. 34.1: *Acizzia jamatonica* – recorded distribution in Slovenia

Sl. 34.1: *Acizzia jamatonica* – znana razširjenost v Sloveniji



Fig. 34.2: *Albizia julibrissis* – leaf

Sl. 34.2: List albicije



**Fig. 34.3:** *Acizzia jamatonica* – overwintering female; body size 2.4–2.7 mm

**SI. 34.3:** *Acizzia jamatonica* – prezimujoča samica; n. v. 2,4–2,7 mm



**Fig. 34.4:** *Acizzia jamatonica* – summer male; body size 2.2–2.4 mm

**SI. 34.4:** *Acizzia jamatonica* – poletni samec; n. v. 2,2–2,4 mm



**Fig. 34.5:** *Acizzia jamatonica* – autumn fifth instar nymph

**SI. 34.5:** *Acizzia jamatonica* – jesenska nimfa pete razvojne stopnje



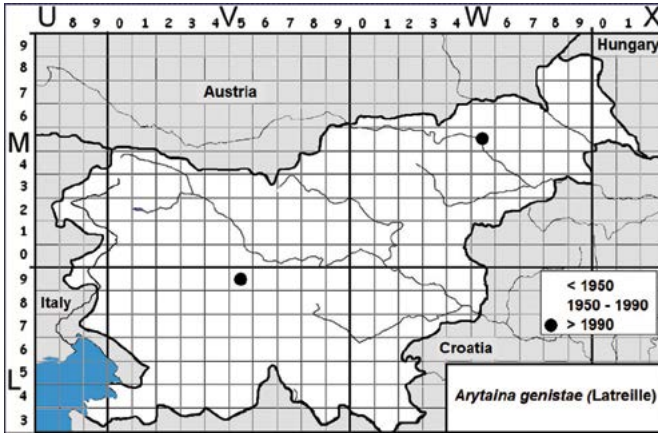


Fig. 35.1: *Arytaina genistae* – recorded distribution in Slovenia

Sl. 35.1: *Arytaina genistae* – znana razširjenost v Sloveniji



Fig. 35.2: *Cytisus scoparius*

Sl. 35.2: Navadna metla



Fig. 35.3: *Arytaina genistae* – female; body size 3.4–3.7 mm

Sl. 35.3: *Arytaina genistae* – samica; n. v. 3,4–3,7 mm

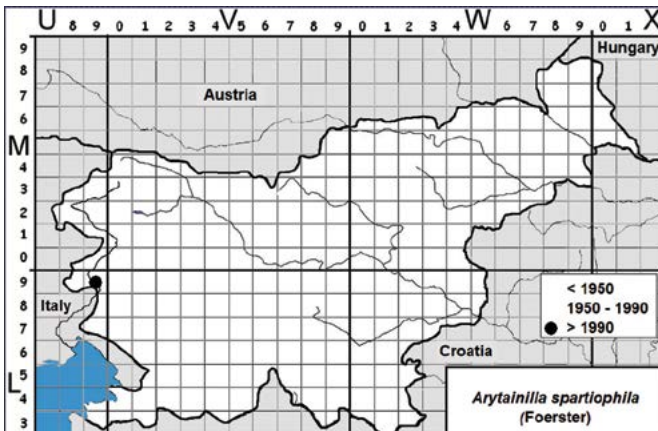


Fig. 36.1: *Arytainilla spartiophila* – recorded distribution in Slovenia

Sl. 36.1: *Arytainilla spartiophila* – znana razširjenost v Sloveniji



Fig. 36.2: *Cytisus scoparius*

Sl. 36.2: Navadna metla



**Fig. 36.3:**  
*Arytainilla spartiophila* – female;  
body size 2.9–3.2 mm

**Sl. 36.3:** *Arytainilla spartiophila* –  
samica; n. v. 2,9–3,2 mm



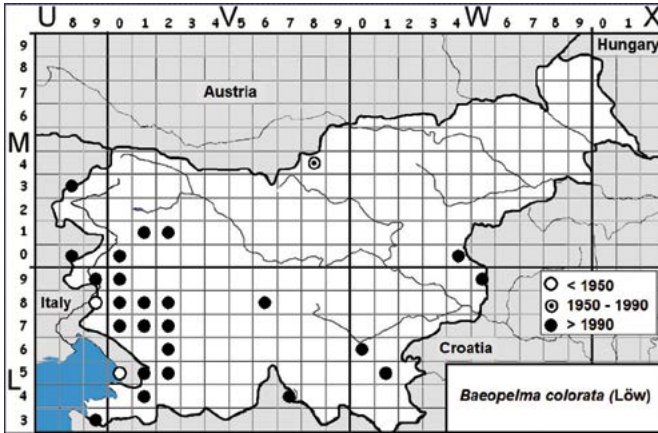
**Fig. 36.4:**  
*Arytainilla spartiophila* – male;  
body size 2.5–2.8 mm

**Sl. 36.4:** *Arytainilla spartiophila* –  
samec; n. v. 2,5–2,8 mm



**Fig. 36.5:**  
*Arytainilla spartiophila* – fifth  
instar nymph

**Sl. 36.5:** *Arytainilla spartiophila* –  
nimfa pete razvojne stopnje



**Fig. 37.1:** *Baeopelma colorata* – recorded distribution in Slovenia  
**Sl. 37.1:** *Baeopelma colorata* – znana razširjenost v Sloveniji



**Fig. 37.2:** *Ostrya carpinifolia*  
**Sl. 37.2:** Črni gaber



**Fig. 37.3:** *Baeopelma colorata* – female; body size 3.3–3.9 mm  
**Sl. 37.3:** *Baeopelma colorata* – samica; n. v. 3,3–3,9 mm



**Fig. 37.4:** *Baeopelma colorata* – fifth instar nymph  
**Sl. 37.4:** *Baeopelma colorata* – nimfa pete razvojne stopnje

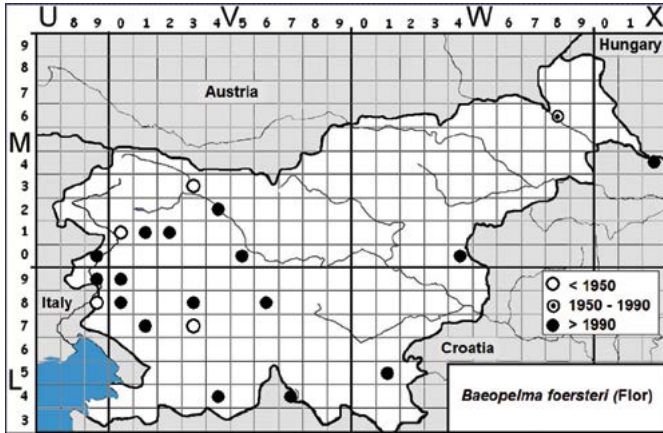


Fig. 38.1: *Baeopelma foersteri* – recorded distribution in Slovenia  
 Sl. 38.1: *Baeopelma foersteri* – znana razširjenost v Sloveniji



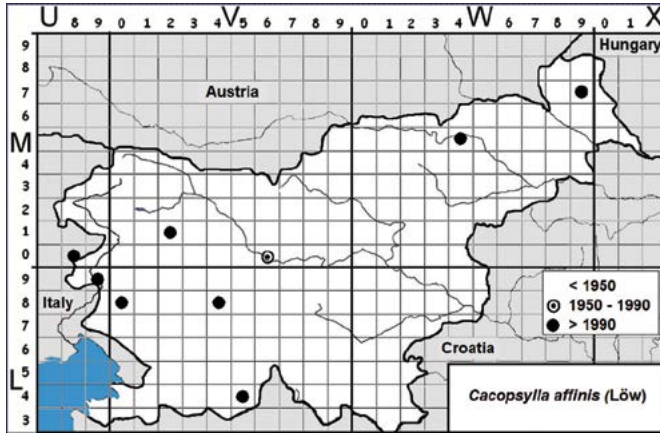
Fig. 38.2: *Alnus glutinosa*  
 Sl. 38.2: Črna jelša



Fig. 38.3: *Baeopelma foersteri* – female; body size 4.6–4.9 mm  
 Sl. 38.3: *Baeopelma foersteri* – samica; n. v. 4,6–4,9 mm



Fig. 38.4: *Baeopelma foersteri* – dentate female proctiger  
 Sl. 38.4: *Baeopelma foersteri* – nazobčan samičin proktiger



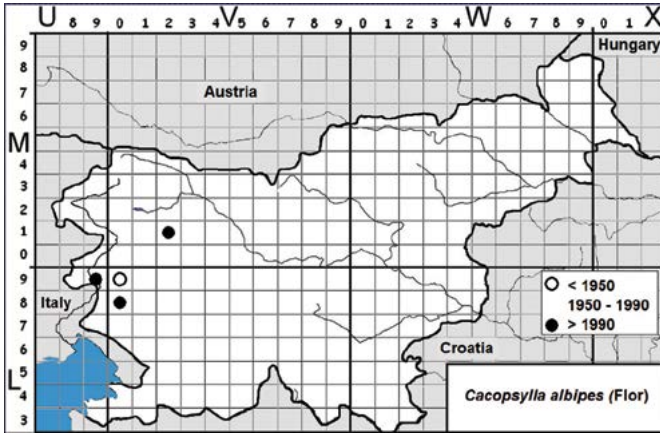
**Fig. 39.1:** *Cacopsylla affinis* – recorded distribution in Slovenia  
**Sl. 39.1:** *Cacopsylla affinis* – znana razširjenost v Sloveniji



**Fig. 39.2:** *Crataegus monogyna*  
**Sl. 39.2:** Enovrati glog



**Fig. 39.3:** *Cacopsylla affinis* – male; body size 2.6–3.0 mm  
**Sl. 39.3:** *Cacopsylla affinis* – samec; n. v. 2,6–3,0 mm



**Fig. 40.1:** *Cacopsylla albipes* – recorded distribution in Slovenia  
**Sl. 40.1:** *Cacopsylla albipes* – znana razširjenost v Sloveniji



**Fig. 40.2:** *Sorbus domestica*  
**Sl. 40.2:** Skorš



**Fig. 40.3:** *Cacopsylla albipes* – female; body size 3.0–3.6 mm  
**Sl. 40.3:** *Cacopsylla albipes* – samica; n. v. 3,0–3,6 mm



**Fig. 40.4:** *Cacopsylla albipes* – male; body size 2.8–3.2 mm  
**Sl. 40.4:** *Cacopsylla albipes* – samec; n. v. 2,8–3,2 mm



**Fig. 40.5:** *Cacopsylla albipes* – fifth instar nymph

**Sl. 40.5:** *Cacopsylla albipes* – nimfa pete razvojne stopnje



**Fig. 40.6:** Leaf curling of *S. domestica* caused by immatures of *C. albipes*

**Sl. 40.6:** Ličinke bolšice *C. albipes* povzročajo kodranje skorševih listov

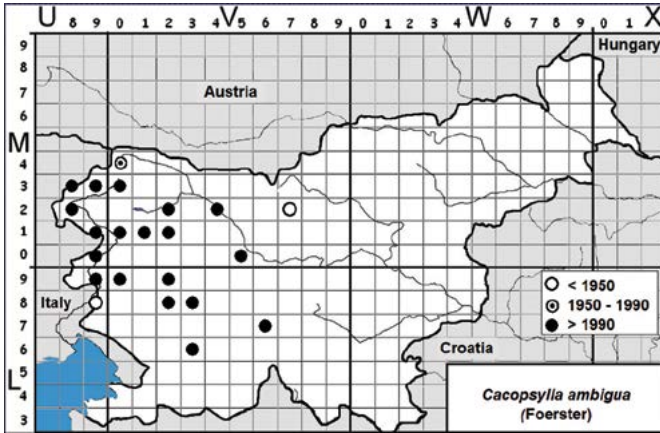


Fig. 41.1: *Cacopsylla ambigua* – recorded distribution in Slovenia

Sl. 41.1: *Cacopsylla ambigua* – znana razširjenost v Sloveniji



Fig. 41.2: *Salix eleagnos*

Sl. 41.2: Siva vrba



Fig. 41.3: *Cacopsylla ambigua* – morph from a narrow-leaved willow; body size 3.0–3.5 mm

Sl. 41.3: *Cacopsylla ambigua* – različek z ozkolistnih vrst vrb; n. v. 3,0–3,5 mm



Fig. 41.4: *Cacopsylla ambigua* – morph from a broad-leaved sallow

Sl. 41.4: *Cacopsylla ambigua* – različek s širokolistnih vrst vrb



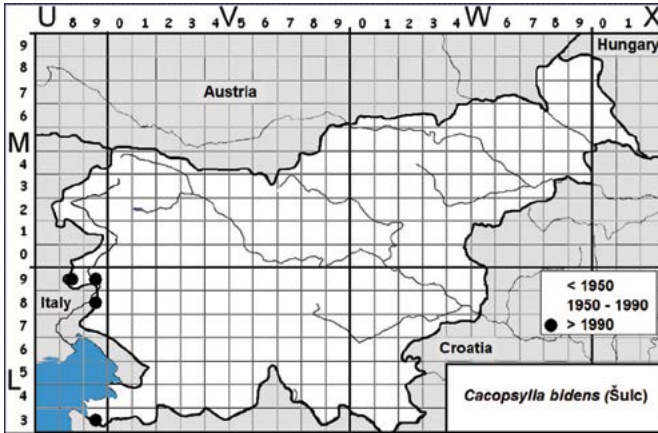


Fig. 42.1: *Cacopsylla bidens* – recorded distribution in Slovenia

Sl. 42.1: *Cacopsylla bidens* – znana razširjenost v Sloveniji



Fig. 42.2: *Pyrus communis*

Sl. 42.2: Hruška



Fig. 42.3: *Cacopsylla bidens* – female; body size 2.7–3.3 mm

Sl. 42.3: *Cacopsylla bidens* – samica; n. v. 2,7–3,3 mm



Fig. 42.4: *Cacopsylla bidens* – male; body size 2.2–2.9 mm

Sl. 42.4: *Cacopsylla bidens* – samec; n. v. 2,2–2,9 mm

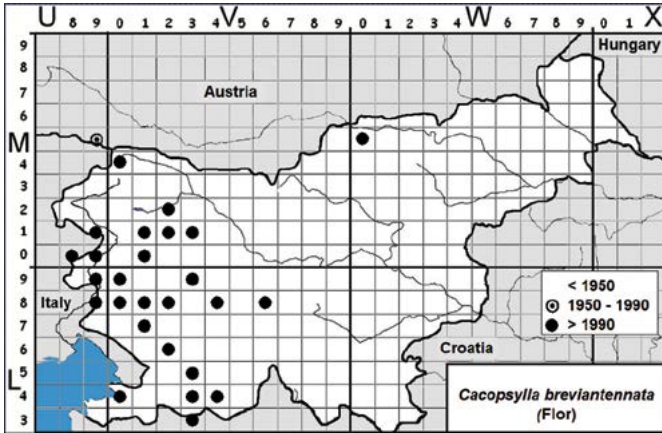


Fig. 43.1: *Cacopsylla breviannata* – recorded distribution in Slovenia  
 Sl. 43.1: *Cacopsylla breviannata* – znana razširjenost v Sloveniji



Fig. 43.2: *Sorbus aria*  
 Sl. 43.2: Navadni mokovec



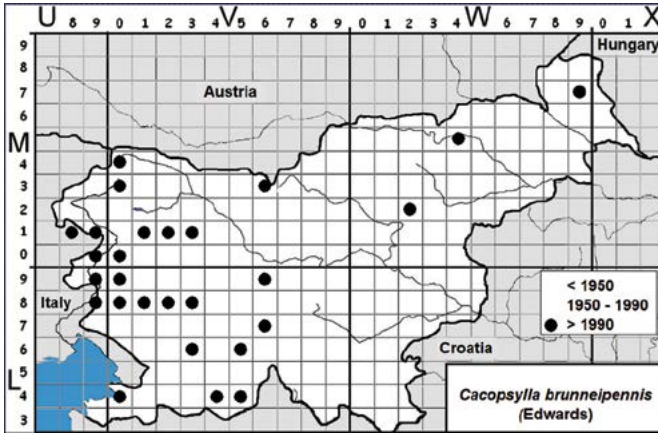
Fig. 43.3:  
*Cacopsylla breviannata* – female; body size 2.4–2.8 mm

Sl. 43.3:  
*Cacopsylla breviannata* – samica; n. v. 2,4–2,8 mm



Fig. 43.4: *Cacopsylla breviannata* – fifth instar nymph; right – with wax webbing removed

Sl. 43.4: *Cacopsylla breviannata* – nimfa pete razvojne stopnje; desno – z odstranjenim pajčevinastim opredkom



**Fig. 44.1:** *Cacopsylla brunneipennis* – recorded distribution in Slovenia  
**Sl. 44.1:** *Cacopsylla brunneipennis* – znana razširjenost v Sloveniji



**Fig. 44.2:** *Salix cinerea*  
**Sl. 44.2:** Pepelnatosiva vrba



**Fig. 44.3:**  
*Cacopsylla brunneipennis* – female; body size 3.4–3.9 mm

**Sl. 44.3:**  
*Cacopsylla brunneipennis* – samica; n. v. 3,4–3,9 mm



**Fig. 44.4:**  
*Cacopsylla brunneipennis* – male; body size 3.3–3.6 mm

**Sl. 44.4:**  
*Cacopsylla brunneipennis* – samec; n. v. 3,3–3,6 mm

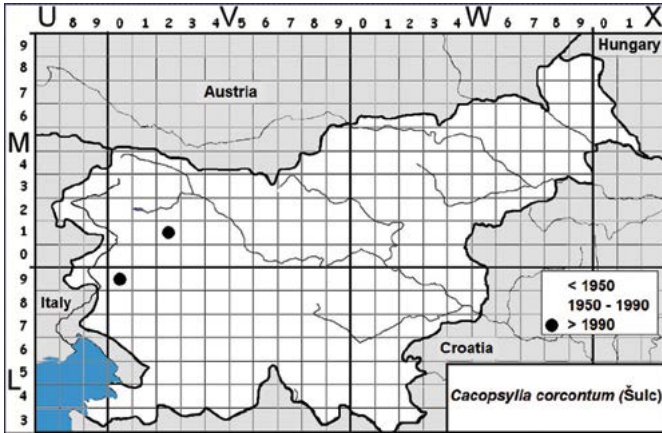


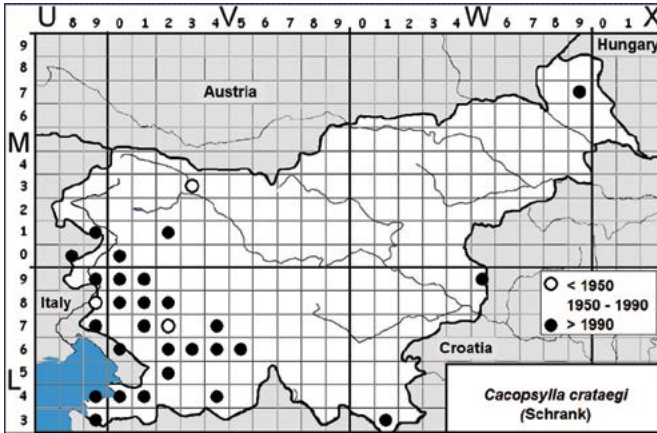
Fig. 45.1: *Cacopsylla corcontum* – recorded distribution in Slovenia  
Sl. 45.1: *Cacopsylla corcontum* – znana razširjenost v Sloveniji



Fig. 45.2: *Sorbus aucuparia*  
Sl. 45.2: Jerebika



Fig. 45.3: *Cacopsylla corcontum* – female; body size 2.9–3.3 mm  
Sl. 45.3: *Cacopsylla corcontum* – samica; n. v. 2,9–3,3 mm



**Fig. 46.1:** *Cacopsylla crataegi* – recorded distribution in Slovenia  
**Sl. 46.1:** *Cacopsylla crataegi* – znana razširjenost v Sloveniji



