

## AN OVERVIEW OF THE CURRENT KNOWLEDGE OF JUMPING PLANT-LICE OF SLOVENIA (HEMIPTERA: PSYLLOIDEA)

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**Abstract** - A list of the jumping plant-lice (Psylloidea) species recorded in Slovenia is given: 100 species have been found of which 44 are new to the Slovenian fauna. The records of *Trioza kiefferi* Giard were based on misidentification, and the species is considered as absent from Slovenia.

KEY WORDS: Hemiptera, Psylloidea, fauna, Slovenia

### **Izveštaj** - PREGLED TRENUTNEGA POZNAVANJA BOLIČNIC SLOVENIJE (HEMIPTERA: PSYLLOIDEA)

Predstavljen je pregleden seznam boličnic (Psylloidea), ki so bile doslej ugotovljene na ozemlju Slovenije. Seznam vsebuje stare zapise in nove podatke za 100 vrst. Od teh je 44 novih za favno Slovenije. Stari podatki za vrsto *Trioza kiefferi* Giard temeljijo na napačnih določitvah, zato je vrsta izločena iz seznama.

KLJUČNE BESEDE Hemiptera, Psylloidea, favna, Slovenija

### **Introduction**

Psyllids or jumping plant-lice are very small insects whose size in European species usually varies from 1,5 to 4,5 mm in length. They are exclusively phytophagous sap-sucking insects (Ossiannilsson, 1992). In general, they are highly host specific and are mostly associated with only one single plant species or with a very restricted number of closely related host plants. There are very few European species which can be characterized as polyphagous (e.g. *Bactericera nigricornis*). From this point of view, it is possible to predict the occurrence of the associated psyllid species based on the distribution data of their host plants. Some psyllids are also known as serious pests of cultivated plants - e.g. *Cacopsylla pyri* (Pollini, 1998;

Vrabl & Matis, 1977), *C. pyrisuga* (Pollini, 1998, Janež 1951) *Cacopsylla mali* (Janež 1951) *Acizzia jamatonica* (Alma & al., 2002, Seljak & al., 2004), *Euphyllura olivina* (Pollini; 1998, Chermiti, 1992). Some of them are known to be important vectors of harmful phytoplasma diseases of crop plants - e.g. *Cacopsylla pyri* (Lemoine, 1991, Carraro & al. 1998a), *C. pyricola* (Jensen & al., 1964), *C. pruni* (Carraro & al., 1998b, Jarausch, 2001), *C. melanoneura* (Tedeschi & Alma, 2004), *C. picta* (Frisinghelli & al., 2000; Jarausch & al. 2003).

As long ago as 1888 Franz Lj. made the most comprehensive overview of psyllids occurring in the territory of the former Austrian-Hungarian monarchy, which includes also the territory of the present Slovenia (Lj., 1888). This remains until now the only specialized work dealing with psyllids in the territory of Slovenia. In that work, 37 species belonging to the family Psyllidae and 14 species of Triozidae, collected within the Slovene territory are recorded. Most of the data Lj. included were provided by Franz Then, who collected psyllids in the surroundings of Lesce (Less) and Bled (Valdes) and by Andor Hensch, who worked and collected in the surroundings of Gorica (Gj., Gorizia). The type material of at least three species originates from these two collecting areas. The type material

**Fig. 1:** *Camarotoscena subrubescens* Lj. adult.

**Fig. 2:** *Acizzia jamatonica* - two adults and a nymph sucking on leaf of *Albizia julbrissin*.

**Fig. 3:** *Cacopsylla pyrisuga* - nymphs visited by ants.

**Fig. 4:** *Trioza alacris* Gj. gall on *Laurus nobilis* leaf caused by nymphs.

of *Psyllopsis meliphila* Ličw, 1881 originate unambiguously from the territory of Slovenia (Lesce, Bled), while the type locality of *Baeopelma colorata* (Ličw, 1888) and *Cacopsylla intermedia* (Ličw, 1888) is problematic, because the region is divided between Slovenia and Italy at present. Officially, Italy is the typical area but the type material was quite probably collected on the Slovene side as well.

Gričfe (1911) also contributed some faunistic records, which mostly refer to the area round Tolmin.

Almost exactly hundred years later Franc Janež summarized his seventeen years' investigations on plant galls of Slovenia, also providing a large amount of distribution data concerning 25 species of Psylloidea (Janež 1989). Some of his records require a confirmation or even revision according to the modern taxonomic view. However, as his identifications were based mainly on the host plant and the gall form only and as far as I know, no documentary collection is available, it is almost impossible to confirm his records with reference to the more critical species.

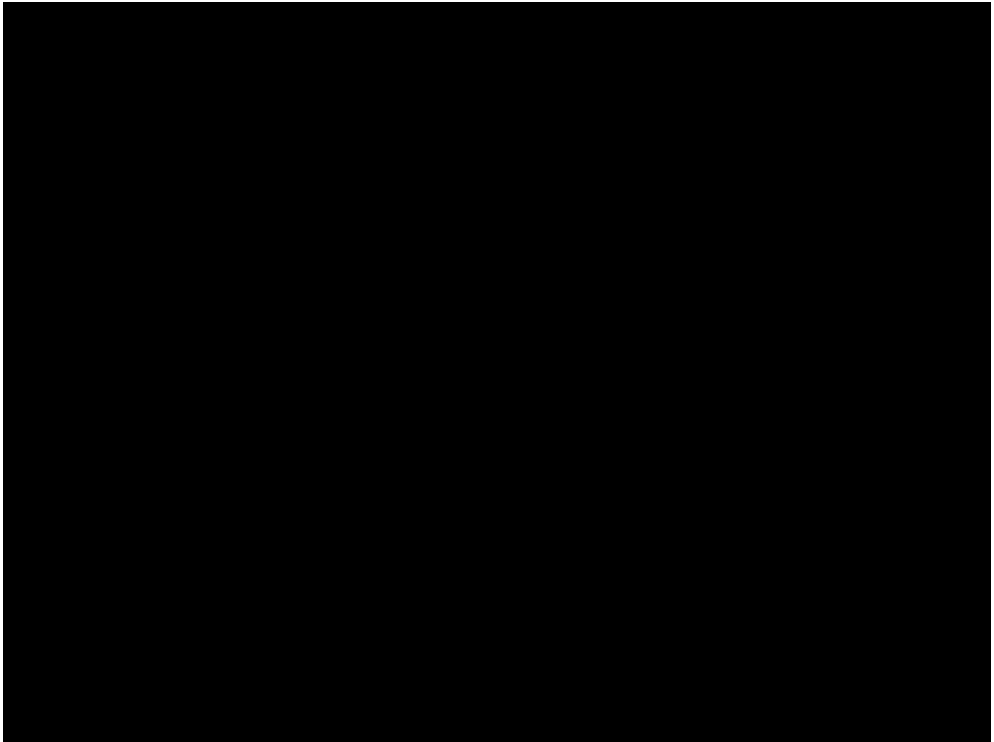
There are also some other reports dealing with pear psyllids (e.g. *Cacopsylla pyri*, *C. pyrisuga*) in Slovenia, but mainly only from the agricultural point of view (Vrabl & Matis, 1977). Knowledge of the diversity of psyllids and their distribution in Slovenia is still incomplete and in general poorly investigated. The intention of this overview is to summarize and confirm records of psyllids previously known to occur in Slovenia. In addition, my own data gathered in the last few years have been included.

## Methods

Faunistic investigations by the author on the psyllids of Slovenia have been carried out in the past five years. Material has mainly been collected intentionally, by looking for adults and the fifth instar nymphs on their host or shelter plants, but partly also unintentionally during collecting trips of plant- and leafhoppers. Sweep-netting and beating methods were mainly used to obtain adults from the host or shelter plants. Nymphs were collected together with their host plants in small plastic bags or picked up and preserved in 70 % ethanol in plastic tubes.

For the identification following work were mostly used: Ossiannilsson, 1992; Hodkinson & White, 1979; White & Hodkinson, 1982; Hodkinson & Hollis, 1987; Loginova, 1964; Klimaszewski, 1975; Haupt, 1935. Adults were dry mounted on specimen cards and are included in the author's collection. Fifth instar nymphs and sometimes younger nymphs were slide-mounted in Canada balsam as described by Hodkinson & White (1979). For an accurate identification, a stereomicroscope (Nikon SMZ-2B) and a compound microscope (Nikon Labophot-2) were applied.

