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New distributional and biological data on European Psylloidea (Hemiptera, Sternorrhyncha), with special reference to the fauna of the Czech Republic and Slovakia

by **Pavel Lauterer & Igor Malenovský**

Abstract. New distributional and biological data on European Psylloidea (Hemiptera, Sternorrhyncha), with special reference to the fauna of the Czech Republic and Slovakia: *Livilla variegata* (LÖW, 1881), *Trioza schrankii* FLOR, 1861 and *Bactericera parastriola* CONCI, OSSIANNILSSON & TAMANINI, 1988, first records in the Czech Republic; *Aphalara avicularis* OSSIANNILSSON, 1981, *Craspedolepta campestrella* OSSIANNILSSON, 1987, *Cacopsylla* (*Thamnopsylla*) *rhamnicola* (SCOTT, 1876), *Cacopsylla* (*Thamnopsylla*) *affinis* (LÖW, 1880), *Cacopsylla* (*Hepatopsylla*) *hippophaes* (FÖRSTER, 1848), *Cacopsylla* (*Hepatopsylla*) *zetterstedti* (THOMSON, 1878), *Cacopsylla* (*Hepatopsylla*) *brunneipennis* (EDWARDS, 1896), *Bactericera kratochvili* VONDRÁČEK, 1957, and *Trioza dispar* LÖW, 1878, first records in Bohemia; *Craspedolepta aberrantis* LOGINOVA, 1962, *Craspedolepta artemisiae* (FÖRSTER, 1848), *Craspedolepta campestrella* OSSIANNILSSON, 1987, *Cacopsylla* (*Thamnopsylla*) *rhamnicola* (SCOTT, 1876), *Cacopsylla* (*Thamnopsylla*) *affinis* (LÖW, 1880), *Cacopsylla* (*Thamnopsylla*) *picta* (FÖRSTER, 1848), *Trioza tatrensis* KLIMASZEWSKI, 1965, and *Trioza megacerca* BURCKHARDT, 1983, first records in Slovakia; *Livilla variegata* (LÖW, 1881), first records in Austria and Germany; *Cacopsylla* (*Hepatopsylla*) *moscovita* (ANDRIANOVA, 1948) and *Cacopsylla* (*Hepatopsylla*) *zetterstedti* (THOMSON, 1878), first records in the Netherlands; *Craspedolepta artemisiae* (FÖRSTER, 1848) and *Trioza megacerca* BURCKHARDT, 1983, first records in Bulgaria; *Trioza schrankii* FLOR, 1861, first record in France; additional localities of *Craspedolepta campestrella* OSSIANNILSSON, 1987, *Cacopsylla* (*Hepatopsylla*) *myrtilli* (W. WAGNER, 1947), *Cacopsylla* (*Hepatopsylla*) *visci* (CURTIS, 1835), and *Trioza proxima* FLOR, 1861 for the Czech Republic, *Trioza proxima* FLOR, 1861 for Slovakia, *Arytainilla spartiophila* (FÖRSTER, 1848) and *Trioza proxima* FLOR, 1861 for Germany given; *Bactericera kratochvili* VONDRÁČEK, 1957, variability of the apex of aedeagus discussed; *Trioza neglecta* LOGINOVA, 1978, overwintering as adult confirmed.

Key words. Hemiptera – Psylloidea – Faunology – Life cycle – Czech Republic – Bohemia – Moravia – Slovakia – Austria – Bulgaria – France – Germany – the Netherlands

Introduction

The psylloid fauna of some European countries is fairly well known (e.g. OSSIANNILSSON 1992, CONCI et al. 1993 and 1996, LAUTERER 1998b and 1999). Nevertheless, many gaps in knowledge of the systematics, immature stages, biology and geographical distribution of these plant-sucking insects remain to be filled. Based on the study of material kept in the Moravian Museum in Brno, field surveys in previously unexplored regions and a recent spreading of some species on introduced ornamental plants, we report here new information on twenty-three species of European Psylloidea. Most refer to the territory of the Czech Republic and Slovakia and present a supplement to the check-list of LAUTERER (1977) and subsequent papers (LAUTERER 1979, 1982, 1991, 1993a, 1993b, 1998a, 1999, BURCKHARDT & LAUTERER 1982, 1997, BURCKHARDT et al. 1991, LAUTERER & BURCKHARDT 1994, MALENOVSKÝ & LAUTERER 1997). A few records are added from Austria, Bulgaria, France, Germany, and the Netherlands, and information is provided on the biology and life cycle of some species.

Methods

Czech and Slovak localities are supplemented by a code number in parentheses, which refers to the map field according to the grid mapping system of Central Europe (EHRENDORFER & HAMANN 1965). The position of localities in other countries is given with geographical co-ordinates. Host plant nomenclature follows mostly DOSTÁL (1989). The material is deposited in the Moravian Museum, except for the collections of V. Janský which are in the Slovak National Museum in Bratislava.

The following abbreviations are used in the text:

(L) ..... P. Lauterer leg.
(M) ..... I. Malenovský leg.