**Fig. 46.2:** *Crataegus monogyna*  
**Sl. 46.2:** Enovrati glog



**Fig. 46.3:** *Cacopsylla crataegi* – female; body size 3.6–4.0 mm  
**Sl. 46.3:** *Cacopsylla crataegi* – samica; n. v. 3,6–4,0 mm



**Fig. 46.4:** *Cacopsylla crataegi* – male; body size 3.4–3.8 mm  
**Sl. 46.4:** *Cacopsylla crataegi* – samec; n. v. 3,4–3,8 mm

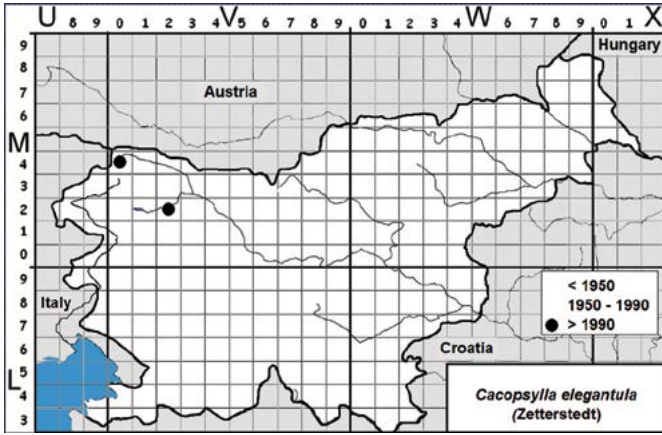


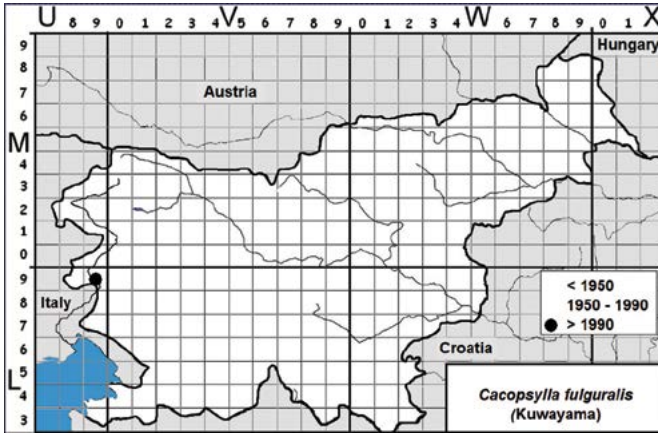
Fig. 47.1: *Cacopsylla elegantula* – recorded distribution in Slovenia  
Sl. 47.1: *Cacopsylla elegantula* – znana razširjenost v Sloveniji



Fig. 47.2: *Salix caprea*  
Sl. 47.2: Iva



Fig. 47.3: *Cacopsylla elegantula* – male; body size 2.9–3.4 mm  
Sl. 47.3: *Cacopsylla elegantula* – samec; n. v. 2,9–3,4 mm



**Fig. 48.1:** *Cacopsylla fulguralis* – recorded distribution in Slovenia  
**Sl. 48.1:** *Cacopsylla fulguralis* – znana razširjenost v Sloveniji



**Fig. 48.2:**  
*Elaeagnus* × *submacrophylla*  
**Sl. 48.2:** Okrasna oljčica



**Fig. 48.3:** *Cacopsylla fulguralis* – mating; body sizes ♀ 3.2 mm, ♂ 3.0 mm  
**Sl. 48.3:** *Cacopsylla fulguralis* – parjenje; n. v. ♀ 3,2 mm, ♂ 3,0 mm



**Fig. 48.4:** *Cacopsylla fulguralis* – fifth instar nymph  
**Sl. 48.4:** *Cacopsylla fulguralis* – nimfa pete razvojne stopnje

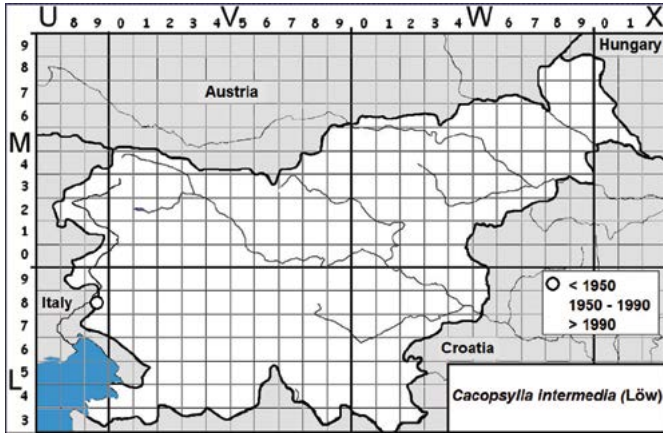


Fig. 49.1: *Cacopsylla intermedia* – recorded distribution in Slovenia according to Löw (1888)

Sl. 49.1: *Cacopsylla intermedia* – razširjenost v Sloveniji po Löw-u (1888)



Fig. 49.2: *Salix purpurea*

Sl. 49.2: Rdeča vrba

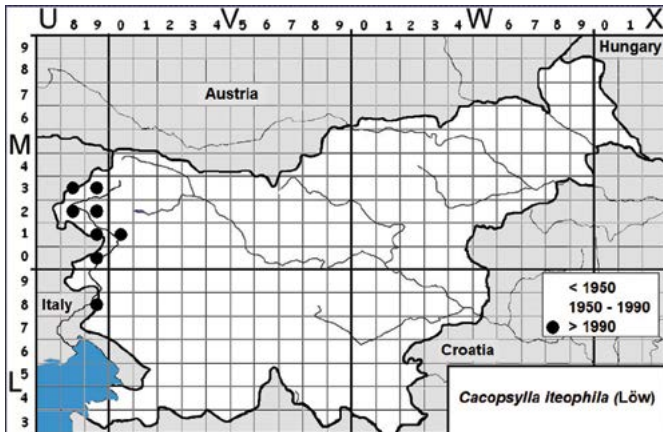


Fig. 50.1: *Cacopsylla iteophila* – recorded distribution in Slovenia

Sl. 50.1: *Cacopsylla iteophila* – znana razširjenost v Sloveniji



Fig. 50.2: *Salix eleagnos*

Sl. 50.2: Siva vrba





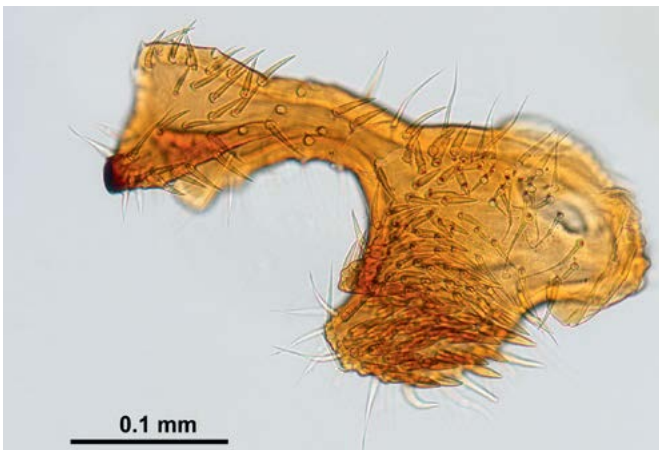
**Fig. 50.3:** *Cacopsylla iteophila* – female; body size 3.3 mm

**Sl. 50.3:** *Cacopsylla iteophila* – samica; n. v. 3,3 mm



**Fig. 50.4:** *Cacopsylla iteophila* – male; body size 3.1 mm

**Sl. 50.4:** *Cacopsylla iteophila* – samec; n. v. 3,1 mm



**Fig. 50.5:** *Cacopsylla iteophila* – male right paramere in lateral view (inner face)

**Sl. 50.5:** *Cacopsylla iteophila* – samčeva desna paramera od strani (notranja stran)

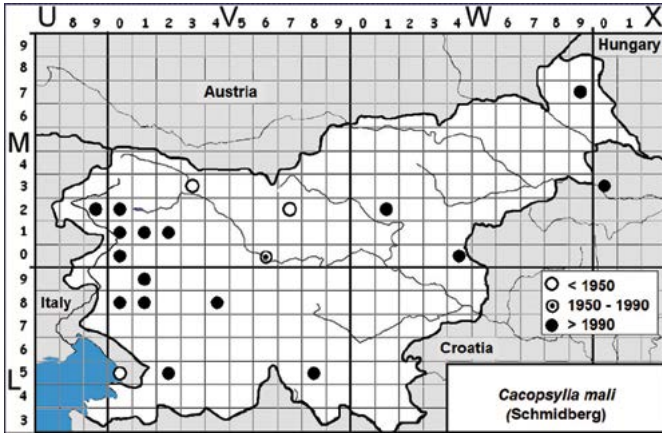


Fig. 51.1: *Cacopsylla mali* – recorded distribution in Slovenia

Sl. 51.1: *Cacopsylla mali* – znana razširjenost v Sloveniji



Fig. 51.2: *Malus domestica*

Sl. 51.2: Jablana



Fig. 51.3: *Cacopsylla mali* – male; body size 2.9–3.6 mm

Sl. 51.3: *Cacopsylla mali* – samec; n. v. 2,9–3,6 mm

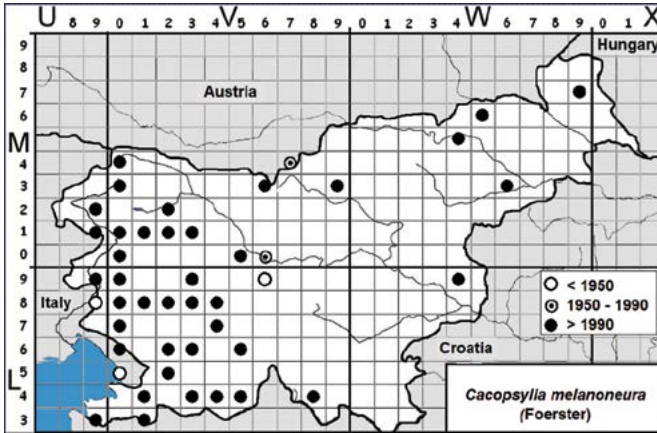


Fig. 52.1: *Cacopsylla melanoneura* – recorded distribution in Slovenia  
Sl. 52.1: *Cacopsylla melanoneura* – znana razširjenost v Sloveniji



Fig. 52.2: *Malus domestica* and *Crataegus monogyna*

Sl. 52.2: Jablana in glog



Fig. 52.3: *Cacopsylla melanoneura* – female; body size 2.9–3.3 mm

Sl. 52.3: *Cacopsylla melanoneura* – samica; n. v. 2,9–3,3 mm



**Fig. 52.4:**  
*Cacopsylla melanoneura* – male;  
body size 2.5–3.1 mm

**Sl. 52.4:**  
*Cacopsylla melanoneura* – samec;  
n. v. 2,5–3,1 mm



**Fig. 52.5:**  
*Cacopsylla melanoneura* – eggs

**Sl. 52.5:**  
*Cacopsylla melanoneura* – jajčeca



**Fig. 52.6:**  
*Cacopsylla melanoneura* – fifth  
instar nymph

**Sl. 52.6:**  
*Cacopsylla melanoneura* – nimfa  
pete razvojne stopnje

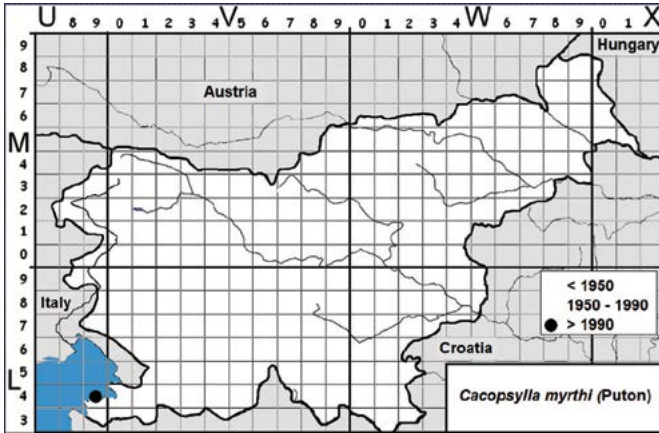


Fig. 53.1: *Cacopsylla myrthi* – recorded distribution in Slovenia  
Sl. 53.1: *Cacopsylla myrthi* – znana razširjenost v Sloveniji



Fig. 53.2: *Rhamnus alaternus*  
Sl. 53.2: Zimzelena kozja češnja



Fig. 53.3: *Cacopsylla myrthi* – female; body size 2.8 mm  
Sl. 53.3: *Cacopsylla myrthi* – samica; n. v. 2,8 mm



Fig. 53.4: *Cacopsylla myrthi* – male; body size 2.5 mm  
Sl. 53.4: *Cacopsylla myrthi* – samec; n. v. 2,5 mm

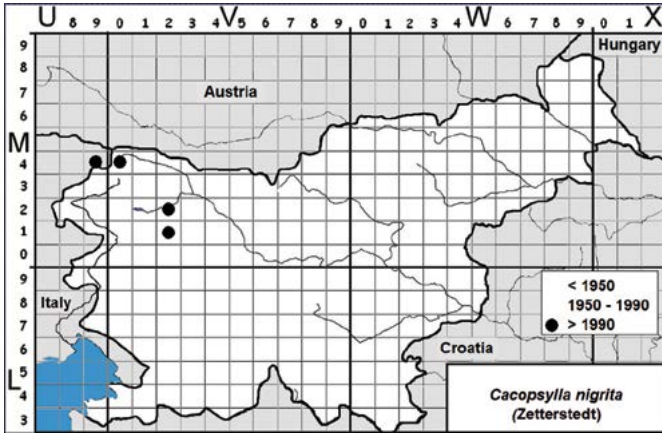


Fig. 54.1: *Cacopsylla nigrita* – recorded distribution in Slovenia  
Sl. 54.1: *Cacopsylla nigrita* – znana razširjenost v Sloveniji



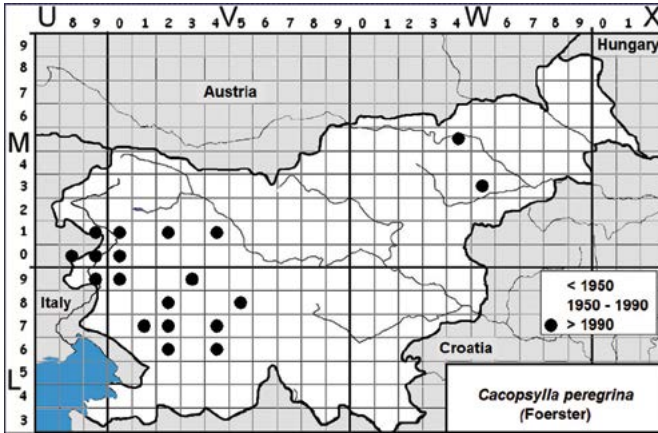
Fig. 54.2: *Salix appendiculata*  
Sl. 54.2: Velikolistna vrba



Fig. 54.3: *Cacopsylla nigrita* – female; body size 3.1–3.6 mm  
Sl. 54.3: *Cacopsylla nigrita* – samica; n. v. 3,1–3,6 mm



Fig. 54.4: *Cacopsylla nigrita* – male; body size 2.9–3.4 mm  
Sl. 54.4: *Cacopsylla nigrita* – samec; n. v. 2,9–3,4 mm



**Fig. 56.1:** *Cacopsylla peregrina* – recorded distribution in Slovenia  
**Sl. 56.1:** *Cacopsylla peregrina* – znana razširjenost v Sloveniji



**Fig. 56.2:** *Crataegus monogyna*  
**Sl. 56.2:** Enovrati glog



**Fig. 56.3:** *Cacopsylla peregrina* – female; body size 3.1–3.6 mm

**Sl. 56.3:** *Cacopsylla peregrina* – samica; n. v. 3,1–3,6 mm



**Fig. 56.4:** *Cacopsylla peregrina* – male; body size 2.8–3.5 mm

**Sl. 56.4:** *Cacopsylla peregrina* – samec; n. v. 2,8–3,5 mm

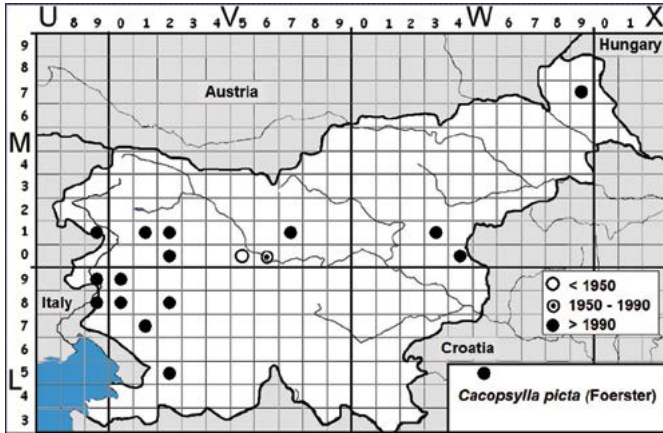


Fig. 57.1: *Cacopsylla picta* – recorded distribution in Slovenia

Sl. 57.1: *Cacopsylla picta* – znana razširjenost v Sloveniji



Fig. 57.2: *Malus domestica*

Sl. 57.2: Jablana



Fig. 57.3:

*Cacopsylla picta* – female, a dark coloured overwintering re-immigrant specimen; body size 3.1–3.4 mm

Sl. 57.3:

*Cacopsylla picta* – samica; temno obarvan prezimujoči osebek; n. v. 3,1–3,4 mm



Fig. 57.4: *Cacopsylla picta* – female, a green summer specimen

Sl. 57.4: *Cacopsylla picta* – samica; zelen poletni osebek





Fig. 57.5: *Cacopsylla picta* – male (overwintering specimen); body size 2.9–3.2 mm

Sl. 57.5: *Cacopsylla picta* – samec (prezimujoči osebek); n. v. 2,9–3,2 mm

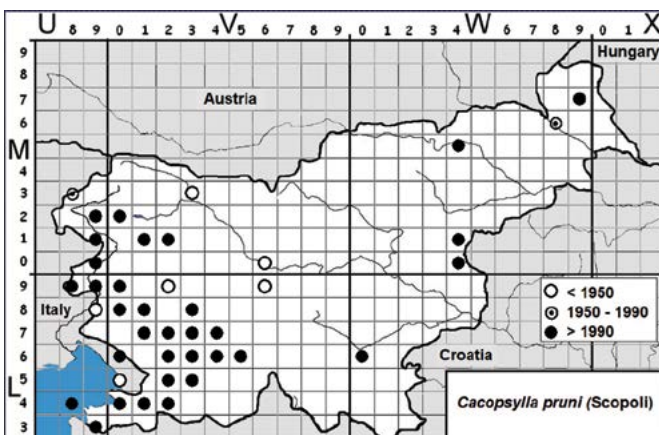


Fig. 58.1: *Cacopsylla pruni* – recorded distribution in Slovenia

Sl. 58.1: *Cacopsylla pruni* – znana razširjenost v Sloveniji.