In the table below data on Psylloidea hitherto known to occur in Slovenia are summarized. For each species the earlier records and their authors (Scopoli, 1763; Ličw, 1888; Gričfe, 1911; Janež 1989) are given. New distribution data provided by myself are given separately. For each species, the larval host plant(s) are listed as



**Fig. 5:** UTM grid of Slovenia and distribution of *Diaphorina chobauti* Puton as an example.

well. As it has been impossible to examine the original material of earlier collectors (e. g. Then, Hensch, Ličew), the older published data have been interpreted in the modern taxonomic view only when they have already been clarified by modern authors. When the locality was defined well enough, the corresponding 10x10-kilometre UTM quadrant has also been added (fig. 5). As the whole territory of Slovenia goes into the grid zone 33T, the zone designation of UTM quadrants is omitted.

Records referring to Gičez (Gorica or Gorizia, Italy) by Ličew (1888) are also included, because a considerable part of Hensch's collecting area around this border town belongs to the present Western Slovenia. This area includes at least the following UTM quadrants: UL89, UL98, UL99, VL08, and VL09.

The taxonomy and nomenclature of Psylloidea follows Burckhardt (2002). The nomenclature source for the names of vascular host plants was iMala flora Slovenije (Martinič & al., 1999). The host plant range for individual psyllid species were mostly taken from Ossiannilsson (1992), White & Hodkinson (1982), Conci, Rapisarda & Tamanini, 1992 and 1997 or Burckhardt (2002), but also some data based on my own observations were used.

## Abbreviations

**GS:** previously unpublished data; material collected and examined by the author.

**HP:** larval host plant

\* - Species discussed more in detail later in the text are marked with an asterisk.

## Results

### HOMOTOMIDAE Heslop-Harrison, 1958

#### *Homotoma ficus* (Linnaeus, 1767)

**Griffiths, 1911** Tolmin

**GS:** Kozana (UL89), 17.05.2003; Strunjan (UL94), 12.09.2003; Nova Gorica (UL99), 10.06.1999 and 18.07.2001; Kromberk (UL99), Kanal (UM90), 05.06.2005; 02.09.2004; Brje pri Komnu (VL07), 07.06.2003; Most na Soči (VM01), 16.08.2003; widespread and common in SW Slovenia.

**HP:** *Ficus carica* (Moraceae)

### CALOPHYIDAE Vondrič, 1957

#### *Calophya rhois* (Lj. W., 1878)

**Janežič, 1989** in 48 localities, a large majority of them belong to the SW submediterranean part of Slovenia;

**GS:** Krkavci (UL93), 02.04.2005; Strunjan (UL94), 22.06.2001; Lokvica - 215 m (UL97), 08.05.2005; Vale pri Brestovici (UL97), 08.05.2005; Opatje selo (UL98), 01.09.2001; Fojana (UL89), 10.06.2005; Sabotin (UL99), 23.05.1999; Podsabotin (UL99), 25.04.2004; Ravnica (UL99), 03.10.2004; Slejki - 450 m (VL08), 29.04.2005; i. mihel - 450 m (VL08), 31.03.2002; Lokev (VL15), 22.09.200; Dolga poljana - 350 m (VL18), 22.04.2005.

**HP:** *Cotinus coggygria* (Anacardiaceae)

### PSYLLIDAE Latreille, 1807

#### LIVIINAE Lj. W., 1878

#### *Livia junci* (Schränk, 1789)

**Lj. W., 1888** Lesce; Ljubljana; Gorica

**Janežič, 1989** Podsabotin (UL99)

**GS:** Panovec (UL98), 10.09.2000; Nova Gorica (UL98), 18.06.2005; Podsabotin (UL99); Podčrklje (UM83), 16.09.2002; i. mihel (VL08), 08.04.2005; Planinsko polje (VL47), 28.06.2001; Tolmin (VM01), 12.10.2002; Pokljuka - i. ječ (VM23), 2.9.2005; Ledine - Jelovica (VM32), 3.9.2005; Volovjek - 1040 m (VM72), 30.07.2005.

**HP:** *Juncus* spp. (Juncaceae)

### EUPHYLLURINAE Crawford, 1914

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

**GS:** Fjesa (UL84), 16.06.1997; Sežana (UL93), 16.08.2004; Dragonja (UL93), 10.8.2005; Gaičana (UL94), 25.06.1994; Rtičana Ronek (UL94), 10.8.2005; otherwise quite common on olive trees in the coastal area; sometimes it may appear as a minor pest.

**HP:** *Olea europaea* (Oleaceae)

#### RHINOCOLINAE Vondrič, 1957

*Agonoscena succincta* (Heeger, 1856)

**GS:** Ravnica (UL99), 12.10.2003; Grgar - 300 m (UL99), 18.07.2004 on *Ruta divaricata* Ten.

**HP:** *Ruta graveolens* *R. divaricata* (Rutaceae)

*Agonoscena targionii* (Lichtenstein, 1874)

**Janežič, 1989** Vipava (VL17); Branik (VL07); Kostanjevica na Krasu (UL97); Osp (VL14); on curled leaves of *Pistacia terebinthus*.

**GS:** Brestovica na Krasu -140m (UL97), 08.05.2005 on *Pistacia terebinthus*.

**HP:** *Pistacia terebinthus*, *Pistacia lentiscus*

*Rhinocola aceris* (Linnaeus, 1758)

**GS:** Kromberk (UL99), 02.08.2002 ič on *Acer campestre*; Banjšice - Kuk (VL09), 18.07.2004; Krn - 1100 m (UM92), 05.07.2003 ič on *Acer platanoides*.

**HP:** *Acer* spp. (Aceraceae)

#### PAUROCEPHALINAE Vondrič, 1963

\**Camarotoscena speciosa* (Flor, 1861)

**Janežič, 1989** Dragonja? (UL93); ič marje pri Kopru? (VL04); Bertoki (VL04) (?); Dekani (VL04) (?); Prečnica (VL14); Neblo (UL89) (?); Skalnica (UL99) (?); Solkan (UL99) (?); Grgar (UL99) (?); Slovenj Gradec (WM05); Vojnik (WM52); Pragersko (WM53); Poljčane (WM54); Kidričovo (WM63); Videm ob Očavnici (WM75); Ivanjkovci (WM84); Lendava (XM15).

**GS:** Ajba (UM90), 05.06.2005

**HP:** *Populus nigra* (Salicaceae)

\**Camarotoscena subrubescens* (Flor, 1861)

**Ličič, 1888** Gorica (Gičev)

**GS:** Solkan (UL99), 07.07.2005; Panovec (UL98), 09.07.2005; Kanal (UM90), 05.07.2003; Dolga poljana - 350 m (VL18), 20.06.2003.

**HP:** *Populus nigra*, *P. alba* (Salicaceae)

#### STROPHINGIINAE White & Hodkinson, 1985

*Strophingia ericae* (Curtis, 1835)