Results

Aphalara avicularis OSSIANNILSSON, 1981

Czech Republic, Bohemia mer.: Dolní Třebonín, part Štěkře (7152), path in fields, 435 m a. s. l., 24.viii.1998, *Polygonum arenastrum*, 5♂ 2♀, (M). Bohemia bor.: Štětí, part Radouň (5552), S village, path in fields, 230 m a. s. l., 1.vi.1999, *Polygonum arenastrum*, 5♂ 4♀, (M); Raná (5548), near the U topolu Pond, 297 m a. s. l., 23.vi.2001, 1♂, J. Preisler leg; Jizerské hory Mts.: Bílý Potok (5157), near the Velká Rybí voda Brook, mown meadow, 460–500 m a. s. l., 12.vii.2001, 3♂ 1♀, (L); Jizerka (5157), National Nature Reserve Rašeliniště Jizerky, 870 m a. s. l., raised bog, 9.ix.2000, 1♂, J. Preisler leg.; Jizerka (5158), 500 m N, bog near the Jizerka Brook, 870 m a. s. l., 10.vii.2001, 1♂ 1♀, (L).

One of the most common species of the genus in Central Europe. Its systematic status was clarified only recently by OSSIANNILSSON & JANSSON (1981). Before that, *Aphalara* spp. were often confused with one another. In the West Palaearctic, the *Aphalara calthae* group includes 7 closely related species (*A. calthae* (L.), *A. polygoni* FÖRSTER, *A. borealis* HESLOP-HARRISON, *A. longicaudata* WAGNER & FRANZ, *A. avicularis* OSSIANNILSSON, *A. crispicola* OSSIANNILSSON and *A. freji* BURCKHARDT & LAUTERER). Published records of these species are therefore unreliable and should be revised. *Aphalara avicularis* is reported for the first time from the territory of Bohemia from the above cited localities. The species is certainly widespread, at least in Central and northern Europe; for the time being, it is known from Sweden, Norway, Finland, England, France, Poland, the Czech Republic, Switzerland, Italy and Bulgaria (OSSIANNILSSON 1992, CONCI et al. 1993, MALENOVSKÝ 1999). *A. avicularis* develops on species of the *Polygonum aviculare* group (*P. aviculare* L., *P. arenastrum* BOREAU, *P. rurivagum* BOREAU), commonly growing in fields, ruderal habitats and frequented places (paths, roads, urban areas). In the Czech Republic, *Aphalara avicularis* probably has two generations per year.

Craspedolepta aberrantis LOGINOVA, 1962

Slovakia mer., Slovenský Kras Karst: Plešivec (7488), S–SW slopes of the Plešivecká planina Plateau, above the railway station, steppe on limestone, 250–450 m a. s. l., 3.–7.vii.1976, *Artemisia campestris*, 41♂ 65♀ and

9.vii.1979, 6♂ 10♀, (L); Plešivec (7488), S–SW slopes of the Koniare Plateau, above the railway line, steppe on limestone, 250 m a. s. l., *Artemisia campestris*, 4.vii.1976, 1♂ 2♀, (L).

A new species for Central Europe, remarkable for the presence of hairs on the body and for its elongated forewings. It inhabits open steppe habitats. *C. aberrantis* has been reported to date from southern European part of the former USSR, Kirghiziya, Kazakhstan, Mongolia and the Russian Far East, where it lives on *Artemisia dracunculus* L., *A. campestris* L. and *A. arenaria* DC. (GEGECHKORI & LOGINOVA 1990). In Slovakia it was found on *Artemisia campestris* L. The populations of *Craspedolepta aberrantis* and *C. artemisiae* in the Slovenský Kras decreased and were probably endangered in the late 1970's, since their habitats, dry south-facing, steep rocky slopes on limestone became overgrown by expanding shrubs and trees, especially *Fraxinus excelsior* L., as a result of the cessation of traditional pasture management. We have no data on their present state.

Craspedolepta artemisiae (FÖRSTER, 1848)

Slovakia mer., Slovenský Kras Karst: Plešivec (7488), S–SW slopes of the Plešivecká planina Plateau, above the railway station, steppe on limestone, 250–450 m a. s. l., 3.–7.vii.1976, *Artemisia campestris*, 16♂ 15♀ and 9.vii.1979, 4♂ 3♀, (L); Plešivec (7488), S–SW slopes of the Koniare Plateau, above the railway line, steppe on limestone, 250 m a. s. l., 4.vii.1976, *Artemisia campestris*, 7♂ 3♀, (L); Domica Cave environs (7588), S slope of the Čertova diera Hill, 350–450 m a. s. l., 6.vii.1976, 1♂, (L); Turňa nad Bodvou (7391), S slopes of the Turňanský hrad Castle Hill, steppe on limestone, 220–350 m a. s. l., 7.vii.1976, *Artemisia campestris*, 2♂ 3♀ and ibid., towards Háj, 12.vii.1979, 5♂ 1♀, (L). Slovakia mer. occ., Malé Karpaty Hills: Čachtice (7272), towards Višňové, W–SW slopes of the Čachtický hrad Castle Hill, steppe on limestone, 280–380 m a. s. l., 28.vi.1968, 4♂ 5♀, (L) and ibid.; 9.vi.1966, 2♀, L. Pospíšilová leg.
Bulgaria centr.: Plovdiv (42°09'N 24°45'E), 13.vi.1963, 2♀, J. Dlabola leg.; Asenovgrad (42°01'N 24°52'E), 14.vi.1963, 5♀, J. Dlabola leg.

The south-facing dry limestone slopes of the Plešivecká planina Plateau and the Malé Karpaty Hills listed above are the only known localities of *Craspedolepta artemisiae* in Slovakia. VONDRÁČEK (1957) quotes a finding attributed to HORVÁTH (1897) from Slovenské Nové Město; however, – this originates only from an erroneous translation of the name of the town of Sátoraljaújhely in Hungary. The species is also new for Bulgaria. In Central Europe, *C. artemisiae* seems to be monophagous on *Artemisia campestris* L. According to GEGECHKORI & LOGINOVA (1990) it has a wide Palaearctic distribution from Spain and Central Europe through Siberia to Japan, but this should be re-examined.

