



**NEW AND LITTLE KNOWN PLANT- AND LEAFHOPPERS
OF THE FAUNA OF SLOVENIA
(HEMIPTERA: FULGOROMORPHA AND CICADOMORPHA)**

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Abstract – In this account distribution data of 178 species of plant- and leafhoppers occurring in Slovenia are recorded; 81 of them are new to the fauna of Slovenia. Some rare and taxonomically and/or zoogeographically critical species like *Hyalesthes scottii*, *Conomelus sagittifer*, *Delphacodes mulsanti*, *Delphax meridionalis*, *Pastirosa clypeata*, *Dicranotropis hamata* group, *Hespericerus brusinae*, *Stegelytra putoni*, the genus *Aphrodes*, *Anoscopus albiger*, *A. albifrons* and *A. flavostriatus* complexes, *Notus italicus*, the genus *Chlorita* and many others are discussed. The distribution range and the demarcation line between the cis- and transalpine sibling species of the genus *Forcipata* in Slovenia is presented here more in detail. With this account the number of plant- and leafhopper species known for Slovenia has increased to 555 species.

KEY WORDS: Hemiptera, Fulgoromorpha, Cicadomorpha, fauna, Slovenia

Izvešček – NOVI IN MANJ ZNANI ŠKRŽATKI V FAVNI SLOVENIJE (HEMIPTERA: FULGOROMORPHA IN CICADOMORPHA)

Pregled prinaša podatke o razširjenosti 178 vrst malih škržatkov v Sloveniji; 81 vrst je omenjenih prvič in so nove za živalstvo Slovenije. Natančneje so obravnavane nekatere redke ter taksonomsko in/ali zoogeografsko zahtevne vrste, kot so: *Hyalesthes scottii*, *Conomelus sagittifer*, *Delphacodes mulsanti*, *Delphax meridionalis*, *Pastirosa clypeata*, *Dicranotropis hamata* skupina, *Hespericerus brusinae*, *Stegelytra putoni*, rod *Aphrodes*, kompleks vrst *Anoscopus albiger*, *A. albifrons* in *A. flavostriatus*, *Notus italicus*, rod *Chlorita*, in še številne druge. Natančneje je razdelana tudi razširjenost in zoogeografska razmejitev cis- in transalpskih parov vrst rodu *Forcipata*.

S tem pregledom je število poznanih škržatkov in škržadov v favni Slovenije naraslo na 555 vrst.

KLJUČNE BESEDE: Hemiptera, Fulgoromorpha, Cicadomorpha, favna, Slovenija

Introduction

In the previous literature, nearly 480 plant- and leafhopper species have been recorded for the territory of Slovenia (SCOPOLI, 1763; THEN, 1886 and 1896; MELICHAR, 1896; GRÄFFE, 1903; KIAUTA, 1962; TANASIJEVIĆ, 1965; ASCHE, 1982; GOGALA & GOGALA, 1999; HOLZINGER & SELJAK, 2001; SCHÜRRER & LÖCKER, 2003; SELJAK & al., 2003; SELJAK, 1987, 2002, 2004a, 2004b, 2011, 2013a and 2013b; SELJAK & PAGLARINI, 2004; HOLZINGER & al., 2011; HOLZINGER & al 2013). Since author's last more comprehensive contribution to the Auchenorrhyncha fauna of Slovenia (SELJAK, 2004a), a huge amount of material has been collected and many species new to the fauna of Slovenia have been discovered. This paper would rise too much in size, if all these data are included. Therefore only findings of new, less recorded and taxonomically or zoogeographically critical species are summarized here. With this account, together with the previous publications, a good base for a checklist of plant- and leafhoppers occurring in Slovenia is given.

Material and methods

Three different collecting methods have been used to provide specimens for faunistic and taxonomic study: sweep-netting, sampling with a suction sampler and light-trapping. For suction sampling, a leaf blower McCulloch BVM 240 was used. Insects were collected in a mesh net bag turned over the inlet hole of the suction tube. This bag retains the collected material inside the suction tube and prevents its damaging and passing through the fan. This suction method is especially advantageous for extracting species and specimens dwelling near the ground or inside the fit vegetation. For light-trapping a home-made UV insect trap was used. If not specified otherwise, the collector was the author himself.

Sample specimens were dry mounted on specimen cards of appropriate size and are deposited in the author's insect collection.

In addition, plant- and leafhoppers preserved in 70% ethanol from a non-sorted Hemiptera collection deposited at the Slovenian Museum of Natural History (PMS) was examined. These data are also included here. Collectors (mainly students of biology at Biotechnical Faculty - University of Ljubljana - BF) are often unknown. In these cases the collectors are specified as BF, but if known, they are explicitly cited.

Sampling sites are designated by topographic names and by 10 x 10 km UTM grid marks. As the whole territory of Slovenia goes into the grid zone 33T, the zone designation is omitted. Species new to the fauna of Slovenia are marked with an asterisk (*).

The names of food plants were taken from the database "The Plant List" (<http://www.theplantlist.org/>), therefore the authors of the plant names are also omitted.

Results

FULGOROMORPHA

CIXIIDAE Spinola 1839

Apartus michalki (Wagner 1948)

New records: Zadlaška jama - 300 m (VM01), 26.2.2005, leg. A. Kapla; Robič - 310 m (UM82), 18.6.2005, leg. A. Kapla; Trnovo ob Soči - 340 m (UM82), 14.4.2007; Slap Boka - 350 m (UM83), 14.4.2007; Rut - 1200 m (VM11), 12.6.2010; Izvir Soče - 900 m (VM04), 12.4.2011; Kolovrat - 1100 m (UM91), 16.6.2013, mostly swept from *Picea abies* trees, rarely from *Pinus sylvestris* as well.

In earlier publications, in Slovenia this endemic species of the south-eastern Alps was only recorded from a single locality near Bohinjska Bela (HOLZINGER, 1999, HOLZINGER & al. 2003). However, since 2005 it has been collected on several sites in north-western Slovenia, especially abundantly in the Upper Soča Valley. Adult specimens were mainly swept during spring months from young trees of *Picea abies* and in much lesser extent also from pines. In the cave Zabreška jama, an adult specimen was caught as early as in late February, which suggests that adults may hatch very early waiting then in underground refuges for appropriate meteorological conditions to leave them.

**Cixius sticticus* Rey 1891

Material examined: Planina Razor - 1300 m (VM02), 7.7.2005; Vučja Gomila (WM97), 27.4.2011, leg. B. Zadavec.

**Hyalesthes scotti* Ferrari 1882

Material examined: Solkan - 100 m (UL99), 7.7.2005, 17.8.2008 and 24.6.2014; Vale pri Brestovici - 130 m (UL97), 6.8.2005; Kromberk - 350 m (UL99), 14.8.2005; Gradišče nad Prvačino (VL08), 14.7.2006; Hrvatini - Brageti - 135 m (VL04), 25.7.2006; Dolga poljana - 350 m (VL18), 11.7.2007; Kubed (VL14), 17.7.2012; Golo brdo (UM80), 23.6.2014; Rebrnice (VL27), 1.8.2015; Sabotin - 570 m (UL99), 2.8.2015; Dragonja (UL93), 21.7.2016; mainly swept from *Fraxinus ornus* trees and from low vegetation.

This west-Mediterranean species is known to occur in Italy, France, Spain and Portugal, with its most eastern distribution range somewhere on Balkans (HOCH & REMANE, 1985). In Slovenia, this species is scattered distributed on xerothermic slopes in the sub-Mediterranean area. I have also collected it in Croatia: in Istria (Poreč) and in Dalmatia (Krk, Senj and Opuzen). According to our observations it populates strictly xerothermic habitats. Adults have mostly been swept from trees and shrubs of *Fraxinus ornus* or from low vegetation below. In the literature, *Ulmus* trees have mainly been recorded on which adults mostly dwell (HOCH & REMANE,

1985). In contrast, we only have found *Hyalesthes luteipes* on those plants, but never *H. scotti* so far.

Pentastiridius beieri (Wagner 1970)

A new record: Ajba - 110 m (UM90), 5.6.2005; a ♀ caught on *Salix eleagnos*.

This is the second record of this species for Slovenia (HOLZINGER & SELJAK, 2001). Both findings are from Soča Valley.

Reptalus quinquecostatus (Dufour 1833)

New records: Sebeborci (WM97), 25.8.2005; Seča (UL93), 4.6.2006; Stepani (VL14), 7.7.2006; Bertoki, 33 m (VL04), 25.7.2006; Izola (UL94), 24.7.2008; Lukini - 310 m (VL13), 20.8.2013; Ajševica (VL08), 17.7.2009, 8.7.2010, 13.7.2012, 22.06.2014; Vogrsko (UL98), 25.7.2012; Velike Žablje - 80 m (VL18), 1.8.2012; Lože - 110 m (VL17); Kromberk - 130 m (UL99), 11.8.2013; Nova Gorica - 100 m (UL99), 19.7.2014.

Previously less recorded species from Slovenia, which has proved, however, to be one of the most common Cixiids in south-western parts of the country. It has been largely collected in and around agricultural biotopes, especially on fields with maize and cereals. Adults fly from mid-June to mid-August.

Trigonocranus emmeae Fieber 1876

New records: Kromberk (UL99), 11.6.2005; Vogrsko (VL08), 14.6.2005; Kanalski vrh - 640 m (UM90), 6.7.2016.

ACHILIDAE Stål 1966

**Cixidia pilatoi* D'Urso & Guglielmino 1995

Material examined: Golo Brdo (UM80), 11.6.2006; Šmaver (UL99), 26.6.2012, leg. J. Kamin; Kubed (VL14), 17.7.2012; Klariči (UL97), 3.7.2013, Branik (Golec) - 370 m (VL07), 25.5.2014; Golo Brdo - 210 m (UM80), 31.5.2014; Petrinjski kras (VL14), 6.6.2014; Solkan (UL99), 24.6.2014; mostly swept from canopies of *Q. pubescens*.

These distribution data have already been published in the monographic account on the West Palaearctic Achilidae (ASCHE, 2015).

DELPHACIDAE Leach 1865

Kelisiinae Wagner 1963

**Kelisia irregularata* Haupt 1935

Material examined: Novakov Rovt - 660 m (VM23), 2.9.2005; Kanji dol - 1020 m (VL28), 30.7.2006; Trnovski gozd (Krnica) - 1000 m (VL08), 14.8.2011; Hotedršica - 550 m (VL38), 26.8.2016; Gorenji Novaki - 1090 m (VM21), 28.8.2016.

This species from the *K. guttula* group is characterized by the very short subanal processes that are half as long as the anal tube, by small serrated carina on halfway of the aedeagal shaft and by genal spots that do not extend beyond the median keel. Its

distribution range is apparently limited to Central Europe, being recorded from Germany, Austria, Slovakia, Switzerland and Luxemburg (NAST, 1987; REMANE & GUGLIELMINO, 2002; NIEDRINGHAUS & al. 2010). In Slovenia, it was found in five localities, on wet or temporarily dry sites, mainly at higher altitudes up to 1100 m or in cool sites with more continental climate. *Carex flacca* is recorded as the host plant (NICKEL, 2003). As this plant is common everywhere else, climate conditions apparently play an important environmental role in the establishment and development of this species. It has not been found in the area with sub-Mediterranean climate yet.

**Kelisia melanops* Fieber 1878

Material examined: Nova Gorica - 95 m (UL98), 18.6.2005 (6 ♂♂ and 1 ♀); 9.10.2005 (2 ♂♂ and 11 ♀♀); 30.10.2016 (2 ♂♂, 18 ♀♀); Gradišče pri Vipavi - 115 m (VL17) (29.9.2016, 4 ♂♂ and 8 ♀♀).

This species has a prevalently south-eastern European and Mediterranean distribution (NAST, 1987; HOLZINGER & al. 2003). *Carex* spp. is recorded as the host plant (DROSOPOULOS, 1982). Only two localities of this species are currently known in Slovenia. In both cases, it was collected in wet or temporarily flooded sites with lots of various *Carex* and *Juncus* species. It can be easily recognized by the rather small and stout appearance and in particular by the dark brown to black upper part of frons.

**Kelisia monoceros* Ribaut 1934

Material examined: Ajševica - 170 m (UL99), 15.9.2012 (3 ♂♂ and 2 ♀♀).

So far, this is the only known locality of this species in Slovenia. The specimens were collected on a semi-dry and slightly shady meadow in a forest clearing on calcareous ground. Sedges of the *Carex muricata* and *C. vulpina* complex are recorded as the host plants of this species (NICKEL, 2003). As several small species of this complex of sedges occur commonly in Slovenia, new findings of *K. monoceros* could be expected.

Kelisia praecox Haupt 1935

New records: Podnanos - 150 m (VL27), 17.7.2005; Prvačina (UL98), 10.6.2006; Ajševica (VL08), 2.7.2006; Vogrsko - 50 m (UL98), 8.8.2007 and 7.10.2007; Vrtojba (UL98), 15.6.2014; Spodnje Bukovo - 390 m (VM11), 24.7.2016.

Kelisia punctulum (Kirschbaum 1868)

New records: Ajševica (VL08), 8.9.2001 and 1.8.2004; Ajševica - Gmajna (UL98), 19.8.2004; Loke (UL98), 19.8.2004; Nova Gorica (UL99), 18.6.2005 and 30.10.2016; Gradišče pri Vipavi - 115 m (VL17), 17.7.2005 and 29.9.2016; Strunjan (UL94), 10.8.2005.

**Kelisia sima* Ribaut 1934

Material examined: Labinje, 800- 900 m (VM21), 22.8.2004 and 23.8.2004 on two different localities; Novakov Rovt - 660 m (VM23), 2.9.2005; Vojsko - Gačnik - 910 m (VM10), 3.8.2016.

The taxonomic position and separation of this species was clarified by REMANE & JUNG (1995). Because of the great similarity with *Kelisia guttula* (Germar 1818) earlier distribution records of the latter species became uncertain and need verification all over Europe. As both morphospecies may occur syntopically, the situation is getting even more complex (REMANE & JUNG, 1995), although, according to the more recent investigations, they develop on different host plants; *K. guttula* on *Carex flacca* and *K. sima* on sedges of the *C. flava* group (NICKEL, 2003). The main criteria that have been followed in discrimination of these two species among the material collected in Slovenia were: aedeagus length (in male), extent of the dark pattern in the apical region of fore wings, darkened or not darkened upper part of the frons. In all above mentioned localities specimens were collected on temporarily wet seeps and spring mires. In the locality Vojsko - Gačnik both sibling species occur, but it remains unknown whether syntopically. The species might be rather uncommon, as the number of specimens was scarce in all cases.

Kelisia vittipennis J. Sahlberg 1868

New records: Labinje - 800 m (VM21), 22.8.2004; Jelovica (Ledine) - 1150 m (VM32), 23.8.2004, 19.9.2004 and 3.9.2005; Pokljuka (Grajska planina) (VM23), 2.9.2005; Rakitna - 800 m (VL58), 12.9.2008; Vojsko - Gačnik - 915 m (VM10), 12.7.2016 and 3.8.2016; Hotedrščica - 560 m (VL38), 26.8.2016; Žejna dolina - 580 m (VL39), 26.8.2016; Gorenji Novaki - 1090 m (VM21), 28.8.2016.

Stenocraninae Wagner 1963

Stenocranus fuscovittatus (Stål 1858)

New records: Šempas (VL08), 22.3.2005; Nova Gorica (UL98), 18.6.2005 and 9.10.2005; Ajševica (VL08), 2.7.2006; on tall sedges.

Delphacinae Wagner 1963

**Chloriona vasconica* Ribaut 1934

Material examined: Škocjanski zatok (VL04), 14.4.2011 (4 ♂♂, leg. & det. I. Malenovský).

**Oncodelphax pullula* (Boheman 1852)

Material examined: Vojsko - Gačnik - 910 m (VM10), 3.8.2016 (5 ♂♂).

**Conomelus sagittifer* Remane & Asche 1979

Material examined: Gradišče pri Vipavi (Mlake) - 115 m (VL17), 17.7.2005 (2 ♂♂ and 7 ♀♀) on *Juncus effusus*.

So far, this species has only been recorded from Sicily, central Italy and Greece (REMANE & ASCHE, 1979; DROSOPOULOS, 1982). This new and apparently isolated occurrence in Vipava Valley is currently the northernmost in Europe and confirms the presumption of a possible wider distribution expressed already by REMANE & ASCHE (1979). Like in central Italy, both species - *C. sagittifer* and *C. lorifer dehneli* live syntopically on *Juncus effusus*.