**Ličič, 1888** Gorica

**GS:** Smrečje (VL39), 12.06.2002 on *Erica carnea*; Smrekovec - 1500 m (VM94), 22.06.2002 on *Calluna vulgaris*

**HP:** *Calluna vulgaris* (Ericaceae)

#### APHALARINAE Ličič, 1878

*Aphalara avicularis* Ossiannilsson, 1981

- GS:** Leskovec (WL38), 10.07.2004; Velika vas pri Križkem (WL38), 10.07.2004;  
**HP:** *Polygonum aviculare* (Polygonaceae)  
\**Aphalara calthae* (Linnaeus, 1761)  
**Lišev, 1888** Ljubljana  
**Grišar, 1911** Tolmin  
**GS:** Pokljuka - 1250 m (VM23), 02.09.2005  
**HP:** *Caltha palustris* (Ranunculaceae)  
*Aphalara crispicola* Ossiannilsson, 1987  
**GS:** Vipava (VL17), 03.10.2002.  
**HP:** *Rumex crispus*, *R. obtusifolius*, *R. aquaticus*, *R. conglomeratus* (Polygonaceae)  
*Aphalara freji* Burckhardt & Lauterer, 1997  
**GS:** Lukini (VL13), 24.9.2005 on *Polygonum lapathifolium*; Panovec (UL98), 14.8.2005; Ajčevica (UL98), 01.08.2004; Jurčinci (WM74), 16.09.2004; Čadovinec (WL38), 10.7.2004.  
**HP:** *Polygonum persicaria*, *P. lapathifolium*, *P. hydropiper*, *P. amphibium*  
*Aphalara longicaudata* Wagner & Franz, 1961  
**GS:** Vrišče - 1400 m (VM04), 23.07.2002  
**HP:** *Polygonum bistorta* (Polygonaceae).  
*Aphalara sauteri* Burckhardt, 1983  
**GS:** Lepena - 600 m (UM93), 26.08.2001; Vogel - Čegarjev graben (VM02), 05.08.1999 (swept from *Oxyria digyna*).  
**HP:** *Rumex scutatus*, *Oxyria digyna* (?) (Polygonaceae)  
*Craspedolepta conspersa* (Lišev, 1888)  
**GS:** Izola (UL94), 10.8.2005; Panovec (UL98), 14.8.2005; Kromberk (UL99), 29.08.2003; Breginj - 550 m (UM72), 22.08.2003; Lepena - 700 m (UM92), 22.08.2003; Ajčevica (VL08), 02.08.2003 and 19.08.2004; Nanos - 900 m (VL27), 20.08.2004; Grgar (UL99), 18.06.2005.  
**HP:** *Artemisia vulgaris* (Asteraceae)  
*Craspedolepta flavipennis* (Foerster, 1848)  
**GS:** Sinji vrh - 980 m (VL18), 12.08.2001; Komna - 1520 m (VM02), 02.08.1999; Zadnja Trenta (VM03), 24.07.2005; Vrišče - 1400 m (VM04), 23.07.2002; Labinje - 670 m (VM21), 20.07.2003; Labinje - 800 m (VM21), 22.08.2004; Blegoš - 1500 m (VM31), 29.07.2001; Smrekovec - 1350 m (VM94), 22.06.2002.  
**HP:** *Leontodon hispidus* (Lauterer & Burckhardt, 2004) (Asteraceae)  
*Craspedolepta nervosa* (Foerster, 1848)  
**GS:** Krn - 1100 m (UM92), 05.07.2003; Planina Razor (VM02), 07.07.2005.  
**HP:** *Achillea millefolium* s.l. (Asteraceae)  
\**Rhodochlanis bicolor* (Scott, 1880)  
**GS:** Strunjan (UL94), 12.09.2003; Črnojanski zatok (VL04), 24.9.2005  
**HP:** *Suaeda maritima* (Chenopodiaceae)

#### DIAPHORININAE Vondrič, 1951

\**Diaphorina chobauti* Puton, 1898



**GS:** Lokvica (UL97), 29.05.2004; Izvir Lijaka (VL09), 1.10.2005; Solkan (UL99), 21.05.2006; also Doberdob (UL87) - Italy, 9.6.2005, always swept from *Convolvulus cantabriga* L.

**HP:** *Convolvulus cantabriga* L., *Convolvulus* spp. (Convolvulaceae)

*Psyllopsis distinguenda* Edwards, 1913

**GS:** Bled (VM33), 19.08.2002.

**HP:** *Fraxinus excelsior* (Oleaceae)

\* *Psyllopsis fraxini* (Linnaeus, 1758)

**Ličič, 1888** Lesce

**Gričič, 1911** Tolmin

**Janežič, 1989** on *Fraxinus excelsior* and *F. oxycarpa* in 90 localities all over the country.

**GS:** Panovec (UL98), 21.08.2001 and 29.08.2003; Planina na Klinu - 900 m (UM72), 22.08.2003; Log ižica (UM83), 16.09.2002; Ajba (UM90), 05.06.2005; Kanal (UM90), 05.06.2005; Vojsko - 1050 m (VL19), 22.08.2003; Studeno (VL37), 06.06.1999; Bohinjska Bistrica (VM12), 19.08.2002; Nemiški rovt - 750 m (VM22), 14.08.2003; Senožeti (VL26), 19.06.2005.

**HP:** *Fraxinus excelsior*, *F. oxycarpa* (Oleaceae)

*Psyllopsis fraxinicola* (Foerster, 1848)

**Ličič, 1888** Kranjsko

**GS:** Ajba (UM90), 05.06.2005; Kanal (UM90), 05.06.2005; Banjšice - Humarji (UL99), 18.07.2004; Krn - 1100 m (UM92), 05.07.2003; Ljubljana (VL69), 22.05.2003; Spodnje Bukovo (VM11), 13.07.2002; Dolenji Novaki (VM21), 20.07.2003; Senožeti (VL26), 19.06.2005.

**HP:** *Fraxinus excelsior* (Oleaceae)

\* *Psyllopsis meliphila* Ličič, 1881

**Ličič, 1888** Lesce; type locality

**GS:** Gornje Cerovo (UL89), 10.07.2005; Sabotin - 600 m (UL99), 10.09.2002; Grgar - 300 m (UL99), 16.07.2004; Kromberk (UL99), 11.06.2005; Vrsno (UM91), 05.07.2003; Rabotnica (VL07), 30.06.2002; ižica vrata (VL07), 27.06.2003; Nanos - Rebernice 600 m (VL27), 06.07.2002; Matenja vas (VL36), 05.10.2004.

**HP:** *Fraxinus ornus* (Oleaceae)

#### ARYTAININAE Crawford, 1914

*Arytaina genistae* (Latreille, 1805)

**GS:** Počahova (WM55), 10.08.2004; captured on yellow sticky trap.

**HP:** *Cytisus scoparius*, *Genista tinctoria* (Fabaceae)

*Livilla horvathi* (Scott, 1879)

**Ličič, 1888** Hrači pri Postojni (VL37);

**HP:** *Chamaecytisus austriacus* (Fabaceae) (Hodkinson & Hollis, 1987), *Genista tinctoria* (Fabaceae)

*Livilla spectabilis* (Flor, 1861)

**GS:** ižmarje pri Kopru (VL04), 22.05.2002 and 11.09.2002; ižica (VL13), 11.05.2000 [S. Brelih leg.]; Sokolici (VL13), 24.9.2005.

**HP:** *Spartium junceum* (Fabaceae)



*Livilla ulicis* Curtis, 1836

**Ličuw, 1888** Gorica

**GS:** Orehek (VM11), 25.04.1999

**HP:** *Genista tinctoria*, *Ulex europaeus* (Fabaceae)

*Livilla variegata* (Ličuw, 1881)

**GS:** Sabotin - 400 m (UL99), 01.05.2001; Krn - 1100 m (UM92), 05.07.2003; Planina Stador - 1040 m (VM01), 07.07.2005; ičumi vrh - 1000 m (VM21), 20.07.2003; Labinje - 800 m (VM21), 22.08.2004.

**HP:** *Laburnum alpinum*, *L. anagyroides* (Fabaceae)

*Livilla vicina* (Ličuw, 1886)

**GS:** Lepena - 700 m (UM92), 22.08.2003

**HP:** *Genista radiata* (Fabaceae)

*Livilla vittipennella* (Reuter, 1875)

**Ličuw, 1888** Triglav (VM13); J. A. Palmič leg.

**GS:** Lepena - 700 m (UM92), 22.08.2003; Planina Razor - 1400 m (VM02), 07.07.2005; Izvir Soič (VM04), 23.07.2002; Kojca - 1000 m (VM11), 09.07.2000; Labinje - 800 m (VM21), 22.08.2004.

**HP:** *Genista radiata* (Fabaceae)

ACIZZIINAE White & Hodkinson, 1985

*Acizzia acaciaebaileyanae* (Froggatt, 1901)

**Seljak, 2004:** Vrtojba (UL98), 06.05.2002 on *Acacia baileyana* in a glasshouse; accidentally introduced with the planting material, probably from Italy, but has not established.

**HP:** *Acacia baileyana* (Mimosaceae)

*\*Acizzia jamatonica* (Kuwayama, 1908)

**Seljak, 2003:** east Palearctic species spread from Italy into SW Slovenia in 2001 or 2002.

**GS:** Vipolice (UL89), 25.04.2004; Strunjan (UL94), 12.09.2003; Nova Gorica (UL99), 27.07.2002, 02.08.2002; Solkan (UL99), 09.09.2002; Sabotin (UL99), 10.09.2002; Paljevo (UL99), 20.09.2003; Koper (VL04), 11.09.2002; Lucija (VL04), 11.07.2003; Vrtovice (VL17), 24.07.2003; Slap pri Vipavi (VL17), 12.07.2004.