Craspedolepta campestrella OSSIANNILSSON, 1987

Czech Republic, Bohemia centr.: Tišice (5753), Natural Heritage Area Písčina u Tišic, 170 m a. s. l., 31.v.1999, *Artemisia campestris*, many ♂ and ♀, (M). Bohemia bor.: Bělá pod Bezdězem, part Vrchbělá (5454), 350 m a. s. l., 26.v.2000, 1♂, J. Preisler leg.
Czech Republic, Moravia mer. occ.: Podmolí (7161), Šobes, vineyard environs, 320 m a. s. l., 12.vii.1997, *Artemisia campestris*, 1♂ 3♀, (L); Konice (near Znojmo, 7162), Suchý vrch Hill, 250–263 m a. s. l., 16.vi.1988, 1♂, (L); Havraníky (7161–7162), Havranické vřesoviště Heath, 270–280 m a. s. l., 16.vi.1988, 2♂ 1♀, (L). Moravia mer.: Pouzdřany (7065), National Nature Reserve Pouzdřanská step, 230–290 m a. s. l., 26.vii.1994, many specimens, (L); Kobylí (7067), part Lecany, towards Ochoza Hill, 200–274 m a. s. l.,

17.vii.1968, 1♀, (L). Moravia mer. or.: Bohuslavice (near Kyjov, 6968), Stará hora Hill, 240–270 m a. s. l., 10.vi.1987, 5♂ 7♀, (L); Ježov (6969), towards Osvětimany, W terrace of the Hruškovice Brook, 250–280 m a. s. l., 4.vii.1962, *Artemisia campestris*, 14♂ 14♀ and 15.v.1963, adults and many 5th instar larvae on thick roots of the host plant, (L); Mutěnice (7068–7168), sands, 175 m a. s. l., 4.vii.1962, 3♂ 1♀ and 28.v.1963, 3♂ 3♀, (L); Hodonín, part Roztrhánky (7168), 187–200 m a. s. l., 11.vi.1974, 2♀, (L); Hodonín, part Pánov (7168), 208 m a. s. l., 28.vi.1963, 1♂ 4♀, (L); Ratíškovice (7069–7169), towards Rohatec, aeolic sands along the railway line, 206 m a. s. l., 4.vii.1962, 25♂ 23♀, 28.v.1963, *Artemisia campestris*, 10♂ 13♀ and 13.viii.1975, 6♀ (some of them with extremely dark coloration of forewings, especially at the apex), (L), ibid., 1.vii.1974, 1♀ and 6.viii.1979, 1♂, L. Pospíšilová leg.; Ratíškovice (7069–7169), SE elevation point 205 m, 28.v.1974, 27♂ 11♀, (L); Vacenovice (7069), SW village margin, 215–220 m a. s. l., 24.vi.1974, 6♂ 21♀, (L); Bzenec (7069), military grounds, 190–195 m a. s. l., 15.viii.1968, 12♀, (L); Bzenec, part Přívoz (7069), 190 m a. s. l., aeolic sands along the railway line, 1.vi.1976, 1♂ 5♀, L. Pospíšilová leg..
Slovakia mer. occ., Záhorská nížina Lowland: Kúty (7368), 160–170 m a. s. l., 2.vii.1968, 4♂ 4♀, (L); Borský Svätý Jur (7368), 195 m a. s. l., 26.vi.1968, 1♀, L. Pospíšilová leg.; Závod, part Hl'boká Mlaka (7468), 160–180 a. s. l., 19.vi.1968, 7♂ 4♀ and 7.vi.1975, 3♂ 3♀, (L); Šaštín, part Stráže (7368), 180 m a. s. l., 14.vii.1983, 2♀, V. Janský leg.; Borský Svätý Mikuláš, part Piesky (7369), 195 m a. s. l., 6.vi.1968, 15♂ 11♀ and 5.vii.1975, 1♂, (L). Malé Karpaty Hills: Devínská Kobyla near Bratislava (7867–7868), 250–500 m a. s. l., 26.vii.1984, 2♀, V. Janský leg.

A relatively recently described species, known so far only from several localities in Denmark and Sweden; OSSIANNILSSON (1987) also used Lauterer's material from Moravia (Osvětimany-Ježov) for the description. There are no other published data on the distribution of *C. campestrella* in Central Europe, so we are combining the complete list of our material, including the first records from Bohemia and Slovakia. In Moravia *C. campestrella* occurs in a few localities in the surroundings of Znojmo and Jihomoravská pahorkatina, and especially on sandy sites in the Hodonín and Kyjov surroundings. In Slovakia, it has been found only in the western part, in the Záhorská nížina Lowlands and in their close vicinity. The current state of knowledge is that the species is monophagous on *Artemisia campestris* L., growing in habitats with sandy substrate. In 1963, Lauterer observed many 5th instar nymphs on the upper part of a massive root of *Artemisia campestris* down to a depth of ca. 15 cm from the soil surface. A substrate of loose sand, sandstone or disintegrated granite seems to be the condition for a proper development of the larvae on thick parts of roots of the host plant. In the climatic conditions of South Moravia, adults emerge during the second and third tenths of May. The final adults (females only) were found in the second tenth of August. *C. campestrella* is probably more widespread; further records are to be expected from suitable habitats in Germany, Poland and Austria.