Florodelphax leptosoma (Flor 1861)

New records: Postojna (VL37), 17.7.1979 (ASCHE, 1979); Volovjek - 1040 m (VM72), 30.7.2005; Panovec (UL98), 14.8.2005 and 24.6.2007; Spodnje Bukovo (VM11), 24.7.2016; Kanalski vrh (UM90), 29.7.2016; Vojsko - Gačnik - 910 m (VL10), 3.8.2016; Gorenji Novaki - 1090 m (VM21), 28.8.2016; Gradišče pri Vipavi - 115 m (VL17), 29.9.2016; mainly associated with *Juncus effusus*.

**Delphacodes capnodes* (Scott 1870) (Figure 1)

Material examined: Velika Polana (XM05), 26.7.2004 (1♂ and 1♀).

So far, this is the only known locality in Slovenia. It has not been found in western Slovenia yet, although systematically sought for years in wet habitats.

**Delphacodes venosus* (Germar 1830) (Figure 1)

Material examined: Muriša (XM24), 26.7.2004; Velika Polana (XM05), 26.7.2004; Panovec (UL98), 9.7.2005; Ajševica (UL98), 1.10.2016.

**Delphacodes mulsanti* (Fieber 1866) (Figure 1)

Material examined: Bilje (UL98), 14.7.1999; Orehek pri Postojni (VL36), 12.9.2004; Dolina Dragonje (UL93), 2.4.2005; Nova Gorica (UL98), 9.10.2005, 24.6.2007 and 30.10.2016 (10 ♂♂ - all brachypterous, 23 ♀♀ - brachypterous and 18 ♀♀ macropterous); Ajševica (UL98), 20.8.2006 and 31.7.2010; Volčja Draga - 50 m (UL98), 8.8.2007 and 7.10.2007; Sečoveljske soline (UL93), 23.7.2010; Staro Selo - 240 m (UM82), 24.8.2016; Gradišče pri Vipavi - 115 m (VL17), 29.9.2016.

In the past, the identity of this species was interpreted rather confused and controversially by several authors. Specimens from spatially distant populations were often

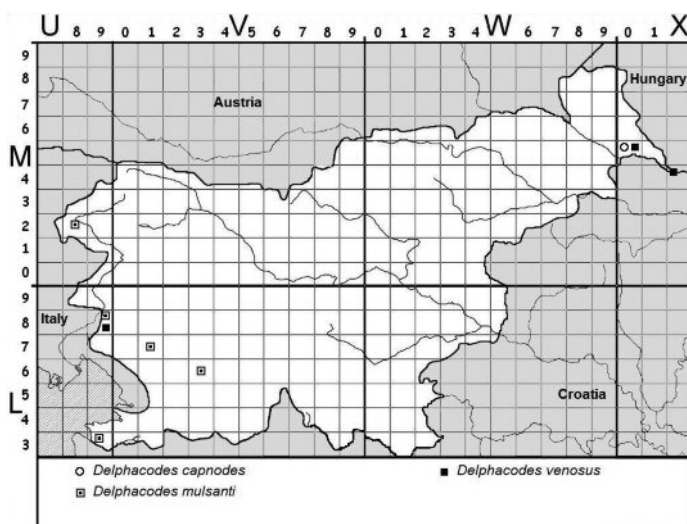


Fig. 1: The genus *Delphacodes* in Slovenia - currently known distribution.

considered as separate species and described under different names (ASCHE & REMANE, 1983). According to Manfred Asche (pers. comm.), after he examined all holotypes of this species group, the following names have to be considered as junior synonyms: *Megamelodes ornatipennis* Haupt 1927; *D. audrasi* Ribaut 1954; *Megamelodes linnavorii* Le Quesne 1960; *Calligypona fascia* Lindberg 1960 and *D. nastasi* Asche & Remane 1983. Thus, the valid name for this taxon is the oldest one, which is *D. mulsanti* (Fieber 1966). *D. mulsanti* has a Mediterranean distribution. In Slovenia its distribution is probably restricted to the south-western part of the country which is its northernmost occurrence in this part of Europe. It dwells in moist to temporarily moist sites with *Juncus* spp., *Carex* spp. and *Cyperus* spp. (ASCHE & REMANE, 1983). Both forms – brachypterous and macropterous appear. Males are mainly brachypterous, while in females the proportion between both forms is more equalized. It overwinters in adult stage.

**Delphax pulchellus* (Curtis 1833)

Material examined: Ankaran (VL04), 29.7.2004; Strunjan (UL94), 10.8.2005; Škocjanski zatok (VL04), 24.9.2005; Sečoveljske soline (UL93), 23.7.2010, always swept from plants of *Phragmites australis*.

Although a widely distributed species all over Europe, in Slovenia it has been collected only in coastal salt marshes.

**Delphax meridionalis* (Haupt 1924)

Material examined: Sečovlje (UL93), 10.6.2010 (1 ♂ and 1 ♀, leg. S. Gomboc), trapped at light in a marine salt marsh with *Phragmites australis* and other halophytic vegetation.

So far, this species has only been recorded from the type locality in Greece (HAUPT, 1924; ASCHE & DROSOPOULOS, 1982). NAST (1972) listed it also for Italy and former Yugoslavia. ASCHE AND DROSOPOULOS (1982) have considered records for former Yugoslavia to be rather uncertain suggesting a possible confusion with *D. ribautianus* Asche and Drosopoulos 1982, a species being described by same authors ten years after Nast's publication. A very disjunctive finding of *D. meridionalis* in the littoral area of Slovenia makes Nast's records for former Yugoslavia likely to be true, which, however, has to be verified by further faunistic investigations focussed especially on the area along the Adriatic Sea in Croatia and Montenegro.

Dicranotropis hamata group (Figure 2)

The existence of two morphologically slightly different populations of *Dicranotropis hamata* s.l in Slovenia has been well known for several years. In the continental part of Slovenia including the Dinaric mountain chain, specimens displaying characteristics of the typical species have always been collected. Populations occurring in western parts of Slovenia from the south Alpine slopes to the littoral region on the south, however, differ significantly in shape of genital styli and the chirality of the aedeagus. This entity has been described recently as a new species *Dicranotropis remaniaca* Guglielmino, d'Urso & Bückle 2016. The genital styles of this new species

are slightly curved apically and show a well-developed preapical tooth. In *D. hamata* this subapical bifurcation is lacking and the aedeagus including the phallosome (which is on the left side) is (with some rare exceptions) mirror-inverted to the latter (GUGLIELMINO & al., 2016). Among the material collected in Slovenia, no exceptions in this regard have been observed. The taxonomic relevance of the chirality of the aedeagus in the *D. hamata* group has been discussed for a long time. Nevertheless, a clear parapatric distribution in Slovenia strongly supports the arguments for two distinct taxonomic entities. They have to be considered as the result of the long-lasting separation of populations by the Dinaric mountain chain during the last glaciations in Europe. In context of this new knowledge, also all earlier records and data for Slovenia have been revised and are given here again (FLOR, 1961; THEN, 1886; GRAEFFE, 1903; KIAUTA, 1962; ASCHE, 1982; SELJAK & HOLZINGER, 2001). Graeffe's records cannot be discriminated with complete reliability, but according to current knowledge *D. remaniaca* should occur in the major part of the area he dealt with. Thus, his record will be treated here as *D. remaniaca*. All records by FLOR (1861), THEN (1886), KIAUTA (1962) and ASCHE (1982) should belong to *D. hamata*. Records given by HOLZINGER & SELJAK (2001) were divided according to the new knowledge.

Dicranotropis hamata (Boheman 1847)

Old records: Ljubljana (FLOR, 1861); Lesce (THEN, 1886); Škofja Loka (KIAUTA, 1962); Postojna, Žužemberk (ASCHE, 1982)

Material examined: Bohinjska Bistrica (VM12), 19.8.2002; Dolnje Lome - 680 m (VL28), 30.7.2006; Gorenji Novaki - 1090 m (VM21), 28.8.2016; Hotedršica - 550 m (VL38), 26.8.2016; Hrušica (VL37), 10.9.2008; Idrijska Bela - 412 m (VL29), 12.7.2016; Kneža (VM01), 1.8.1999; Kojca - 670 m (VM11), 8.8.2010; Kucej - 1140 m (VL08), 3.9.2000; Labinje (VM21), 7.8.1998, 14.8.1999, 20.7.2003 and 18.8.2012; Landol - 530 m (VL37), 18.7.2016; Lendavske gorice (XM15), 27.7.2004; Litmerk (WM84), 26.6.2002; Mali Brebrovnik (WM94), 22.7.2003; Marindol - 240 m (WL23), 3.6.2007; Mestni vrh pri Ptujju (WM64), 22.7.2003; Orešje (WL59), 4.8.2004; Podraga (VL17), 18.7.2016; Police pri Radgoni (WM76), 15.7.2003; Radgona (WM76), 6.9.2000; Sinji vrh - 980 m (VL18), 12.8.2001; Spodnje Bukovo (VM11), 1.8.1999 and 24.7.2016; Sremič (WL39), 25.9.2007; Sromlje (WL49), 2.8.2007; Stojnci (WM73), 31.7.2008; Strezetina (WM84), 20.9.2002 and 22.7.2003; Svetinje v Sl. goricah (WM94), 26.6.2002; Turški vrh (WM83), 26.6.2002 and 20.9.2002; Vetrnik, 700 m (WM40), 17.6.2006; Virštanj - 370 m (WM40), 16.6.2006; Vodiška planina - 1110 m (VM32), 3.9.2005; Vremščica - 840 m (VL25), 16.7.2011; Vučja Gomila (WM97), 27.4.2011; Zgornje Jezersko - 890 m (VM63), 15.8.2007.

**Dicranotropis remaniaca* Guglielmino, d'Urso & Bückle 2016

Old records: Primorje (Kras, Soča Valley) (GRAEFFE, 1903)

Material examined: Ajševica (UL98), 31.7.2010; Banjški Kuk - 770 m (VM00), 12.8.2014; Baske - 600 m (UL99), 22.5.2011; Bilje (UL98), 4.5.1999; Bizjaki (VL08), 14.7.2006; Breginj - 550 m (UM72), 22.8.2003; Gorjansko - 197 m (UL97), 6.8.2005; Grižnik - 299 m (VL07), 6.8.2005; Kamno - 200 m (UM91), 18.8.2006; Kanalski vrh

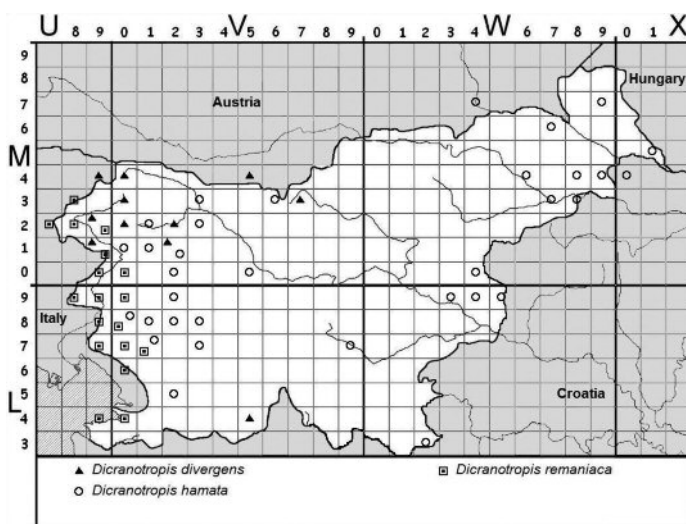


Fig. 2: Known distribution of the three *Dicranotropis* species in Slovenia

(UM90), 29.7.2016; Kozana (UL89), 17.5.2003; Krn - 1200 m (UM92), 26.8.2011; Kromberk (UL99), 17.7.1999 and 6.4.2007; Lepena - 700 m (UM92), 26.8.2001 and 22.8.2003; Loke (UL99), 19.8.2004; Nova Gorica (UL99), 12.8.1999; Nova Gorica (UL98), 17.7.1999, 12.7.2001 and 24.6.2007; Novo mesto (UL97), 1.9.2001; Osek (VL08), 16.7.2003; Pliskovica (VL06), 7.6.2003; Podčela (UM83), 16.9.2002 and 6.8.2004; Podlaka (VL09), 13.5.2006 and 13.7.2006; Prvačina (UL98), 1.4.1998 and 4.9.2003; Ravnica (UL99), 7.5.2000, 3.10.2004 and 25.5.2008; Spodnje Škofije (VL04), 19.9.2005; Staro Selo - 240 m (UM82), 24.8.2016; Strunjan (UL94), 23.4.2000; Šmihel (VL08), 13.7.2006; Vipolže (UL89), 26.7.2005; Vitovlje (VL08), 13.7.2006; Vogrsko (VL08), 2.7.2006 and 21.9.2014; Zalošče (VL08), 14.7.2006; Zavino - 190 m (VL17), 8.8.2007.

Dicranotropis divergens Kirschbaum 1868

New records: Kolovrat - 1100 m (UM91), 24.6.2016; Krnsko jezero - 1400 m (UM92), 1.8.2009; Logarska dolina - 790 m (VM73), 30.7.2005; Mangart - 2050 m (UM94), 15.7.2006; Planina Pungrat - 1440 m (VM54), 9.8.2014; Planina Razor (VM02), 7.7.2005 and 2.9.2006; Drežniške Ravne (Planina Zappleč) - 1200 m (UM92), 12.7.2015; Porezen - 1600 m (VM21), 3.7.2010 and 25.6.2011; Soriška planina - 1500 m (VM22), 3.8.2008; Vršič - 1620 m (VM04), 27.7.2008; Zadnja Trenta - 960 m (VM03), 24.7.2005 and 28.7.2007.

Euconomelus lepidus (Boheman 1847)

New records: Orehek pri Postojni (VL36), 12.9.2004; Zagorje (pri Pivki) (VL35), 9.7.2006; Rakitna 800 m (VL58), 12.9.2008.

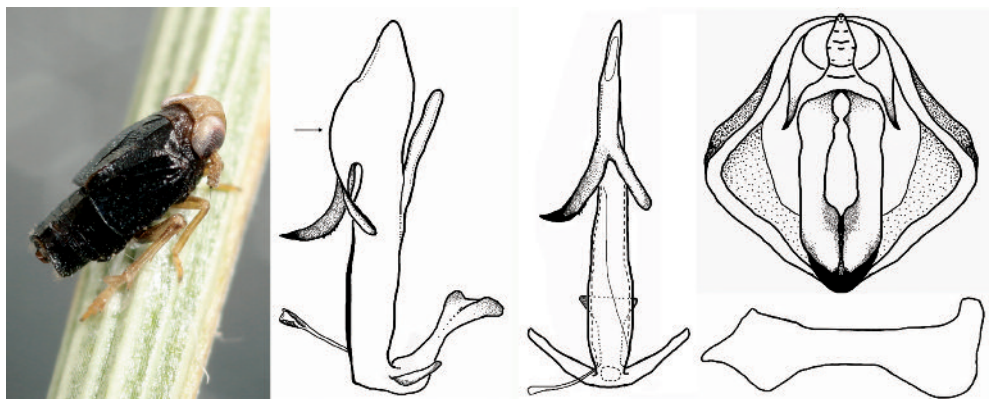


Fig. 3: *Eurysanoides flavobrunnea*, left: male (size: 1.8 - 2.0 mm); center: aedeagus – lateral and dorsal view (arrow); right: male pygofer and the right stylus ventral side

Eurysanoides flavobrunnea (Dlabola 1956) (Figure 3)

New records: Nanos - 900 m (VL27), 20.8.2004 and 4.9.2005; Kucelj - 1150 m (VL08), 4.9.2004; Ravnica - 400 m (UL99), 3.10.2004; Kastelec - 320 m (VL14), 21.9.2016.

This is a rare and little known Mediterranean species originally described from northern Italy (DLABOLA, 1956). Furthermore, it is recorded for Greece and France (DROSOPOULOS, 1982; ASCHE & HOCH, 1982) and also for former Yugoslavia (NAST, 1987), but the exact locality for the latter is not known to the author. In Slovenia it was first recorded in Trnovo (HOLZINGER & SELJAK, 2001), but later on it was found by myself in several localities on the exposed southern slopes of Nanos and Čaven mountains, sometimes in fairly significant numbers in altitudes up to 1150 m. Recently it was found on the Karst edge near Kastelec as well.

**Eurysula lurida* (Fieber 1866)

Material examined: Muriša (XM24), 26.7.2004; Ajševica (UL98), 1.8.2004; Maribor - Tezno (WM55), 16.9.2004; Grgar (UL99) 18.6.2005; Hotedršica - 550 m (VL38), 26.8.2016.