**HP:** *Albizia julbrissin* (Mimosaceae)

PSYLLINAE Latreille, 1807

*Baeopelma colorata* (Ličuw, 1888)

**Ličuw, 1888** Gorica, type locality and type record.

**GS:** Lijak (UL99), 02.05.2002; Kromberk (UL99), 11.06.2005; Solkan (UL99), 05.05.2002; Nova Gorica (UL99), 02.08.2002 and 18.05.2003; Ravnica (UL99), 25.07.2003; Orlek - 345 m (VL05), 19.06.2005; ičmlezna vrata (VL07), 27.06.2003; ičmničke Ravne (VL08), 03.07.2004; Ajdovčica - Hubelj (VL18), 01.06.2002; Nanos - 950 m (VL27), 06.07.2002 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.

**HP:** *Ostrya carpinifolia* (Betulaceae)

*Baeopelma foersteri* (Flor, 1861)

**Ličuw, 1888** Gorica; Hračič pri Postojni (VL37); Lesce

**Gričfe, 1911** Tolmin

**GS:** Ročna dolina pri Novi Gorici (UL98), 12.07.2003 ; Kromberk (UL99), 11.06.2005; Banjšice - Kuk (VL09), 18.07.2004; Postojna (VL37), 06.06.1999; Labinje - 800 m (VM21), 22.08.2004; Murč (XM24), 26.07.2004.

**HP:** *Alnus glutinosa* (Betulaceae)

*Chamaepsylla hartigii* (Flor, 1861)

**GS:** Nova Gorica (UL99), 17.05.2003; ičadrg (VM01), 26.06.2004.

**HP:** *Betula* spp. (Betulaceae)

*Cacopsylla affinis* (Ličuw, 1880)

**GS:** Hoič pri Mariboru (WM45), 10.04.2002 [M. Lečnik leg.]

**HP:** *Crataegus* spp. (Rosaceae)

*Cacopsylla albipes* (Flor, 1861)

**Ličuw, 1888** Trnovski gozd

**GS:** Kromberk (UL99), 21.03.2002 and 04.04.2004 on *Sorbus domestica*.

**HP:** *Sorbus aucuparia*, *S. domestica* (Rosaceae)

*Cacopsylla ambigua* (Foerster, 1848)

**Ličuw, 1888** Gorica

**GS:** Kromberk (UL99), 28.04.2002; Panovec (UL98), 09.07.2005 on *Salix cinerea*; Zadnja Trenta (VM03), 24.7.2005 on *Salix eleagnos*.

**HP:** *Salix* spp. (Salicaceae)

*Cacopsylla bidens* (ičalc, 1907)

**GS:** Vedrijan (UL89), 26.05.2003; Nova Gorica (UL99), 09.05.2002.

**HP:** *Pyrus* spp. (Rosaceae)

*Cacopsylla breviantennata* (Flor, 1861)

**GS:** Dravograd, 04.05.2004; Kromberk (UL99), 10.12.2000 and 08.02.2001; ičmihel - 600 m (VL08), 31.03.2002; Kopitnik - 940 m (VL08), 31.12.2004; Lijak - 500 m (VL09), 02.05.2002; Pri Peč (VL09), 02.05.2004; Trnovo (VL09), 31.12.2004; Nanos - 900 m (VL26), 16.10.2001; Podkraj (VL28), 12.05.2002 and 30.05.2002; Strmica - Zaplana (VL48), 12.05.2002; Hudournik (VM10), 20.05.2001; Orehek (VM11), 25.04.1999; Spodnje Bukovo (VM11), 11.03.2001 and 29.04.2001; Labinje (VM21), 13.10.2002.

**HP:** *Sorbus aria*, *Amelanchier ovalis* (Rosaceae)

*Cacopsylla brunneipennis* (Edwards, 1896)

**GS:** Panovec (UL98), 12.05.2005; ični vrh nad Cerknim - 1230 m (VM21), 20.07.2003; Pohorski dvor (WM45), 12.05.2002 [M. Lečnik leg.]

**HP:** *Salix* spp. (Salicaceae)

*Cacopsylla crataegi* (Schrank, 1801)

**Ličuw, 1888** Gorica; Nanos (VL27); Lesce

**GS:** Skalnica - 320 m (UL99), 13.06.1999; Ravnica (UL99), 17.06.200; i%kabrijel (UL99), 21.03.2004; Kromberk (UL99), 04.04.2004; Lijak (VL09), 15.04.2001, 01.12.2002 and 09.11.2003; i%mihiel (VL08), 31.03.2002; Gozd - 800 m (VL18), 25.05.1999; Vojsko - 1050 m (VL19), 23.08.2003; Podkraj - 850 m (VL28), 05.07.1999; Sanabor (VL28), 10.05.2002; common and widespread.

**HP:** *Crataegus* spp. (Rosaceae)

*Cacopsylla intermedia* (Li%w, 1888)

**Li%w, 1888** Gorica; type locality and type record.

**HP:** *Salix purpurea* (Salicaceae)

*Cacopsylla iteophila* (Li%w, 1876)

**GS:** Tolmin (VM01), 11.04.2004 and 03.04.2005; Kanal ob Soi%o (UM90), 03.04.2005 and 05.06.2005 i%always on *Salix elaeagnos*.

**HP:** *Salix elaeagnos*, *S. fragilis* (Salicaceae)

*Cacopsylla mali* (Schmidberg, 1836)

**Li%w, 1888** Lesce; Bela pei%o

**GS:** common and widespread throughout the whole territory, e. g.: Lepena - 700 m (UM92), 22.08.2003; Vojsko - 1050 m (VL19), 23.08.2003; Strmica pri Zaplani (VL48), 12.05.2002; Ljubljana (VL69), 22.05.2003; Rakitnica (VL85), 25.08.2003; U%nik (VM01), 13.07.2002; i%adrg (VM01), 26.06.2004; Spodnje Bukovo (VM11), 13.07.2002; i%ni vrh nad Cerknim - 1230 m (VM21), 20.07.2003;

**HP:** *Malus* spp. (Rosaceae)

*Cacopsylla melanoneura* (Foerster, 1848)

**Li%w, 1888** Gorica; Ljubljana.

**GS:** one of the most common species, widespread throughout the country, e. g.: i%odelin (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; i%mihiel - 450 m (VL08), 31.3.2002; Lijak (VL09), 9.11.2003; Voli%o - 175 m (VM01), 3.4.2005; Jesenica (VM11), 25.4.1999; Labinje - 670 m (VM21), 20.7.2003; i%ni vrh - 1230 m (VM21), 20.7.2003; Sorii%ka planina - 1300 m (VM22), 19.8.2002 and 19.9.2004; Dolga poljana - 350 m (VL18), 22.4.2005; Hotedri%ica (VL38), 11.6.2003; Smrekovec - 1350 m (VM94), 22.6.2002; Pohorski dvor (WM45), 22.3.2001; Ho%o pri Mariboru (WM45), 10.4.2002.

**HP:** *Crataegus* spp., *Malus* spp., *Pyrus* spp., *Mespilus germanica* (Rosaceae)

*Cacopsylla peregrina* (Foerster, 1848)

**GS:** Kromberk (UL99), 26.08.2002; Banji%ice - Humarji (UL99), 18.07.2004; Col - 750 m (VL28), 16.06.2004; Smrei%je (VL39), 12.06.2002; Most na Soi%o (VM01), 16.08.2003; Labinje - 670 m (VM21), 20.07.2003 and 22.08.2004; i%kofja Loka - Pui%al (VM41), 02.06.2003.

**HP:** *Crataegus* spp. (Rosaceae)

*Cacopsylla picta* (Foerster, 1848) [= *Psylla costalis* Flor, 1861]

**Li%w, 1888** Ljubljana

**GS:** Kromberk (UL99), 07.04.2002 and 04.04.2004; Podkraj (VL28), 12.05.2002; Jesenica (VM11), 25.04.1999; Golubinjek - 200 m (WM40), 27.04.2005; probably wider spread, but not common.