Fig. 58.2: *Prunus spinosa*

Sl. 58.2: Črni trn (photo: M. Skok)



**Fig. 58.3:**  
*Cacopsylla pruni* – female  
(overwintering re-immigrant  
specimen); body size 2.6–2.9 mm

**Sl. 58.3:** *Cacopsylla pruni* –  
samica (prezimujoči osebek); n. v.  
2,6–2,9 mm



**Fig. 58.4:** *Cacopsylla pruni* –  
female (summer specimen)

**Sl. 58.4:** *Cacopsylla pruni* –  
samica (poletni osebek)



**Fig. 58.5:** *Cacopsylla pruni* – fifth instar nymph  
**Sl. 58.5:** *Cacopsylla pruni* – nimfa pete razvojne  
stopnje



**Fig. 58.6:** *Cacopsylla pruni* – eggs  
**Sl. 58.6:** *Cacopsylla pruni* – jajčeca

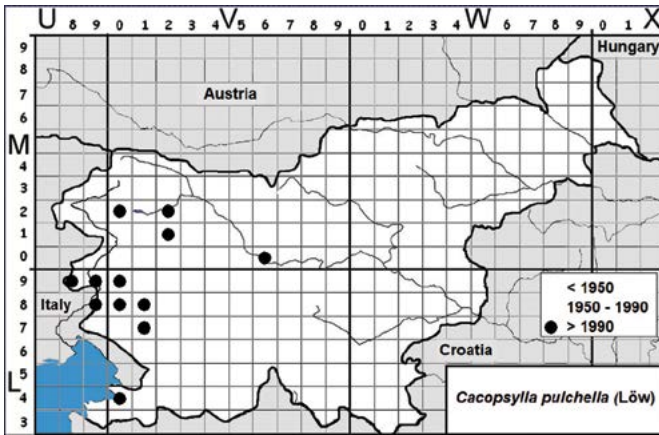


Fig. 59.1: *Cacopsylla pulchella* – recorded distribution in Slovenia

Sl. 59.1: *Cacopsylla pulchella* – znana razširjenost v Sloveniji



Fig. 59.2: *Cercis siliquastrum*

Sl. 59.2: Navadni jadikovec



Fig. 59.3: *Cacopsylla pulchella* – female; body size 2.8–3.1 mm

Sl. 59.3: *Cacopsylla pulchella* – samica; n. v. 2,8–3,1 mm



Fig. 59.4: *Cacopsylla pulchella* – male; body size 2.6–2.9 mm and eggs

Sl. 59.4: *Cacopsylla pulchella* – samec; body size 2,6–2,9 mm in jajčeca



Fig. 59.5: *Cacopsylla pulchella* – fifth instar nymphs

Sl. 59.5: *Cacopsylla pulchella* – nimfi pete razvojne stopnje

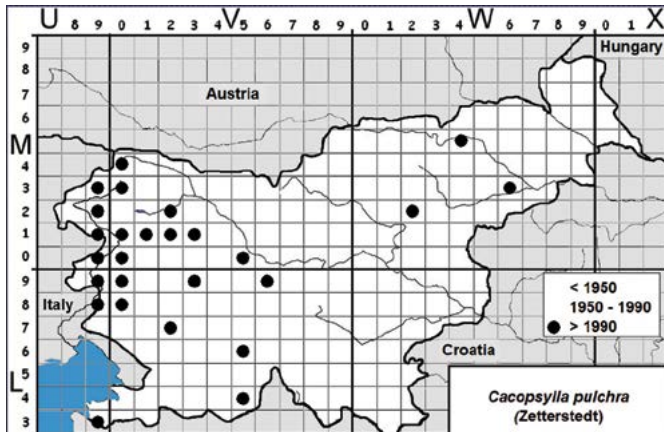


Fig. 60.1: *Cacopsylla pulchra* – recorded distribution in Slovenia

Sl. 60.1: *Cacopsylla pulchra* – znana razširjenost v Sloveniji



Fig. 60.2: *Salix purpurea*

Sl. 60.2: Rdeča vrba



**Fig. 60.3:** *Cacopsylla pulchra* – female; body size 3.2–3.6 mm

**Sl. 60.3:** *Cacopsylla pulchra* – samica; n. v. 3,2–3,6 mm



**Fig. 60.4:** *Cacopsylla pulchra* – male; body size 2.9–3.3 mm

**Sl. 60.4:** *Cacopsylla pulchra* – samec; n. v. 2,9–3,3 mm



**Fig. 60.5:** *Cacopsylla pulchra* – eggs deposited on female willow catkins

**Sl. 60.5:** *Cacopsylla pulchra* – jajčeca odložena na žensko mačico vrbe

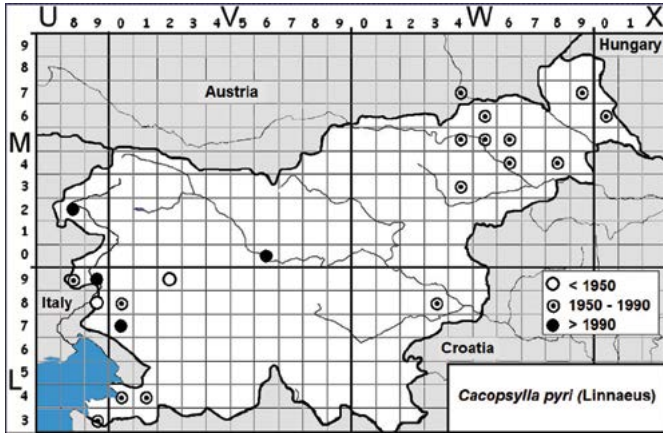


Fig. 61.1: *Cacopsylla pyri* – recorded distribution in Slovenia

Sl. 61.1: *Cacopsylla pyri* – znana razširjenost v Sloveniji



Fig. 61.2: *Pyrus communis*

Sl. 61.2: Hruška



Fig. 61.3: *Cacopsylla pyri* – female; body size 2.9–3.4 mm

Sl. 61.3: *Cacopsylla pyri* – samica; n. v. 2,9–3,4 mm



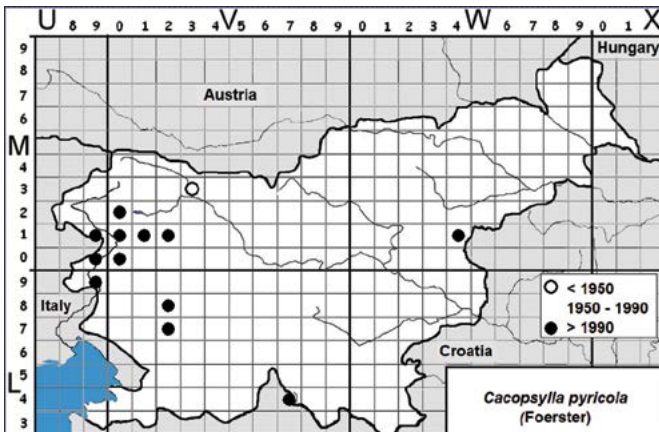
Fig. 61.4: *Cacopsylla pyri* – male; body size 2.6–3.4 mm

Sl. 61.4: *Cacopsylla pyri* – samec; n. v. 2,6–3,4 mm



**Fig. 61.5:** *Cacopsylla pyri* – fifth instar nymph

**Sl. 61.5:** *Cacopsylla pyri* – nimfa pete razvojne stopnje



**Fig. 62.1:** *Cacopsylla pyricola* – recorded distribution in Slovenia

**Sl. 62.1:** *Cacopsylla pyricola* – znana razširjenost v Sloveniji



**Fig. 62.2:** *Pyrus communis*

**Sl. 62.2:** Hruška



**Fig. 62.3:** *Cacopsylla pyricola* – female (overwintering generation); body size 2.7–3.3 mm

**Sl. 62.3:** *Cacopsylla pyricola* – samica (prezimujoči rod); n. v. 2,7–3,3 mm



**Fig. 62.4:** *Cacopsylla pyricola* – female (summer generation); body size 2.2–2.9 mm

**Sl. 62.4:** *Cacopsylla pyricola* – samica (poletni rod); n. v. 2,2–2,9 mm



**Fig. 62.5:** *Cacopsylla pyricola* – male (overwintering generation); body size 2.1–2.9 mm

**Sl. 62.5:** *Cacopsylla pyricola* – samec (prezimujući rod); n. v. 2,1–2,9 mm



**Fig. 62.6:** *Cacopsylla notata* – female; body size 2.0–2.5 mm. Locality: Baderna (Croatia)

**Sl. 62.6:** *Cacopsylla notata* – samica; n. v. 2,0–2,5 mm. Lokaliteta: Baderna (Hrvaška)



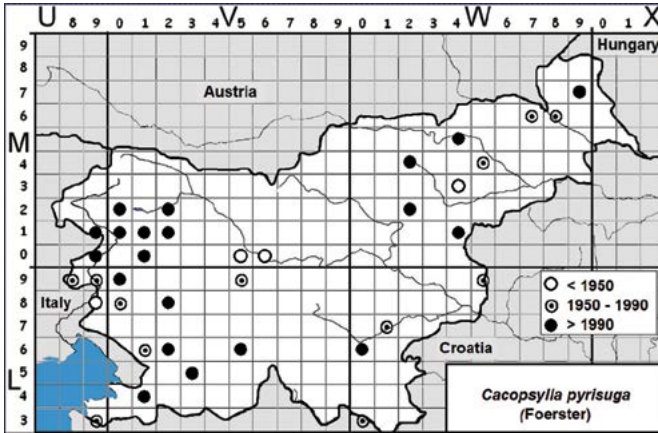


Fig. 63.1: *Cacopsylla pyrisuga* – recorded distribution in Slovenia

Sl. 63.1: *Cacopsylla pyrisuga* – znana razširjenost v Sloveniji



Fig. 63.2: *Pyrus communis*

Sl. 63.2: Hruška



Fig. 63.3: *Cacopsylla pyrisuga* – female; body size 3.8–4.2 mm

Sl. 63.3: *Cacopsylla pyrisuga* – samica; n. v. 3,8–4,2 mm



Fig. 63.4: *Cacopsylla pyrisuga* – male; body size 3.5–4.0 mm

Sl. 63.4: *Cacopsylla pyrisuga* – samec; n. v. 3,5–4,0 mm



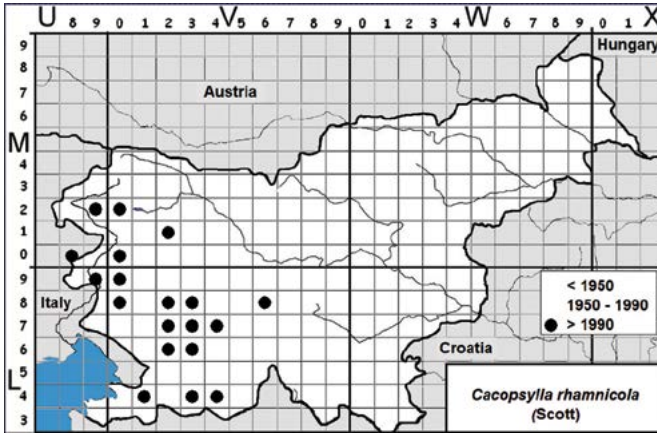
**Fig. 63.5:**  
*Cacopsylla pyrisuga* – eggs

**Sl. 63.5:**  
*Cacopsylla pyrisuga* – jajčeca



**Fig. 63.6:** *Cacopsylla pyrisuga* –  
fifth instar nymphs

**Sl. 63.6:** *Cacopsylla pyrisuga* –  
nimfe pete razvojne stopnje



**Fig. 64.1:** *Cacopsylla rhamnocola* – recorded distribution in Slovenia  
**Sl. 64.1:** *Cacopsylla rhamnocola* – znana razširjenost v Sloveniji



**Fig. 64.2:** *Rhamnus cathartica*  
**Sl. 64.2:** Čistilna kozja češnja



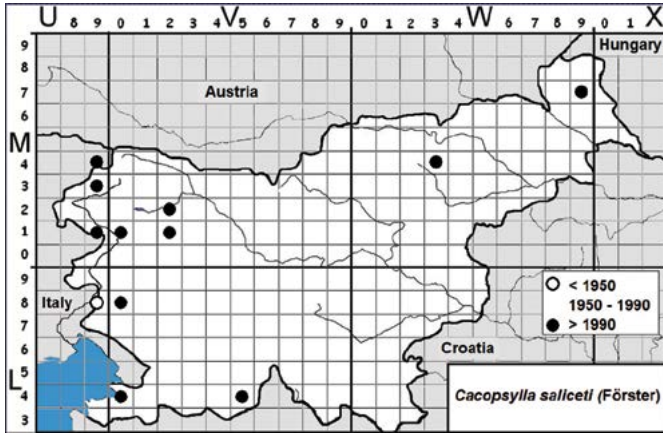
**Fig. 64.3:**  
*Cacopsylla rhamnocola* – female;  
 body size 3.7–4.3 mm

**Sl. 64.3:** *Cacopsylla rhamnocola* – samica; n. v. 3,7–4,3 mm



**Fig. 64.4:**  
*Cacopsylla rhamnocola* – female  
 (dorsal view)

**Sl. 64.4:** *Cacopsylla rhamnocola* – samica (hrbtna stran)



**Fig. 65.1:** *Cacopsylla saliceti* – recorded distribution in Slovenia  
**Sl. 65.1:** *Cacopsylla saliceti* – znana razširjenost v Sloveniji



**Fig. 65.2:** *Salix appendiculata*  
**Sl. 65.2:** Velikolistna vrba



**Fig. 65.3:** *Cacopsylla saliceti* – female; body size 3.2–3.7 mm  
**Sl. 65.3:** *Cacopsylla saliceti* – samica; n. v. 3,2–3,7 mm



**Fig. 65.4:** *Cacopsylla saliceti* – male; body size 3.0–3.5 mm  
**Sl. 65.4:** *Cacopsylla saliceti* – samec; n. v. 3,0–3,5 mm

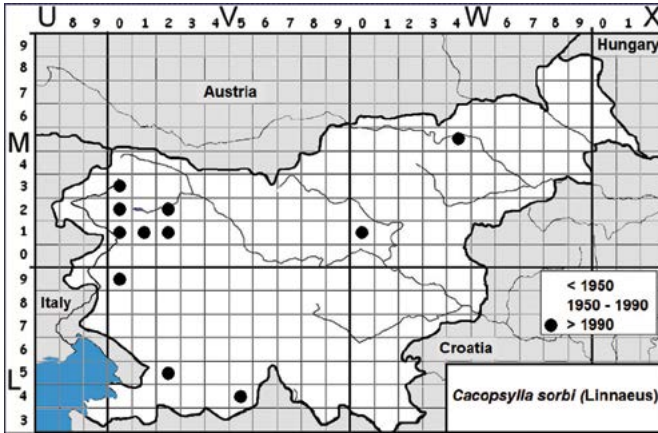


Fig. 66.1: *Cacopsylla sorbi* – recorded distribution in Slovenia

Sl. 66.1: *Cacopsylla sorbi* – znana razširjenost v Sloveniji



Fig. 66.2: *Sorbus aucuparia*

Sl. 66.2: Jerebika



Fig. 66.3: *Cacopsylla sorbi* – female; body size 3.5–3.9 mm

Sl. 66.3: *Cacopsylla sorbi* – samica; n. v. 3,5–3,9 mm



Fig. 66.4: *Cacopsylla sorbi* – male; body size 3.0–3.7 mm

Sl. 66.4: *Cacopsylla sorbi* – samec; n. v. 3,0–3,7 mm

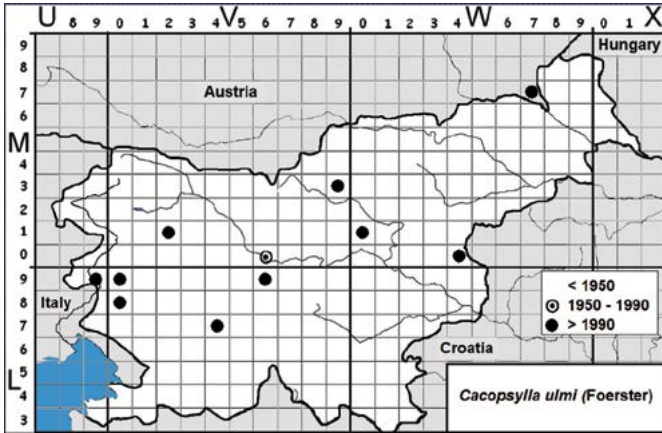


Fig. 67.1: *Cacopsylla ulmi* – recorded distribution in Slovenia

Sl. 67.1: *Cacopsylla ulmi* – znana razširjenost v Sloveniji



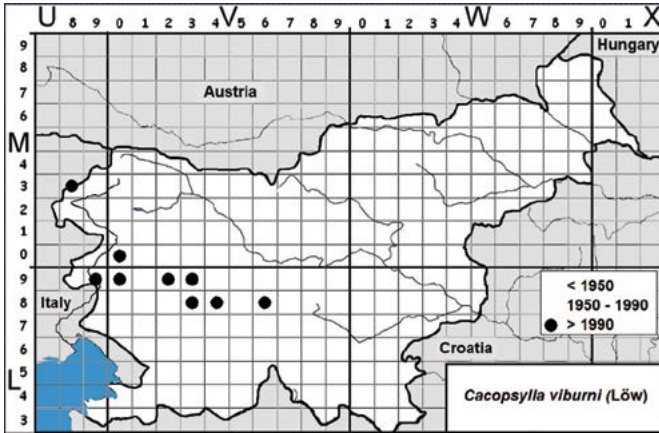
Fig. 67.2: *Ulmus minor*

Sl. 67.2: Poljski brest



Fig. 67.3: *Cacopsylla ulmi* – female; body size 3.8–4.5 mm

Sl. 67.3: *Cacopsylla ulmi* – samica; n. v. 3.8–4.5 mm



**Fig. 68.1:** *Cacopsylla viburni* – recorded distribution in Slovenia  
**Sl. 68.1:** *Cacopsylla viburni* – znana razširjenost v Sloveniji



**Fig. 68.2:** *Viburnum lantana*  
**Sl. 68.2:** Dobrovita



**Fig. 68.3:** *Cacopsylla viburni* – female; body size 4.4–4.8 mm  
**Sl. 68.3:** *Cacopsylla viburni* – samica; n. v. 4,4–4,8 mm



**Fig. 68.4:** *Cacopsylla viburni* – male; body size 4.2–4.6 mm  
**Sl. 68.4:** *Cacopsylla viburni* – samec; n. v. 4,2–4,6 mm

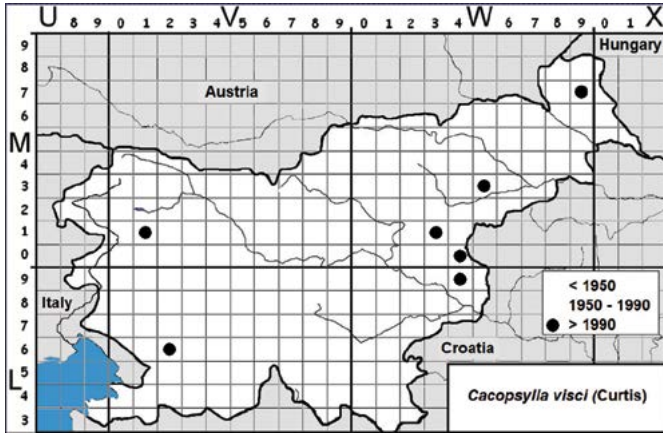


Fig. 69.1: *Cacopsylla visci* – recorded distribution in Slovenia

Sl. 69.1: *Cacopsylla visci* – znana razširjenost v Sloveniji



Fig. 69.2: *Viscum album*

Sl. 69.2: Bela omela



Fig. 69.3: *Cacopsylla visci* – male; body size 3.6 mm

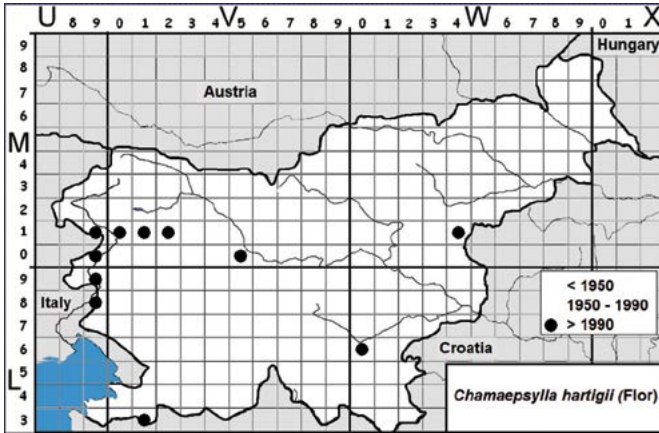
Sl. 69.3: *Cacopsylla visci* – samec; n. v. 3,6 mm



Fig. 69.4: *Cacopsylla visci* (dorsal view)