Livilla variegata (LÖW, 1881)

Germany, Baden-Württenberg: Odenwald, Dallau environs (49°24'N 09°13'E), 31.v.1980, 1♂, P. Dynort leg.; Hohenlohe, Öhringen (49°12'N 09°30'E), garden, 24.v.2001, 4♀, P. Dynort leg.
Germany, Bayern bor.: Tannenlohe (near Erlangen, 49°32'N 11°02'E), 300 m a. s. l., 8.vii.2001, 1♂ 1♀, H. Nickel leg.; Haag (near Bayreuth, 49°52'N 11°34'E), 480 m a. s. l., 26.vii.2001, 2♀, H. Nickel leg.
Austria, Steyermark: Graz, Wartingergasse (47°05'N 15°26'E), 16.vi.2001, 3♂, W. Holzinger leg.
Czech Republic, Bohemia bor.: Štětí (5552), dry and warm slopes above the railway W of the station, 1.vi.1999, 1♀, (M). Bohemia centr.: Praha-Nové Město (5952), Botanical garden of the Charles University, Faculty of Science, 5.vi.2001, 10♀, P. Kment leg.

Czech Republic, Moravia centr.: Brno-Bystrc, Chvalovka (6764), road margin, 350 m a. s. l., 25.v.2001, 5♂ 10♀, P. Kment leg.; Brno-Bystrc (6765), Šťouračova street, 290 m a. s. l., 3.vi.2001, 21♂ 26♀, (L); Brno-Žabovřesky (6765), Tábor street, 230 m a. s. l., 24.vi.2001, 1♂ 4♀, (L); Brno-Lesná (6765), M. Majerové street, Okružní street and Loosova street, 250–270 m a. s. l., 17.vi.2001, 15♂ 23♀, (L); Brno-Centre (6765), Veveří street, Botanical garden of the Masaryk University, Faculty of Science, 240 m a. s. l., 24.vi.2001, 1♀, (L); Brno-Centre (6865), Petrov, Denisovy sady park, 240 m a. s. l., 30.v.2001, 10♂ 17♀, (M); Brno-Centre (6865), Špilberk castle, S slopes, 270 m, 15.vi.2001, 5♀, (L); Brno-Štýřice (6865), Vídeňská street and Strž street, 230 m a. s. l., 3.vi.2001, 10♂ 10♀, (L). Moravia or.: Uherský Brod (6971), Tyršovy sady park, 260 m a. s. l., 30.vi.2001, 2♀, (M); Velká nad Veličkou (7171), gardens at the railway station, 310 m a. s. l., 29.vi.2001, 1♂ 2♀, (M); Korytná (7072), village green, 340 m a. s. l., 5.vii.2001, 10♂ 5♀, (M).

Most of the material was collected on *Laburnum anagyroides* MED.

Livilla variegata has been reported from France, Italy, Switzerland, Bosnia and Herzegovina [referred as Yugoslavia], Rumania, Spain, Great Britain (HODKINSON & HOLLIS 1987) and also recently from Hungary (RIPKA 1997). Our records are the first to be published from Germany, Austria and the Czech Republic. The species is strictly oligophagous on *Laburnum anagyroides* MED. and *L. alpinum* (MILLER) BERCHT. & J. & C. PRESL. In Italy, it has one generation per year, adults occur from April to August on the host plants, nymphs were recorded in April and May. It probably overwinters at the egg stage or as first instar nymphs (CONCI et al. 1993). Our findings suggest that *Livilla variegata* is nowadays already a widespread psyllid in Central Europe, where it colonised its host plant *Laburnum anagyroides*, an introduced Mediterranean ornamental tree commonly planted in parks and gardens in cities, towns and villages and on roadside verges. Our sampling efforts were positive on almost every *Laburnum* tree that we came across. The moment of introduction and spread of *L. variegata* in Central Europe escaped the notice of entomologists. Thus, the situation is similar to that in England, where it was collected for the first time in 1978 but already appeared to have a wide distribution (HOLLIS 1978, HODKINSON & HOLLIS 1980).

Arytainilla spartiophila (FÖRSTER, 1848)

Germany, Bayern bor.: Tannenlohe (near Erlangen, 49°32'N 11°02'E), 300 m a. s. l., 8.vii.2001, on *Laburnum anagyroides*, 1♀ together with several specimens of *Arytaina genistae*, H. Nickel leg.
Germany, Baden-Württenberg occ.: Oberkirch (48°32'N 08°05'E), around the castle ruines, 22.v.1994, 10♂ 4♀, (M).

A species of western Europe, known from Great Britain, Ireland, Spain, France, Belgium, Netherlands, Denmark, Germany (type locality: Aachen), Switzerland and Italy (CONCI & TAMANINI 1986, CONCI et al. 1993), introduced in the USA (HODKINSON 1988) and Canada (Vancouver, Burckhardt leg., unpublished data from Musée d'Histoire Naturelle Genève). The reports of AULMANN (1913) for Bohemia and Austria were based on a misunderstanding of the Czech paper by ŠULC (1907) and the report for Portugal is also probably in error. Our record from Bayern is obviously close to the easternmost limit of the range of distribution of the species. *Arytainilla spartiophila* is monophagous on *Sarothamnus scoparius* (L.) WIMM. ex KOCH, has one generation per year, and overwinters at the egg stage. In Italy, adults were found from May to July, nymphs in June and early July on the host plant (CONCI et al. 1993).