**HP:** *Malus* spp. (Rosaceae)

*Cacopsylla pruni* (Scopoli, 1763)

**Scopoli, 1763:** Idrija; type record.

**Lišinski, 1888** Gorica; Ljubljana; Lesce

**GS:** very common and widespread, e. g.: Krkavčica (UL93), 02.04.2005; Stara Gora (UL98), 15.07.2000; Skalnica - 320 m (UL99), 13.06.1999; ižabrijel (UL99), 21.03.2002 and 07.04.2002; Kromberk (UL99), 04.04.2004; Nova Gorica (UL99), 11.04.2004; Krn - 1100 m (UM92), 05.07.2003; ižokjan (VL04), 01.06.2001; Ajčevica (VL08), 03.05.2003; Ajčevica (VL08), 22.04.2004; ižmotič (VL14), 30.05.2004 and 19.06.2004; Sinji vrh - 980 m (VL18), 12.08.2001; Vremska dolina (VL35), 07.07.2000; Postojna (VL37), 06.06.1999; Hotedričica (VL38), 25.05.1999 and 10.05.2002; Spodnje Bukovo (VM11), 29.04.2001; Poč (VM21), 25.04.1999; Hoč pri Mariboru (WM45), 10.04.2002 [M. Lešnik leg.];

**HP:** *Prunus armeniaca*, *P. cerasifera*, *P. domestica*, *P. institia*, *P. persica*, *P. salicina*, *P. spinosa* (Rosaceae)

*Cacopsylla pulchella* (Lišinski, 1877)

**GS:** Snelčno (UL89), 01.06.2005; Kromberk (UL99), 13.05.1999; ižabrijel (UL99), 08.02.2001; Nova Gorica (UL99), 28.04.2001 and 04.05.2002; Lijak (UL99), 01.12.2002; Zemono (VL17), 04.05.1999; adults often drifted very far away from the larval host plant and found on conifers even above 1000 m a.s.l. [e.g. Sorička planina 1270 m (VM22), 19.09.2004; Planina Razor - 1300 m (VM02), 08.07.2005]

**HP:** *Cercis siliquastrum* (Cesalpiniaceae)

*Cacopsylla pulchra* (Zetterstedt, 1838)

**GS:** Dragonja (UL93), 02.04.2005; Loke (UL99), 03.05.2003; Nova Gorica (UL99), 17.04.2004; Kanal ob Soči (UM90), 03.04.2005; Ajčevica (VL08), 06.05.2001 and 14.03.2004; Trnovo (VL09), 31.12.2004; Tolmin (VM01), 11.04.2004, 03.04.2005; probably widespread all over the territory.

**HP:** *Salix* spp. (Salicaceae)

*Cacopsylla pyri* (Linnaeus, 1761)

**Lišinski, 1888** Gorica; Kranjsko.

**Vrabl et al. 1976:** widespread throughout the territory; sometimes a very harmful pest in pear orchards;

**GS:** common in pear orchards and widespread throughout the whole territory.

**HP:** *Pyrus* spp. (Rosaceae)

*Cacopsylla pyricola* (Foerster, 1848)

**Lišinski, 1888** Lesce

**Janežič et al. 1989:** widespread throughout the whole territory;

**GS:** Nova Gorica (UL99), 09.03.2003; Tolmin (VM01), 12.10.2002 and 25.05.2003; ižadrg (VM01), 26.06.2004; Spodnje Bukovo (VM11), 11.03.2001 and

13.07.2002; Labinje - 700 m (VM21), 20.07.2003; widespread, but not very common, mainly in weakly cultivated orchards without any insecticide use.

**HP:** *Pyrus* spp. (Rosaceae)

*Cacopsylla pyrisuga* (Foerster, 1848)

**Lišinski, 1888** Gorica; Ljubljana

**Janežič, 1989** on leaves and shoots of pears throughout the whole territory;

**Vrabič et al. 1976:** widespread, but less common than *Cacopsylla pyri*.

**GS:** ižica (UL93), 15.05.2005; Bilje (UL98), 03.05.1999; Nova Gorica (UL99), 02.05.2001; Kromberk (UL99), 04.04.2004; Kanal (UM90), 05.06.2005; Podkraj (VL28), 12.05.2002; Tolmin (VM01), 25.05.2003; ižica (VM01), 26.06.2004; ižica (VM10), 25.06.2003; Spodnje Bukovo (VM11), 29.04.2001; Labinje (VM21), 25.04.1999; widespread and common.

**HP:** *Pyrus* spp. (Rosaceae)

*Cacopsylla rhamnicola* (Scott, 1876)

**GS:** Krn - 1100 m (UM92), 05.07.2003; Planina Razor (VM02), 07.07.2005; Nanos - 900 m (VL27), 26.07.2002; Matenja vas (VL36), 05.10.2004; ižica vrh nad Cerknim - 1240 m (VM21), 20.07.2003.

**HP:** *Rhamnus cathartica*, *Rhamnus fallax* (Rhamnaceae)

*Cacopsylla saliceti* (Foerster, 1848)

**Lišinski, 1888** Gorica (UL98)

**GS:** Sorška planina - 1300 m (VM22), 19.09.2004 (on *Picea excelsa*); ižica jezero - 1200 m (WM34), 25.07.2004.

**HP:** *Salix* spp. (Salicaceae)

*Cacopsylla sorbi* (Linnaeus, 1767)

**GS:** Zadnja Trenta (VM03), 24.07.2005; Cimprovka - 1200 m (VM21), 30.06.2000 and 23.08.2004; Sorška planina - 1300 m (VM22), 19.08.2002; Gorjuičica - 1000 m (VM22), 14.08.2003.

**HP:** *Sorbus aucuparia* (Rosaceae)

*Cacopsylla ulmi* (Foerster, 1848)

**GS:** Kromberk (UL99), 02.08.2002; Nova Gorica (UL99), 26.08.2002; Smrekovec - 1350 m (VM94), 22.06.2002.

**HP:** *Ulmus* spp. (Ulmaceae)

*Cacopsylla viburni* (Lišinski, 1876)

**GS:** Kromberk (UL99), 02.08.2002; Lijak (VL09), 06.04.2003; Pri peči (VL09), 12.07.2002; Godovčica (VL38), 16.06.2004.

**HP:** *Viburnum lantana* (Sambucaceae)

*Cacopsylla visci* (Curtis, 1835)

**GS:** Golubinjek - 200 m (WM40), 27.04.2005; Poklek - 350 m (WL49), 27.04.2005; Ptujška Gora (WM53), 05.05.2001 [M. Lešnik leg.]; in East-Slovenia may be rather common.

**HP:** *Viscum album* (Viscaceae)

*Psylla alni* (Linnaeus, 1758)

**Lišinski, 1888** Postojna (VL37); Prebold (WM02)

**Gričnik, 1911** Tolmin

**GS:** common and widespread throughout the whole territory; e. g. Vodice (UL99), 20.09.2003; Banjšice (VL09), 18.07.2004; Podnanos (VL27), 15.05.2002; Postojna (VL37); 06.06.1999; Planinsko polje (VL47), 28.06.2001; Bistra (VL48), 16.06.2004; Jesenica - 800 m (VM11), 10.07.2000; Spodnje Bukovo (VM11), 13.07.2002; Bohinjska Bistrica (VM12), 19.08.2002; Dolenji Novaki (VM21), 28.05.2000; Labinje (VM21), 13.10.2002 and 22.08.2004; Nemški rovt - 750 m (VM22), 14.08.2003.

**HP:** *Alnus glutinosa*, *A. incana* (Betulaceae)

*Psylla alpina* Foerster, 1848

**GS:** Planina Razor - 1310 m (VM02), 07.07.2005; Planina Stador - 1040 m (VM01), 07.07.2005; Porezen - 1600 m (VM21), 18.08.1999; Cimprovka - 1200 m (VM21), 28.05.2000 and 23.08.2004; Smrekovec - 1370 m (VM94), 22.06.2002.

**HP:** *Alnus viridis* (Betulaceae)

*Psylla fusca* (Zetterstedt, 1828)

**Liš., 1888** Stol (VM34)

**GS:** Črni vrh nad Cerknim - 1200 m (VM21), 20.07.2003; Kočutnik (Karavanke) (VM54) [S. Brelj leg.]; Logarska dolina - 790 m (VM73), 30.07.2005.