**Falcotoya minuscula* (Horvath 1897)

Material examined: Izola (UL94), 10.8.2005 and 27.07.2011; Ankaran (VL04), 31.7.2007

In Slovenia, this species has a strictly Sub-Mediterranean distribution range and lives on the grass *Cynodon dactylon*.

**Megamelodes lequesnei* Wagner 1963

Material examined: Muriša (XM24), 26.7.2004 (1 ♀); Nova Gorica (UL98), 31.10.2006 (21 ♂♂, 18 ♀♀, 1 nymph) and 10.5.2008 (1 ♂).

In Germany this species lives monophagously on *Juncus subnodulosus* in swamps and does not tolerate mowing (NICKEL 2015). In the last locality this species was swept from fen vegetation with *Carex pendula*, *Scirpus sylvaticus* and *Sparganium* sp. in an urban park, but no attention was paid whether *Juncus subnodulosus* was present there.

Mirabella albifrons (Fieber 1879)

A new record: Muriša (XM24), 26.7.2004.

Paradelphacodes paludosa (Flor 1861)

New records: Jelovica (Ledine) (VM32), 3.9.2005; Puščava - 240 m (WL18), 17.6.2006; Vojsko - Gačnik - 915 m (VM10), 12.7.2016; Landol - 530 m (VL37), 18.7.2016; Staro Selo - 240 m (UM82), 24.8.2016; Hotedršica - 560 m (VL38), 26.8.2016; Gorenji Novaki - 1090 m (VM21), 28.8.2016.

Muellerianella fairmairei (Perris 1857)

New records: Nova Gorica (UL98), 23.7.2005; Dolnji Zemon (VL44), 1.7.2007; Vogrsko (UL98), 21.9.2014; Gradišče pri Vipavi - 115 m (VL17), 29.9.2016.

Muellerianella extrusa (Scott 1871)

New records: Planinsko polje (VL47), 28.6.2001; Nova Gorica (UL98), 21.8.2001, 9.7.2005, 9.10.2005; Kobarid - 235 m (UM92), 15.9.2001; Pokljuka (Močila) - 1200 m (VM23), 14.8.2003 and 2.9.2005; Ajševica (UL98), 1.8.2004; Podčela - 350 m (UM83), 6.8.2004; Labinje - 800 m (VM21), 23.8.2004; Petelinjsko jezero 550 m (VL46), 12.9.2004; Jelovica (Ledine) - 1100 m (VM32), 19.9.2004 and 3.9.2005; Gradišče pri Vipavi (VL17), 17.7.2005; Novakov Rovt (VM23), 2.9.2005; Nanos (VL27), 4.9.2005; Puščava - 240 m (WL18), 17.6.2006; Preloge - 360 m (WL15), 31.5.2007; Dolnji Zemon (VL44), 1.7.2007; Čepovan (Kobilica) - 540 m (VM00), 8.7.2007; Lijak (VL08), 20.7.2008; Rakitna - 800 m (VL58), 12.9.2008; Vojsko - Gačnik - 915 m (VM10), 12.7.2016; Landol - 530 m (VL37), 18.7.2016; Kanalski vrh (UM90), 29.7.2016; Staro Selo - 240 m (UM82), 24.8.2016; Hotedršica - 560 m (VL38), 26.8.2016; Žejna dolina - 580 m (VL39), 26.8.2016.

**Pastiroma clypeata* (Horvath 1897)

Material examined: Strunjan (UL94), 6.7.2011 (2 ♂♂) on *Puccinellia festuciformis*.

More abundantly, this species has been collected in halophytic salt marshes near Poreč in Istria - Croatia (Červar-Porat (UL91), 10.8.2003, 11.8.2004, 22.8.2005; Vabriga - Santa Maria (UL91), 8.8.2006).

Metropis aris Asche, Drosopoulos & Hoch 1983

New records: Branik - Branik (Golec) - 370 m (VL07), 8.6.2006 (11 ♀♀), 10.6.2008 (7 ♀♀), 25.5.2014 (70 ♀♀, 13 ♂♂), 21.04.2016 (2 ♀♀, 19 ♂♂); Petrinjski kras (VL14), 27.4.2008 (1 ♂); Rakitovec - 520 m (VL13), 6.6.2014 (1 ♂, 3 ♀♀).

This species occurs on very dry karstic pastures with various xerophilous grasses, mainly certain species from the *Festuca valesiaca* and *F. ovina* aggregate as well as *Stipa pennata*. Sometimes it may be found even a substantial number of specimens, especially by the suction sampling method. It develops one generation per year. Adults appear in spring from April to June. Males usually prevail at the beginning (April, early May), while in June only females can be found.

**Struebininganella lugubrina* (Boheman 1847)

Material examined: Žagorje pri Pivki (VL35), 9.7.2006 on *Glyceria notata*.

TETTIGOMETRIDAE Germar 1821

**Tettigometra leucophaea* (Preysslér 1799)

Material examined: Petelinjsko jezero - 550 m (VL46), 12.9.2004; Strunjan - 50 m (UL94), 14.10.2007; Unec - 540 m (VL47), 31.8.2008; Izola - 130 m (UL94), 3.11.2008; Dragonja - 20 m (UL93), 26.5.2016; on dry xerothermic pastures and low-intensity meadows with calcareous soil.

CICADOMORPHA Evans 1946

APHROPHORIDAE Amyot & Serville 1943

Aphrophora major Uhler 1896

New records: Ljubljana (VL60), 19.7.1988; Jarše (VM60), 8.6.1989; Dolga vas pri Kočevju (VL95), 15.9.1991; Stražišče pri Kranju (VM42), 4.7.1995 (all leg. BF); Podčela - 350 m (UM83), 6.8.2004; Labinje - 800 m (VM21), 22.8.2004 and 18.8.2012; Baske - 600 m (UL99), 25.7.2009; Koseze (IB) (VL44), 11.7.2014; Vojsko - Gačnik - 920 m (VM10), 12.7.2016; Hotedršica - 560 m (VL38), 26.8.2016.

Neophilaenus limpidus Wagner 1935

New records: Kucelj - 1170 m (VL08), 13.8.2006; Volovja reber - 1080 m (VL44), 1.7.2007; Rakitovec - 520 m (VL13), 6.6.2014.

In Slovenia, this species has been recorded earlier only from the type locality on the mountain Nanos (WAGNER, 1935). It may be more common along the Dinaric mountain chain, but hitherto little faunistic attention has been paid to this species. All localities recorded here belong to this geographic area. This species is confined to a few isolated populations on the southern side of the Alps. Outside of Slovenia, which is "terra typica", this species is only recorded from the North-Italian regions Piedmont and Trento-Alto Adige (SERVADEI, 1967).

Neophilaenus minor (Kirschbaum 1868)

New records: Golo brdo (UM80), 23.6.2014; Branik - 380 m (VL07), 30.6.2002 and 10.6.2008; Sinji vrh - 1000 m (VL18), 12.8.2001; Turški vrh (WM83), 26.6.2002.

CICADELLIDAE Latreille 1825

Macropsinae Evans 1935

Macropsis fragilicola Holzinger, Nickel & Remane 2013

Records: Stanošina (WM62), 27.5.2013; on *Salix fragilis* (HOLZINGER & al., 2013)

No other records are known from the territory of Slovenia. This species has not been collected yet by the author himself.

Macropsis notata (Prohaska 1923)

New records: Planinsko polje - 450 m (VL47), 31.8.2008 on *Salix triandra*; Hruševje pri Postojni - 535 m (VL36), 12.9.2015 on *Salix fragilis*.

Species recorded earlier only from Kungota pri Ptuj (SCHÜRRER & LÖCKER, 2003).

Macropsis gravesteini Wagner 1953

New records: Nova Gorica (UL98), 28.5.2006; Golubinjek - 200 m (WM40), 16.6.2006, in both places on *Salix alba*. Species also recorded earlier from Dolnja Počehova (SCHÜRRER & LÖCKER 2003).

**Macropsis remanei* Nickel 1999

Material examined: Kamno - 200 M (UM91) 18.8.2006; Zadnja Trenta - 970 M (VM03), 28.7.2007; Idrijska Bela - 410 m (VL29), 12.7.2016; - on *Salix eleagnos*

Macropsis haupti Wagner 1950

New records: Logarska dolina - 790 m (VM73), 30.7.2005; Podsreda - Socko - 300 m (WL49), 17.6.2006; Kranjska gora - 850 m (VM04), 27.7.2008; Vojsko - Gačnik - 915 m (VM10), 12.7.2016; Podraga (VL17), 18.7.2016; on *Salix purpurea*.

Macropsis scutellata (Boheman 1845)

New records: Čentiba (XM15), 27.7.2004; Bizjaki (VL08), 14.7.2006; Oševljek (UL98), 14.7.2006 and 12.6.2007; Nova Gorica (UL98), 30.8.2011. On *Urtica dioica*.

**Macropsis vicina* (Horvath 1897)

Material examined: Kanal (UM90), 5.6.2005; Kromberk (UL99), 27.6.2007; on *Populus alba*

**Hephathus freyi* (Fieber 1868)

Material examined: Debeli rtič (VL04), 27.7.2011, swept from plants of *Artemisia caerulescens*.

This species has been collected more abundantly in the Croatian part of Istria (Červar - Porat (UL91), 25.8.2008 and 20.8.2015; Antenal (UL91), 7.8.2001), mainly swept from *Artemisia caerulescens* plants. Its most likely association with *Artemisia* spp. plants has already been reported by Tishechkin (TISHECHKIN, 1999).

Agalliinae Kirkaldy 1901

**Agallia consobrina* Curtis 1833

Material examined: Čentiba and Lendavske gorice (XM15), 27.7.2004 on *Urtica dioica*.

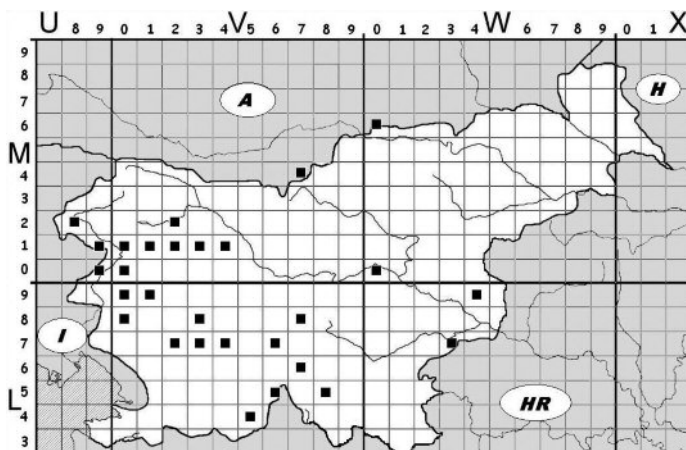


Fig. 4: Known distribution of *Indigallia limbata* in Slovenia

Indigallia limbata (Kirschbaum 1868)

New records: Nanos - 1040 m (VL27), 16.7.2004; Podsreda - Socko, 300 m (WL49), 17.6.2006; Cimprovka - 1240 m (VM21), 24.6.2006; Soriška planina - 1400 m (VM22), 3.8.2008; Grant - 700 m (VM11), 12.6.2010; Rut - 1200 m (VM11), 12.6.2010; Spodnje Bukovo - 388 m (VM11), 12.6.2010; Cimprovka - 1180 m (VM21), 26.6.2010; Porezen - 1620 m (VM21), 3.7.2010; Porezen - 1300 m (VM21), 25.6.2011; Kalce - Ruska rajda (VL38), 15.5.2012; Ravhar (UM90), 18.5.2013; Volčanski Ruti - 560 m (UM91), 16.6.2013; Grčarice (VL85), 21.7.2013; Košenjak (WM06), 8.7.1973 (leg. B. Sket - coll. PMS); Podolševa - Sveti Duh (VM74), 20.7.1974 (leg. B. Sket - coll. PMS).

This south-alpine and dinaric species is fairly common in Slovenia, especially along the Dinaric mountain chain (Figure 4). According to the current knowledge, it is absent in the sub-Mediterranean area as well as in the extreme eastern parts of Slovenia (Prekmurje). We usually have found it associated with the plant *Lamium orvala*, which is most likely its preferred if not the only host plant. Namely, if distribution maps of *Indigallia limbata* and *Lamium orvala* are compared, an almost perfect overlap is gained, which could additionally support this preferred relationship. Adults occur from end of April to the end of July with the maximum in June.

Dryodurgades dlabolai Wagner 1963

New records: Podkraj - 870 m (VL27), 10.9.2008; Vitovski vrh - 880 m (VL08), 28.9.2008; food plant *Trifolium medium*.

Idiocerinae Baker 1915

**Hespericerus brusinae* (Horvath 1895)

Material examined: Lokvica - 215 m (UL97), 8.5.2005 and 7.5.2016; Klariči (UL97), 19.5.2006 (nymphs) and 3.7.2013; Vale pri Brestovici -140 m (UL97), 8.5.2005; Kromberk (UL99), 9.7.2005; Lijak (VL09), 20.5.2006 (nymphs and adults),

4.5.2008 and 3.4.2007 (nymphs); Solkan (UL99), 21.5.2006 (1 ♂, many nymphs); Golo brdo (UM80) - 200 m, 11.6.2006 and 31.5.2014; Osp (VL14), 27.4.2008; Črni kal (VL14), 14.4.2011; always on *Pistacia terebinthus*.

The type locality of this species is the island of Hvar ('Lesina' in Horvath's original paper) in Dalmatia, but recorded by the same author also from Bakar and Novi Vinodolski in the northern Adriatic area (HORVATH, 1895). According to DLABOLA (1981: 225) this species is an arboreal-east-Mediterranean fauna element distributed from Tajikistan through Turkmenistan, Iran, western Caucasus to the Black Sea area and then along the eastern Adriatic coast, where it reaches the most western and northern range in western Slovenia and in Friuli-Venezia Giulia (Northeast Italy). Various plant species have been recorded as to be the host plants of this species: *Pistacia* spp. (DLABOLA, 1981), *Ailanthus altissima* (LOGVINENKO, 1984), *Rhus coriaria* (GNEZDILOV, 1999). Records on *Salix* and *Celtis* in Turkey seem to be somehow ambiguous (LODOS & KALKANDELEN, 1982). We always found this species to be strictly associated with *Pistacia terebinthus*. Its life history is poorly known. We found first adults in April when its host plant starts budding. This suggests that this species most probably overwinters in the adult stage. Larvae and nymphs have been observed very abundantly in May and June, rarely even in early July. They feed on young leaves and shoots of *Pistacia terebinthus*. Adults of the new generation have been collected on the host plant during July and then they disappeared completely. It remains a mystery where they move after this period.

**Populicerus albicans* (Kirschbaum 1868)

Material examined: Kromberk (UL99), 27.6.2007; Nova Gorica (UL99), 5.6.2010; on *Populus alba*.

Populicerus laminatus (Flor 1861)

New records: Kot pri Semiču - 370 m (WL15), 31.5.2007; Baske - 600 m (UL99), 25.7.2009; on *Populus tremula*.

Iassinae Amyot & Serville 1843

Iassus mirabilis Orosz 1979

New records: Rodik (VL15), 6.7.2008; Dobravlje na Krasu (VL16), 23.6.2010; Rebrnice - 540 m (VL26), 5.7.2014 - on *Quercus cerris*.

Aphrodinae Haupt 1927

Aphrodes bicincta (Schrank 1776) group

Opinions on species delimitation in this group were controversive in the past because of very vague morphological differences between the sibling species. Since they often may live syntopically, the situation becomes even more complicated. Important improvements in this regard have been done in the recent time by using multiple diagnostic criteria (vibrational signals, molecular and morphological characteristics) in order to provide more information needed for reliable species identification (TISHECHKIN, 1998; BLUEMEL & AL., 2014; DERLINK & al., 2014). In the latest two studies also a huge

amount of material from Slovenia was elaborated. It has been corroborated that four species from this group occur in Slovenia - *A. bicincta* (Schrank 1776), *A. makarovi* Zachvatkin 1948, *A. diminuta* Ribaut 1952 and a new one that still needs to be described, temporarily named *Aphrodes* type "Dragonja" (DERLINK & AL., 2014). In the light of these recent studies, the correctness of all older data on *Aphrodes* species in Slovenia become dubious (GRAEFFE, 1903; HOLZINGER & SELJAK, 2001) and require complete verification. Hence, the only reliable distributional data in Slovenia derive from BLUEMEL & al. (2014). After the complete morphological revision of *Aphrodes* material in my collection, my own data can only be contributed for *A. diminuta*, which is morphologically well-defined, but not for *A. bicincta* s.str. and *A. makarovi*. On the basis of our observations and data, in Slovenia *A. diminuta* seems to have a more mountainous distribution, being collected mainly at altitudes between 600 - 1400 m.