Sl. 69.4: *Cacopsylla visci* (hrbtna stran)





**Fig. 70.1:** *Chamaepsylla hartigii* – recorded distribution in Slovenia  
**Sl. 70.1:** *Chamaepsylla hartigii* – znana razširjenost v Sloveniji



**Fig. 70.2:** *Betula pendula*  
**Sl. 70.2:** Navadna breza



**Fig. 70.3:** *Chamaepsylla hartigii* – female; body size 2.8–3.4 mm  
**Sl. 70.3:** *Chamaepsylla hartigii* – samica; n. v. 2,8–3,4 mm



**Fig. 70.4:** *Chamaepsylla hartigii* – male; body size 2.7–3.0 mm  
**Sl. 70.4:** *Chamaepsylla hartigii* – samec; n. v. 2,7–3,0 mm

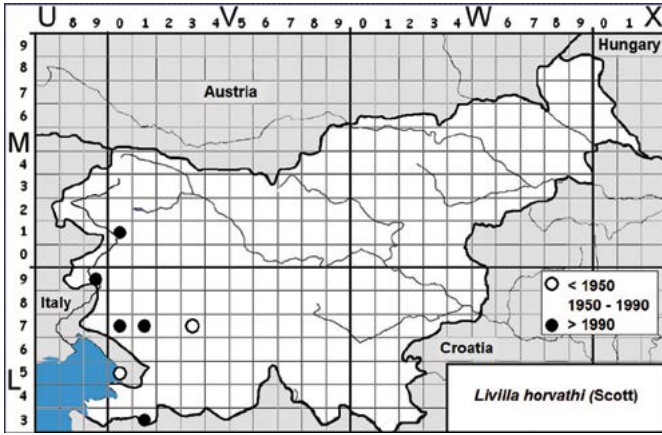


Fig. 71.1: *Livilla horvathi* – recorded distribution in Slovenia

Sl. 71.1: *Livilla horvathi* – znana razširjenost v Sloveniji



Fig. 71.2: *Genista tinctoria*

Sl. 71.2: Barvilna košeničica



Fig. 71.3: *Livilla horvathi* – female; body size 3.8 mm

Sl. 71.3: *Livilla horvathi* – samica; n. v. 3,8 mm

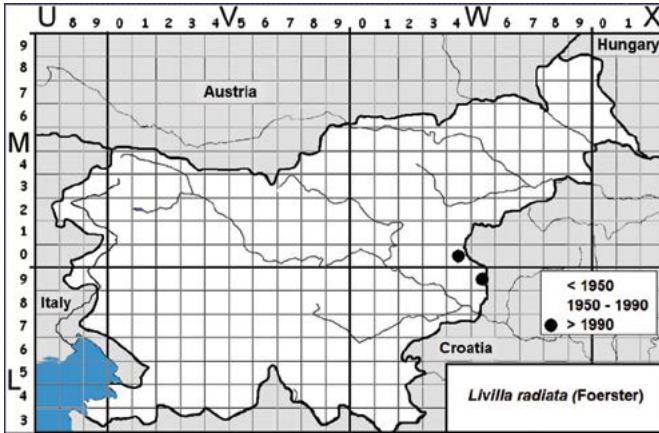


Fig. 72.1: *Livilla radiata* – recorded distribution in Slovenia

Sl. 72.1: *Livilla radiata* – znana razširjenost v Sloveniji



Fig. 72.2: *Lembotropis nigricans*  
(photo: M. Skok)

Sl. 72.2: Navadna kozja detelja



Fig. 72.3: *Livilla radiata* – adult; body size 2.5–3.7 mm

Sl. 72.3: *Livilla radiata* – imago; n. v. 2,5–3,7 mm

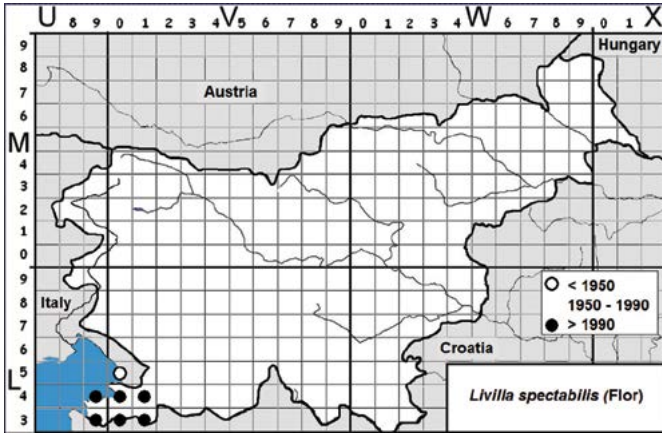


Fig. 73.1: *Livilla spectabilis* – recorded distribution in Slovenia

Sl. 73.1: *Livilla spectabilis* – znana razširjenost v Sloveniji



Fig. 73.2: *Spartium junceum*

Sl. 73.2: Navadna žuka



Fig. 73.3: *Livilla spectabilis* – female; body size 4.3–5.1 mm

Sl. 73.3: *Livilla spectabilis* – samica; n. v. 4,3–5,1 mm

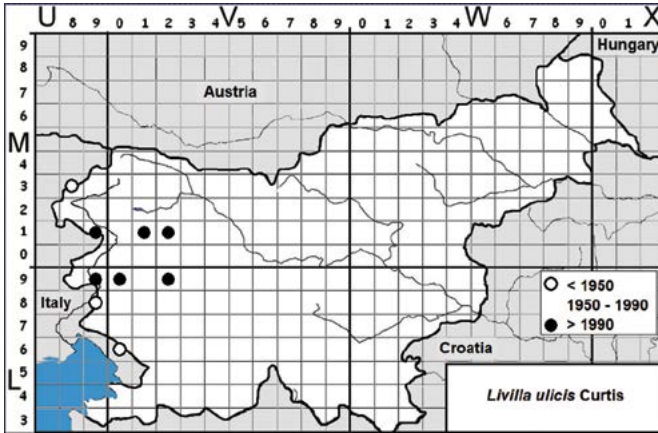


Fig. 74.1: *Livilla ulicis* – recorded distribution in Slovenia

Sl. 74.1: *Livilla ulicis* – znana razširjenost v Sloveniji



Fig. 74.2: *Genista tinctoria*

Sl. 74.2: Barvilna košeničica



Fig. 74.3: *Livilla ulicis* – female;  
body size 2.6–3.0 mm

Sl. 74.3: *Livilla ulicis* – samica; n.  
v. 2,6–3,0 mm



Fig. 74.4: *Livilla ulicis* – male;  
body size 2.3–2.7 mm

Sl. 74.4: *Livilla ulicis* – samec; n.  
v. 2,3–2,7 mm

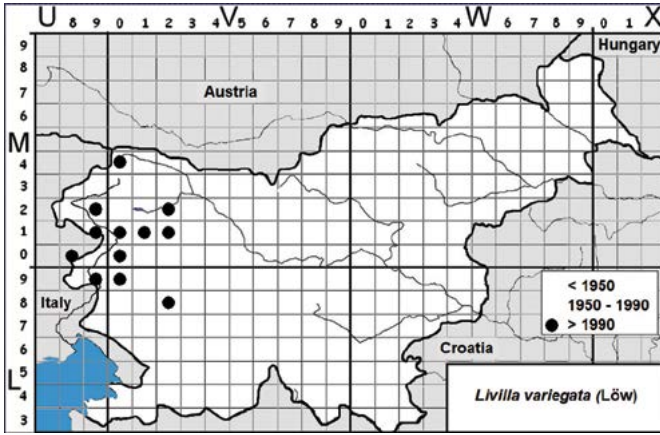


Fig. 75.1: *Livilla variegata* – recorded distribution in Slovenia  
 Sl. 75.1: *Livilla variegata* – znana razširjenost v Sloveniji



Fig. 75.2: *Laburnum alpinum*  
 Sl. 75.2: Alpski nagnoj



Fig. 75.3: *Livilla variegata* – female; body size 3.7–4.3 mm  
 Sl. 75.3: *Livilla variegata* – samica; n. v. 3,7–4,3 mm



Fig. 75.4: *Livilla variegata* – male; body size 3.5–3.8 mm  
 Sl. 75.4: *Livilla variegata* – samec; n. v. 3,5–3,8 mm

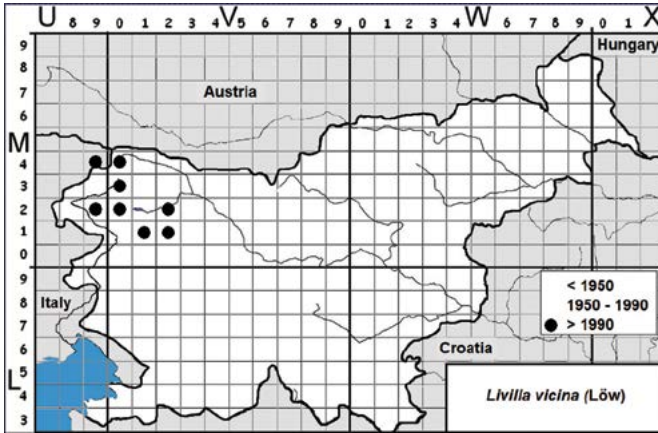


Fig. 76.1: *Livilla vicina* – recorded distribution in Slovenia

Sl. 76.1: *Livilla vicina* – znana razširjenost v Sloveniji



Fig. 76.2: *Genista radiata*

Sl. 76.2: Žarkasta košeničica



Fig. 76.3: *Livilla vicina* – female laying eggs; body size 3.1–3.5 mm

Sl. 76.3: *Livilla vicina* – samica odlaga jajčeca; n. v. 3,1–3,5 mm



Fig. 76.4: *Livilla vicina* – male; body size 2.8–3.2 mm

Sl. 76.4: *Livilla vicina* – samec; n. v. 2,8–3,2 mm

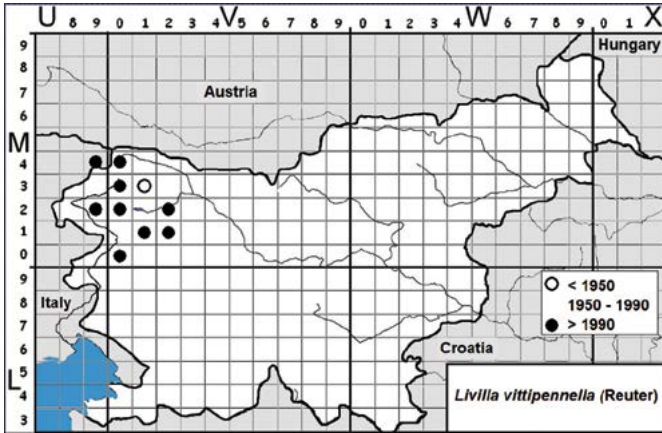


Fig. 77.1: *Livilla vittipennella* – recorded distribution in Slovenia

Sl. 77.1: *Livilla vittipennella* – znana razširjenost v Sloveniji



Fig. 77.2: *Genista radiata*

Sl. 77.2: Žarkasta košeničica



Fig. 77.3: *Livilla vittipennella* – adult; body size 3.0–3.7 mm

Sl. 77.3: *Livilla vittipennella* – imago; n. v. 3,0–3,7 mm



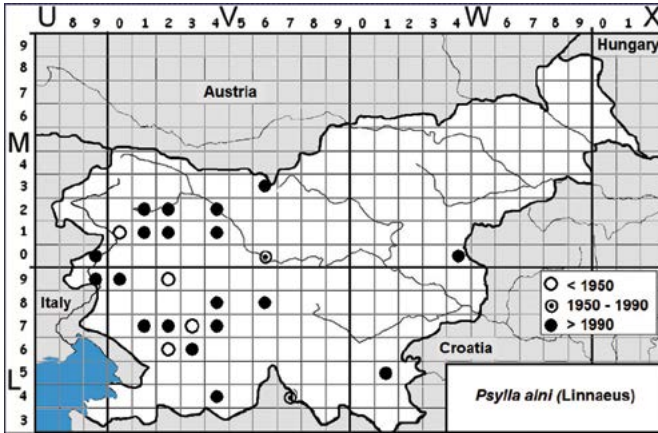


Fig. 78.1: *Psylla alni* – recorded distribution in Slovenia

Sl. 78.1: *Psylla alni* – znana razširjenost v Sloveniji



Fig. 78.2: A shoot of *Alnus glutinosa* infested by immatures of *P. alni*

Sl. 78.2: Poganjek črne jelše z ličinkami bolšice *P. alni*



Fig. 78.3: *Psylla alni* – fifth instar nymph

Sl. 78.3: *Psylla alni* – nimfa pete razvojne stopnje



Fig. 78.4: *Psylla alni* – fifth instar nymph from behind

Sl. 78.4: *Psylla alni* – nimfa pete razvojne stopnje od zadaj



**Fig. 78.5:** *Psylla alni* – female; body size 5.0–5.8 mm

**Sl. 78.5:** *Psylla alni* – samica; n. v. 5,0–5,8 mm



**Fig. 78.6:** *Psylla alni* – male; body size 4.8–5.5 mm

**Sl. 78.6:** *Psylla alni* – samec; n. v. 4,8–5,5 mm

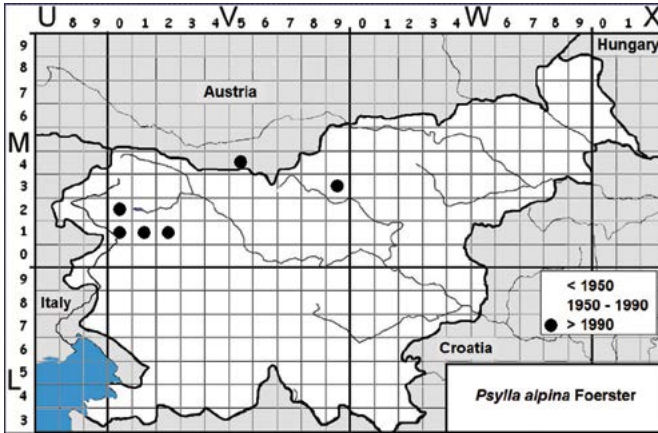


Fig. 79.1: *Psylla alpina* – recorded distribution in Slovenia

Sl. 79.1: *Psylla alpina* – znana razširjenost v Sloveniji



Fig. 79.2: *Alnus alnobetula*

Sl. 79.2: Zelena jelša



Fig. 79.3: *Psylla alpina* – female;  
body size 4.0–4.2 mm

Sl. 79.3: *Psylla alpina* – samica; n.  
v. 4,0–4,2 mm



Fig. 79.4: *Psylla alpina* – male;  
body size 3.7–3.8 mm

Sl. 79.4: *Psylla alpina* – samec; n.  
v. 3,7–3,8 mm

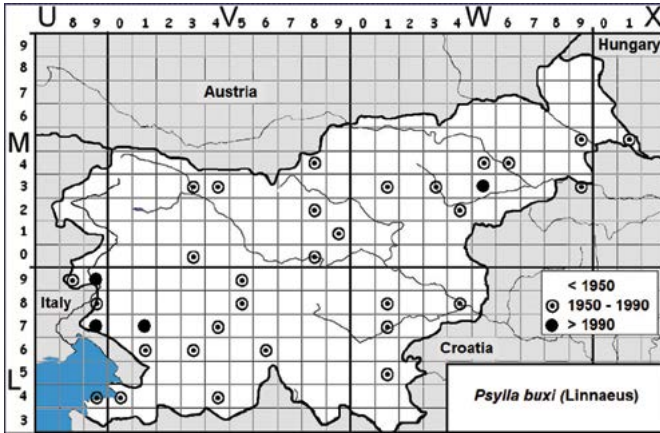


Fig. 80.1: *Psylla buxi* – recorded distribution in Slovenia

Sl. 80.1: *Psylla buxi* – znana razširjenost v Sloveniji



Fig. 80.2: *Buxus sempervirens*

Sl. 80.2: Navadni pušpan



Fig. 80.3: *Psylla buxi* – female;  
body size 3.6–4.3 mm

Sl. 80.3: *Psylla buxi* – samica; n. v.  
3,6–4,3 mm



Fig. 80.4: *Psylla buxi* – fifth instar  
nymph

Sl. 80.4: *Psylla buxi* – nimfa pete  
razvojne stopnje

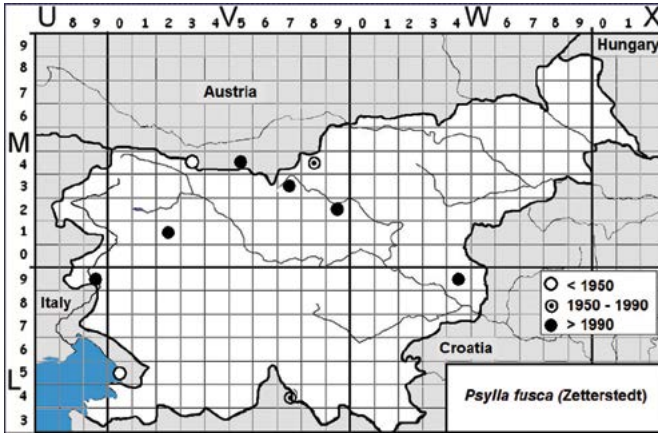


Fig. 81.1: *Psylla fusca* – recorded distribution in Slovenia

Sl. 81.1: *Psylla fusca* – znana razširjenost v Sloveniji



Fig. 81.2: *Alnus incana*

Sl. 81.2: Siva jelša



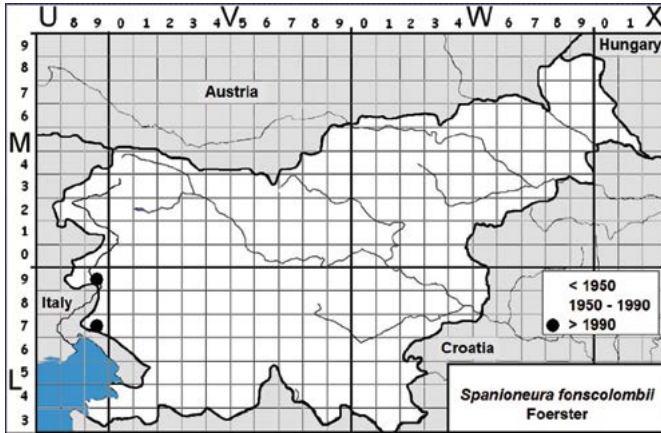
Fig. 81.3: *Psylla fusca* – female;  
body size 4.4–5.4 mm

Sl. 81.3: *Psylla fusca* – samica; n.  
v. 4,4–5,4 mm



Fig. 81.4: *Psylla fusca* – male;  
body size 4.3–4.8 mm

Sl. 81.4: *Psylla fusca* – samec; n. v.  
4,3–4,8 mm



**Fig. 82.1:** *Spanioneura foncolombii* – recorded distribution in Slovenia  
**Sl. 82.1:** *Spanioneura foncolombii* – znana razširjenost v Sloveniji



**Fig. 82.2:** *Buxus sempervirens*  
**Sl. 82.2:** Navadni pušpan



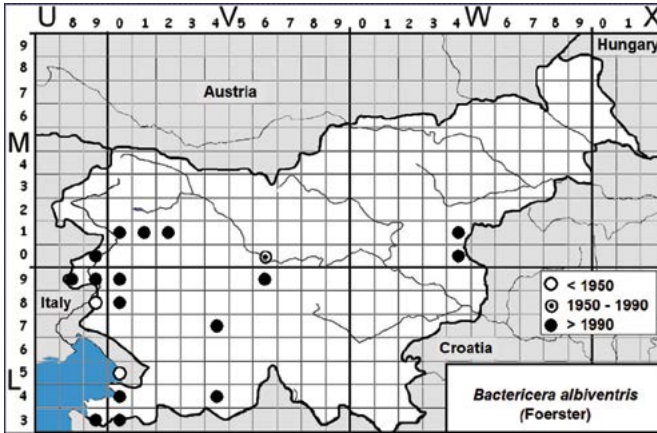
**Fig. 82.3:**  
*Spanioneura foncolombii* – female; body size 3.3 mm