**HP:** *Alnus incana* (Betulaceae)

*Psylla buxi* (Linnaeus, 1758)

**Janežič, 1989** recorded from 67 localities throughout the whole territory.

**GS:** Gorjansko - 197 m (UL97), 06.08.2005; Nova Gorica (UL99), 27.04.1998, and 03.07.2003; Zemono (VL17), 07.08.2005; Bled (VM33), 19.08.2002.

**HP:** *Buxus sempervirens* (Buxaceae)

*Spanioneura fonscolombii* Foerster, 1848

**GS:** Gorjansko - 200 m (UL97), 06.08.2005

**HP:** *Buxus sempervirens* (Buxaceae)

#### TRIOZIDAE **Liš., 1878**

*Trichohermes walkeri* (Foerster, 1848)

**Liš., 1888** Gorica; Postojna; Lesce

**Janežič, 1989** in 134 localities throughout the whole territory;

**GS:** Log čezsoči (UM83), 16.09.2002; Lepena - 700 m (UM92), 22.08.2003; Vojsko - 1050 m (VL19), 23.08.2003; Nanos (VL27), 10.08.2000; Bohinjsko jezero (VM12), 03.08.1999

**HP:** *Rhamnus cathartica* (Rhamnaceae)

*\*Phylloplecta trisignata* (Liš., 1886)

**GS:** Parecag (UL93), 18.10.2004, captured on yellow sticky trap.

**HP:** *Rubus* spp. (Rosaceae)

*Bactericera albiventris* (Foerster, 1848)

**Liš., 1888** Gorica

**GS:** Dragonja (UL93), 02.04.2005; Krkavič (UL93), 02.04.2005; Čabrijel (UL99), 08.02.2001; Nova Gorica (UL99), 19.01.2003 and 13.03.2005; Kromberk - 300 m (UL99), 04.04.2004; Kopitnik - 940 m (VL08), 31.12.2004; Trnovo (VL09), 31.12.2004; Tolmin (VM01), 03.04.2005; Podčetrtek - 205 m (VM41), 27.04.2005.



**HP:** *Salix alba*, *S. fragilis*, *S. pentandra*, *S. triandra*, *S. purpurea* (Salicaceae)

*Bactericera curvatinervis* (Foerster, 1848)

**Lišajec, 1888** Lesce (?)

**GS:** Ajčevica (VL08), 28.4.2006 on *Salix cinerea*.

**HP:** *Salix* spp. (Salicaceae)

*Bactericera femoralis* (Foerster, 1848)

**Lišajec, 1888** Trnovski gozd; Lesce (as *Trioza acutipennis*)

**GS:** Planina Razor - 1310 m (VM02), 07.07.2005; Zadnja Trenta - 970 m (VM03), 24.07.2005; Vričevica 1400 m (VM04), 23.07.2002; Vojsko - 1040 m (VL19), 18.08.2001 and 23.08.2003; Nemiški rovt - 750 m (VM22), 14.08.2003; Grajska planina (VM23), 2.9.2005; Velika Planina - 1260 m (VM72), 30.07.2005; Smrekovec (VM93), 22.06.2002; Pesek - 1380 m (WM24), 25.07.2004; Kisovec - 1260 m (VM72), 30.07.2005.

**HP:** *Alchemilla* spp. (Rosaceae)

*Bactericera harrisoni* (Wagner, 1955)

**GS:** Zadnja Trenta (VM03), 24.07.2005; Pokljuka - ičevica (VM23), 2.9.2005; Ledine - Jelovica (VM32), 3.9.2005.

**HP:** ?

*Bactericera kratochvili* Vondracek, 1957

**GS:** ičmi kal (VL14), 24.9.2005; Sabotin (UL99), 10.09.2002; Skalnica (UL99), 21.05.2005; ičmiičve Ravne (VL08), 03.07.2004; Nanos - 950 m (VL27), 06.07.2002; Col - 720 m (VL28), 14.07.2001; Lepena - 700 m (UM92), 22.08.2003; ičarjevica (VL26), 20.06.2005.

**HP:** *Allium senescens* (Liliaceae)

*Bactericera modesta* (Foerster, 1848)

**Lišajec, 1888** Gorica, as *Trioza recondita* Flor, 1861

**GS:** Nanos - 900 m, 26.07.2002; Grgar (UL99), 31.08.2002

**HP:** *Sanguisorba officinalis*, *S. minor* (Rosaceae).

*Bactericera nigricornis* (Foerster, 1848)

**Lišajec, 1888** Gorica; Hračevica (VL36)

**GS:** Vrtojba (UL98), 19.11.2003 and 20.11.2003, nymphs on *Cichorium intybus*; Nova Gorica (UL99), 05.10.2002, nymphs on *Cichorium intybus*; Kanal (UM90), 05.07.2003; Lokve (VL09), 25.07.2003; Banjšice - Kuk (VL09), 18.07.2004; Slap pri Vipavi (VL17), 03.10.2002 on *Cichorium endivia*; Vojsko - 1050 m (VL19), 23.08.2003; Nanos - 950 m (VL27), 06.07.2002; Malo polje (VL28), 21.09.2003; Ratečovo brdo (VL35), 16.10.2003; Turški vrh (WM83), 20.09.2002.

**HP:** polyphagous

\*[?] *Bactericera perrisi* Puton, 1876

**Lišajec, 1888** Gorica, Trnovski gozd. These records may also refer to *B. kratochvili* and are in need of verification.

**HP:** *Artemisia campestris*, *A. alba* (Asteraceae)

*Bactericera striola* (Flor, 1861)

**Lišajec, 1888** Gorica, Lesce

**Gričec, 1911** Tolmin



**GS:** Nova Gorica (UL99), 03.04.2005; Lukini (VL13), 24.9.2005; Tolmin (VM01), 03.04.2005; Ajčevica (VL08), 02.08.2003 and 24.03.2005 on *Salix cinerea*; Trnovo (VL09), 31.12.2004 on *Pinus nigra*; Podnanos (VL27), 17.07.2005 on *Salix purpurea*; Ledine - Jelovica (VM32), 3.9.2005 on *Salix rosmarinifolia*.

**HP:** *Salix* spp. (Salicaceae)

*Trioza alacris* Flor, 1861

**GS:** common on *Laurus nobilis* in SW Slovenia; e.g. Snežno (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 and 09.06.2003; Pliskovica (VL06), 07.06.2003.

**HP:** *Laurus nobilis* (Lauraceae)

*Trioza anthrisci* Burckhardt, 1986

**GS:** Kucelj (VL08), 02.09.2002; Podkraj (VL28), 12.05.2002; Lanišče (VL38), 12.05.2002; Spodnje Bukovo (VM11), 14.05.2000 and 13.07.2002.

**HP:** *Anthriscus* spp., *Chaerophyllum* spp. (Apiaceae)

*Trioza apicalis* Foerster, 1848

**Liš., 1888** Gorica, Ljubljana, Nanos

**Janežič, 1989** antjerne (WL27); Pletanje (WL49)

**GS:** Krn - 1100 m (UM92), 05.07.2003; Labinje (VM21), 13.10.2002.

**HP:** *Daucus carota* and some other Apiaceae.

*Trioza centranthi* (Vallot, 1829)

**Janežič, 1989** Fjasa (UL84); Piran (UL84); Sečur (UL93); Cerovo (UL89)

**HP:** *Centranthus ruber* (Valerianaceae)

*Trioza cerastii* (Linnaeus, 1758)