Aphrodes diminuta Ribaut 1952

Material examined: Porezen - 1300 m (VM21), 19.8.2000; Blegoš (VM21), 29.7.2001, 6.9.2008, 8.8.2009; Črni vrh over Cerkno - 1270 m (VM21), 5.8.2007; Kojca - 670 m (VM11), 8.8.2010; Bohinjska Bistrica (VM12), 19.8.2002; Bohinjsko jezero - (VM12), 3.8.1999; Jelovica 1100 m (VM32), 23.8.2004, 3.9.2005; Logarska dolina - 790 m (VM73), 30.7.2005; Mlinarjevo sedlo - 1250 m (VM63), 15.8.2007; Mojstrana (VM24), 27.7.2011; Nanos - 900 m (VL27), 20.8.2004 and 4.9.2005; Planina Razor (VM02), 2.9.2006; Dolnji Zemon (VL44), 1.7.2007; Trbovlje (WM00), 11.7.1990 (PMS).

Anoscopus albifrons (Linnaeus 1758)

Material examined: Murska Sobota (WM87), 4.7.1974

**Anoscopus albifrons mappus* Guglielmino & Bückle, 2015

Material examined: Solkan - 90 m (UL99), 30.8.2008; Kromberk (UL98), 9.7.2005; Grgar (UL99), 18.6.2005; Skalnica - 160 m (UL99), 21.5.2005; Zagomila - 360 m (UL99), 16.6.2008; Kobariški Stol - 1135 m (UM82), 20.7.2014; Livek - 850 m (UM91), 16.7.2005; Kucelj - 1200 m (VL08), 4.9.2004; Čaven - 1240 m (VL18), 14.8.2011; Socerb - 440 m (VL14), 6.7.2008; Jelšane (VL43), 1.7.2007; Čepovan (Kobilica) - 540 m (VM00), 8.7.2007; Vodiška planina - 1110 m (VM32), 3.9.2005.

According to the most recent investigations made by GUGLIELMINO & BÜCKLE (2015) the whole material in my collection collected in western Slovenia belongs to the subspecies *A. a. mappus*. Also records published by me in 2004 as *A. albifrons* refer to this subspecies (SELJAK, 2004a). Only a male specimen found in the collection of PMS, meets aedeagus characteristics of the typical *A. albifrons* (Linnaeus) s.str. This specimen was collected by B. Sket near Murska Sobota (Pannonian region) on 04.07.1974.

* *Anoscopus carlebippus* Guglielmino & Bückle, 2015

Material examined: Rožna dolina (UL98), 23.7.2005 and 22.7.2011; Nova Gorica (UL98), 30.7.2004 and 24.6.2007; Kromberk (UL99), 16.7.2004; Mark (UL98),

20.7.2004; Ajševica (UL98), 1.8.2004, 20.8.2006 and 31.7.2010; Semič (WL15), 6.7.1981; Gederovci (WM87), 21.7.1974; in temporary wet to swampy places rich on sedges.

The recently published studies by GUGLIELMINO and BÜCKLE (2015) showed that the populations of *Anoscopus albiger* (Germar 1821) species complex distributed in the Balkans as well as those from western Slovenia differ from the typical species in the shape of the aedeagus appendages, the terminal ones being "very broad, leaf-shaped" and the proximal ones "diverging in ventral view". Specimens from this region have been recognized as a separate species and described under the name above. Among the paratypes also material from western Slovenia was studied and documented. According to these changes the typical *Anoscopus albiger* (Germar 1821) has not been collected in Slovenia yet.

Anoscopus flavostriatus (Donovan, 1799) s. l.

According to the recent account on the species *A. flavostriatus* two subspecies occur in Europe; the typical one being widely distributed all around the vast part of Europe and *A. f. dubius* Gebicki & Bednarczyk 2002 till now only recorded from central and northern Italy (GUGLIELMINO & BÜCKLE, 2015). The differences between two subspecies are small, but seem to be stable and largely consider the shape and orientation of proximal aedeagal appendages. Specimens from Slovenia included in this study originate from the eastern part of the country (Muriša) and belong to *A. flavostriatus* s. str. The subsequent re-examination of specimens in my collection has shown, however, that both subspecies occur in Slovenia. Because of the scarcity of material from the central and eastern part of the country being available for the examination, general conclusions on the distribution and demarcation situation of both subspecies in Slovenia have to be omitted for now. Available distributional data of both subspecies that suggest a much commoner occurrence of *A. f. dubius* are gathered below.

Anoscopus flavostriatus (Donovan 1799) s. str.

Material examined: Gederovci (WM87), 21.7.1974 (leg. B. Sket); Dolina pri Lendavi (XM15), 26.7.2004; Muriša (XM24), 26.7.2004; Dolnji Zemon (VL44), 1.7.2007; Hrušica pri Podgradu - 550 m (VL34), 6.7.2008.

Anoscopus flavostriatus dubius (Gebicki & Bednarczyk 2002)

Material examined: Zabraška planina -1050 m (VM34), 2.8.2003; Soriška planina - 1300 m (VM22), 14.8.2003 and 23.8.2004;; Podčela - 350 m (UM83), 6.8.2004; Cimprovka - 1250 m (VM21), 23.8.2004 and 28.8.2016; Jelovica - 1150 m (VM32), 23.8.2004 and 3.9.2005; Kucelj - 1200 m (VL08), 4.9.2004; Mala Lazna - 1100 m (VL09), 4.9.2004; Logarska dolina - 790 m (VM73), 30.7.2005; Novakov rovt (VM23), 2.9.2005; Planina Kuk - 1150 m (VM01), 2.9.2006; Zadnja Trenta - 970 m (VM03), 28.7.2007; Blegoš - 1230 m (VM21), 6.9.2008; Kojca - 1300 m (VM11), 27.8.2009; Vremščica - 840 m (VL25), 16.7.2011; Landol - 530 m (VL37), 18.7.2016; Vojsko - Gačnik - 910 m (VM10), 8.8.2016; Črni vrh nad Cerknim - 1220 m (VM21), 28.8.2016;

**Anoscopus alpinus* (Wagner 1955)

Material examined: Peca - 1900 m (VM85), 22.7.1974 (1 ♂; leg. B. Sket - coll. PMS)

**Planaphrodes trifasciata* (Geoffroy 1785)

Material examined: Čaven - 1240 m (VL18), 14.8.2011(1 ♂); Sabotin (UL99), 14.8.2012 (2 ♂♂, leg. J. Kamin); Golo brdo (UM80), 23.6.2014 (1 ♂).

**Stroggylocephalus agrestis* (Fallen 1806)

Material examined: Nova Gorica - Barje (UL98), 18.6.2005, 9.10.2005, 23.8.2010; Rožna dolina (UL98), 23.7.2005; Orehek pri Postojni (VL36), 12.9.2004; Landol - 530 m (VL37), 18.7.2016; Velika Polana (XM05), 26.7.2004; Muriša (XM24), 26.7.2004; in wet or temporary dry straw meadows on tall sedges, mainly on *Carex acutiformis*.

**Stroggylocephalus livens* (Zetterstedt 1840)

Material examined: Ajševica (VL08), 20.8.2006, 20.9.2009 and 31.7.2010; Nova Gorica - 100 m (UL99), 30.10.2016; in wet meadows.

Stegelytrinae Baker 1915

**Stegelytra putoni* (Mulsant & Rey 1875) (*Figure 5 and Figure 6*)

Material examined: Nova Gorica (UL99), 11.9.2010, 2.10.2010, 2.10.2011, 29.10.2011 and 6.7.2013, 15.7.2016; always in the same place on *Quercus ilex*.



Fig. 5: *Stegelytra putoni* - female (size: 5.0-5.7 mm)



Fig. 6: *Stegelytra putoni*
– nymph

This is a Mediterranean species distributed in the Pyrenean Peninsula, southern France, and Italy (RIBAUT, 1952; GUGLIELMINO & BÜCKLE, 2007). In the East Adriatic region it was recorded from Dalmatia (Croatia) (RIBAUT, 1952; NAST, 1987), but marked in Fauna Europaea as a vague data (JACH & HOCH, 2016). In Dalmatia (Croatia), I only found a female on the island Korčula, 30.06.2005, therefore uncertainty, which species occurs there - *S. putoni* or *S. erythronaura*, remains unsolved. However, repeated collections of this species on the above given locality for several years unambiguously confirm the presence of *S. putoni* in the East-Adriatic region. According to our observations this species develops at least two generations per year, one in summer and another one in early autumn. According to RIBAUT (1952), it is strictly associated with evergreen oaks, especially *Quercus ilex* and *Q. suber*. We always collected it from *Q. ilex* only.

Cicadellinae Latreille 1825

**Graphocephala fennahi* Young 1977

Material examined: Maribor (WM45), 25.7.2005, leg. J. Miklavc; a specimen trapped on a yellow sticky trap (SELJAK, 2013).

Errhomenus brachypterus Fieber 1866

New records: Kojca - 670 m (VM11), 8.8.2010; Krnica - 990 m (VL09), 29.7.2012, leg. J. Kamin; Deskle (UM90), 4.10.2012, leg. J. Kamin; Rimske Toplice (WM10), 7.4.2016 (leg. B. Zadavec).

Collection PMS: leg. BF: Ig (VL68), 14.5.1984 (leg. ?); Kočevski Rog (WL05), 18.6.1986 (leg. ?); Pevno (VM41), 27.5.1987 (leg. R. Borisov); Planinsko polje (VL47), 23.6.1993; Planinsko polje (VL48), 23.6.1993; Planinca (VL59), 9.9.1996 (leg. M. Pistotnik); Turjak (VL68), 15.6.1997 (leg. P. Presetnik); Šmarna gora (VM50),

19.6.1997 (leg. S. Strgulc) and 17.6.1998 (leg. Š. Štrekelj); Laze (WL16), 22.6.1997 (leg. A. Gregorčič); Podutik (VM50), 12.7.1997 (leg. U. Kozina) and 25.6.1998 (leg. A. Skoberne); Postojna (VL37), 20.7.1997 (leg. B. Fajdiga); Doblar (UM90), 1.6.1998 (leg. B. Del Fabbro); Dragatuš (WL14), 14.6.1998 (leg. N. Planinc); Vrhnika (VL49), 15.6.1998 (leg. M. Zagmajster); Gorenja Kanomlja (VM10), 22.6.1998 (leg. D. Erjavec); Iški Vintgar (VL68), 22.6.1998 (leg. T. Korenčič); Sedlo Davovec (Cerklje) (VM62), 22.6.1998 (leg. E. Močnik); Smladnik (VM51), 22.6.1998 (leg. A. Žunič); Stari Grad v Podbočju (WL37), 22.6.1998 (leg. A. Zorko); Trnovec (VM50), 22.6.1998 (leg. G. Šubic); Vikrče (VM50), 10.6.1999 (leg. ?); Žlebe (VM50), 20.6.1999 (leg. P. Glogovačan).

Typhlocybinae Kirschbaum 1868

Dikraneura variata Hardy 1850

New records: Šempas (VL08), 28.9.2002; Lijak (VL09), 9.11.2003; Stara Gora (UL98), 25.6.2007; Sabotin - 370 m (UL99), 16.6.2008; Kojca - 1300 m (VM11), 27.8.2009; Kolovrat - 1100 m (UM91), 8.9.2012 and 16.6.2013; Ravnica - Vratca (UL99), 18.6.2015; Malo Polje (VL28), 27.6.2015; Mala Lazna - 1110 m (VL09), 23.10.2015.

The genus *Forcipata* DeLong & Caldwell 1936 in Slovenia (*Figure 7*)

The zoogeographical situation of the genus *Forcipata* in Slovenia has already been discussed in earlier papers (SELJAK, 2004a; SELJAK, 2012). Four species occur in the territory - *F. citrinella* (Zetterstedt 1828), *F. major* (Wagner 1948), *F. forcipata* (Flor 1861) and *F. obtusa* Vidano 1965. However, there are clear parapatric distributional patterns between the vicariant species pairs, the cisalpine (*F. major* and *F. obtusa*) and transalpine (*F. citrinella* and *F. forcipata*) ones (SELJAK, 2012).

Beside the Alps, the Dinaric mountain chain that runs from the north-west towards the south of the country greatly determines the distribution ranges of *Forcipata* species in Slovenia. It is quite obvious that during the last glaciations previously unique populations became spatially completely divided for a period of time which was long enough for gradual development of separate species pairs.

Till now *F. forcipata* has only been found in the Alpine regions of the northern part of Slovenia, usually at higher altitudes between 900 - 2200 m. In contrast, *F. obtusa* has only been collected south of the Julian Alps, along the Dinaric mountain chain and to the west of it. This species also seems to be more common at submontane and higher altitudes than in the plain. According to the current knowledge there is no geographic overlap of these two species in Slovenia.

F. citrinella occurs in the continental part of Slovenia to the east and north of the Dinaric mountain chain. It has never been collected to the west, where it is completely replaced by *F. major*. Slightly overlapping areas in the southern slopes of the Julian Alps show a possible geographic co-occurrence, but according to our observations they do not live syntopically.

Because of some misinterpretations of *Forcipata* species in an earlier work (HOLZINGER & SELJAK, 2001) that resulted in erroneous interpretations of distribution patterns all earlier distributional data from Slovenia are listed here again.

Forcipata citrinella (Zetterstedt 1828)

Material examined: Borovška gora (VL84), 20.7.2013; Dolga vas (XM16), 31.7.2008; Golubinjek - 200 m (WM40), 16.6.2006; Ljubljana (VM60), 5.6.1971 (leg. B. Sket); Lopata - 260 m (WM12), 28.9.2010; Mala Polana (XM05), 17.5.2000 (leg. S. Gomboc); Murska Sobota (WM86), 4.6.1974 (leg. B. Sket); Novakov rovt (VM23), 2.9.2005; Planina Stador - 1040 m (VM01), 7.7.2005; Preloge - 360 m (WL15), 31.5.2007; Preval pri Podutiku - 330 m (VM50), 6.6.2012; Puščava - 240 m (WL18), 17.6.2006; Radenci (WM86), 23.3.2001; Ravne nad Šoštanjem (WM03), 3.9.1997 (leg. S. Gomboc); Rogaška Slatina (WM42), 2.8.2013; Soriška planina - 1400 m (VM22), 3.8.2008; Turški vrh (WM83), 20.9.2002; Vršič - 1500 m (VM04), 15.8.2012; Zgornje Jezersko - 890 m (VM63), 15.8.2007; Žitkovci (XM06), 31.7.2008.