Cacopsylla (*Thamnopsylla*) *rhamnicola* (SCOTT, 1876)

Czech Republic, Bohemia bor.: Štětí (5552), dry and warm slopes above the railway W of the station, 1.vi.1999, *Rhamnus catharctica*, 4♂ 3♀, (M). Bohemia centr.: Velký Borek, part Mělnická Vrutice (5653), Polabská černava National Nature Reserve, edge of a calcareous fen, 200 m a. s. l., 31.v.1999, *Rhamnus catharctica*, 10♂ 10♀, (M); Lysá nad Labem (5754), Hrabanovská černava National Nature Reserve, edge of a calcareous fen, 180 m a. s. l., 29.v.1999, *Rhamnus catharctica*, 25♂ 24♀, (M). Bohemia or., Českomoravské mezihoří Highland: Bělá nad Svitavou, towards Brněnec, part Podlesí (6365), E slopes of the Svitava River valley, 400–450 m a. s. l., 14.iii.1999, *Salix caprea* and *Picea abies*, 1♂ 1♀, (L).
Slovakia mer., Slovenský kras Mts.: Domica (7588), cave environs, steppe on limestone, 7.vii.1975, 2♂ 1♀, R. Janíček leg.

A Eurosiberian species, widely distributed from Spain, the British Isles and southern Scandinavia to Central Asia, Kazakhstan, western Siberia and Mongolia. However, no records have previously been known from Bohemia and Slovakia. This psyllid is quite rare, but locally abundant, strictly oligophagous on *Rhamnus* spp., in the Czech Republic living only on *Rhamnus catharctica* L. The life cycle is univoltine, with adults overwintering (CONCI et al. 1993, LAUTERER 1999).

Cacopsylla (*Thamnopsylla*) *affinis* (LÖW, 1880)

Czech Republic, Bohemia bor.: Jablonné v Podještědí (5254), Valcha Pond environs, 315 m a. s. l., 1.v.2001, 1♂, J. Preisler leg. Bohemia or., Českomoravské mezihoří Highland: Bělá nad Svitavou towards Brněnec, part Podlesí (6365), E slopes of the Svitava River valley, 400–450 m a. s. l., 14.iii.1999, *Salix caprea* and *Picea abies*, 1♂ 1♀, (L).
Slovakia occ., Záhorská nížina Lowland: Závod, part Hl'boká Mlaka, Abrod (7468), 170–180 m a. s. l., 7.vi.1973, 1♂, (L); Malé Karpaty Hills: Kuchyňa (7569–7669), 4.vi.1969, Modranská skala, steppe on limestone, 300–419 m a. s. l., 1♂ 3♀, (L); Plavecké Podhradie, part Pohanská (7569), 5.vi.1969, 250–350 m a. s. l., 3♂ 4♀, (L). Slovakia centr.: Štiavnické kopce Hills, Malé Krškany, Horšovské údolí Valley (7778), 170–250 m a. s. l., 5.vi.1971, 2♂, (L); Nitra, Zobor Hill (7674), Reserve, 1 km N, steppe on limestone, 7.vi.1960, 1♂, and ibid., Lupka (7674), 300–400 m a. s. l., 22.vi.1984, 1♂, (L); Nitra, part Kalvária (7774), 250–270 m a. s. l., 20.vi.1984, 3♂, (L). Slovakia or.: Viničky (7596–7696), the Bodrog River environs and hills near the Somoš Hill, 94–180 m a. s. l., 30.vi.1974, 1♂ 1♀, (L).

The above records are the first to be published from the territory of Bohemia and Slovakia. *C. affinis* is known from most European countries from Great Britain and Scandinavia through Central and southern Europe to the south of the Ukraine and Russia and the Caucasus. It is strictly oligophagous on *Crataegus* spp. and monovoltine with adults overwintering especially on conifers. The species seems rare in the Czech Republic, prefers open sunny sites and is much less abundant than another *Crataegus*-feeder, the closely related *C. melanoneura* (LAUTERER 1999).

Cacopsylla (*Thamnopsylla*) *picta* (FÖRSTER, 1848)

= *C.* (*T.*) *costalis* (FLOR, 1861)
= *C.* (*T.*) *pyrastri* (LÖW, 1876)

Slovakia centr., Pol'ana Mts.: Predná (7382), 1250 m a. s. l., 14.–23.iv.1992, *Picea abies*, 1♂ after overwintering, J. Kulfan leg. Slovakia mer., Slovenský Kras Karst: Zadiel (7391), 8.vii.1976, 1♀, R. Janíček leg.; Domica cave (7588), steppe on limestone, 7.vii.1975, 1♀, R. Janíček leg.; Rožňava (7389), near the station, 300 m a. s. l., 9.vii.1976, 1♂, (L). Slovakia or., Zemplínské vrchy Hills: Viničky (7596–7696), 94–180 m a. s. l., 30.vi.1974, new generation, 1♂ 1♀, (L).

The species has been known for a long time under the name *Cacopsylla costalis* (FLOR), which was recently recognised by LAUTERER & BURCKHARDT (1997), after an analysis of the female holotype of *Psylla picta* (FÖRSTER) deposited in the collection of K. Šulc, as a junior synonym of the latter. *C. picta* is a new species for the fauna of Slovakia. It is distributed in Great Britain, France, Sweden, Finland, Lithuania, Central, southern, southeastern and Eastern Europe and in Turkey, being oligophagous on *Malus sylvestris* MILL., *M. domestica* BORKH. and *Armeniaca vulgaris* LAM. and monovoltine with adults overwintering. In Central Europe, it is considered to be very rare (CONCI et al. 1993, LAUTERER 1999). Recently, it was reported that the species can act as vector of phytoplasma diseases (FRISINGHELLI et al. 2000). Thus it deserves further attention.