**Janežič, 1989** Križna gora (VM41)

**GS:** Labinje - 670 m (VM21), 20.07.2003

**HP:** *Cerastium* spp. (Caryophyllaceae)

*Trioza chenopodii* Reuter, 1876

**Janežič, 1989** Fjasa (UL84); Koper (VL04); Strunjan (UL94); Ribnica na Pohorju (WM25); Vinski vrh pri Ormožu (WM94).

**GS:** Počukova (WM55), 10.08.2004

**HP:** *Chenopodium* spp., *Atriplex* spp. and some other Chenopodiaceae

*Trioza chrysanthemi* Liš., 1878

**Liš., 1888** Lesce

**Janežič, 1989** Strunjan (UL94)

**HP:** *Leucanthemum* spp. (Asteraceae)

*Trioza cirsii* Liš., 1881

**GS:** Ratečevo brdo (VL35), 16.10.2003, captured on yellow sticky trap.

**HP:** *Cirsium* spp.

[?] *Trioza dispar* Liš., 1878

**Janežič, 1989** in 30 localities in central and southern Slovenia, always on *Aposeris foetida*; needs verification.

**HP:** *Taraxacum* spp., *Aposeris foetida*(?) (Asteraceae)

*Trioza flavipennis* Foerster, 1848

**Janežič, 1989** on *Aegopodium podagraria* in 131 localities throughout the whole territory;

**GS:** Spodnje Bukovo (VM11), 11.03.2001; Zgornje Pijavice (VM63), 01.05.2003.

**HP:** *Aegopodium podagraria* (Apiaceae)

*Trioza galii* Foerster, 1848

**Ličič, 1888** Gorica, Lesce

**GS:** Gorjansko - 197 m (UL97), 6.8.2005; Vipolice (UL89), 26.07.2005; Krn - 1100 m (UM92), 05.07.2003; Kucelj (VL08), 02.09.2002; Nanos (VL27), 26.07.2002; Malo polje (VL28), 21.09.2003; Ratečevo brdo (VL35), 16.10.2003; Sorške planina - 1300 m (VM22), 19.08.2002; Pokljuka - Moička (VM23), 14.08.2003; Jelovica - Ledine 1100 m (VM32), 19.09.2004.

**HP:** *Galium* spp. (Rubiaceae)

*Trioza ilicina* (De Stefani, 1901)

**Janežič, 1989** Portorož (UL94); Nova Gorica (UL98)

**HP:** *Quercus ilex* (Fagaceae)

*Trioza munda* Foerster, 1848

**GS:** Sorške planina 1270 m (VM22), 19.09.2004 on *Picea excelsa*

**HP:** *Knautia* spp., *Scabiosa lucida*, *Succisa pratensis* (Dipsacaceae)

*Trioza proxima* Flor, 1861

**Ličič, 1888** Gorica, Ljubljana

**Janežič, 1989** Razdrto (VL26)

**GS:** ižni vrh nad Cerknim - 1230 m (VM21), 20.07.2003

**HP:** *Hieracium pilosella* and some other *Hieracium* species (Asteraceae)

*Trioza remota* Foerster, 1848

**Janežič, 1989** in 153 localities throughout the whole territory.

**GS:** Kromberk - 450 m (UL99), 10.03.2002, 09.11.2003 and 21.03.2004; ižmihiel - 600 m (VL08), 31.03.2002; Pri peči (VL09), 30.04.2002; Trnovo (VL09), 31.12.2004; Labinje (VM21), 01.11.2003; Podčetrtek - 205 m (WM41), 27.04.2005.

**HP:** *Quercus petraea*, *Q. pubescens*, *Q. robur* (Fagaceae)

*Trioza rhamni* (Schrank, 1801)

**Ličič, 1888** Gorica, Ljubljana

**Janežič, 1989** in 102 localities throughout the whole territory.

**GS:** Nova Gorica (UL99), 09.06.2002; Kromberk (UL99), 11.06.2005; Ajčevica (VL08), 19.05.2002 and 22.04.2004; Nanos (VL27), 06.07.2002; Godovič (VL38), 10.05.2002.

**HP:** *Rhamnus cathartica* (Rhamnaceae)

*Trioza rotundata* Flor, 1861

**GS:** Porezen - 1600 m (VM21), 18.08.1999; Sorške planina 1270 m (VM22), 19.09.2004; Pokljuka - Konjska raven (VM23), 14.08.2003; Blegoš - 1500 m (VM31), 29.07.2001; Rogla - 1470 m (WM24), 25.07.2004.

**HP:** *Cardamine amara*, maybe also some other *Cardamine* species (Brassicaceae)

*Trioza schranki* Flor, 1861

**GS:** Soriška planina - 1300 m (VM22), 19.08.2002; Logarska dolina (VM73), 30.07.2005 on *Astrantia carniolica*.

**HP:** *Astrantia* spp. (Apiaceae)

*Trioza scottii* Ličkov, 1880

**Ličkov, 1880** in marna gora (VM50)

**Janežič, 1989** on *Berberis vulgaris* in 77 localities throughout the whole territory;

**GS:** Hotedriška (VL38), 10.05.2002; Labinje (VM21), 13.10.2002 and 01.11.2003.

**HP:** *Berberis vulgaris* (Berberidaceae)

\**Trioza senecionis* (Scopoli, 1763)

**Scopoli, 1763:** Carniolia (Slovenia) - terra typica:

**HP:** *Senecio nemorensis*, *S. fuchsii* (Asteraceae)

*Trioza urticae* (Linnaeus, 1758)

**Janežič, 1989** in 86 localities throughout the whole territory;

**GS:** very common and widespread throughout the whole territory, e.g.; Panovec (UL98), 13.09.2000; Nova Gorica (UL99), 14.12.1998; Paljevo (UL99), 20.09.2003; Banjšice - Humarji (UL99), 18.07.2004; Breginj - 550 m (UM72), 22.08.2003; Pl. Na Klinu - 900 m (UM72), 22.08.2003; Podčrta (UM83), 16.09.2002; Krn - 1100 m (UM92), 05.07.2003; Lepena - 700 m (UM92), 22.08.2003; Na Skali (UM93) [S. Brelih leg.]; Hrčevica (VL07), 28.04.2002; Matenja vas (VL36), 05.10.2004; Lanišče (VL38), 12.05.2002; Bistra (VL48), 16.06.2004; Snežnik - 1560 m (VL54), 21.07.2002; Bevke (VL59), 14.07.2001; Trebnje (VL98), 10.07.2004; Most na Soči (VM01), 16.08.2003; Iščina (VM10), 25.06.2003; Spodnje Bukovo (VM11), 11.03.2001; Zavode (WL37), 10.07.2004; Iščadovinec (WL38), 10.07.2004; Gornje Pijavičice (WL39), 01.05.2003; Jareninski dol (WM56), 25.07.2004; Mestni vrh pri Ptuj (WM64), 22.07.2003; Strežetina (WM84), 20.06.2003; Strežetina (WM84), 22.07.2003; Litmerk (WM84), 15.08.2004; Mali Brebrovnik (WM94), 22.07.2003; Iščantiba (XM15), 27.07.2004.

**HP:** *Urtica dioica*, *U. urens* (Urticaceae)

*Trioza velutina* Foerster, 1848

**GS:** Orlek - 345 m (VL05), 19.06.2005; Lokvica - 215 m (UL97), 08.05.2005; Ajčevica (UL98), 22.04.2004; Nova Gorica (UL99), 11.04.2004 and 18.06.2005; Podsabotin (UL99), 19.05.2004; Iškabrijel (UL99), 04.06.2004; Iščančice Ravne (VL08), 03.07.2004; Pri peči (VL09), 12.07.2002 and 02.05.2004; Socerb (VL14), 30.05.2004; Iščančice (VL14), 30.05.2004; Nanos - 1040 m (VL27), 16.07.2004; Godovič (VL38), 10.05.2002; Hrčevica (VL38), 30.05.2002; Labinje 800 m (VM21), 23.08.2004.

**HP:** *Galium* spp. (Rubiaceae)

### Comments on some critical or less known species

*Camarotoscena speciosa* (Flor, 1861) and *C. subrubescens* (Flor, 1861)

According to Conci & al. (1993) the distribution of *Camarotoscena subrubescens* is limited to warm regions of the Mediterranean northern side. It is recorded from

Spain, France, Italy (including Sicily), east Adriatic countries, Greece and Turkey. Also in Slovenia, its occurrence seems to be confined to the south-western submediterranean part of the country. Some records concerning *Camarotoscena speciosa* given by Janežič (1989) most probably refer to *C. subrubescens* or at least those originating from South-Western Slovenia (e. g.: Solkan, Skalnica, Grgar, Neblo, Preižica, Dekani, Bertoki, in marje pri Kopru, Dragonja). This is because his identifications were based on gall characters only and not on adults or fifth instar nymphs. Specimens collected in this area by myself (although the material is still quite scarce), as well as the material collected by A. Hensch in the surrounding of Gorica (Lj. 1888), support this uncertainty representing *C. subrubescens* only. Anyway, records given by Janežič are in need of further faunistic verification. Until now, I also could not find both species together, although they use the same host species.