**Sl. 82.3:**  
*Spanioneura foncolombii* – samica; n. v. 3,3 mm



**Fig. 82.4:**  
*Spanioneura foncolombii* – male;  
 body size ~2.7 mm

**Sl. 82.4:**  
*Spanioneura foncolombii* – samec; n. v. ~2,7 mm



**Fig. 83.1:** *Bactericera albiventris* – recorded distribution in Slovenia  
**Sl. 83.1:** *Bactericera albiventris* – znana razširjenost v Sloveniji



**Fig. 83.2:** *Salix alba*  
**Sl. 83.2:** Bela vrba



**Fig. 83.3:** *Bactericera albiventris* – female; body size 3.4–3.7 mm  
**Sl. 83.3:** *Bactericera albiventris* – samica; n. v. 3,4–3,7 mm



**Fig. 83.4:** *Bactericera albiventris* – female (dorsal view)  
**Sl. 83.4:** *Bactericera albiventris* – samica (hrbtna stran)

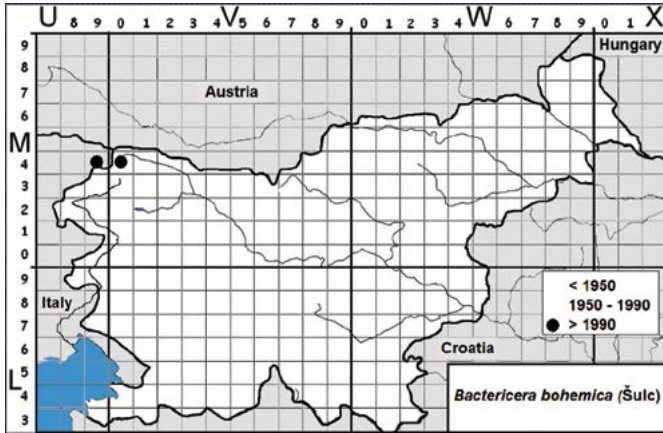


Fig. 84.1: *Bactericera bohémica* – recorded distribution in Slovenia  
Sl. 84.1: *Bactericera bohémica* – znana razširjenost v Sloveniji



Fig. 84.2: *Geum montanum*  
Sl. 84.2: Gorska sretena



Fig. 84.3: *Bactericera bohémica* – female; body size 3.1–3.5 mm  
Sl. 84.3: *Bactericera bohémica* – samica; n. v. 3,1–3,5 mm



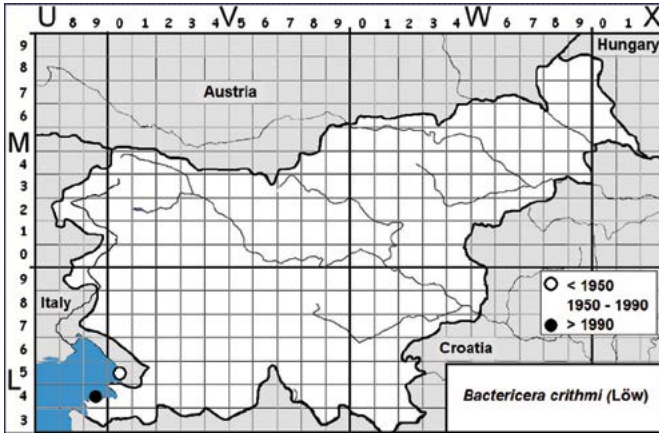


Fig. 85.1: *Bactericera crithmi* – recorded distribution in Slovenia

Sl. 85.1: *Bactericera crithmi* – znana razširjenost v Sloveniji



Fig. 85.2: *Crithmum maritimum*

Sl. 85.2: Navadni morski koprc



Fig. 85.3: *Bactericera crithmi* – female; body size 3.1 mm

Sl. 85.3: *Bactericera crithmi* – samica; n. v. 3,1 mm



Fig. 85.4: *Bactericera crithmi* – male; body size 3.0 mm

Sl. 85.4: *Bactericera crithmi* – samec; n. v. 3,0 mm



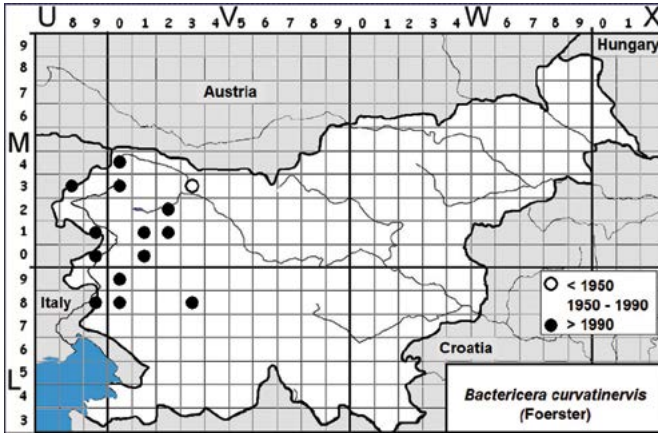
**Fig. 85.5:** *Bactericera crithmi* – egg on a very long pedicel

**Sl. 85.5:** *Bactericera crithmi* – jajčece na zelo dolgem peclju

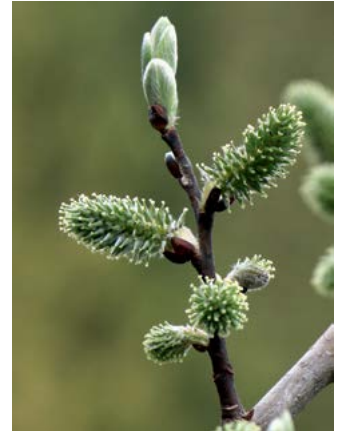


**Fig. 85.6:** *Bactericera crithmi* – fifth instar nymph

**Sl. 85.6:** *Bactericera crithmi* – nimfa pete razvojne stopnje



**Fig. 86.1:** *Bactericera curvatinervis* – recorded distribution in Slovenia  
**Sl. 86.1:** *Bactericera curvatinervis* – znana razširjenost v Sloveniji



**Fig. 86.2:** *Salix caprea*  
**Sl. 86.2:** Iva



**Fig. 86.3:**  
*Bactericera curvatinervis* – female; body size 3.3–3.9 mm

**Sl. 86.3:**  
*Bactericera curvatinervis* – samica; n. v. 3,3–3,9 mm



**Fig. 86.4:**  
*Bactericera curvatinervis* – male; body size 3.1–3.5 mm

**Sl. 86.4:**  
*Bactericera curvatinervis* – samec; n. v. 3,1–3,5 mm

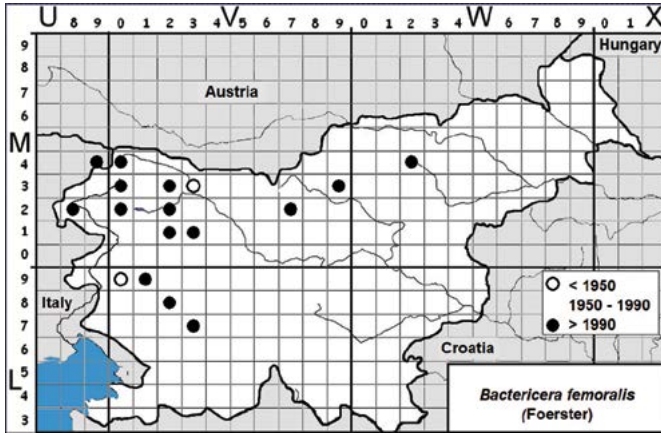


Fig. 87.1: *Bactericera femoralis* – recorded distribution in Slovenia  
 Sl. 87.1: *Bactericera femoralis* – znana razširjenost v Sloveniji



Fig. 87.2: *Alchemilla* sp  
 Sl. 87.2: Plahtica



Fig. 87.3: *Bactericera femoralis* – female; body size 3.2–3.7 mm  
 Sl. 87.3: *Bactericera femoralis* – samica; n. v. 3,2–3,7 mm

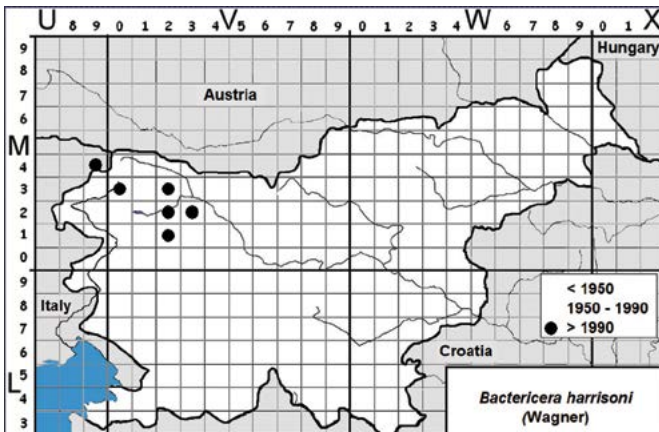


Fig. 87.4: *Bactericera femoralis* – male; body size 3.0–3.5 mm  
 Sl. 87.4: *Bactericera femoralis* – samec; n. v. 3,0–3,5 mm



**Fig. 87.5:** *Bactericera femoralis* – fifth instar nymph

**Sl. 87.5:** *Bactericera femoralis* – nimfa pete razvojne stopnje



**Fig. 88.1:** *Bactericera harrisoni* – recorded distribution in Slovenia

**Sl. 88.1:** *Bactericera harrisoni* – znana razširjenost v Sloveniji



**Fig. 88.3:** *Bactericera harrisoni* – female; body size 3.2–3.7 mm

**Sl. 88.3:** *Bactericera harrisoni* – samica; n. v. size 3,2–3,7 mm

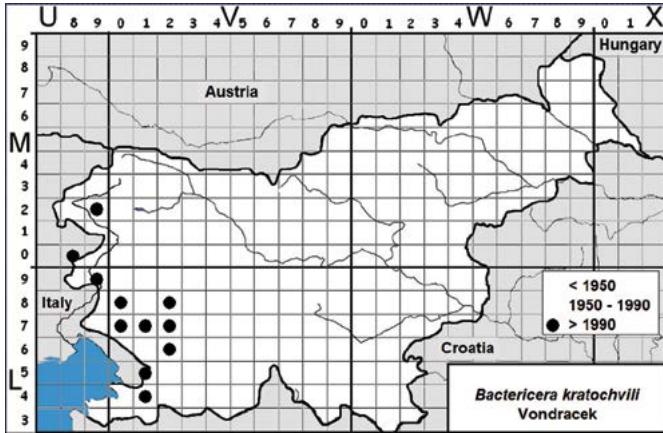


Fig. 89.1: *Bactericera kratochvili* – recorded distribution in Slovenia  
 Sl. 89.1: *Bactericera kratochvili* – znana razširjenost v Sloveniji



Fig. 89.2: *Allium senescens*  
 Sl. 89.2: Gorski luk



Fig. 89.3: *Bactericera kratochvili* – female; body size 3.0 mm  
 Sl. 89.3: *Bactericera kratochvili* – samica; n. v. 3,0 mm



Fig. 89.4: *Bactericera kratochvili* – female (dorsal view)  
 Sl. 89.4: *Bactericera kratochvili* – samica (hrbтна stran)

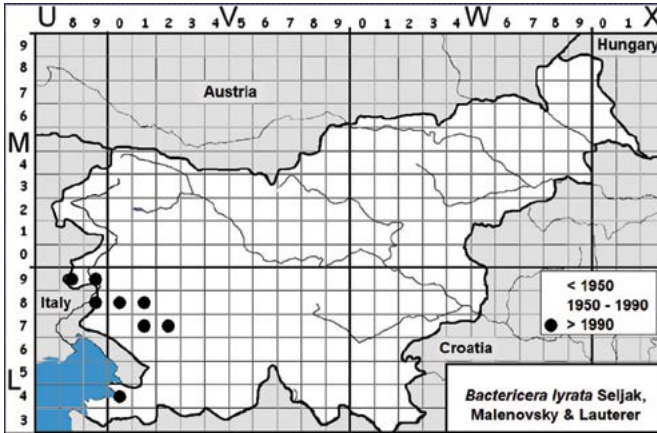


Fig. 90.1: *Bactericera lyrata* – recorded distribution in Slovenia

Sl. 90.1: *Bactericera lyrata* – znana razširjenost v Sloveniji



Fig. 90.2: *Potentilla reptans*

Sl. 90.2: Plazeči petoprstnik



Fig. 90.3: *Bactericera lyrata* – female (summer generation); body size 3.1–3.6 mm

Sl. 90.3: *Bactericera lyrata* – samica (poletni rod); n. v. 3,1–3,6 mm



Fig. 90.4: *Bactericera lyrata* – male (wintering specimen); body size 2.9–3.2 mm

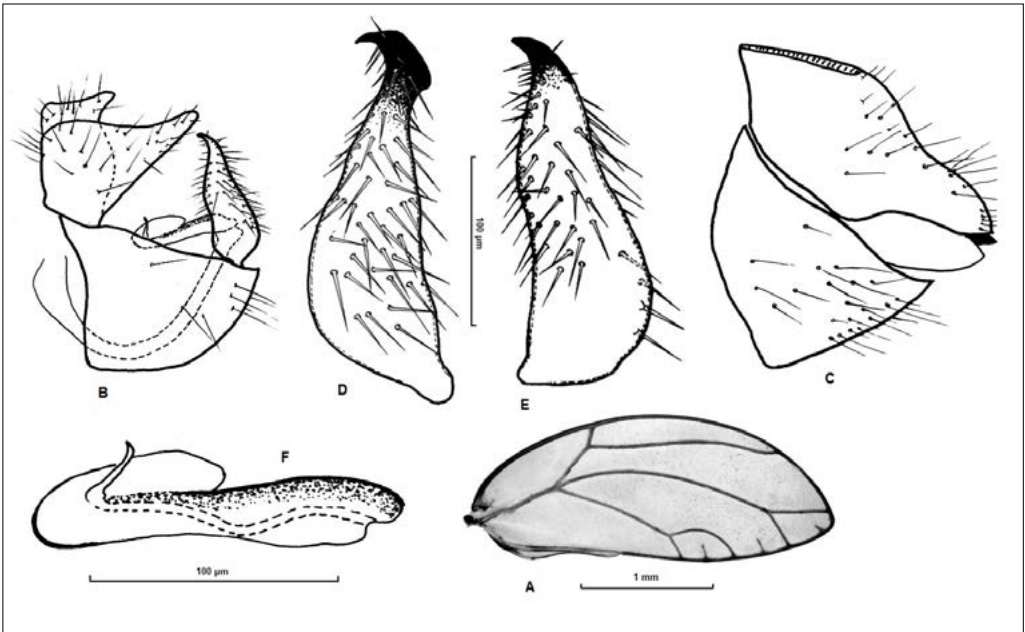
Sl. 90.4: *Bactericera lyrata* – samec (prezimujoči rod); n. v. 2,9–3,2 mm



**Fig. 90.5:** *Bactericera lyrata* – stalked eggs  
**Sl. 90.5:** *Bactericera lyrata* – pecljati jajčeci



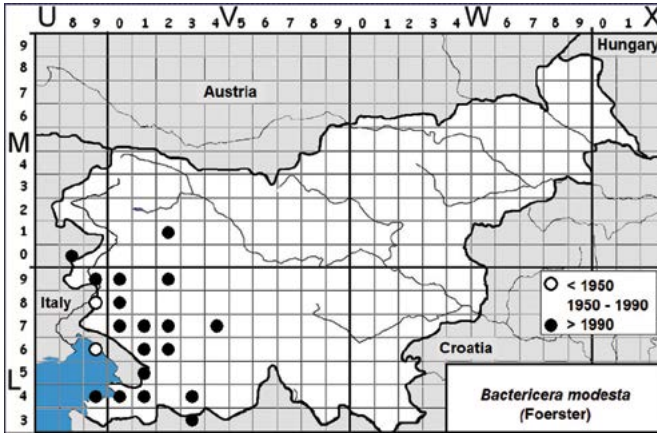
**Fig. 90.6:** *Bactericera lyrata* – fifth instar nymph  
**Sl. 90.6:** *Bactericera lyrata* – nimfa pete razvojne stopnje



**Fig. 90.7:** *Bactericera lyrata*: A – right forewing; B – male genital terminalia; C – female terminalia; D – male's left paramere (posterior view); E – same (lateral view); F – aedeagus. (partly according to Seljak et al., 2008).

**Sl. 90.7:** *Bactericera lyrata*: A – desno sprednje krilo; B – samčev genitalni segment; C – samičin genitalni segment; D – samčeva leva paramera (pogled od zadaj); E – enako (pogled od strani); F – aedeagus. (deloma po Seljak et al., 2008)





**Fig. 91.1:** *Bactericera modesta* – recorded distribution in Slovenia  
**Sl. 91.1:** *Bactericera modesta* – znana razširjenost v Sloveniji



**Fig. 91.2:** *Sanguisorba minor*  
**Sl. 91.2:** Mala strašnica



**Fig. 91.3:** *Bactericera modesta* – female; body size 3.2–3.7 mm  
**Sl. 91.3:** *Bactericera modesta* – samica; n. v. 3,2–3,7 mm

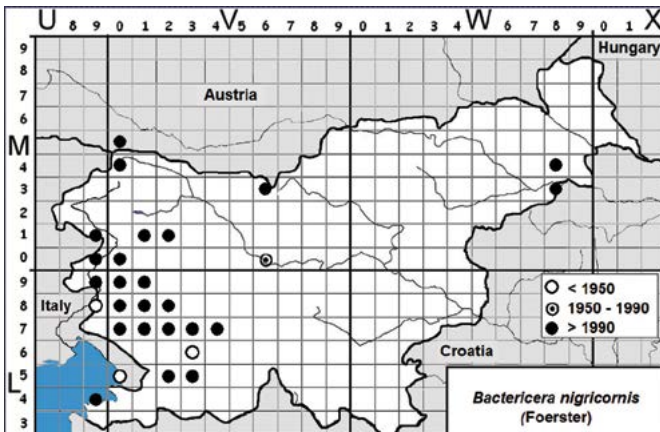


**Fig. 91.4:**  
*Bactericera modesta* – mating  
**Sl. 91.4:**  
*Bactericera modesta* – parjenje



**Fig. 91.5:** *Bactericera modesta* – fifth instar nymph

**Sl. 91.5:** *Bactericera modesta* – nimfa pete razvojne stopnje



**Fig. 92.1:** *Bactericera nigricornis* – recorded distribution in Slovenia

**Sl. 92.1:** *Bactericera nigricornis* – znana razširjenost v Sloveniji



**Fig. 92.2:** *Cichorium intybus*

**Sl. 92.2:** Navadni potrošnik



**Fig. 92.3:**  
*Bactericera nigricornis* – male;  
body size 2.9–3.2 mm

**Sl. 92.3:** *Bactericera nigricornis* – samec; n. v. 2,9–3,2 mm

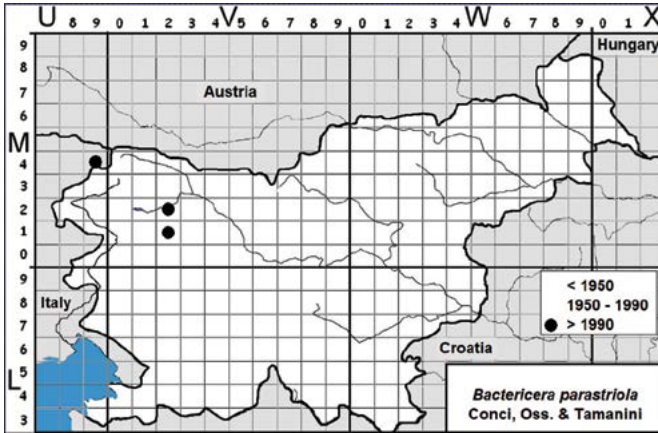


Fig. 93.1: *Bactericera parastricola* – recorded distribution in Slovenia  
 Sl. 93.1: *Bactericera parastricola* – znana razširjenost v Sloveniji