Cacopsylla (*Hepatopsylla*) *myrtilli* (W. WAGNER, 1947)

Czech Republic, Bohemia mer., Šumava Mts.: Horská Kvilda (6947), 26.vii.1961, 1♀, Doskočil, Hůrka & Štys leg.; Stachy, part Zadov (6947), Mt. Churáňov, at the meteorological station, 1118 m a. s. l., and in the forest clear-cut under the funicular, 1030–1080 m a. s. l., 31.vii.1997, on *Vaccinium myrtillus*, numerous ♀, P. Kment leg.; Nová Pec (7249), Rakouská louka (400 m W of the Mt. Plechý), raised bog, 1350 m a. s. l., 17.viii.1998, *Vaccinium myrtillus*, numerous ♀, (M); Volary, towards Dobrá (7149), meadows and forest undergrowth on peat in the Vltava valley near the Mrtvý luh peat bog, 748 m a. s. l., 9.viii.1973, 14♀, (L); Loučovice, 3 km SW (7451), Nature Reserve Rašeliniště u kapličky, bog spruce forest, 900 m a. s. l., 10.viii.1998, *Vaccinium myrtillus*, 6♀, (M). Bohemia bor., Jizerské hory Mts.: Jizerka, 2 km NW (5157), bog at the Jizerka River, undergrowth of a sparse spruce forest with *Vaccinium myrtillus*, 870 m a. s. l., 14.vii.2001, 155♀, (L); Jizerka (5158), mesophilous meadow near the Safírový potok Brook, 860 m a. s. l., 10.vii.2001, 1♀, J. Preisler leg. Bohemia or., Českomoravská vrchovina Highland, Žďárské vrchy Hills: Radostín (6361), forest bog at the Velké Dářko Pond, 610 m a. s. l., 31.viii.1970, 1♀, (L).

Cacopsylla myrtilli has so far been known in the Czech Republic only from the Hrubý Jeseník Mts. (North Moravia) and the Králický Sněžník Mts. (geographically uncertain WAGNER's (1947) locality "Sudeten, Glatzer Schneeberg", LAUTERER 1999). We report additional findings from the territory of Bohemia. *C. myrtilli* has a broad circumpolar, Holarctic, boreomontane distribution (in the Nearctic region it is represented by ssp. *canadensis* HODKINSON, 1976). In Central Europe it inhabits only montane elevations and it is a probable relict of glacial times. The species is strictly oligophagous on *Vaccinium myrtillus* L. and *V. uliginosum* L. In the Czech Republic, its populations can be numerous in some localities. However, we always collected only females. *C. myrtilli* is a facultatively parthenogenetic psyllid. Males are absent from most populations, although odd males have been reported from Poland, North Karelia, the Ural Mts., Chukotka and N. China and even some populations containing males and females in approximately equal numbers are known from Norway and Canada. The mechanism of reproduction of *C. myrtilli* is not yet fully understood. There seems to be no clear-cut geographical pattern linked to severity of climate (HODKINSON 1983). The species has one generation per year and overwinters at the egg stage (LAUTERER 1998a).

Cacopsylla (*Hepatopsylla*) *hippophaes* (FÖRSTER, 1848)

Czech Republic, Bohemia mer.: Český Krumlov, part Špičák (7151), park below the castle, 450 m a. s. l., 24.viii.1998 and 9.viii.1999, *Hippophae rhamnoides*, very numerous ♂ and ♀, (M); Zlatá Koruna, part Rájov (7152), roadside verges, 470 m a. s. l., 24.viii.1998, *Hippophae rhamnoides*, very numerous ♂ and ♀, (M).

The species is monophagous on *Hippophae rhamnoides* L. It has a wide Palaearctic distribution following its host plant: from Great Britain, Spain and Scandinavia to the Caucasus, Central Asia, Pakistan and the Far East (GEGECHKORI & LOGINOVA 1990). *Hippophae rhamnoides* grows naturally in Central Europe on the gravel banks of alpine rivers and along the Baltic coast and is not an autochthonous species of the Czech flora. However, it is often planted in this country as an ornamental in parks, gardens and roadside verges, the psyllid having been introduced with it and found in several localities in Moravia, generally in masses (LAUTERER 1999). No report on its occurrence in Bohemia has been published to date. The biology of *C. hippophaes* has been described in detail by LAUTERER (1982, 1999), it is univoltine and overwinters at the egg stage.

Cacopsylla (*Hepatopsylla*) *zetterstedti* (THOMSON, 1878)

Czech Republic, Bohemia mer.: Český Krumlov, part Špičák (7151), park below the castle, 450 m a. s. l., 9.viii.1999, *Hippophae rhamnoides*, 10♂ 3♀, (M).
Netherlands, Zuid-Holland: Den Haag, part Scheveningen, 2 km NE, 52°08'N 04°19'E, coastal sand dunes, 7.vii.2002, *Hippophae rhamnoides*, 8♂ 6♀, (M).

C. zetterstedti is closely related to *C. hippophaes*. It is also monophagous on *Hippophae rhamnoides* L., univoltine, overwinters in the egg stage and it is widely distributed throughout the Palaearctic region. Generally, it occurs together with *C. hippophaes* but it is not very numerous and is quite localised. In the Czech Republic, it has been recorded from only two localities in Moravia (LAUTERER 1999), no record exists from Bohemia. New species for the Netherlands.