Forcipata major (Wagner 1948)

Material examined: Ajševica (VL08), 6.5.2001, 8.9.2001, 1.8.2004; Bate - 650 m (UM90), 2.7.2000; Bilje (UL98), 28.7.1998, 27.5.1999, 19.7.1999; Blegoš - 1400 m (VM31), 6.9.2008; Bohinjska Bistrica (VM12), 19.8.2002; Cerkniško jezero (VL56), 14.8.2001; Gojače (VL08), 20.5.1998; Gorje - 580 m (VM21), 8.8.2010; Gradišče pri Vipavi (VL17), 17.7.2005, 13.6.2006; Grgar (UL99), 22.10.2000, 27.5.2012; Horjul (VL49), 19.9.2007; Hotedršica - 560 m (VL38), 26.8.2016; Hruševje pri Postojni - 535 m (VL36), 12.9.2015; Hrušica (VL37), 10.9.2008; Idrija pri Bači (VM00), 23.8.1998; Idrsko (UM91), 10.9.2001; Kalce - 500 m (VL38), 29.8.2001; Kobarid - 235 m (UM92), 15.9.2001; Kromberk (UL99), 10.10.1999, 14.7.2013; Labinje - 500-900 m (VM21), 7.8.1998, 9.9.2006, 18.8.2012; Jelovica (Ledine) - 1100 m (VM32), 19.9.2004; Lijak (VL09), 20.7.2008; Log Čezsoški (UM82), 16.9.2002; Mala Lazna - 1100 m (VL09), 23.8.2003; Miren (UL98), 2.5.2012; Nemški rovt - 750 m (VM22), 14.8.2003; Nova Gorica (UL98, UL99), 5.10.1997, 16.10.1997, 29.8.1998, 22.5.1999, 23.10.1999, 12.7.2001, 21.9.2001, 18.6.2005, 29.6.2011, 19.7.2014, 11.7.2001, 9.10.2005, 24.6.2007, 6.6.2010; Novelo - 370 m (UL97), 16.9.2010; Orehek (VM11), 5.6.2015; Orehek pri Postojni (VL36), 12.9.2004; Paljevo (UL93), 20.9.2003; Panovec - 110 m (UL98), 11.6.2000, 13.9.2000, 21.8.2001, 14.8.2005; Planinsko polje - 450 m (VL47), 17.6.1983 (leg. B. Sket), 28.6.2001, 31.8.2008; Podraga (VL17), 18.7.2016; Poljubin (VM01), 27.4.2007; Pri Peči (VL09), 18.10.1997, 21.9.2015; Rakitna - 800 m (VL58), 12.9.2008; Ravnica (UL99), 9.5.1998; Sečoveljske soline (UL93), 23.7.2010; Senik - 550 m (UM80), 11.6.2006; Soriška planina (VM22), 23.8.2004; Spodnje Bukovo - 400 m (VM11), 28.8.2011 and 24.7.2016; Stara Gora (UL98), 21.5.2005, 10.9.2011, 25.5.2012, 9.5.2014; Staro Selo - 240 m (UM82), 24.8.2016; Studeno (VL37), 6.6.1999; Tolmin (VM01), 13.10.2002 and 24.6.2016; Vetrnik - 700 m (WM40), 17.6.2006; Vipava (VL17), 10.8.2000; Vitovlje (VL08), 25.10.2001; Vodice (UL99), 20.9.2003; Vojsko - 1050 m (VL19), 23.8.2003; Vojsko

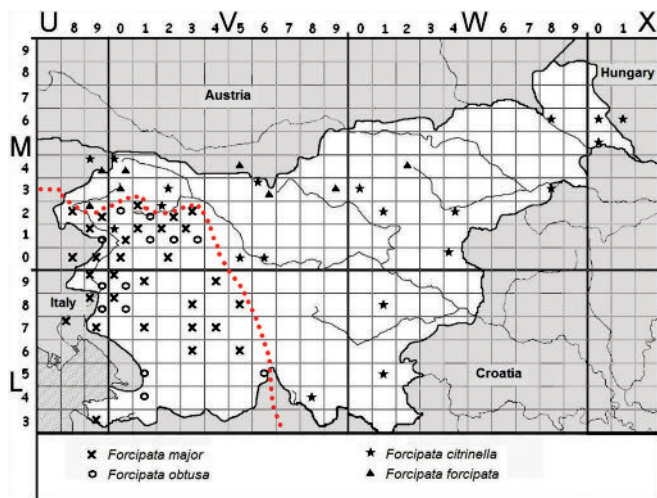


Fig. 7: *Forcipata* spp. - distribution map and the rough demarcation line (red dotted) between cis- and transalpine species in Slovenia

- Gačnik - 915 m (VM10), 12.7.2016; Zagomila - 360 m (UL99), 16.6.2008; Zalošče (VL08), 7.9.1999; Žejna dolina - 580 m (VL39), 26.8.2016.

**Forcipata forcipata* (Flor 1861)

Material examined: Krnsko jezero - 1400 m (UM92), 1.8.2009; Mangart - 1770 m (UM94), 15.7.2006; Mangart - 2050-2100 m (UM94), 15.7.2006, 28.8.2015; Mlinarjevo sedlo - 1250 m (VM63), 15.8.2007; Planica (VM04), 15.8.2012; Planina Pungrat - 1440 m (VM54), 9.8.2014; Rogla - 1500 m (WM24), 13.8.2000; Smrekovec - 1350 m (VM93), 22.6.2002; Vršič - 1500-1620 m (VM04), 15.8.2012, 27.7.2008; Zadnja Trenta - 960 m (VM03), 24.7.2005, 28.7.2007.

Forcipata obtusa Vidano 1965

Material examined: Baske - 600 m (UL99), 22.5.2011; Blegoš - 1300 m (VM21), 8.8.2009, 29.7.2001; Cimprovka - 1250 m (VM21), 24.6.2006; Črni vrh nad Cerknem - 1270 m (VM21), 5.8.2007; Gorje - 580 m (VM21), 8.8.2010; Kolovrat - 1100 m (UM91), 8.9.2012; Komna - 1520 m (VM02), 2.8.1999; Labinje 700-900 m (VM21), 21.8.1997, 23.8.2004, 17.9.2011, 18.8.2012; Lokve - 920 m (VL09), 19.7.2009; Loški potok (VL65), 23.6.2001; Porezen - 1350 m (VM21), 7.8.1998; Slavnik - 1000 m (VL14), 6.7.2004; Spodnje Bukovo - 388 m (VM11), 12.6.2010; Stara Gora (UL98), 21.5.2005, 10.9.2011, 19.9.2015; Trnovo (VL09), 6.9.2015; Vitovski vrh - 880 m (VL08), 28.9.2008; Vogel - 1500 m (VM12), 5.8.1999; Zakriž (VM11), 5.6.2015.

Micantulina micantula (Zetterstedt 1840)

New records: Kobariški Stol - 1230 m (UM82), 8.9.2013 (1 ♂); in a montane forest clearing.

As already stated earlier, this species may be very rare in Slovenia (SELJAK, 2004a). In my collection there are only a male and a female, both from the Upper Soča Valley, but from two rather distant localities. Both specimens were swept from tall vegetation in montane forest clearings. *Thalictrum minus* is recorded as to be the host plant (NICKEL, 2003). This plant species is rather common in that area (JOGAN & al., 2001), but I could not find the association with *M. micantula* yet.

**Notus flavipennis* (Zetterstedt 1828)

Material examined: Cerkniško jezero (VL56), 23.6.2001; Planinsko polje (VL47), 28.6.2001; Juršinci (WM74), 16.9.2004; Puščava (WL18), 17.6.2006; Planinsko polje - 450 m (VL47), 31.8.2008; Rakitna - 800 m (VL58), 12.9.2008; Koseze (VL44), 11.7.2014; Juršinci (WM74), 16.9.2004; Puščava (WL18), 17.6.2006.

The problem of Graeffe's records on "*Dicraneura flavipennis* Fabricius" and the possibility of confusion with the following species was discussed in an earlier paper (SELJAK, 2004a).

**Notus italicus* Wagner 1954

Material examined: Vojsko - Gačnik - 915 m (VM10), 12.7.2016.

This endemic species described from the Laguna of Venetia for the first time is widely distributed throughout northern and central Italy (WAGNER, 1954; SERVADEI, 1967). Several records from the adjacent region Friuli Venezia Giulia have suggested that the distribution range of *N. italicus* could extend also into the territory of western Slovenia, which turned out to be true. The above mentioned locality is the only known so far and interestingly very isolated and rather far away from the nearest known localities in Friuli Venezia Giulia in Italy.

**Wagneriala incisa* (Then 1897)

Material examined: Stara Gora (UL98), 17.6.2011 and 10.9.2011; Socerb - 330 m (VL14), 23.9.2011.

Empoasca ossianilssoni Nuorteva 1948

New records: Sabotin - 600 m (UL99), 10.9.2002; Bukovščica - 460 m (VM42), 17.7.2010.

The genus *Chlorita* Fieber 1872 in Slovenia (*Figure 8*)

Till now, five *Chlorita*-species have been found in Slovenia: *Ch. paolii* (Ossianilsson 1939), *Ch. beieri* Dlabola 1959, *Ch. mendax* (Ribaut 1933), *Ch. dumosa* (Ribaut 1933) and *Ch. szelenica* Dlabola 1967. While *Ch. paolii*, *Ch. beieri* and *Ch. mendax* are morphologically and trophically well characterized (SELJAK, 2004a), the situation is not so clear for *Ch. szelenica* and *Ch. dumosa*, seemingly both dwelling on *Thymus*-plants. According to DLABOLA (1967) the basic difference between these two species is in the shape and arrangement of the appendages at the base of the aedeagus shaft. In *Ch. dumosa* the distal two appendages arise laterally from the base of the shaft and are set closer to each other than the proximal one and mostly have

some kind of a common base; the proximal appendage is clearly widely spaced, but still shifted rather close to the base of the shaft. In contrast, in *Ch. szelenica* the three appendages are more or less evenly spaced and the proximal two displaced from the shaft base. These criteria were used for separating both species. However, among populations swept from *Thymus* mats in south-western Slovenia, also specimens with somewhat intermediate arrangement of these appendages have been observed which may complicate a reliable identification. In such cases several specimens have to be examined.

Chlorita beieri Dlabola 1959

New records: Nanos - 900 m (VL27), 20.8.2004; Škrljevica - 576 m (VL26), 19.6.2005; Kromberk (UL99), 9.7.2005; Gorjansko - 197 m (UL97), 6.8.2005; Grižnik - 299 m (VL07), 6.8.2005; Vale pri Brestovici - 130 m (UL97), 6.8.2005; Črni kal (VL14), 24.9.2005; Golo brdo (UM80), 11.6.2006; Volovja reber - 1080 m (VL44), 1.7.2007; Dolga poljana - 340 m (VL18), 11.7.2007; Lokvica na Krasu (UL97), 7.10.2007; Branik (Golec) - 370 m (VL07), 10.6.2008; Spodnje Škofije (VL04), 24.7.2008; Korte - 100 m (UL93), 17.5.2009; Kastelec (VL14), 17.7.2012; Kubed (VL14), 17.7.2012; Rakitovec - 520 m (VL13), 6.6.2014; Rebrnice - 390 m (VL27), 5.7.2014; Lokovec - 850 m (VM00), 12.8.2014; Beka (VL15), 30.6.2016.

The species is strictly monophagous on *Satureja montana* species complex. In Slovenia it has been collected mainly on *S. montana* s.str., rarely on *S. subspicata*, too.

Chlorita mendax (Ribaut, 1933)

New records: Planina (VL17), 8.6.2006; Ajševica (VL09), 4.5.2008; Golo brdo (UM80), 23.6.2014; Otlica - 830 m (VL18), 27.6.2015; Sabotin - 570 m (UL99), 2.8.2015; Socerb (VL14), 30.6.2016.

The majority of above-listed localities belong to the type area, which is somewhere around Gorizia in Italy and Nova Gorica in Slovenia (RIBAUT, 1933; RIBAUT, 1936). Here, this species is strictly associated with *Artemisia alba*. Most probably it overwinters in the egg stage. First adults appear at the beginning of May with maximum numbers in June and July, but some specimens can be found until to end of September.

**Chlorita dumosa* (Ribaut 1933)

Material examined: Dragonja (UL93), 27.4.2012; Nova vas over Dragonja (UL93), 27.4.2012; Socerb (VL15), 26.5.2016; swept from mats of various *Thymus* species.

Chlorita szelenica Dlabola 1967

New records: Podnanos (VL17), 5.7.2014; swept from mats of various *Thymus* species.

Chlorita paolii (Ossiannilsson 1939)

New records: Šared - 260 m (UL94), 23.9.2011; Nova vas nad Dragonjo (UL93), 27.4.2012; Škocjanski zatok (VL04), 24.9.2005; Divača (VL25), 24.9.2005; Podnanos

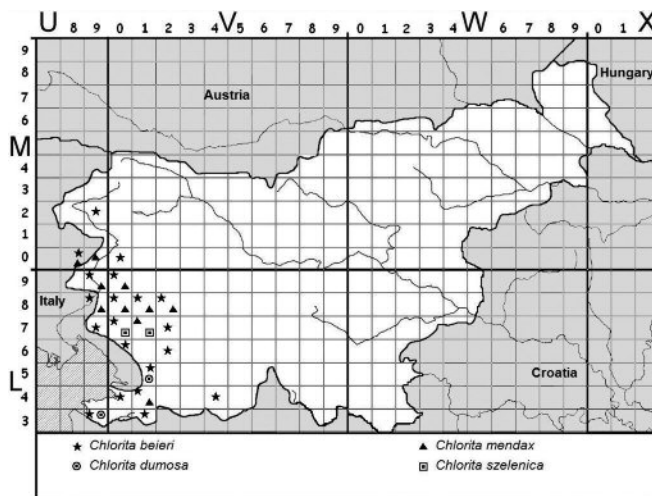


Fig. 8: The genus *Chlorita* in Slovenia: known distribution of four species (the widely distributed species *Ch. paolii* is not mapped out here)

(VL17), 5.7.2014; Malo polje (VL28), 21.9.2003; Idrijski Log - 650 m (VL28), 30.7.2006; Nanos - 900 m (VL27), 26.7.2002; Dolnje Lome - 680 m (VL28), 30.7.2006; Hrušica - 850 m (VL37), 19.9.2007; Baske - 600 m (UL99), 22.5.2011; Vodice nad Grgarjem (UL99), 20.9.2003; Pri Peči - 400 m (VL09), 21.9.2015; Kanal-ski Kolovrat - 650 m (UM90), 19.10.2013; Kolovrat - 1150 m (UM91), 16.6.2013; Zatoľmin (VM01), 3.7.2008; Ljubin (VM01), 27.4.2007; Trebuša - 460 m (VM00), 17.8.2006; Spodnje Bukovo - 440 m (VM11), 28.8.2011; Labinje - 800 m (VM21), 23.8.2004; Blegoš - 1300 m (VM21), 8.8.2009; Rateče (VM05), 15.8.2012; Kranjska gora - 850 m (VM04), 27.7.2008; Gora pri Krškem (WL39), 25.9.2007; Golubinjek - 200 m (WM40), 16.6.2006; Maribor - Tezno (WM55), 16.9.2004; Jareninski dol (WM56), 25.7.2004; Turški vrh (WM83), 20.9.2002; mainly on *Achillea* spp.

* *Kybos lindbergi* (Linnavuori 1951)

Material examined: Črni vrh nad Cerknem - 1270 m (VM21), 5.8.2007; Baske - 600 m (UL99), 25.7.2009; Preval pri Podutiku (VM50), 6.6.2012, on *Betula pendula*.

Ossiannilssonola callosa (Then 1886)

New records: Črni log (XM05), 7.6.2003; Gorenji Novaki - 1028 m (VM21), 4.7.2009; Kozja peč - 400 m (WL59), 16.6.2006; Laniše (VL38), 23.6.2002; Ljubljana (VM60), 17.6.1971 (leg. B. Sket).

* *Edwardsiana bergmani* (Tullgren 1916)

Material examined: Planina Stador - 1040 m (VM01), 7.7.2005 on *Alnus alnobetula*

* *Edwardsiana lamellaris* (Ribaut 1931)

Material examined: Nova Gorica (UL98), 11.7.2011 and 14.7.2013, trapped on light; Miren (UL98), 2.5.2012 on *Rosa arvensis*.

Edwardsiana lethierryi (Edwards 1881)

New records: Gorenje pri Divači (VL16), 22.9.2001; Lokev (VL15), 22.9.2001; Kromberk (UL99), 25.4.2003; Ljubljana (VL69), 22.5.2003; Krn - pl. Kašina - 1100 m (UM92), 5.7.2003; Nemški rovt - 750 m (VM22), 14.8.2003; Most na Soči (VM01), 16.8.2003; Kanal (UM90), 5.6.2005; Preval pri Podutiku (VM50), 6.6.2012; collected on *Acer campestre*, *Tilia cordata* and *T. platyphyllos*.

Edwardsiana nigriloba (Edwards 1924)

Previous records: Tkalca jama (VL47), 22.6.2001 (Schürer & Löcker, 2003);

New records: Nova Gorica (UL99), 27.5.2010 (5 ♂♂, 5 ♀♀), on *Acer platanoides*.

Edwardsiana platanicola (Vidano 1961)

Material examined: Nova Gorica (UL99), 19.5.2007, 14.7.2007 and 02.08.2014 on *Platanus x hispanica* (SELJAK, 2013).

* *Edwardsiana rosaesugans* (Cerutti 1939)

Material examined: Kobarid - 270 m (UM92), 5.8.2006;

This record is based on a male collected at the above-mentioned locality and meets morphological characteristics of this species. However, the aedeagus stem enlargement terminates apically rather sharply angulate, pronounced even slightly more than in Lauterer's drawing (LAUTERER, 1983).

* *Edwardsiana soror* Linnavuori 1950

Material examined: Lepena - 700 m (UM92), 22.8.2003 (1 ♂); Zgornje Jezersko - 890 m (VM63), 15.8.2007 (1 ♂) on *Alnus glutinosa*; Gorenji Novaki - 1028 m (VM21), 4.7.2009 (1 ♂) on *Alnus incana*.