Fig. 93.2: *Salix waldsteiniana*  
 Sl. 93.2: Waldsteinova vrba



Fig. 93.3:  
*Bactericera parastricola* – male;  
 body size 3.3 mm

Sl. 93.3: *Bactericera parastricola* – samec; n. v. 3,3 mm

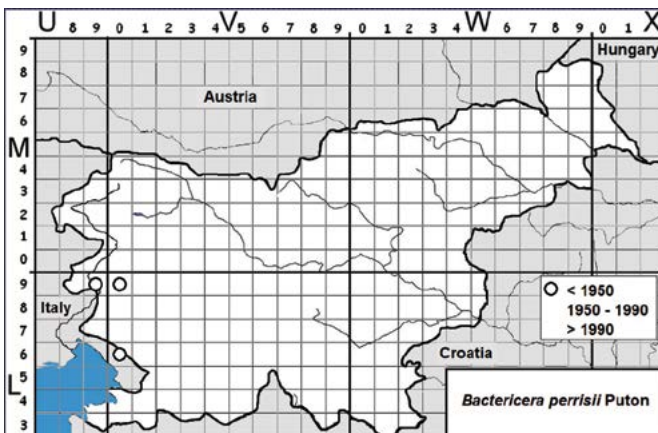


Fig. 94.1: *Bactericera perrisii* – distribution in Slovenia recorded by Löw (1888)  
 Sl. 94.1: *Bactericera perrisii* – razširjenost v Sloveniji povzeta po Löw-u (1888)

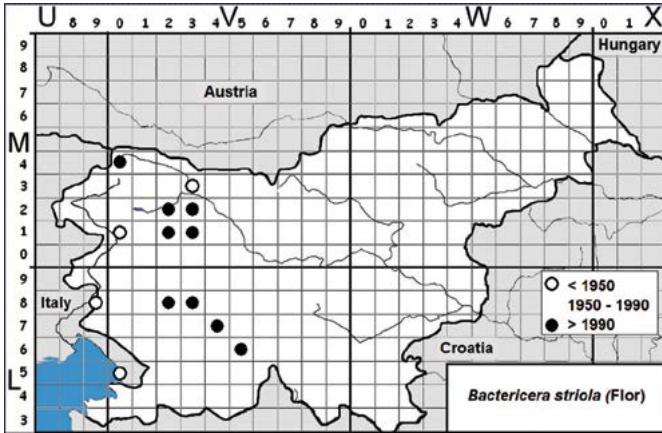


Fig. 95.1: *Bactericera striola* – recorded distribution in Slovenia  
Sl. 95.1: *Bactericera striola* – znana razširjenost v Sloveniji



Fig. 95.2: *Salix caprea*  
Sl. 95.2: Iva



Fig. 95.3: *Bactericera striola* – female; body size 3.2–3.9 mm  
Sl. 95.3: *Bactericera striola* – samica; n. v. 3,2–3,9 mm

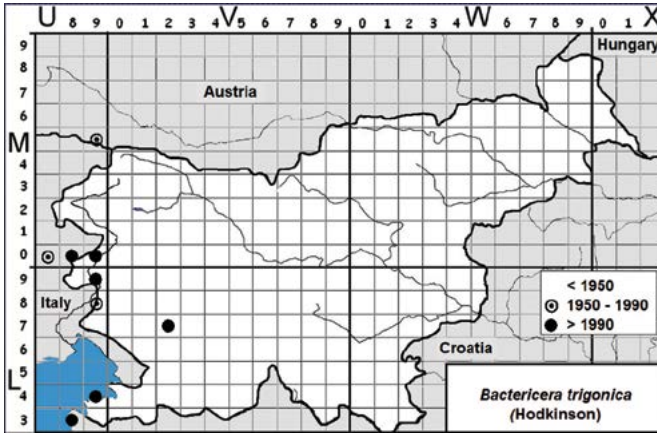


Fig. 96.1: *Bactericera trigonica* – recorded distribution in Slovenia

Sl. 96.1: *Bactericera trigonica* – znana razširjenost v Sloveniji



Fig. 96.2: *Daucus carota*

Sl. 96.2: Navadno korenje



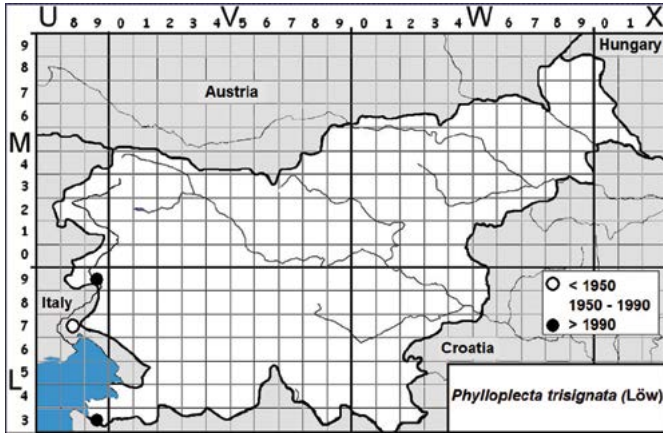
Fig. 96.3: *Bactericera trigonica* – female; body size 2.6 mm

Sl. 96.3: *Bactericera trigonica* – samica; n. v. 2.6 mm



Fig. 96.4: *Bactericera trigonica* – egg

Sl. 96.4: *Bactericera trigonica* – jajčece



**Fig. 97.1:** *Phylloplecta trisignata* – recorded distribution in Slovenia  
**Sl. 97.1:** *Phylloplecta trisignata* – znana razširjenost v Sloveniji



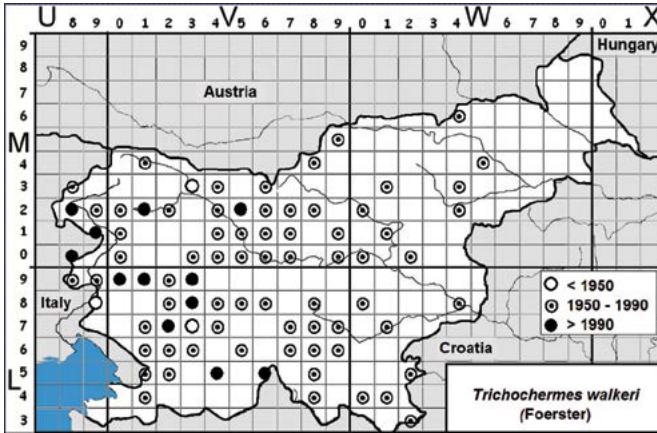
**Fig. 97.2:** *Rubus ulmifolius*  
**Sl. 97.2:** Brestovolistna robida



**Fig. 97.3:** *Phylloplecta trisignata* – female; body size 4.0 mm.  
**Sl. 97.3:** *Phylloplecta trisignata* – samica; n. v. 4,0 mm



**Fig. 97.4:** *Phylloplecta trisignata* – fifth instar nymphs  
**Sl. 97.4:** *Phylloplecta trisignata* – nimfe pete razvojne stopnje



**Fig. 98.1:** *Trichoermes walkeri* – recorded distribution in Slovenia  
**Sl. 98.1:** *Trichoermes walkeri* – znana razširjenost v Sloveniji



**Fig. 98.2:**  
*Trichoermes walkeri* – a gall on a leaf of *Rhamnus cathartica*

**Sl. 98.2:** *Trichoermes walkeri* – šiškasto spremenjen list čistilne kozje češnje



**Fig. 98.3:** *Trichoermes walkeri* – female; body size 4.4–4.6 mm

**Sl. 98.3:** *Trichoermes walkeri* – samica; n. v. 4,4–4,6 mm



**Fig. 98.4:** *Trichoermes walkeri* – male; body size 3.9–4.5 mm

**Sl. 98.4:** *Trichoermes walkeri* – samec; n. v. 3,9–4,5 mm

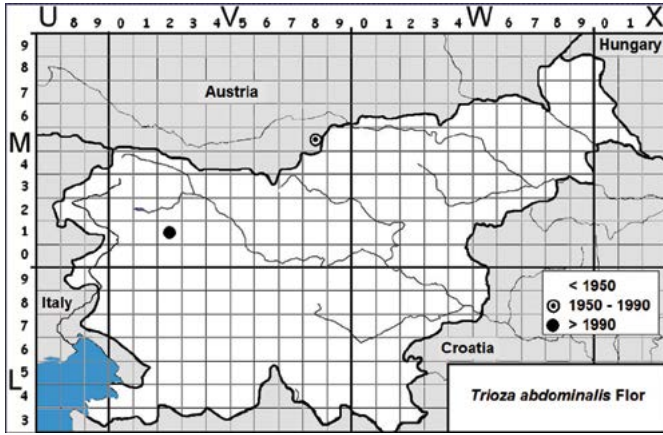


Fig. 99.1: *Trioza abdominalis* – recorded distribution in Slovenia

Sl. 99.1: *Trioza abdominalis* – znana razširjenost v Sloveniji



Fig. 99.2: *Achillea millefolium*

Sl. 99.2: Navadni rman

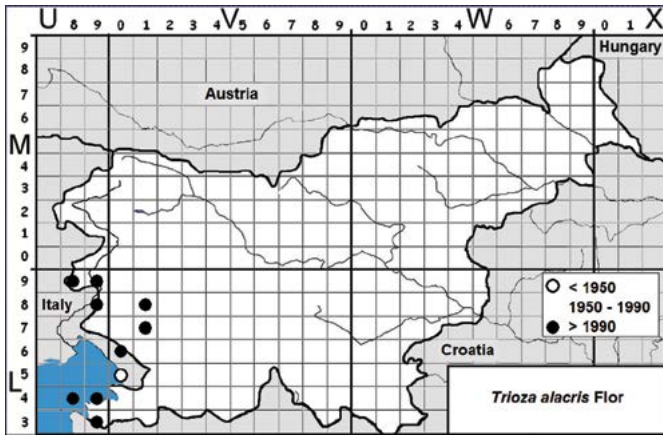


Fig. 100.1: *Trioza alacris* – recorded distribution in Slovenia

Sl. 100.1: *Trioza alacris* – znana razširjenost v Sloveniji



Fig. 100.2: *Laurus nobilis* – male plant

Sl. 100.2: *Laurus nobilis* – moška rastlina



Fig. 100.3: *Trioza alacris* – a galled leaf of *L. nobilis* with nymphal exuvia

Sl. 100.3: *Trioza alacris* – list lovorja s šiško z nimfnimi levki





**Fig. 100.4:** *Trioza alacris* – female;  
body size 3.4–4.0 mm

**Sl. 100.4:** *Trioza alacris* – samica;  
n. v. 3,4–4,0 mm



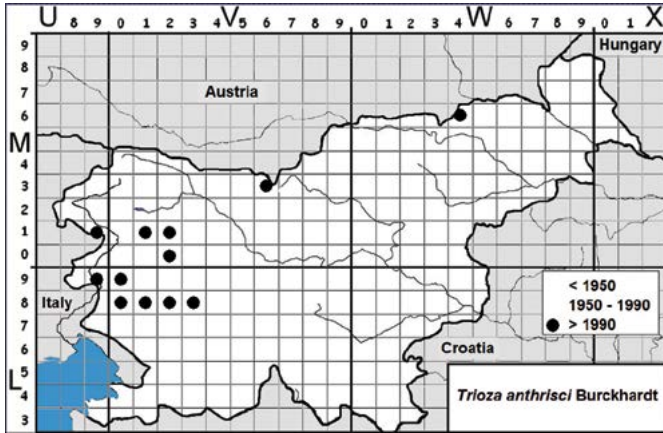
**Fig. 100.5:** *Trioza alacris* – male;  
body size 3.1–3.9 mm

**Sl. 100.5:** *Trioza alacris* – samec;  
n. v. 3,1–3,9 mm



**Fig. 100.6:** *Trioza alacris* – fifth  
instar nymph

**Sl. 100.6:** *Trioza alacris* – nimfa  
pete razvojne stopnje



**Fig. 101.1:** *Trioza anthrisci* – recorded distribution in Slovenia  
**Sl. 101.1:** *Trioza anthrisci* – znana razširjenost v Sloveniji



**Fig. 101.2:** *Anthriscus sylvestris*  
**Sl. 101.2:** Gozdna krebuljica



**Fig. 101.3:** *Trioza anthrisci* – overwintering female; body size 2.8–3.1 mm

**Sl. 101.3:** *Trioza anthrisci* – prezimujoča samica; n. v. 2,8–3,1 mm



**Fig. 101.4:** *Trioza anthrisci* – fresh summer female; body size 2.8–3.1 mm

**Sl. 101.4:** *Trioza anthrisci* – mlada polenta samica; n. v. 2,8–3,1 mm

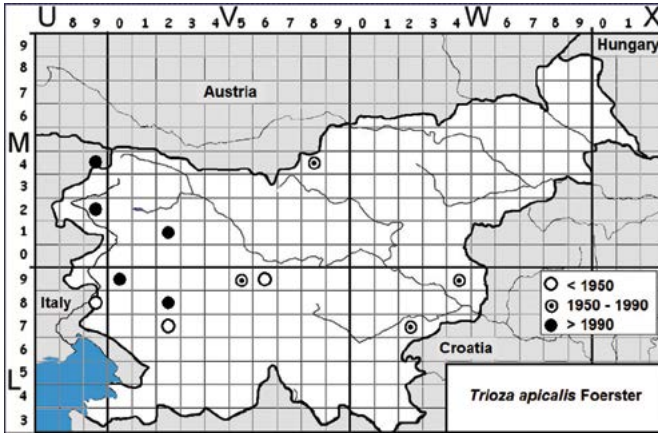


Fig. 102.1: *Trioza apicalis* – recorded distribution in Slovenia

Sl. 102.1: *Trioza apicalis* – znana razširjenost v Sloveniji



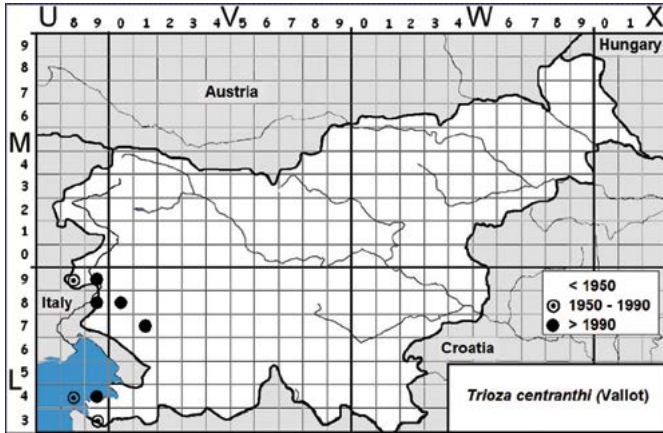
Fig. 102.2: *Daucus carota*

Sl. 102.2: Navadno korenje



Fig. 102.3: *Trioza apicalis* – female; body size 2.7–3.0 mm

Sl. 102.3: *Trioza apicalis* – samica; n. v. 2,7–3,0 mm



**Fig. 103.1:** *Trioza centranthi* – recorded distribution in Slovenia  
**Sl. 103.1:** *Trioza centranthi* – znana razširjenost v Sloveniji



**Fig. 103.2:** *Centranthus ruber*  
**Sl. 103.2:** Navadna rdeča špajka



**Fig. 103.3:** *Trioza centranthi* – female; body size 2.7–3.2 mm  
**Sl. 103.3:** *Trioza centranthi* – samica; n. v. 2,7–3,2 mm



**Fig. 103.4:** *Trioza centranthi* – male; body size 2.6–2.8 mm  
**Sl. 103.4:** *Trioza centranthi* – samec; n. v. 2,6–2,8 mm



**Sl. 103.5:** *Trioza centranthi* –  
nimfa pete razvojne stopnje

**Fig. 103.5:** *Trioza centranthi* –  
fifth instar nymph



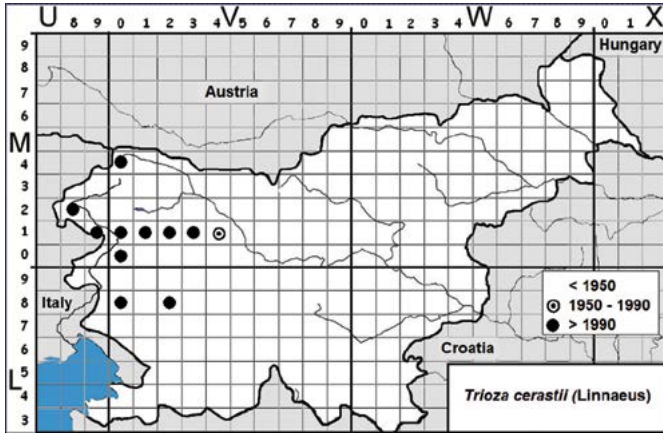
**Fig. 103.6:**  
*Trioza centranthi* – eggs

**Sl. 103.6:**  
*Trioza centranthi* – jajčeca



**Fig. 103.7:** *Trioza centranthi* – a  
leaf-roll gall on *Centranthus ruber*

**Sl. 103.7:** *Trioza centranthi* –  
šiškasto zavihan rob lista navadne  
rdeče špajke



**Fig. 104.1:** *Trioza cerastii* – recorded distribution in Slovenia  
**Sl. 104.1:** *Trioza cerastii* – znana razširjenost v Sloveniji



**Fig. 104.2:** *Cerastium strictum*  
**Sl. 104.2:** Toga smiljka



**Fig. 104.3:** *Trioza cerastii* – female; body size 2.7–3.0 mm

**Sl. 104.3:** *Trioza cerastii* – samica; n. v. 2,7–3,0 mm



**Fig. 104.4:** *Trioza cerastii* – male; body size 2.5–2.8 mm

**Sl. 104.4:** *Trioza cerastii* – samec; n. v. 2,5–2,8 mm

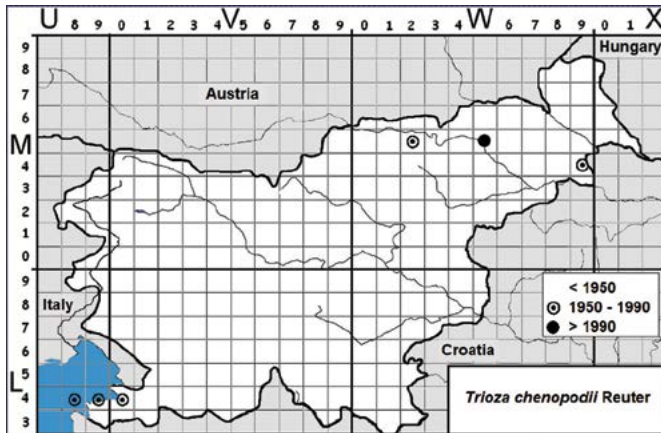


Fig. 105.1: *Trioza chenopodii* – recorded distribution in Slovenia

Sl. 105.1: *Trioza chenopodii* – znana razširjenost v Sloveniji



Fig. 105.2: *Chenopodium album*

Sl. 105.2: Bela metlika

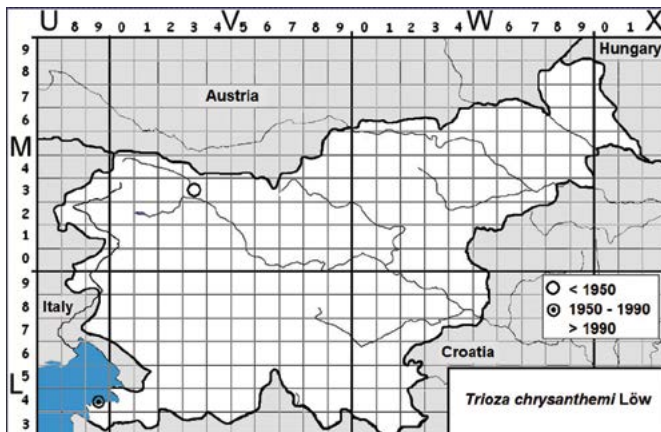


Fig. 106.1: *Trioza chrysanthemii* – recorded distribution in Slovenia

Sl. 106.1: *Trioza chrysanthemii* – znana razširjenost v Sloveniji



Fig. 106.2: *Leucanthemum* sp.  
(photo: M. Skok)