*Aphalara calthae* (Linnaeus, 1761)

According to Lauterer (1993) older records of *Aphalara calthae* published 40 years or more ago need to be verified, as species of the group *Aphalara polygona* Fieber were often published under this name as well. Recently collected material on Pokljuka confirms however unambiguously the occurrence of *Aphalara calthae* in Slovenia.

*Rhodochlanis bicolor* (Scott, 1880)

This species is recorded from South Russia, Ukraine, Kazakhstan (Loginova, 1964, Gegechkori & Loginova, 1990) and Bulgaria (Klimaszewski, 1973). It is known to occur in Iran as well (Burckhardt & Lauterer, 1993), but seems to be rather rare in the Mediterranean basin or perhaps merely less investigated. Conci and Tamanini recorded it from a comparatively restricted coastal area near to Ravenna (Conci & Tamanini, 1984). In Slovenia, it is only known from the two above-mentioned localities on the saline vegetation close to the Adriatic Sea. *Suaeda maritima* was confirmed as the host plant, on which also some few nymphs of fourth and fifth instars were found. Many adults and some nymphs were also collected near Poreč in Istria (Croatia) in late August 2005, always on the same host plant. These findings are obviously only a part of the larger, but still poorly investigated north-Adriatic population of *Rhodochlanis bicolor*.

*Psyllopsis fraxini* (Linnaeus, 1758)

Quite probably, *Psyllopsis fraxini* is widely spread throughout the whole country on its host plant *Fraxinus excelsior*. However, data given by Janežič (1989) based on the presence of galls are not unambiguous, because identical galls cause *P. distinguenda* Edwards, *P. discrepans* (Flor) and *P. dobreanuae* Loginova as well. *P. fraxini* is the most common species and plausible one.

*Psyllopsis meliphila* Lj., 1881

In Slovenia, in particular in its western part, this species is widely spread on its host plant *Fraxinus ornus* in temperate slopes. According to my observations, it develops two generations per year. The species is, however, discussed here only to clarify the type locality, since it was mostly erroneously interpreted in the past. F. Lj. described the species from the material collected by Franz Then in the area

around Lesce and Bled (Lees-Valdes at that time) (Ličkov, 1881). Now this region belongs to Slovenia. Conci & Tamanini (1990), however, placed this type locality in Austria and Carinthia (Kärnten), what is wrong. Namely, even at that time this region belonged to the district Krain, which is now a part of the present Slovenia and not to Carinthia. Such misinterpretations are not rare for all of the species described at that time in the territory of the Austrian-Hungarian monarchy, which is not surprising due to the immense geopolitical changes, which followed afterwards.

*Acizzia jamatonica* (Kuwayama, 1908):

This eastern Palaearctic species has spread from Italy to Slovenia only very recently (Seljak, 2003; Seljak et al., 2004). In Europe it was recorded in North Italy for the first time (Alma et al., 2002). As early as in 2002 large populations were found on its host plant *Albizia julbrissin* in parks in Nova Gorica and soon elsewhere along the Slovene-Italian border as well. In 2003, it was found to be spread all over the south-western submediterranean part of Slovenia, and actually everywhere where its host plant is found planted (parks, parking places, gardens). Also in 2002, it was spreading also towards south in Istria (Umag, Poreč, Rovinj - Croatia). According to Čimala et al. (2006) it is continuing to spread along the coastal area in Dalmatia. The insect spreads mainly by being carried by traffic along the road network and, partly also by active flying in searching for still unoccupied *Albizia* trees. Now it is considered as a very serious pest of *Albizia julbrissin*, threatening its ornamental value and functionality. Due to the weak lignification of shoots, heavily affected trees may often get frozen during the following winter.

*Phyllopecta trisignata* (Ličkov, 1886)

This species is widely distributed throughout the whole Mediterranean (Fauna Europaea, 2004). Its occurrence in Istria (Vološćina, Croatia) was already recorded by Gräffe (1911). A specimen captured on a yellow sticky trap in the Slovene coastal area (Parecag) in 2004 confirms its existence in this part of Europe.

*Diaphorina chobauti* Puton, 1898

It is a very rare species in Europe. According to Burckhardt (1984) and Conci et al. (1993) it has only been known from Liguria in North-Italy so far. Otherwise, it is widely distributed throughout the Near East, in North Africa and in the central Asia (Burckhardt, 1984, Gegechkori & Loginova, 1990, Conci et al., 1993). In Slovenia, there are only three localities known in the southwestern submediterranean part of the country. Another locality has been discovered near the village Doberdob on the Italian side. However, all these localities are quite close together and belong to the same geographical region (fig. 5). Specimens were always swept from *Convolvulus canthabrica* L. plants, mostly at the end of May and in the early June. One specimen however was found the 01.10.2005. As Conci et al. (1993) in Italy give similar collecting periods, it is suggested that the species develops two generations per year.

*Bactericera perrisi* Puton, 1876

There are some uncertainties about the occurrence of this species in Slovenia. Ličkov (1888) recorded it from Gorica (Görz) and Trnovski gozd (Tarnovaner Wald), which were also the only known localities in the territory of Monarchy at that time. Later Gräffe (1911) recorded it to occur also near Trieste (Proseco). Under the



presumption that *Artemisia alba* is the host plant of this species (Conci et al., 1997) (*Artemisia campestris* is very rare in Slovenia) it might occur rather common in this (south-western) part of Slovenia. Nevertheless, I could not find it in this region so far. On the other hand, the related *B. kratochvili* is rather common here. It has been collected very commonly by me on dry meadows with lots of *Allium senescens*. As *B. kratochvili* was described much later, confusion between these two species by Ljw seems to be possible.

#### *Trioza senecionis* (Scopoli, 1763)

Slovenia is i%terra typica%for this species. Scopoli (1763: 140) described it in his i%Entomologia carniolica%for the first time, obviously from material collected in Carniola. An exact locality was not specified. As this species has not been found since then this record is still the only one existent for Slovenia. Its wider distribution, however, is to be expected, as its host plants (*Senecio fuchsii*, *S. nemorensis*) occur rather commonly in Slovenia.

#### *Trioza kiefferi* Giard, 1902:

So far, this species is only known from South Italy, Malta, Iberian Peninsula and Algeria (Conci, Rapisarda & Tamanini, 1996). In Slovenia Janei%(1989) reported it to occur on *Rhamnus fallax* (= *Rh. alpinus* ssp. *fallax*) in several localities in the Slovene Alps. As his identifications were based merely on leaf galls by using Houardi% identification keys, he probably made the same mistake as many European plant gall researchers had already made before him. As Burckhardt (1983) stated, the resemblance of galls on *Rhamnus alpinus* compared to those on *Rhamnus alaternus* and *Rh. lycioides* produced by *Trioza kiefferi* in the Mediterranean area has led to misidentifications. Even more, according to the same author, galls on *Rhamnus alpinus* are not produced by any known psyllid. So far, in Slovenia I could only find adults of *Cacopsylla rhamnicola* (Scott, 1876) on *Rhamnus fallax*. Thus for all these reasons, I consider *Trioza kiefferi* as not existing in Slovenia.

## Discussion

In the present review, the available data and records of jumping plant-lice occurring in the territory of Slovenia have been summarized. The fauna includes 100 species (Homotomidae - 1 species, Calophyidae - 1 species, Psyllidae - 65 species, Triozidae - 33 species). 44 of them (Psyllidae - 34 species, Triozidae - 10 species) are recorded for the first time in Slovenia. This number probably represents about 60-70 % of the whole diversity of this insect group in Slovenia. However, the knowledge of distribution range of the majority of them is still very fragmentary, because a more systematic faunistic work on this group has been started only recently. An exception may represent the galls producing species, which were reported by Janei%fairly comprehensive (Janei%(1989). Despite that, the number of above listed species already exceeds the diversity recorded in the adjacent Italian region Friuli-Venezia Giulia i%84 species (Conci et al. 1992 and 1997) or in Carinthia (Austria) respectively i%82 species (Burckhardt et al. 1999). The proper identity of *Bactericera curvatinervis*, *B. perrisi* and *Trioza dispar* in earlier records

is somewhat ambiguous and are in need of verification. In the text they are marked by a question sign in square brackets.

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