Cacopsylla (*Hepatopsylla*) *brunneipennis* (EDWARDS, 1896)

Czech Republic, Bohemia bor.: Úštěk, part Julčín (5452), Nature Reserve Na Černčí, 240 m a. s. l., 1.vi.1999, *Pinus sylvestris*, 1♂, (M); Liberec, part Krásná Studánka (5156), 380 m a. s. l., 22.iv.2000, 1♂, J. Preisler leg.; Jizerské hory Mts.: Horní Maxov, part Malá Strana (5257), 680 m a. s. l., 24.ix.2000, 1♂ 1♀, J. Preisler leg.. Bohemia or., Českomoravská vrchovina Highland: Jihlavské vrchy Hills: Smrčná, towards Vilémovské Chaloupky (6559), 630 m a. s. l., 3.iv.1999, *Salix caprea*, 10♂ 59♀, M. Dvořák leg.; Příseka near Světlá nad Sázavou (6358), 480 m a. s. l., 23.iii.2002, *Salix caprea*, 1♀, (M); Českomoravské mezihoří Highland: Bělá nad Svitavou, towards Brněnec, part Podlesí (6365), E slopes to Svitava River, 400–450 m a. s. l., 14.iii.1999, *Salix caprea* and *Picea abies*, 139♂ 618♀, 2 in copula, (L); Březová nad Svitavou, part Zářečí, towards Lavičné (6365), wood on E slopes of the Svitava River valley, 390–450 m a. s. l., 14.iii.1999, *Salix caprea* and *Picea abies*, 42♂ 201♀, (L).

A new species for the territory of Bohemia. In Moravia, it is one of the most common psyllids, especially on *Salix caprea* L. in colline and highland habitats in early spring. It has one generation per year, adults overwinter. Females oviposit on the *Salix* spp. host plants in March and April. The development of nymphs is rapid, and adults of the new generation emerge as early as in the first and second tenths of May and soon migrate to shelter plants – coniferous trees, especially spruce, where they stay for the rest of the year and overwinter. Widely distributed in Europe, also known from Kazakhstan and Transcaucasia (LAUTERER 1999).

Cacopsylla (*Hepatopsylla*) *moscovita* (ANDRIANOVA, 1948)

Netherlands, Zuid-Holland: Den Haag, part Scheveningen, 2 km NE, 52°08'N 04°19'E, coastal sand dunes, 7.vii.2002, *Salix repens*, 7♂ 20♀, (M).

A species widely distributed from Great Britain to Mongolia, Siberia and the Far East and from Scandinavia to Switzerland, Austria, Slovakia, Moldavia, Turkey, Caucasus and Kazakhstan (LAUTERER & BURCKHARDT 1997), new for the Netherlands. *C. moscovita* overwinters as adult, is monovoltine and oligophagous on *Salix* spp.: *S. caprea* L., *S. cinerea* L., *S. aurita* L., *S. lapponum* L., *S. repens* L., *S. viminalis* L. (OSSIANNILSSON 1992, LAUTERER & BURCKHARDT 1997, LAUTERER 1999), and *S. rosmarinifolia* L.

Cacopsylla (*Hepatopsylla*) *visci* (CURTIS, 1835)

Czech Republic, Bohemia mer., Blanský les Mts.: Křemže (7051), Holubovské hadce Nature Reserve, 530 m a. s. l., 3.vi.2000, 1♀, J. Preisler leg.

Only the ancient collection of Duda (ŠULC 1905) from "Krč" (probably Praha-Krč, 5952) has been known for *C. visci* from Bohemia to date. In Moravia, the species is relatively frequent in lowlands and hills, has two generations per year and is strictly oligophagous on *Viscum album* L., *V. laxum* BOISS. & REUTER and *Loranthus europaeus* JACQ. Distributed in Europe (except N), Morocco, Iraq and Caucasus (LAUTERER 1999).

Bactericera kratochvili VONDRÁČEK, 1957

Czech Republic, Bohemia mer., Blanský les Mts.: Vyšný (7151), Vyšenské kopce National Nature Reserve, 520 m a. s. l., 4.viii.1997, xerothermic south-facing rocky slope on limestone, on *Allium senescens* subsp. *montanum* and *Pinus sylvestris*, 2♂ 1♀, (M); ibid., 1.viii.1998, 4♂, (M); ibid., 3.viii.1999, 1♂ 1♀, (M).

Bactericera kratochvili is known from Central Europe (the Czech Republic, Slovakia, Austria, northeastern Italy and Germany), the southern European part of the former USSR, Kirghiziya, Kazakhstan and Mongolia (BURCKHARDT & LAUTERER 1997). Its host plant is *Allium senescens* subsp. *montanum* (F. W. SCHMIDT) HOLUB; it has also been artificially bred on other *Allium* spp. The biology was described by LAUTERER (1965, 1991). It overwinters mostly as adult but sometimes also in the 4th and 5th larval instar and probably also as egg, since it does not enter dormancy, except cold quiescence ar any developmental stage. It has three to four generations per year. In the Czech Republic (South Moravia) and Slovakia *B. kratochvili* occurs locally but quite frequently and abundantly in suitable habitats with growth of *Allium senescens* subsp. *montanum* – rock-outcrop vegetation with *Festuca pallens* HOST. on sunny rocky slopes on shallow soil and basic as well as acidic rocks. These are situated in Moravia in colline altitudes (up to ca 500 m a. s. l.), in Slovakia also in mountains (up to ca 1200 m a. s. l.). No record is yet known from the territory of Bohemia. The collecting site in South Bohemia on the small limestone islet in the region of Český Krumlov is isolated; no similar habitat occurs in the surroundings for several dozen kilometres (CHYTRÝ et al. 2001).