Linnavuoriana sexmaculata (Hardy 1850)

New records: Tuniši (VL13), 30.9.2004; Pregara (VL13), 20.10.2005; Vogrsko (VL08), 31.3.2006; Panovec (UL98), 7.4.2006; Ajševica (VL08), 28.4.2006 and 2.7.2006; Slap Boka (UM83), 15.7.2006; Horjul (VL49), 19.9.2007; Rut - 1200 m (VM11), 12.6.2010; Ljubljana - Rožna dolina (VM50), 20.7.2010; Nova Gorica (UL99), 24.3.2012; Vršič - 1400 m (VM04), 15.8.2012; mainly on various broad-leaved *Salix* spp.

Ribautiana alces (Ribaut 1931)

New records: Lijak (VL09), 9.11.2003; Pregara (VL13), 20.10.2005; Kozja peč - 400 m (WL59), 16.6.2006; Novelo (UL97), 16.9.2010; Kromberk (UL99), 23.10.2011; Planina pri Ajdovščini (VL17), 19.7.2012; mainly on *Quercus pubescens*

* *Ribautiana ognevi* (Zachvatkin 1948)

Material examined: Planinsko polje - 450 m (VL47), 31.8.2008 (3 ♂♂, 2 ♀♀) on *Ulmus glabra*

**Eupteryx adpersa* (Herrich-Schaeffer 1838)

Material examined: Divača (VL25), 24.9.2005; Kastelec (VL14), 6.7.2008; on *Artemisia absinthium*

Eupteryx austriaca (Metcalf 1968)

New records: Vojsko - 1040 m (VL19) 18.8.2001 and 23.8.2003; Soriška planina (VM22), 23.8.2004; Maribor - Kalvarija (WM45), 25.8.2005; Kromberk (UL99), 1.6.2006, 9.7.2011 and 14.7.2013; Vitovlje (VL08), 8.6.2006; Gradišče pri Vipavi (VL17), 13.6.2006; Podsreda - Socko, 300 m (WL49), 17.6.2006; Straška gora - 300 m (WL07), 31.5.2007; Blegoš - 1500 m (VM31), 8.8.2009; Kojca - 670 m (VM11), 8.8.2010; Nova Gorica - Pristava (UL99), 12.9.2010 on *Knautia* spp. (mainly *K. drymeia*).

**Eupteryx collina* (Flor 1861)

Material examined: Duplje - 120 m (VL17), 30.9.1999; Lijak - 90 m (VL09), 4.5.2008; Šempeter pri Gorici - 100 m (UL98), 25.9.2011; Ajševica - 60 m (UL99), 15.9.2012; Rogaška Slatina - 260 m (WM42), 2.8.2013; Podnanos - 140 m (VL17), 5.7.2014; on *Mentha longifolia*.

Eupteryx lelievrei (Lethierry 1874)

New records: Ajševica (UL98), 1.8.2004, 2.7.2006 and 20.8.2006 - on *Stachys officinalis*.

Eupteryx melissae Curtis 1837

New records: Spodnje Škofije (VL04), 28.9.2004, 20.10.2005 and 23.10.2006; Pregara (VL13), 12.10.2005; Parecag (UL93), 20.10.2005; Sečoveljske soline (UL93), 23.7.2010.

So far, it has only been caught on yellow sticky traps or on light, therefore no own data on the host plant(s) are available. Its distribution pattern concentrated in the littoral area suggests, however, that *Nepeta* spp. (*N. cataria* and *N. nuda*) might be the main host plant (NICKEL, 2003).

**Eupteryx origani* Zachvatkin 1948

Material examined: Planina Kuk - 1270 m (VM01), 2.9.2006 - 1 ♀; Borovška gora - 1000 m (VL84), 20.7.2013 - 1 ♀; on *Origanum vulgare*.

It is obviously a rare or perhaps only little collected species in Slovenia, although its host plant is common all over (JOGAN & al., 2001); only two females have been found so far.

Eupteryx ribauti Dworakowska 1972

New records: Trstelj (UL97), 29.5.2004; Solkan (UL99), 25.9.2005; Kromberk (UL99), 16.10.2005 and 18.5.2008; Lijak (VL09), 1.10.2005, 20.5.2006 and 4.5.2008; Golo Brdo (UM80), 11.6.2006; Spodnje Bukovo - 440 m (VM11), 9.9.2006 and

28.8.2011; Hudajužna (VM11), 28.8.2013; Lokovec (VM00), 12.8.2014 - host plants *Clinopodium menthifolium* and *C. nepeta*.

**Eupteryx salviae* Arzone & Vidano 1994

Material examined: Petrinje (VL14), 17.7.2012 and 06.06.2014 on natural population of *Salvia officinalis*

Zyginella pulchra Löw 1885 (Figure 9)

Material examined: Food plant *Cotinus coggygia*: Ravnica (UL99), 18.10.1997; Črni kal (VL14), 5.6.2001; Strunjan (UL94), 22.6.2001; Kostanjevica (UL97), 1.9.2001; Opatje selo (UL98), 1.9.2001; Lokev (VL15), 22.9.2001; Lijak - 450 m (VL09), 2.5.2002; Sabotin - 600 m (UL99), 10.9.2002; Skalnica (UL99), 30.8.2003 and 30.10.2011; Ravnica (UL99), 12.10.2003; Podsabotin (UL99), 25.4.2004; Vale pri Brestovici -140 m (UL97), 8.5.2005; Ajdovščina (VL18), 14.5.2005; Lukini - 320 m (VL13), 24.9.2005; Pregara (VL13), 12.10.2005; Parecag (UL93), 20.10.2005; Gradišče nad Prvačino (VL08), 14.7.2006; Hrvatini (VL04), 25.7.2006; Črni kal (VL14), 14.4.2011; Kromberk (UL99), 9.7.2011 and 14.7.2013; Branik (VL07), 21.9.2014.

On other food plants or the food plant not specified: Bled (VM33), 19.8.2002 (*Acer platanoides*); Ljubljana - Rožna dolina (VL59), 23.7.2004 (leg. V. Mazzoni); Kozja peč - 400 m (WL59), 16.6.2006; Idrijski Log - 650 m (VL28), 30.7.2006; Vitovski vrh - 880 m (VL08), 28.9.2008; Labinje (VM21), 18.8.2012 (*Juglans regia*); Vodrance (WM94), 28.10.2013.

On winter shelter plants: Nova Gorica (UL99), 7.2.1998, 10.12.2000, 8.2.2001, 13.03.2005 (*Taxus baccata*, *Picea abies*); Lijak - 450 m (VL09), 1.12.2002, 11.2.2007 and 2.3.2008 (*Quercus ilex*); Sabotin - 200 m (UL99), 4.2.2007 (*Quercus ilex*); Selo pri Prosenjakovcih - 260 m (WM97), 4.2.2016 (*Pinus sylvestris*).

Cotinus coggygia is the main food plant of this species in the sub-Mediterranean area of south-western Slovenia. Larvae and adults provoke the characteristic stippling of leaves just like the majority of mesophyll feeding Typhlocybinæ. The populations are often rather considerable and consequently the visibility of injuries on leaves, too. In addition, this species is the only Typhlocybinæ we have ever found feeding on *C. coggygia*.

However, there were also certain hesitations expressed whether these populations belong to *Z. pulchra* at all or another perhaps still undescribed species may be involved (REMANE, pers. comm.) I myself have examined a vast number of specimens collected on *C. coggygia* and those swept from *Acer platanoides* and *Juglans regia*. At the morphological level no differences have been observed between compared populations. Fifth instar nymphs were also compared and again both display the same morphological features. Perhaps, combined molecular, vibrational and/or rearing assays would be advantageous to remove the last shadows from this question.

Zyginella pulchra graeffei Melichar 1901

Material examined: Škodelin (UL93), 20.5.2005; Bilje (UL98), 16.4.2009; Miren (UL98) 18.4.2012; Kromberk - 300 m (UL99), 24.4.2013 and 15.05.2016 - in all cases trapped on yellow sticky traps.



Fig. 9: *Zyginella pulchra*, top: adult female; center: 5th instar nymph; bottom: feeding signs on a leaf of *Cotinus coggygria*

This variety has mainly not been accepted as a valid taxonomic entity although externally it differs quite clearly from the typical species by a distinct black quadrangular spot in the costal region of the fore wings just behind the wax area. Good drawings of this feature were published by MELICHAR (1901) and DLABOLA (1977). More material and further studies will be needed to establish the taxonomic value of this pattern variation. All specimens (altogether 7) found by us were captured on yellow or blue sticky traps always in spring, only from April to May.

Arboridia pusilla (Ribaut 1936)

New record: Solkan - 90 m (UL99), 30.8.2008 (7 ♂♂).

Earlier, this species has only been recorded once from Fijesa (HOLZINGER & SELJAK, 2001). Specimens from the new locality were swept from the vegetation along a railway bank. *Geranium sanguineum* is recorded as its food plant (NICKEL, 2003)

Hauptidia distinguenda (Kirschbaum 1868)

New records: Nova Gorica (UL99), 26.4.2005 and 2.4.2006 on *Arabis caucasica*, 8.9.2016 on *Nicotiana* sp. (leg. J. Kamin); Črniče (VL08), 29.4.2005 on *Geranium robertianum*; Kozana (UL89), 25.5.2007 on tomato plants; Tolmin (VM01), 16.10.2011 on *Fuchsia corymbiflora*; Ljubljana (VM60), 6.8.2013 on *Sedum maximum*. In all cases nymphs were also present and obvious injuries on leaves observed.

Zygina frauenfeldi Lethierry 1880

Material examined: Branik (Golec) - 370 m (VL07), 8.6.2006; Socerb (VL14), 23.9.2011; Šempeter pri Gorici (UL98), 25.9.2011; Dragonja (UL93), 27.4.2012; Nova Gorica (UL99), 7.10.2012; Golo brdo (UM80), 23.6.2014, Koper - Sermin (VL04), 26.5.2016; Beka (VL15), 30.6.2016; part of these data have already been published in HOLZINGER & al. (2011).

This species occurs scattered in extremely dry and hot habitats, often along road margins, in stone and sand pits always associated with *Sanguisorba minor* s.l. Until now, all findings in Slovenia are from the sub-Mediterranean region.

Zygina hyperici (Herrich-Schaeffer 1836)

New records: Mala Lazna - 1100 m (VL09), 4.9.2004; Hrušica - 850 m (VL37), 19.9.2007; Rožna dolina (UL98), 30.8.2011; Solkan (UL99), 16.9.2011; Kastelec (VL14), 17.7.2012; on *Hypericum perforatum*.

**Zygina lunaris* (Mulsant & Rey 1885)

Material examined: Nova Gorica (UL98), 26.3.2006, 5.7.2008 and 27.9.2008; Nova Gorica (UL99), 29.10.2011 and 24.3.2012; Loke (UL99), 8.7.2010; Miren (UL98), 18.4.2012, 2.5.2012 and 15.06.2014; on *Salix purpurea* and *S. eleagnos*; adults overwinter on evergreen trees, locally often swept from *Quercus ilex*.

Zygina ordinaria (Ribaut 1936)

New records: Lijak (VL09), 1.12.2002 on *Salix purpurea*; Slap Boka (UM83), 15.7.2006 on *S. eleagnos*; Dragonja (UL93), 14.4.2011 and Preval pri Podutiku - 330 m (VM50), 6.6.2012, both on *Salix alba*.

Zygina suavis Rey 1891

New records: Tolmin (VM01), 12.10.2002; Labinje (VM21), 1.11.2003, both on *Frangula alnus*; Krn - 1100 m (UM92), 5.7.2003; Planina Razor (VM02), 2.9.2006 both on *Rhamnus alpina* subsp. *fallax*.

Zyginidia servadeii Vidano 1982

New records: Parecag (UL93) 18.10.2004 and 4.6.2006; Seča (UL93), 4.6.2006; Strunjan (UL94), 14.10.2007; Korte (UL93), 17.5.2009 and 17.5.2009; on various grasses, by us confirmed feeding of adults and nymphs on *Arundo donax*.

**Zyginidia franzi* (Wagner 1944)

Material examined: Vršič - 1600 m (VM04), 29.7.2001, leg. C. Chersi (pers. comm.); Mangartsko sedlo - 2100 m (UM94), 28.8.2015 on *Sesleria caerulea*.

Deltocephalinae Fieber 1869

Fieberiellini Wagner 1951

**Phlogotettix cyclops* (Mulsant & Rey 1855)

Material examined: Podnanos - 150 m (VL17), 17.7.2005; Nova Gorica (UL98), 8.8.2005; Novo mesto - Kandija (WL17), 23.8.2005; Trebče (WL49), 25.8.2005; Izvir Lijaka (VL09), 1.10.2005; Spodnje Škofije (VL04), 23.10.2006; Zavino - 190 m (VL17), 8.8.2007.

Synophropsis lauri (Horvath 1897)

Widely distributed in the sub-Mediterranean region on various especially evergreen trees and shrubs; found also in Ljubljana (VM60), 25.7.2010 on a bonsai tree of *Olea europaea* (leg. T. Trilar).

Goniagnathini Wagner 1951

Goniagnathus brevis (Herrich-Schaeffer 1835)

New records: Socerb (VL14), 2.10.2001 and 30.5.2004; Debeli rtič (UL94), 6.10.2001; Sanabor - Zavetniki (VL28), 10.5.2002; Kromberk (UL99), 29.8.2003; Črniške Ravne (VL08), 3.7.2004; Lokvica - 215 m (UL97), 8.5.2005; Vipolže (UL89), 26.7.2005; Gaberje (VL17), 9.6.2006; Šempeter pri Gorici (UL98), 25.9.2011; Lukini - 310 m (VL13), 20.8.2013.

Opsini Emeljanov 1962

**Circulifer opacipennis* (Lethierry 1876)

Črni kal (VL14), 24.9.2005 (2 ♂♂ and 2 ♀♀); Solkan (UL99), 17.8.2008 (1 ♀); Socerb - 330 m (VL14), 23.9.2011 (2 ♂♂) and 30.6.2016 (1 ♀).

This species is subject to diverging interpretations among various authors. While it is recognised as a variety of *C. haematoceps* (Mulsant & Rey 1855) by some authors (RIBAUT, 1952) or is suggested it might probably be just an "ecomorph", others consider it a good species or even "two different species complexes, namely the *C. haematoceps* and the *C. opacipennis* complex" (KLEIN & RACCAH, 1992).

Without delving deeper into this matter, I decided to publish specimens found in Slovenia as *C. opacipennis* because they meet all characters of this taxonomic entity described by RIBAUT (1952) and DELLA GIUSTINA (1989). All specimens in my collection are rather small not exceeding 2.7 mm in males and 3.0 mm in females, greenish-yellow in colour and mostly devoid of any dark markings on fore wings.

Hishimonus hamatus Kuoh 1976

New records: Gažon - 170 m (UL94), 9.7.2015; Renče (UL98), 4.9.2015; Debeli rtič (VL04), 19.12.2015; Dragonja (UL93), 21.7.2016.

For the first time, this East-Palaeartic species has been recorded to occur in Slovenia and in Europe in 2012 (SELJAK, 2013). Some web forums have reported its occurrence in several Italian provinces since 2008. However, no officially published data are available. I myself found a specimen in the city park in Catania (Sicily) on June 15, 2016. There are also documented findings in the surroundings of Poreč in Croatia. In south-western parts of Slovenia it is spreading rather fast, although the population densities are still moderate everywhere. The species seems to be very polyphagous. Recently, it has been collected particularly often on olive trees.

Macrostelini Kirkaldy 1906

**Aconurella prolixa* (Lethierry 1885)

Material examined: Seča (UL93), 16.8.2004 and 14.10.2007; Spodnje Škofije (VL04), 19.9.2005; Valdoltra (VL04), 31.7.2007; Strunjan (UL94), 14.10.2007; Izola - Livade (UL94), 24.7.2008; Solkan (UL99), 16.9.2011; Vedrijan (UL89), 21.9.2011; Vipolže - 60 m (UL89), 1.8.2012, mainly on *Cynodon dactylon*.

**Balclutha calamagrostis* Ossiannilsson 1961

Material examined: Selovec - 1200 m (VL08), 13.8.2006; Krnica - 1000 m (VL08), 14.8.2011; Preval pri Podutiku (VM50), 6.6.2012.

Nesoclutha erythrocephala (Ferrari 1882) (Figure 10)

Material examined: Antenal (UL91) - Croatia, 20.8.2011 (23 ♂♂ and 22 ♀♀), on grasses (perhaps *Bothriochloa ischaemum*) in an extremely hot and dry stone-pit.

In Slovenia this extremely thermoxerophilous species has not been found yet, but it may be expected in the coastal region.

**Erotettix cyane* (Boheman 1845)

Material examined: Blagovna (WM22), 24.7.2004 (1 ♂, 8 ♀♀) on *Trapa natans* (leg. T. Trilar).