Sl. 106.2: Ivanjščica

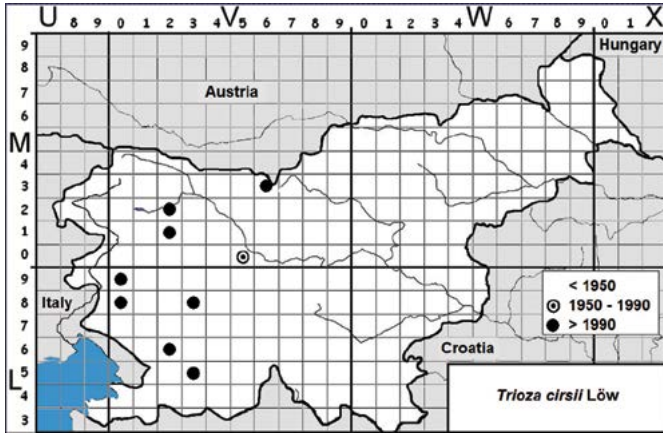


Fig. 107.1: *Trioza cirsi* – recorded distribution in Slovenia

Sl. 107.1: *Trioza cirsi* – znana razširjenost v Sloveniji



Fig. 107.2: *Cirsium oleraceum*

Sl. 107.2: Mehki osat



Fig. 107.3: *Trioza cirsi* – female; body size 2.8–3.1 mm

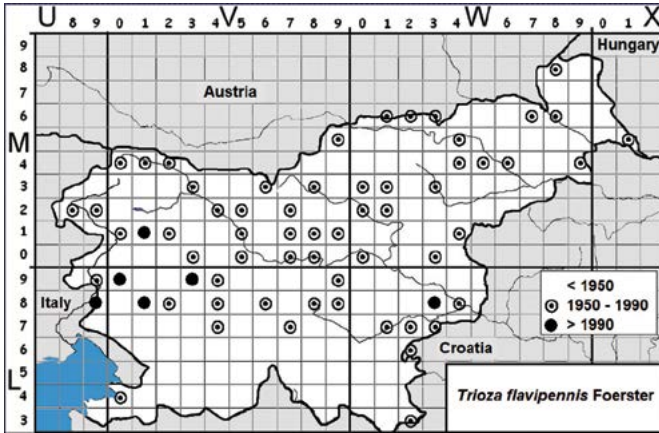
Sl. 107.3: *Trioza cirsi* – samica; n. v. 2,8–3,1 mm



Fig. 107.4: *Trioza cirsi* – male; body size 2.7–3.0 mm

Sl. 107.4: *Trioza cirsi* – samec; n. v. 2,7–3,0 mm





**Fig. 108.1:** *Trioza flavipennis* – recorded distribution in Slovenia

**Sl. 108.1:** *Trioza flavipennis* – znana razširjenost v Sloveniji



**Fig. 108.2:**

*Aegopodium podagraria*

**Sl. 108.2:** Navadna regačica



**Fig.108.3:** *Trioza flavipennis* – female; body size 2.7–3.1 mm

**Sl.108.3:** *Trioza flavipennis* – samica; n. v. 2,7–3,1 mm



**Fig.108.4:** *Trioza flavipennis* – pit-galls on a leaf of *A. podagraria*

**Sl.108.4:** *Trioza flavipennis* – šiške na listu navadne regačice



**Fig. 108.5:** *Trioza flavipennis* – an egg in a pit-gall on the lower leaf-side

**Sl. 108.5:** *Trioza flavipennis* – jajčece odloženo v jamičasto šiško na spodnji strani lista

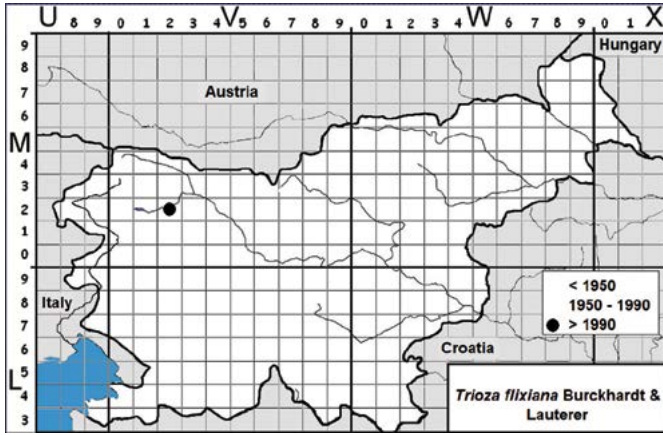


Fig. 109.1: *Trioza flixiana* – recorded distribution in Slovenia  
 Sl. 109.1: *Trioza flixiana* – znana razširjenost v Sloveniji



Fig. 109.2: *Cirsium spinosissimum*  
 Sl. 109.2: Trnati osat

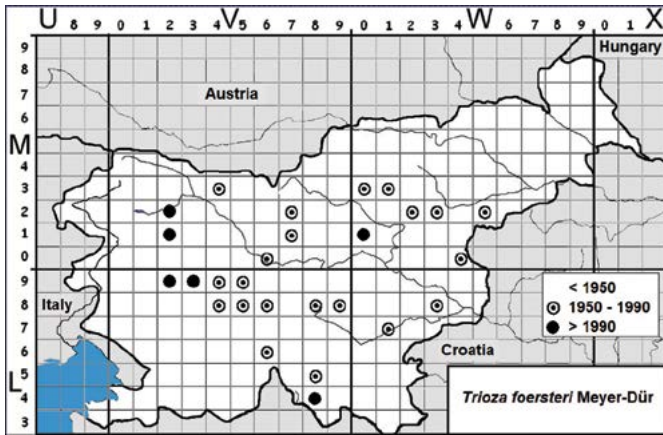


Fig. 110.1: *Trioza foersteri* – recorded distribution in Slovenia  
 Sl. 110.1: *Trioza foersteri* – znana razširjenost v Sloveniji



Fig. 110.2: *Aposeris foetida*  
 Sl. 110.2: Navadna smrdljivka



Fig. 110.3: *Trioza foersteri* – male;  
 body size 2.4–2.6 mm  
 Sl. 110.3: *Trioza foersteri* – samec;  
 n. v. 2,4–2,6 mm



**Fig.110.4:** *Trioza foersteri* – fifth instar nymphs

**Sl.110.4:** *Trioza foersteri* – nimfe pete razvojne stopnje



**Fig.110.5:** *Trioza foersteri* – eggs in pit-galls on the lower leaf-side of *A. foetida*

**Sl.110.5:** *Trioza foersteri* – jajčeca odložena v jamičaste šiške na spodnji strani lista navadne smrdljivke



**Fig.110.6:** *Trioza foersteri* – pit-galls on a leaf of *A. foetida* induced by egg-laying females

**Sl.110.6:** *Trioza foersteri* – šiške na listu navadne smrdljivke, katerih nastanek sproži samica pri odlaganju jajčec

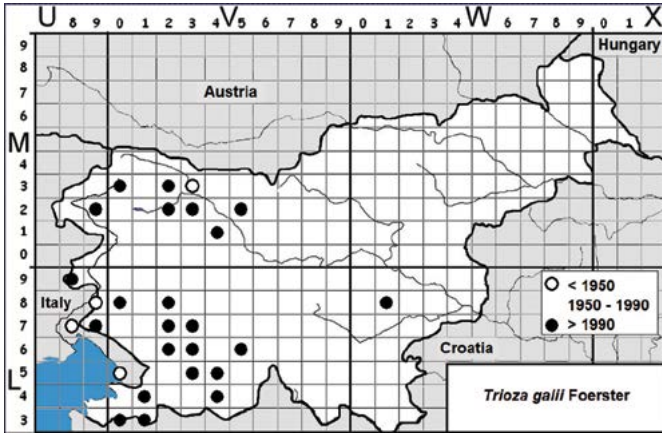


Fig. 111.1: *Trioza galli* – recorded distribution in Slovenia  
 Sl. 111.1: *Trioza galli* – znana razširjenost v Sloveniji



Fig. 111.2: *Gallium lucidum*  
 Sl. 111.2: Bleščeča lakota



Fig. 111.3: *Trioza galli* – male; body size 2.2–2.7 mm  
 Sl. 111.3: *Trioza galli* – samec; n. v. 2,2–2,7 mm

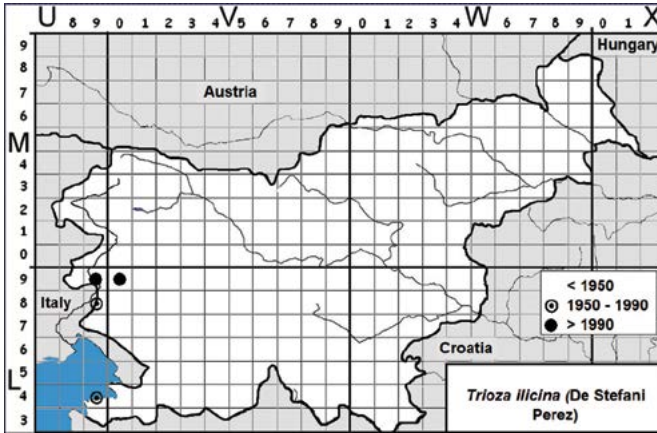


Fig. 112.1: *Trioza ilicina* – recorded distribution in Slovenia

Sl. 112.1: *Trioza ilicina* – znana razširjenost v Sloveniji



Fig. 112.2: *Quercus ilex*  
 (photo: M. Skok)

Sl. 112.2: Črničevje



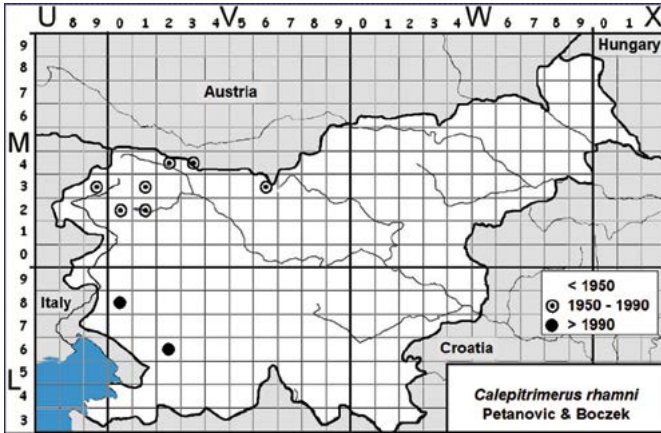
Fig. 112.3: *Trioza ilicina* – fifth instar nymph

Sl. 112.3: *Trioza ilicina* – nimfa pete razvojne stopnje



Fig. 112.4: *Trioza ilicina* – pit-galls on a leaf of *Quercus ilex* inhabited by nymphs

Sl. 112.4: *Trioza ilicina* – šiške na listu črničevja z naseljenimi nimfami



**Fig. 113.1:** Distribution of the eriophide mite *Calipitrimerus rhamni* in Slovenia, erroneously recorded as *Trioza kiefferi* by Janežič (1989).

**Sl. 113.1:** Razširjenost pršice šiškarice *Calipitrimerus rhamni* v Sloveniji, katerih šiške je Janežič (1989) napačno pripisal bolšici *Trioza kiefferi*



**Fig. 113.2:** *Rhamnus alpina* subsp. *fallax*

**Sl. 113.2:** Kranjska kozja češnja



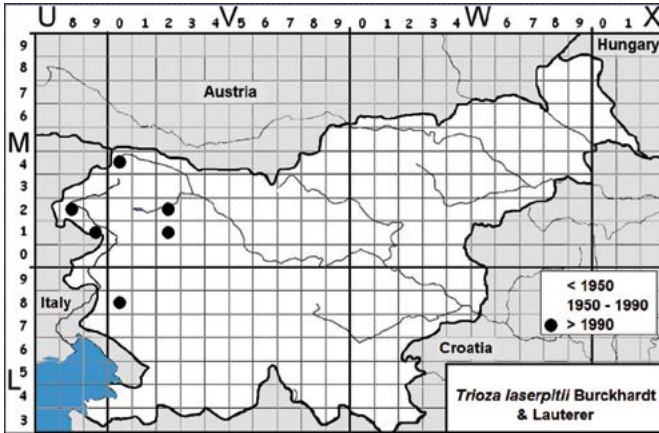
**Fig. 113.3:** Galls on the upper side of leaves of *Rh. alpinus* subsp. *fallax* caused by the mite *Calipitrimerus rhamni*

**Sl. 113.3:** Šiške na zgornji strani lista kranjske kozje češnje, ki jih povzroča pršica *Calipitrimerus rhamni*



**Fig. 113.4:** *Calipitrimerus rhamni* – galls on the upper side of leaves (detail)

**Sl. 113.4:** *Calipitrimerus rhamni* – šiške na zgornji strani lista (izrez)



**Fig. 114.1:** *Trioza laserpitii* – recorded distribution in Slovenia  
**Sl. 114.1:** *Trioza laserpitii* – znana razširjenost v Sloveniji



**Fig. 114.2:** *Laserpitium latifolium*  
**Sl. 114.2:** Širokolistni jelenovec



**Fig. 114.3:** *Trioza laserpitii* – female; body size 2.8–3.1 mm  
**Sl. 114.3:** *Trioza laserpitii* – samica; n. v. 2,8–3,1 mm

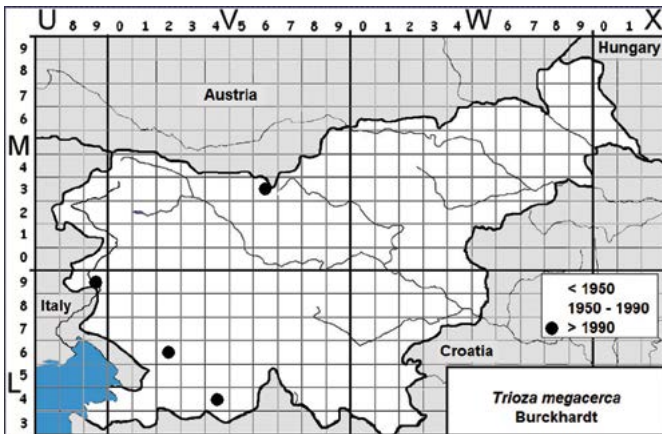


**Fig. 114.4:** *Trioza laserpitii* – male; body size 2.6–2.9 mm  
**Sl. 114.4:** *Trioza laserpitii* – samec; n. v. 2,6–2,9 mm



**Fig. 114.5:** *Trioza laserpitii* – fifth instar nymph and exuvium of the previous instar

**Sl. 114.5:** *Trioza laserpitii* – nimfa pete razvojne stopnje in levek prejšnje razvojne stopnje



**Fig. 115.1:** *Trioza megacerca* – recorded distribution in Slovenia

**Sl. 115.1:** *Trioza megacerca* – znana razširjenost v Sloveniji



**Fig. 115.2:** *Trioza megacerca* – male; body size 2.4–2.7 mm

**Sl. 115.2:** *Trioza megacerca* – samec; n. v. 2,4–2,7 mm



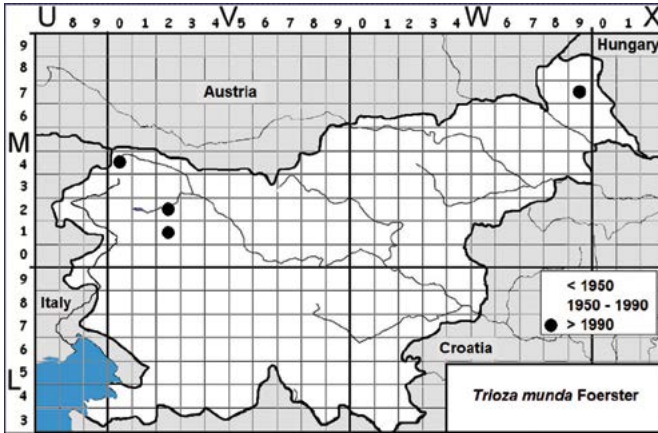


Fig. 116.1: *Trioza munda* – recorded distribution in Slovenia

Sl. 116.1: *Trioza munda* – znana razširjenost v Sloveniji



Fig. 116.2: *Scabiosa lucida*

Sl. 116.2: Bleščechi grintavec



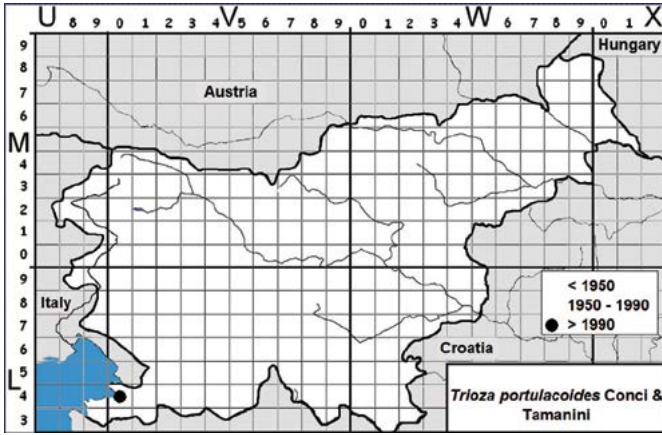
Fig. 116.3: *Trioza munda* – female;  
body size 3.0–3.4 mm

Sl. 116.3: *Trioza munda* – samica;  
n. v. 3,0–3,4 mm



Fig. 116.4: *Trioza munda* – male;  
body size 2.9–3.2 mm

Sl. 116.4: *Trioza munda* – samec;  
n. v. 2,9–3,2 mm



**Fig. 117.1:** *Trioza portulacoides* – recorded distribution in Slovenia  
**Sl. 117.1:** *Trioza portulacoides* – znana razširjenost v Sloveniji



**Fig. 117.2:** *Atriplex portulacoides*  
**Sl. 117.2:** Tolščakasta loboda



**Fig. 117.3:** *Trioza portulacoides* – female; body size 2.5–2.6 mm  
**Sl. 117.3:** *Trioza portulacoides* – samica; n. v. 2,5–2,6 mm



**Fig. 117.4:** *Trioza portulacoides* – male; body size 2.3–2.5 mm  
**Sl. 117.4:** *Trioza portulacoides* – samec; n. v. 2,3–2,5 mm

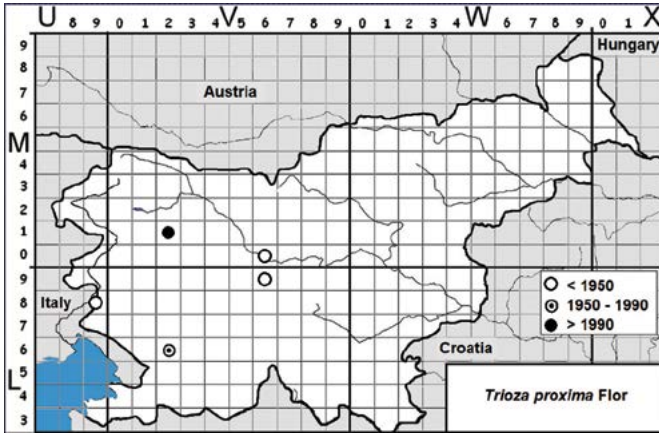


Fig. 118.1: *Trioza proxima* – recorded distribution in Slovenia

Sl. 118.1: *Trioza proxima* – znana razširjenost v Sloveniji



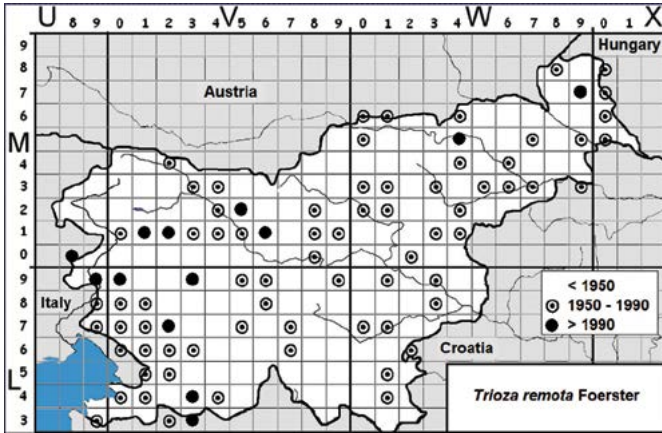
Fig. 118.2: *Hieracium pilosella*

Sl. 118.2: Dolgodlakava škržolica



Fig. 118.3: *Trioza proxima* – female; body size 2.0–2.2 mm

Sl. 118.3: *Trioza proxima* – samica; n. v. 2,0–2,2 mm



**Fig. 119.1:** *Trioza remota* – recorded distribution in Slovenia  
**Sl. 119.1:** *Trioza remota* – znana razširjenost v Sloveniji