**Macrosteles alpinus* (Zetterstedt 1828)

Material examined: Mangartsko sedlo - 2100 m (UM94), 28.8.2015;

**Macrosteles horvathi* (Wagner 1935)

Material examined: Jelovica (Ledine) - 1150 m (VM32), 23.8.2004 and 19.9.2004.

**Macrosteles maculosus* (Then 1897)

Material examined: Zadnja Trenta - 960 m (VM03), 24.7.2005 and 28.7.2007; Robič - 250 m (UM82), 13.8.2008.

Macrosteles ossianillsoni Lindberg 1954

New records: Žejna dolina - 580 m (VL39), 26.8.2016;

**Macrosteles septemnotatus* (Fallen 1806)

Material examined: Loški potok (VL65), 23.6.2001; Jelovica (Ledine) - 1150 m (VM32), 23.8.2004, 19.9.2004 and 3.9.2005; Grobišče (ob Pivki) (VL36), 12.9.2004; Orehek pri Postojni (VL36), 12.9.2004; Puščava - 240 m (WL18), 17.6.2006; Planinsko polje - 450 m (VL47), 31.8.2008; Landol - 530 m (VL37), 18.7.2016; host plant *Filipendula ulmaria*.

**Macrosteles sexnotatus* (Fallen 1806)

Material examined: Staro Selo - 240 m (UM82), 24.8.2016;

Under the name *Cicadula sexnotata* Fallen, this species was recorded by Graeffe as very common in the whole littoral region that includes the present-day's Slovenian part as well. He recorded: "*Im ganzen Küstenlande verbreitet, liebt besonders nasse Wiesen und findet sich vom April bis October dort in grosser Anzahl*" (GRAEFFE, 1903). According to our observations, this species is rather uncommon being found only once on a very wet meadow with lots of *Juncus effusus*, *Molinia coerulea* and various *Carex*-species near Kobarid. Graeffe's record obviously includes several by external appearances similar species like *M. cristatus*, *M. laevis*, *M. ossianillsoni* which dominate in this area. Hence, this record cannot be accepted as reliable. This old record has already been marked as questionable in an earlier paper (HOLZINGER & SELJAK, 2001).

Macrosteles variatus (Fallen 1806)

New records: Lepena - 700 m (UM92), 22.8.2003; Dolina Idrije (UM80), 11.6.2006; Kucelj - 1180 m (VL08), 13.8.2006; possibly on *Urtica dioica*

**Macrosteles viridigriseus* (Edwards 1922)

Material examined: Nova Gorica (UL98), 9.10.2005, 27.9.2008 and 22.7.2011; Kamno - 200 m (UM91) 18.8.2006; Lokve v Beli krajini (WL14), 31.5.2007; Preloge - 360 m (WL15), 31.5.2007; Straška gora - 300 m (WL06), 31.5.2007; Marindol - 240 m (WL23), 3.6.2007; Sečje selo - 170 m (WL13), 3.6.2007; Podlisec (VL98), 7.8.2007; Ajševica (VL08), 11.5.2012.

Deltocephalini Fieber 1869

Maiestas horvathi (Then 1896)

New record: Vogrsko (VL08), 2.7.2006 (1 ♂); in Slovenia previously only recorded by Then from Kočevje (THEN, 1896; HOLZINGER & SELJAK, 2001).

Doraturini Ribaut 1952

* *Doratura exilis* Horvath 1903

Material examined: Branik (Golec) - 380 m (VL07), 30.6.2002; Petelinjsko jezero - 550 m (VL46), 12.9.2004; Zagorje (pri Pivki) (VL35), 9.7.2006; Gabrje pri Tolminu (UM91), 3.7.2008; Vipava (VL17), 1.8.2012; Kobariški Stol - 1380 m (UM82), 8.9.2013; Drežniške Ravne (Planina Zapleč) - 1200 m (UM92), 12.7.2015; Beka (VL15), 30.6.2016; Socerb (VL14), 30.6.2016; Spodnji Kras (VL14), 21.9.2016.

Chiasmus conspurcatus (Perris 1886)

New records: Prvačina (UL98), 4.9.2003; Panovec - 110 m (UL98), 14.8.2005; Vogrsko (UL98), 7.10.2007 and 10.8.2008; Kromberk (UL99), 12.10.2007; Strunjan (UL94), 14.10.2007; Izola (UL94), 24.7.2008; Rožna dolina - 84 m (UL98), 10.8.2008; Solkan - 90 m (UL99), 30.8.2008 and 16.9.2011; Vipolže - 60 m (UL89), 1.8.2012 and 01.09.2016; Nova Gorica - 100 m (UL99), 30.10.2016; mostly in anthropogenic environment, on sunny and warm sites, often in vineyards and orchards among the ground vegetation.

Tetartostylini Wagner 1951

Tetartostylus illyricus (Kirschbaum 1868)

New records: Lukovec (VL07), 30.6.2002; Pri peči (VL09), 12.7.2002; Sabotin - 360 m (UL99), 28.6.2007; Kuk nad Desklami - 640 m (UL99), 25.7.2009; Golo brdo (UM80), 23.6.2014; Podnanos - 150 m (VL17), 2.7.2011 and 5.7.2014; Podraga (VL17), 18.7.2016; Socerb (VL14), 30.6.2016; monophagous on *Chrysopogon gryllus*.

This species has a South-eastern European distribution range. Its habitats are dry low-intensity karstic meadows and pastures with *Chrysopogon gryllus* as the host plant. It is scattered distributed in south-western Slovenia, but locally it may occur rather abundantly. Adults occur from the beginning of June to the mid of July. In the database Fauna europaea (JACH & HOCH, 2016) it is recorded as doubtfully present in Italy. Specimens in my collection from Vivaro (Magredi) (UM20), 7.6.2008 (Friuli Venezia Giulia) as well as earliest record by GRAEFFE (1903) definitely confirm its presence in Italy.

Athysanini Van Duzee 1892

Allygidius commutatus (Scott 1872)

New records: Labinje - 700 m (VM21), 22.8.2004 and 18.8.2012; Logarska dolina - 790 m (VM73), 30.7.2005; Zadlog - 710 m (VL28), 30.7.2006; Čepovan (Kobilica) - 680 m (VM00), 17.8.2006; Čezsoča (UM83), 28.7.2007; Dolenja Trebuša (VM00), 4.7.2009; Lokve - 920 m (VL09), 19.7.2009; Kojca - 1300 m (VM11), 27.8.2009; Kromberk (UL99), 9.7.2011 and 14.7.2013; Vremščica - 900 m (VL25), 16.7.2011; Borovška gora - 1000 m (VL84), 20.7.2013; Osilnica - 825 m (VL74), 20.7.2013; Mirtovički potok (VL84), 21.7.2013; Grčarice (VL85), 21.7.2013.

Allygus maculatus Ribaut 1948

New records: Lokve - 920 m (VL09), 19.7.2009; Utovlje (VL16), 23.6.2010;

**Artianus manderstjernii* (Kirschbaum 1868)

Material examined: Šembije - 580 m (VL45), 9.7.2006 and 11.7.2014; Zagorje (pri Pivki) (VL35), 9.7.2006; Jelšane (VL43), 1.7.2007; Zavino - 190 m (VL17), 8.8.2007; Hrušica pri Podgradu - 550 m (VL34), 6.7.2008; Kastelec - 420 m (VL14), 6.7.2008 and 17.7.2012; Beka (VL15), 30.6.2016; Socerb (VL14), 30.6.2016; Lukovec (VL07), 21.8.2016; Rakitovec - 520 m (VL13), 11.9.2016; on hot xerothermic pastures or partly overgrown places; the host plant(s) not known to me.

**Athysanus argentarius* Metcalf 1955

Material examined: Limbuš (WM45), 20.7.1997 (2 ♀♀, leg. L. Božič - coll. PMS); Dolnja Bistrica (WM95), 26.7.2004 (1 ♀); Muriša (XM24), 26.7.2004 (2 ♀♀).
In Slovenia this species has so far only been collected in the eastern part.

**Colobotettix morbillosus* (Melichar 1896)

Mala Lazna - 1100 m (VL09), 1.8.2010. Lives on *Picea abies*.

Conosanus obsoletus (Kirschbaum 1858)

New records: Ajševica (VL08), 8.9.2001 and 2.7.2006; Ankaran (VL04), 29.7.2004; Nova Gorica (UL99) 18.6.2005; Gradišče pri Vipavi (VL17), 17.7.2005; Dolnji Zemon (VL44), 1.7.2007; Vogrsko - 50 m (UL98), 8.8.2007; Rakitna - 800 m (VL58), 12.9.2008; Strunjan (UL94), 6.7.2011; Koseze (Ilirska Bistrica) (VL44), 11.7.2014; Landol - 530 m (VL37), 18.7.2016; Gorenji Novaki - 1090 m (VM21), 28.8.2016.

**Euscelis venosus* (Kirschbaum 1868)

Material examined: Topla - Črna na Koroškem (VM84), 21.7.1974 (1 ♂, leg. B. Sket - coll. PMS).



Fig. 10: *Nesoclutha erythrocephala* – female (size: 2.6-3.2 mm)



Fig. 11: *Laburris quadratus* – male
(size: 3.1-4.0 mm)

**Euscelidius variegatus* (Kirschbaum 1858)

Material examined: Nova Gorica (UL99), 31.7.2002; Vedrijan (UL89), 21.9.2011; Miren (UL98), 2.5.2012; Vipolže - 70 m (UL89), 1.9.2016.

**Hardya tenuis* (Germar 1821)

Material examined: Gederovci (WM87), 21.7.1974 (1 ♂; leg. B. Sket - coll. PMS)

Idiodonus cruentatus (Panzer 1799)

New records: Čepovan (Kobilica) - 680 m (VM00), 17.8.2006; Zadnja Trenta - 970 m (VM03), 28.7.2007; Planica (VM04), 15.8.2012; Mangartsko sedlo - 1770 m (UM94), 28.8.2015.

**Laburris quadratus* (Forel 1864) (*Figure 11*)

Kubed (VL14), 17.7.2012; Solkan (UL99), 24.6.2014; Golo brdo (UM80), 23.6.2014, Puštale - 520 m (VL09), 12.8.2014; Sabotin - 570 m (UL99), 2.8.2015; Rakitovec - 520 m (VL13), 11.9.2016; always associated with *Artemisia alba*; on the same plant also collected on the island Krk (Croatia), 10.07.2014.

Lamprotettix nitidulus (Fabricius 1787)

New records: Kucelj - 1100 m (VL08), 3.9.2000 and 13.8.2006; Marno pri Hrastniku (WM10), 25.8.2005; Mlinarjevo sedlo - 1250 m (VM63), 15.8.2007; Hrušica - 850 m (VL37), 19.9.2007; Mala Lazna (VL09), 1.8.2010; Godnje (VL06), 20.7.2011; Lendavske gorice (XM15), 28.7.2011; Soriška planina - 1500 m (VM22), 23.10.2012; Pivola (WM45), 22.7.2014.

**Macustus grisescens* (Zetterstedt 1828)

Črno jezero on Pohorje - 1200 m (WM34), 25.7.2004; among tall sedges in a montane peat bog.

**Mocydiopsis parvicauda* Ribaut 1939

Dolina pri Lendavi (XM15), 26.7.2004; Dolnja Bistrica (WM95), 26.7.2004; Muriša (XM24), 26.7.2004.

Ophiola cornicula (Marshall 1866)

New records: Pokljuka (Močila) - 1200 m (VM23), 14.8.2003; Pokljuka (Grajska planina) - 1200 m (VM23), 2.9.2005; subalpine peat bog with lots of diverse Eriaceae.

Limotettix striola (Fallen 1806)

New record: Staro Selo - 240 m (UM82), 24.8.2016 on *Eleocharis* sp.

Ophiola decumana (Kontkanen 1949)

New records: Gornje Cerovo (UL89), 16.6.2005; Gaberje (VL17), 8.6.2006; Preloge - 360 m (WL15), 31.5.2007; Brič (VL03), 8.7.2007; Gora pri Krškem (WL39), 25.9.2007; Bilje (UL98), 28.7.2008; Stojnci (WM73), 31.7.2008; Vogrsko - 115 m (UL98), 10.8.2008; Kromberk (UL99), 21.7.2011; Vedrijan (UL89), 21.9.2011; Potoče - 75 m (VL08), 1.8.2012; Lukini - 310 m (VL13), 20.8.2013; Korada - 615 m (UM80), 31.5.2014; Vipolže - 70 m (UL89), 1.9.2016; mainly swept from plants of *Polygonum aviculare*; Petrinjski kras (VL14), 6.6.2014 abundantly on *Geranium robertianum*;

**Ophiola russeola* (Fallen 1826)

Material examined: Zadnja Trenta - 960 m (VM03), 24.7.2005 and 28.7.2007; Tolmin (VM01), 24.06.2016 on limestone gravel near the river Soča.

Orienteus ishidae (Matsumura 1902)

New records: Gornje Cerovo (UL89), 10.7.2005; Kojsko (UL89), 20.7.2009; Neblo (UL89), 5.7.2008; Snežatno (UL89), 10.7.2005; Vipolže (UL89), 10.7.2005; Ajševica (UL98), 31.7.2010; Renče (UL98), 23.7.2015; Stara Gora (UL98), 29.6.2011 and 18.7.2006; Vogrsko (UL98), 10.8.2008; Grgar (UL99), 29.7.2012; Kromberk (UL99), 9.7.2011, 13.7.2013; Ravnica (UL99), 1.8.2010; Sabotin (UL99), 14.8.2012 and 2.8.2015; Morsko (UM90), 6.7.2016; Spodnje Bukovo (VM11), 24.7.2016; Staro Selo (UM82), 17.7.2012 and 24.8.2016; Banjšice (UM90), 17.8.2012; Osek (VL08), 8.7.2011; Spodnja Idrija (VL29), 5.8.2005; Ljubljana - Rudnik (VL69), 25.9.2007; Ljubljana - Bežigrad (VM60), 25.7.2010; Smlednik (VM51), 29.7.2015; Zadlog (VM70), 13.7.2015; Krško (WL49), 3.7.2013; Pečica (WM42), 30.7.2013; Zbelovo (WM42), 30.7.2013; Zgornji Gabrnik (WM42), 30.7.2013; Kalvarija nad Mariborom (WM45), 26.7.2007; Pivol (WM45), 11.8.2014; Počehova (WM55), 12.7.2011; Negova (WM55), 21.7.2016.

Since 2004 this species has spread rapidly in various parts of Slovenia. In the recent time it has occurred in very high population densities on various trees around Nova Gorica and in apple orchards around Maribor (e.g. Pivol, Negova, Počehova).

Phlepsius intricatus (Herrich-Schaeffer 1838)

New records: Podsreda - Socko - 300 m (WL49), 17.6.2006 (2 ♀♀); Osp - 40 m (VL14), 27.4.2008 (1 ♀); Spodnje Škofije (VL04), 22.10.2010 (1 ♀); Kastelec (VL14), 17.7.2012 (1 ♀) and 21.9.2016 (1 ♂, 1 ♀); Solkan (UL99), 24.6.2014 (1 ♂); on hot xerothermic pastures and overgrown grassland.

Pithyotettix abietinus (Fallen 1806)

New records: Zadnja Trenta - 960 m (VM03), 24.7.2005; Mangartska planina - 1400 m (UM94), 15.7.2006; Kucelj - 1150 m (VL08), 13.8.2006; Trnovo ob Soči (UM82), 14.4.2007; Mlinarjevo sedlo - 1300 m (VM63), 15.8.2007; Čaven - 1240 m (VL18), 14.8.2011; Mala Lazna - 1100 m (VL09), 9.5.2015; Nemci - 880 m (VL09), 13.6.2015; Trnovo (VL09), 6.9.2015; monophagous on *Picea abies*.

Rhopalopyx adumbrata (J. Sahlberg 1842)

New records: Col - 720 m (VL28), 14.7.2001; Soriška planina - 1300 m (VM22), 19.8.2002; Zabreška planina - 1050 m (VM34), 2.8.2003; Rakitna - 900 m (VL58), 6.8.2004; Cimprovka - 1250 m (VM21), 23.8.2004; Livek - 850 m (UM91), 16.7.2005; Logarska dolina - 790 m (VM73), 30.7.2005; Pokljuka (Grajska planina) (VM23), 2.9.2005; Vodiška planina - 1110 m (VM32), 3.9.2005; Divača (VL25), 24.9.2005; Dolnje Lome - 680 m (VL28), 30.7.2006; Idrijski Log - 650 m (VL28), 30.7.2006; Kanji dol - 1020 m (VL28), 30.7.2006; Planina Kuk (VM01), 2.9.2006; Planina Razor - 1400 m (VM02), 2.9.2006; Zadnja Trenta - 970 m (VM03), 28.7.2007; Mlinarjevo sedlo - 1250 m (VM63), 15.8.2007; Blegoš - 1230 m (VM21), 6.9.2008; Kobariški Stol - 1380 m (UM82), 8.9.2013.

**Rhopalopyx preysleri* (Herrich-Schaeffer 1838)

Material examined: Dolina pri Lendavi (XM15), 26.7.2004; Muriša (XM24), 26.7.2004; Zagorje (pri Pivki) (VL35), 9.7.2006; Vremščica - 840 m (VL25), 16.7.2011.

**Selenocephalus pallidus* Kirschbaum 1868

Material examined: Hrvatini - Brageti, 135 m (VL04), 25.7.2006 (1 ♀); Spodnje Škofije (VL04), 24.7.2008 (1 ♂); Kastelec (VL14), 17.7.2012 (1 ♂); in all cases swept from *Quercus pubescens*.

Stictocoris picturatus (J. Sahlberg 1842)

New records: Lepena - 600 m (UM92), 26.8.2001; Krim - 1050 m (VL58), 6.8.2004; Rakitna - 900 m (VL58), 6.8.2004; Sromlje (WL49), 2.8.2007; Ručetna vas (WL15), 23.8.2007; Bohinjsko jezero (VM12), 12.8.2008; Nanos (VL27), 2.7.2011; Kromberk (UL99), 1.10.2012.



Fig. 12: *Thamnotettix zelleri* (size: 6.5 - 8.0 mm)

Streptanus aemulans (Kirschbaum 1868)

New records: Strezetina (WM84), 20.9.2002; Nova Gorica (UL98), 1.7.2003; Mala Lazna - 1100 m (VL09), 4.9.2004; Trnovski gozd (Smrečje) - 1050 m (VL09), 4.9.2004; Slamnjak (WM95), 25.6.2007 (leg. M. Lukman); Dolnji Zemon (VL44), 1.7.2007; Landol - 530 m (VL37), 18.7.2016; Gorenji Novaki - 1090 m (VM21), 28.8.2016.

Thamnotettix exemtus Melichar 1896

New records: Radenci (WM86), 23.5.2001; Nanos - Rebernice (VL26), 26.7.2002; Boharina - 700 m (WM23), 25.7.2004; Branik (Golec) - 370 m (VL07), 8.6.2006; Senik - 550 m (UM80), 11.6.2006; Virštanj - 370 m (WM40), 16.6.2006; Vetrnik, 700 m (WM40), 17.6.2006; Lokve v Beli krajni (WL14), 31.5.2007; Straška gora - 300 m (WL06), 31.5.2007; Sabotin - 360 m (UL99), 28.6.2007; Jelšane (VL43), 1.7.2007; Ravnica - 500 m (UL99), 25.5.2008; Bukovščica - 450 m (VM41), 31.5.2008; Zagomila - 360 m (UL99), 16.6.2008; Kromberk (UL99), 7.7.2008 and 2.5.2016; Planina pri Ajdovščini (VL17), 19.7.2012; Osilnica - 825 m (VL74), 20.7.2013; Pečica (WM42), 30.7.2013; Lokvica (UL98), 7.5.2016.

Thamnotettix zelleri (Kirschbaum 1868) (fig. 12)

New records: Višnjevnik (UL89), 1.6.2005; Spodnje Škofije (VL04), 20.7.2011; Gaberje (VL17), 27.4.2014; Bertoki (VL04), 26.4.2015.



Fig. 13: *Ebarrius interstinctus* - female (size 3.5 - 3.9 mm)

Paralimnini Distant 1908

Adarrus exornatus Ribaut 1952

New records: Kromberk (UL99), 26.5.2001; Blegoš - 1550 m (VM31), 29.7.2001; Bohinjska Bistrica (VM12), 19.8.2002; Most na Soči (VM01), 16.8.2003; Vodice (UL99), 20.9.2003; Kucelj - 1200 m (VL08), 4.9.2004; Livek - 850 m (UM91), 16.7.2005; Zadnja Trenta - 970 m (VM03), 28.7.2007; Zagomila - 360 m (UL99), 16.6.2008; Hrušica pri Podgradu - 550 m (VL34), 6.7.2008; Bohinjsko jezero (VM12), 12.8.2008; Bukovščica - 460 m (VM42), 17.7.2010; Krnica - 1000 m (VL08), 14.8.2011; Labinje (VM21), 18.8.2012; Cimprovka - 1250 m (VM21), 28.8.2016.

Calamotettix taeniatus (Horvath 1911)

New records: Lazaret (VL04), 29.7.2004 and 25.7.2006, on *Phragmites australis* on the margin of a sea lagoon.

Cosmotettix aurantiacus (Forel 1859)

New records: Jelovica (Ledine) - 1100 m (VM32), 19.9.2004; Vojsko (Gačnik) - 910 m (VM10), 12.7.2016 and 3.8.2016; in wet straw meadows and fens on *Carex elata* (NICKEL, 2003 and pers. comm.)

**Cosmotettix costalis* (Fallen 1826)

Material examined: Jelovica (Ledine) - 1100 m (VM32), 23.8.2004 (2 ♀♀, 1 ♂); 19.9.2004 (5 ♂♂, 19 ♀♀) and 3.9.2005 (2 ♂♂, 11 ♀♀).

This species has a predominantly north-European distribution ranging then towards the Trans-Caucasian region. The locality given above is currently the most southern known occurrence of this species in Europe. The nearest locality is recorded from Carinthia (HOLZINGER, 1995). Several dozens of specimens were obtained in an Alpine bog by using the suction method.

**Ebarrius cognatus* (Fieber 1869)

Material examined: Škrbina - 1660 m (VM54), 9.8.2014 (1 ♂); a single male was found among the material collected on the south slopes of the mountain Škrbina (Karavanke).

Ebarrius interstinctus (Fieber 1869) (*Figure 13*)

Material examined: Mangart - 1770 m (UM94), 28.8.2015 (1 ♂, 3 ♀♀);

THEN (1886) recorded this species from Kočevska reka and from three localities on the Italian site close to the Slovene border (Basovizza, Sant'Antonio in Bosco - Borst and Cave di Predil - Raibl). After 130 yers, this is the first finding of this species in the territory of Slovenia. The new locality is rather close to THEN's record in Raibl.

Emeljanovianus medius (Mulsant & Rey 1855)

New records: Blegoš - 1350 m (VM31), 29.7.2001; Nanos - 950 m (VL27), 6.7.2002 and 2.7.2011; Vojsko - 1050 m (VL19), 23.8.2003; Virštanj - 370 m (WM40), 16.6.2006; Vetrnik - 700 m (WM40), 17.6.2006; Cimprovka - 1250 m (VM21), 24.6.2006; Petelinjsko jezero - 550 m (VL46), 9.7.2006; Kanji dol - 1020 m (VL28), 30.7.2006; Marindol - 240 m (WL23), 3.6.2007; Starod - 660 m (VL33), 25.6.2008; Log pod Mangartom - 620 m (UM93), 12.7.2008; Hrušica - 830 m (VL37), 10.9.2008; Vremščica - 800 m (VL25), 16.7.2011;

This species obviously reaches in Slovenia the most northern distribution range in this part of Europe. The majority of findings are from the area of the High Dinaric Karst, but it has also been collected at lower altitudes in alpine valleys and on sub-Pannonian hills. It usually occurs on sunny moderately dry pastures and low-intensity meadows on calcareous substrates, often synoptically with *Turrutus socialis*. The grass *Bromus inermis* has been recorded as the host plant in Russia (EMELJANOV, 1964), but probably also some other grasses may serve it for food.

Henschia collina (Boheman 1850)

Material examined: Črnotiče (VL14), 29.7.2004; Slap pri Vipavi (VL17), 30.7.1998; Maribor (Tezno) (WM55), 16.9.2004; Nova Gorica (UL98), 18.6.2005; Brestovica - 50 m (UL97), 6.8.2005; Kamno - 200 m (UM91), 18.8.2006; Sremič (WL39), 25.9.2007; Stojnci (WM73), 31.7.2008; Miren (UL98), 2.5.2012; Kastelec (VL14), 17.7.2012.



Fig. 14: *Quartausius hamatus* (size: 2.5 - 3.0 mm)

Nanosius chloroticus (Melichar 1896)

New records: Kucelj - 1150 m (VL08), 4.9.2004; Kobariški Stol - 1135 m (UM82), 20.7.2014; Drežniške Ravne (Planina Zapleč) - 1200 m (UM92), 12.7.2015; Sabotni - 570 m (UL99), 2.8.2015 - on *Sesleria tenuifolia*.

**Paralimnus lugens* (Horváth 1897); syn.: *P. zachvatkini* Emeljanov 1964

Material examined: Škocjanski zatok (VL04), 24.9.2005; Bertoki, 4 M (VL04), 25.7.2006; Nova Gorica (UL98), 27.9.2008; Sečoveljske soline (UL93), 23.7.2010 - *Phragmites australis*.

Quartausius hamatus (Then 1896) (Figure 14)

A new record: Kastelec - 320 m (VL14), 11.9.2016 (3 ♂♂, 1 ♀).

Until now, only one male specimen of this apparently rare species was available to me. Recently, I obtained additional four specimens by using the suction method. Both known localities in Slovenia are fairly close to each other and both belong to the type area, which is around Bazovica near Trieste (Italy), just about 6 km away (THEN, 1896). Nothing is known about its biology. THEN collected it in June and July, while all specimens collected by me were found later in the season (September, October), which suggests that two generations may occur. The apparent conspecificity of *Q. dalmatinus* Dlabola 1974 with this species was discussed in an earlier paper (SELJAK, 2004a).

Jassargus alpinus (Then 1896) s.str.

New records: Snežnik - 1680 m (VL54), 21.7.2002; Zadlog, 710 m, (VL28), 30.7.2006; Trnovski gozd (Smrečje) - 1050 m, (VL09), 4.9.2004; Voglarji - 770 m (VL09), 1.8.2010; Čepovan (Kobilica) - 680 m, (VM00), 17.8.2006 and 8.7.2007; Planina Kuk - 1150 m (VM01), 2.9.2006; Kojca - 1300 m, (VM11), 27.8.2009; Porezen -1400-1630 m (VM21), 25.6.2011; Črni vrh over Cerkno - 1220 m, (VM21), 28.8.2016; Blegoš - 1230 m (VM31), 29.7.2001; Matajur - 1300 m, (UM81), 24.8.2016; Planina Razor - 1400 m (VM02), 2.9.2006; Soriška planina - 1300 m, (VM22), 19.8.2002, 14.8.2003 and 29.7.2016; Jelovica (Ledine) - 1150 m, (VM32), 23.8.2004; Vodiška planina - 1110 m, (VM32), 3.9.2005; Breginj (Planina na Klinu) - 900 m, (UM72), 22.8.2003; Kobariški Stol - 1400 m, (UM82), 8.9.2013 and 20.7.2014; Krnsko jezero - 1400 m, (UM92), 1.8.2009; Drežniške Ravne (Planina Zapleč) - 1200 m, (UM92), 12.7.2015; Zadnja Trenta - 960 m, (VM03), 24.7.2005 and 28.7.2007; Vršič - 1400 m, (VM04), 23.7.2002 and 27.7.2008; Javorniški rovt - 1100 m, (VM24), 11.8.2004; Planina Pungrat -1440 m, (VM54), 9.8.2014.

**Jassargus alpinus neglectus* (Then 1896)

Material examined: Košenjak (WM06), 8.7.1973 (1 ♂, leg. B. Sket); Rogla - 1500 m (WM24), 13.8.2000 (2 ♂♂ and 1 ♀).

Along with the typical *J. alpinus* s.str., four additional subspecies are recognized, which slightly differ in the shape of the aedeagus. Furthermore, they have a more or less clear parapatric distribution in Europe. A detailed taxonomic account on this species was made by W. WAGNER (1958), who also drew rough demarcation lines between different subspecies. Accordingly, in much of the Slovenian territory the typical *J. alpinus* s. str. should occur, but the subspecies *J. alpinus neglectus* cannot be excluded in the most eastern parts. Our faunistic investigations confirm in some way these delineations, although there are still insufficient data from the eastern part of Slovenia for a general conclusion. However, two male specimens collected on Rogla display well the aedeagus characteristics of *J. alpinus neglectus*. More field studies will be needed to clarify this faunistic question. In western parts, however, only *J. alpinus* s.str. occurs and is fairly common at higher altitudes above 1000 m.

Discussion and conclusions

With this account, the fauna of plant- and leafhoppers is getting fairly well known regarding the western part of Slovenia (Dinaric mountain chain included). In contrast, the central and eastern parts remain almost a white area with only scattered records from the earlier published papers or data gathered during the author's occasional trips. With this account the number of plant- and leafhoppers hitherto known to occur in Slovenia has risen to 555 species. 81 species recorded here are new to the fauna of Slovenia. With the interpolation of Italian, Austrian and Hungarian checklists a rough indication can be obtained, which further species may occur in the territory of Slovenia.

From the taxonomic and zoogeographic point of view, several representatives of the subfamily Aphrodinae have revealed to be very complicated in the studied area. Morphological identification down to the species level has revealed as rather unconfident for the genus *Aphrodes* except for *A. diminuta*. Hence, additional vibrational or/and molecular methods are necessary to obtain reliable results for this group (BLUEMEL & al. 2014). Also the majority of material belonging to the species *Anoscopus albifrons* and *A. flavostriatus* collected in the western part of Slovenia display some aberrations in the aedeagus morphology in comparison to the typical species. However, they share the characteristics with the subspecies recently recorded from Italy, namely *Anoscopus albifrons mappus* and *Anoscopus flavostriatus dubius* respectively (GUGLIELMINO & BÜCKLE, 2015). The species *Anoscopus albiger* is completely replaced here by a newly described species *Anoscopus carlebippus*. In spite of some hesitation concerning the taxonomic significance of the morphological aberrations of aedeagi that have been applied for the creation of these new entities, they have been accepted here in order to point out the differences and to preserve distributional data separately.

The Auchenorrhyncha fauna of western Slovenia shares a significant number of typical Mediterranean species. The majority of them can be encountered in the Adriatic littoral area (Slovenska Istra), as well as in a larger area around Nova Gorica (Vipava Valley, Goriška Brda). Such species are: Cixiidae: *Hyalesthes scotti*; Delphacidae: *Kelisia melanops*, *Conomelus sagittifer*, *Delphax meridionalis*, *Delphacodes mulsanti*, *Eurysanoides flavobrunnea*, *Metropis aris*, *Ribautodelphax fanari*; Issidae: *Latilica maculipes*, *Bubastia obsoleta*; Cicadellidae: *Hephathus freyi*, *Hespericerus brusinae*, *Stegelytra putoni*, *Notus italicus*, *Chlorita szelenica*, *Ch. beieri*, *Ch. mendax*, *Eupteryx ribauti*, *E. zelleri*, *E. salviae*, *Zyginidia servadeii*, *Synophropsis lauri*, *Goniagnathus brevis*, *Selenocephalus pallidus*, *Aconurella prolixa*, *Opsius heydeni*, *Laburrus quadratus*, *Thamnotettix zelleri*, *Quartausius hamatus*. Some of these species achieve here the most northern distribution range in Europe.

So far, nine non-European alien species are recorded for Slovenia. The majority of them have spread into Slovenia in the last three decades. They are: *Prokelisia marginata* (SELJAK, 2004), *Metcalfa pruinosa* (ŠIVIC, 1991), *Stictocephala bisonia* (SELJAK, 2002), *Graphocephala fennahi* (SELJAK, 2013b), *Scaphoideus titanus* (SELJAK, 1987), *Orientalis ishidae* (SELJAK, 2004a), *Erasmoneura vulnerata* (SELJAK, 2011), *Hishimonus hamatus* (SELJAK, 2013a), *Edwardsiana platanicola* (SELJAK, 2013b). *Scaphoideus titanus* has become a serious pest transmitting the grapevine flavescence dorée phytoplasma, one of the most harmful plant pathogens of vine. *Orientalis ishidae* is rapidly spreading in several parts of Slovenia. It has been recognised as the carrier of certain phytoplasmas, but its ability to transmit them between plants has not been established yet (MEHLE & al, 2012). *Prokelisia marginata* seriously threatens the already scarce populations of the grass *Spartina maritima* in Lazaret and Sečovlje.

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