**Fig. 119.2:** *Quercus petraea*  
**Sl. 119.2:** Gradec



**Fig. 119.3:** *Trioza remota* – female;  
 body size 3.6–4.0 mm  
**Sl. 119.3:** *Trioza remota* – samica;  
 n. v. 3,6–4,0 mm



**Fig. 119.4:** *Trioza remota* – male;  
 body size 3.3–3.6 mm  
**Sl. 119.4:** *Trioza remota* – samec;  
 n. v. 3,3–3,6 mm

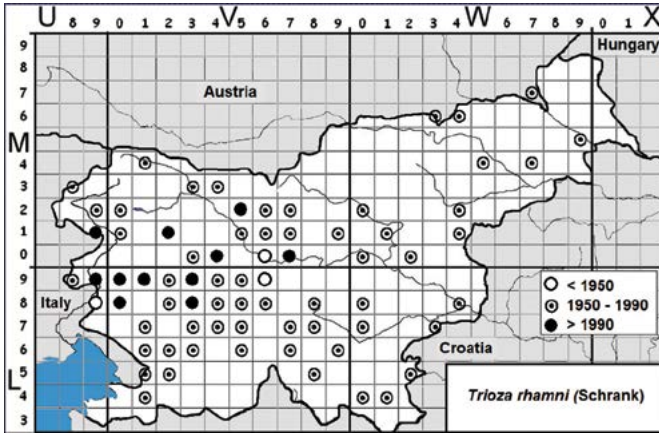


Fig. 120.1: *Trioza rhamni* – recorded distribution in Slovenia

Sl. 120.1: *Trioza rhamni* – znana razširjenost v Sloveniji



Fig. 120.2: *Rhamnus catharticus*

Sl. 120.2: Čistilna kozja češnja



Fig. 120.3: *Trioza rhamni* – female; body size 2.9–3.7 mm

Sl. 120.3: *Trioza rhamni* – samica; n. v. 2,9–3,7 mm



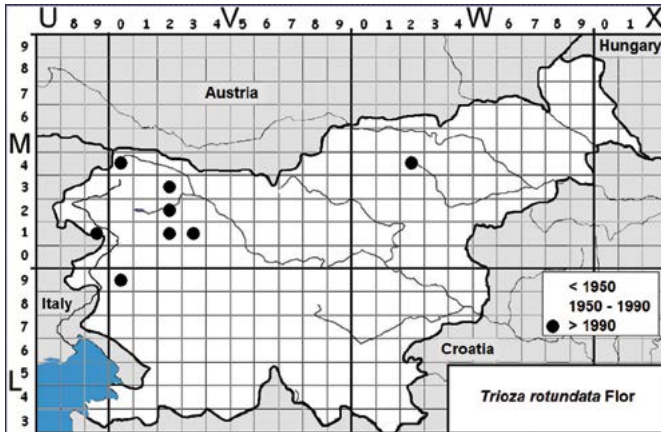
Fig. 120.4: *Trioza rhamni* – male; body size 2.8–3.3 mm

Sl. 120.4: *Trioza rhamni* – samec; n. v. 2,8–3,3 mm



**Fig. 120.5:** *Trioza rhamni* – pit-galls induced by egg-laying female on a leaf of *R. cathartica*

**Sl. 120.5:** *Trioza rhamni* – šiške na listu čistilne kozje češnje, katerih nastanek sproži samica pri odlaganju jajčec



**Fig. 121.1:** *Trioza rotundata* – recorded distribution in Slovenia

**Sl. 121.1:** *Trioza rotundata* – znana razširjenost v Sloveniji



**Fig. 121.2:** *Cardamine amara*

**Sl. 121.2:** Grenka penušā



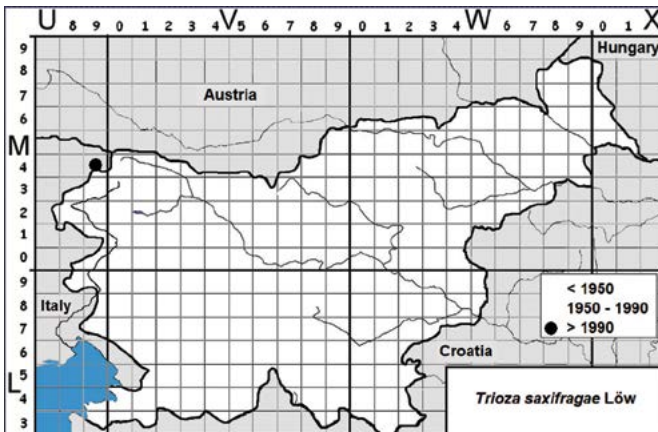
**Fig. 121.3:** *Trioza rotundata* – female; body size 2.5–3.2 mm

**Sl. 121.3:** *Trioza rotundata* – samica; n. v. 2,5–3,2 mm



**Fig. 121.4:** *Trioza rotundata* – male; body size 2.4–3.0 mm

**Sl. 121.4:** *Trioza rotundata* – samec; n. v. 2,4–3,0 mm



**Fig. 122.1:** *Trioza saxifragae* – recorded distribution in Slovenia

**Sl. 122.1:** *Trioza saxifragae* – znana razširjenost v Sloveniji



**Fig. 122.2:** *Saxifraga paniculata*

**Sl. 122.2:** Grozdasti kamnokreč



**Fig. 122.3:** *Trioza saxifragae* – female; body size 2.3–2.6 mm

**Sl. 122.3:** *Trioza saxifragae* – samica; n. v. 2,3–2,6 mm

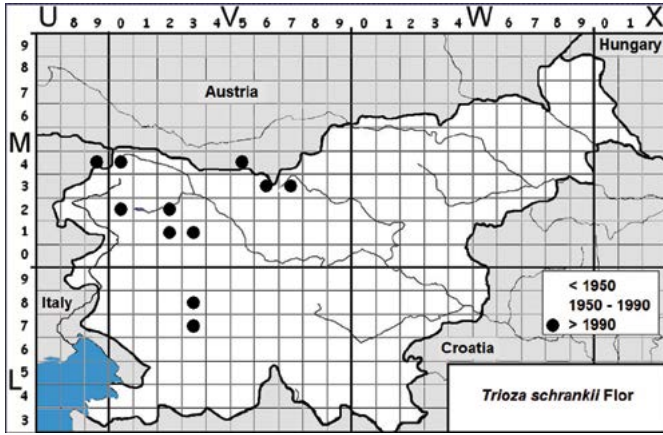


Fig. 123.1: *Trioza schrankii* – recorded distribution in Slovenia

Sl. 123.1: *Trioza schrankii* – znana razširjenost v Sloveniji



Fig. 123.2: *Astrantia major*

Sl. 123.2: Veliki zali kobilček



Fig. 123.3: *Trioza schrankii* – female; body size 2.7–3.1 mm

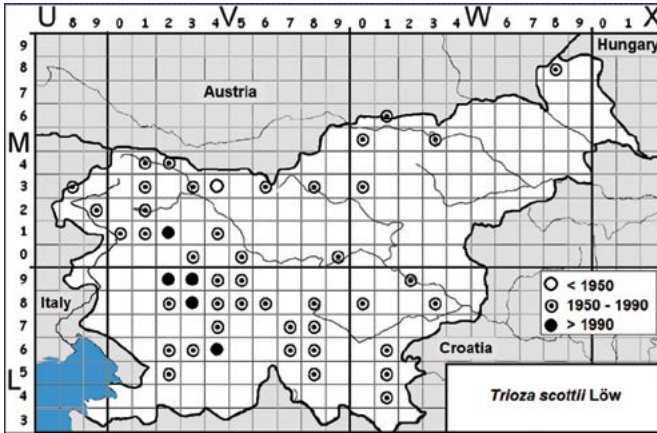
Sl. 123.3: *Trioza schrankii* – samica; n. v. 2,7–3,1 mm



Fig. 123.4: *Trioza schrankii* – mating

Sl. 123.4: *Trioza schrankii* – parjenje





**Fig. 124.1:** *Trioza scottii* – recorded distribution in Slovenia  
 SI. 124.1: *Trioza scottii* – znana razširjenost v Sloveniji



**Fig. 124.2:** *Berberis vulgaris*  
 SI. 124.2: Navadni češmin



**Fig. 124.3:** *Trioza scottii* – fifth and second instar nymphs  
 SI. 124.3: *Trioza scottii* – nimfe pete in druge razvojne stopnje

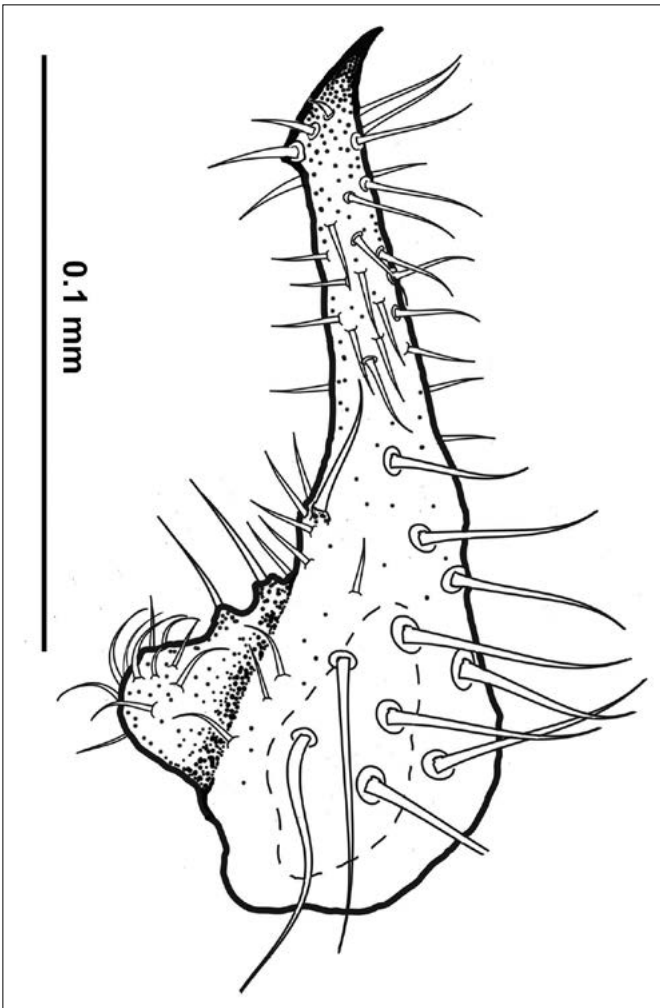


**Fig. 124.4:** *Trioza scottii* – second and fourth instar nymphs  
 SI. 124.4: *Trioza scottii* – nimfe druge in četrte razvojne stopnje



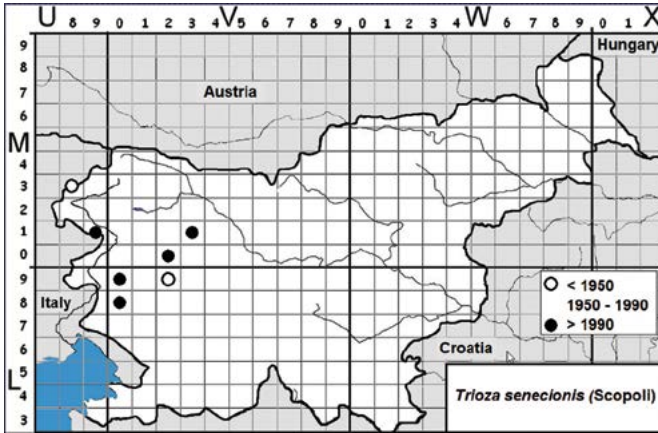
**Fig. 124.5:** *Trioza scottii* – pit-galls induced by egg-laying females on leaves of *Berberis vulgaris*

**Sl. 124.5:** *Trioza scottii* – šiške na listu češmina, katerih nastanek povzroča samica pri odlaganju jajčec



**Fig. 124.6:** *Trioza scottii* – right paramere (posterior view; orig.)

**Sl. 124.6:** *Trioza scottii* – desna paramera (pogled od zadaj; orig.)



**Fig. 125.1:** *Trioza senecionis* – recorded distribution in Slovenia  
**Sl. 125.1:** *Trioza senecionis* – znana razširjenost v Sloveniji



**Fig. 125.2:** *Senecio ovatus*  
**Sl. 125.2:** Fuchsov grint



**Fig. 125.3:** *Trioza senecionis* – female; body size 2.8–3.2 mm  
**Sl. 125.3:** *Trioza senecionis* – samica; n. v. 2,8–3,2 mm

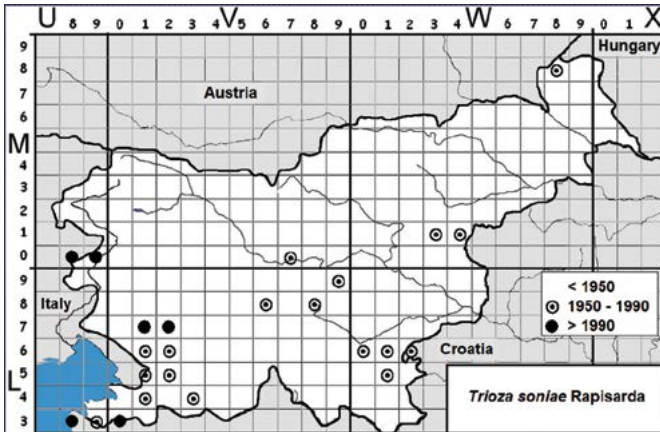


**Fig. 125.4:** *Trioza senecionis* – male; body size 3.2–3.4 mm  
**Sl. 125.4:** *Trioza senecionis* – samec; n. v. 3,2–3,4 mm



**Fig. 125.5:** *Trioza senecionis* – fifth instar nymphs

**Sl. 125.5:** *Trioza senecionis* – nimfi pete razvojne stopnje



**Fig. 126.1:** *Trioza soniae* – recorded distribution in Slovenia

**Sl. 126.1:** *Trioza soniae* – znana razširjenost v Sloveniji



**Fig. 126.2:** *Quercus cerris*

**Sl. 126.2:** Cer



**Fig. 126.3:** *Trioza soniae* – female; body size 3.5–4.1 mm

**Sl. 126.3:** *Trioza soniae* – samica; n. v. 3,5–4,1 mm



**Fig. 126.4:** *Trioza soniae* – male;  
body size 3.3–3.7 mm

**Sl. 126.4:** *Trioza soniae* – samec;  
n. v. 3,3–3,7 mm



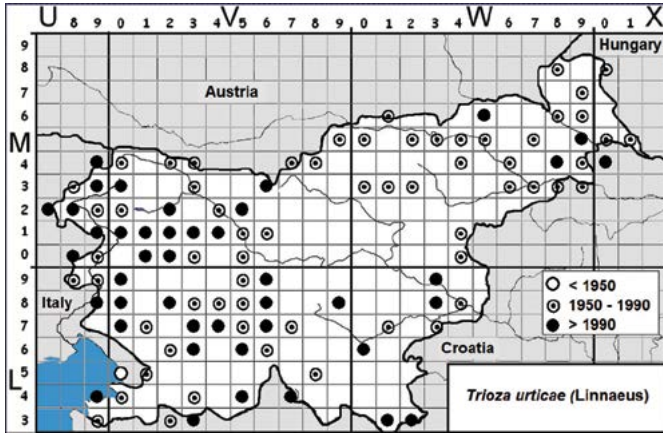
**Fig. 126.5:** *Trioza soniae* – fifth  
instar nymph

**Sl. 126.5:** *Trioza soniae* – nimfa  
pete razvojne stopnje



**Fig. 126.6:** *Trioza soniae* –  
pit-galls induced by egg-laying  
female on a leaf of *Quercus cerris*

**Sl. 126.6:** *Trioza soniae* – šiške  
na listu cera, katerih nastanek  
povzroča samica pri odlaganju  
jajčec



**Fig. 127.1:** *Trioza urticae* – recorded distribution in Slovenia  
**Sl. 127.1:** *Trioza urticae* – znana razširjenost v Sloveniji



**Fig. 127.2:** *Urtica dioica*  
**Sl. 127.2:** Velika kopriva



**Fig. 127.3:** *Trioza urticae* – female; body size 3.3–3.5 mm

**Sl. 127.3:** *Trioza urticae* – samica; n. v. 3,3–3,5 mm



**Fig. 127.4:** *Trioza urticae* – male; body size 3.0–3.4 mm

**Sl. 127.4:** *Trioza urticae* – samec; n. v. 3.0–3.4 mm

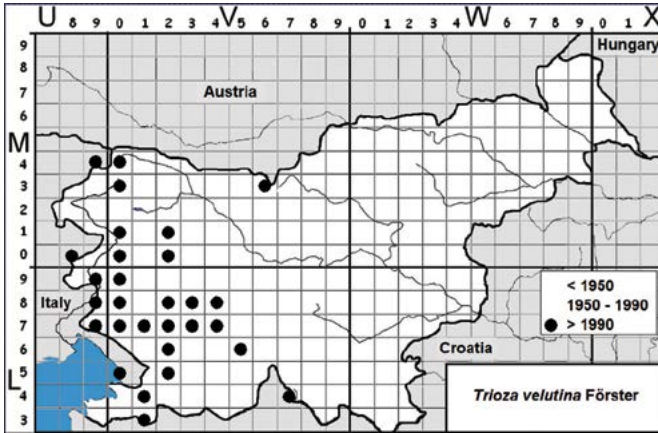


Fig. 128.1: *Trioza velutina* – recorded distribution in Slovenia

Sl. 128.1: *Trioza velutina* – znana razširjenost v Sloveniji



ig. 128.2: *Galium lucidum*

Sl. 128.2: Bleščeca lakota



Fig. 128.3: *Trioza velutina* – female; body size 2.4–2.8 mm

Sl. 128.3: *Trioza velutina* – samica; n. v. 2,4–2,8 mm



Fig. 128.4: *Trioza velutina* – eggs

Sl. 128.4: *Trioza velutina* – jajčeci

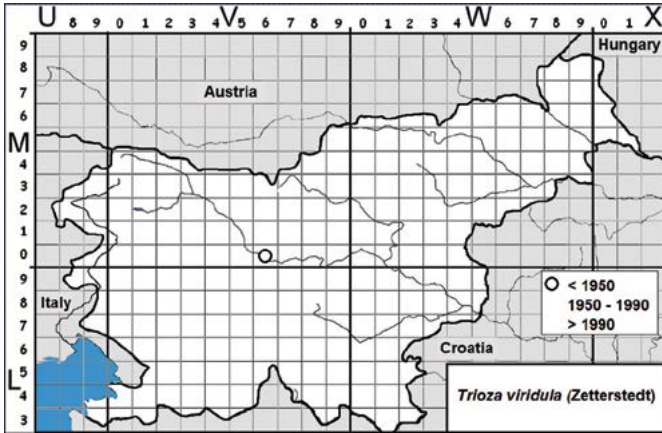


Fig. 129.1 *Trioza viridula* – its occurrence recorded by Flor (1861b)

Sl. 129.1 *Trioza viridula* – pojavljanje povzeto po Flor-u (1861b)