LAUTERER (1965) mentioned the variability of *B. kratochvili* and illustrated different forms of the distal segment of aedeagus of Moravian specimens. BURCKHARDT & LAUTERER (1997) in their comments on *Bactericera loginovae* (KLIMASZEWSKI, 1962) stated that LAUTERER's (1965) Figs. 3 and 4 are referable to *B. loginovae*, and his Figs. 5 and 6 to *B. kratochvili* respectively. Nevertheless, Lauterer had at his disposal only the material of *B. kratochvili* at that time, so all these figures represent *B. kratochvili*. Subsequently Lauterer looked through several dozen specimens of *B. kratochvili* and corroborated the variability of the apex of aedeagus in this species. We looked at all the *B. kratochvili* and *B. loginovae* material from the Czech Republic and Slovakia. *B. kratochvili* occurs in numerous localities in Moravia and Slovakia; however *B. loginovae* has to date been recorded in Europe only from a single small S- and SW-facing steep rocky slope site of 0.5 km^2 in the Vel'ký Choč Mts. in Slovakia. According to published records, it occurs outside Europe not nearer than in Mongolia and Kazakhstan (BURCKHARDT & LAUTERER 1997). *B. loginovae* is closely related to *B. kratochvili*, both morphologically and biologically. The host plant of the Slovak population of *B. loginovae* is also *Allium senescens* subsp. *montanum*, which has been confirmed not only in the field but also by laboratory rearing (where, *B. loginovae* had at least three generations per year). In the Vel'ký Choč Mts., *B. loginovae* lived on *A. senescens* syntopically together with *B. kratochvili* and the larvae of the two species were indistinguishable. *Allium senescens* has a disjunct distribution in the steppes of Central Asia and Europe, where this plant is a relict from the early post-glacial, perhaps even from the late glacial era (MEUSEL et al. 1965). This could also be true for the two *Bactericera* spp. living on it, with scattered and local distribution in Central Europe on fragments of probably primarily treeless habitats (steep rocky slopes). KLIMASZEWSKI (1962), in the original description based on the material from Mongolia and also in the later papers on Mongolian Psylloidea (e.g. KLIMASZEWSKI 1972), mentioned *Artemisia* sp. as a probable host plant of *B. loginovae*, although he was not sure of it. His opinion was shared by LOGINOVA (1972) who considered that *B. kratochvili* lived on *Artemisia* spp. as well. Some *Allium* spp., including *A. senescens*, often grow in the same habitats as *Artemisia* spp. Nevertheless, more material would be necessary to confirm the conspecifity of Central European and Mongolian populations of *B. loginovae* and *B. kratochvili* (BURCKHARDT & LAUTERER 1997).

Bactericera parastriola CONCI, OSSIANNILSSON & TAMANINI, 1988

Czech Republic, Bohemia bor.: Jizerské hory Mts., Horní Maxov, part Malá Strana (5257), 680 m a. s. l., 24.i.2000, 1♂, J. Preisler leg.
Czech Republic, Moravia bor.: Hrubý Jeseník Mts., Karlova Studánka (5969), valley of the Bílá Opava River 0,5 km NW, 810 m a. s. l., *Salix caprea*, 25.v.1999, 28♂ 10♀ and 2.vi.1999, 4♂ 3♀, (L).

A new species for the fauna of the Czech Republic. The probably boreomontane triozid has previously been reported from Sweden, Poland, Rumania, Switzerland and NE Italy. In Central Europe, it is localised and orophilous. It is considered as strictly oligophagous on *Salix* spp. The known host plants are *Salix lapponum* L., *S. phylicifolia* L. and *S. waldsteiniana* WILD. (CONCI et al. 1996), *S. appendiculata* VILL., *S.*

myrsinifolia SALISB. and *S. caprea* L. (BURCKHARDT, pers. comm.). In the Jeseníky Mts., *B. parastriola* was collected in numbers on *Salix caprea* L.

Trioza schrankii FLOR, 1861

France mer. occ., Languedoc-Roussillon, Pyrénées-Orientales: Font-Romeu environs (42°31'N 02°03'E), 28.vii.1996, 1♂, (M).
Czech Republic, Bohemia mer., Blanský les Mts.: Brloh (7051), 2 km W, the valley of the Dobročkovský potok Brook, 620 m a. s. l., 9.viii.1999, 2♀, (M); Český Krumlov, part Nové Dobrkovice (7151), Vyšenské kopce National Nature Reserve, 530 m a. s. l., 3.viii.1999, fringe *Trifolion medii*, 1♀, (M).
Czech Republic, Moravia or.: Bílé Karpaty Mts., Valašské Klobouky (6874), SW slope of the Královec Hill, Javorůvky Nature Reserve, 550 m a. s. l., 22.v.1999, 3♂ 6♀ and 2.vii.1999, 1♂ and 11.ix.1999, *Astrantia major* and *Picea abies*, 4♂ 2♀, (M); Valašské Klobouky (6874), 1,5 km SSE, valley of the Kloboucký potok Brook, meadow above the railway line, 460 m a. s. l., 19.v.1999, 2♂ 7♀, (M); Nedašov (6874), Kaňoury Nature Heritage Area, meadows below Vysocka Hill, 620 m a. s. l., 20.v.1999, 2♂ 5♀, (M); Brumov-Bylnice, part Bylnice (6974), 2 km S, meadows on the N slope of the Pláňava Hill, 400 m a. s. l., 21.v.1999, 2♀, (M); Hostýnské vrchy Hills., Rusava (6672), Klapinov plateau between Skalný and Bečka Hills, 670 m a. s. l., 16.ix.1997, *Picea abies* on the margin of a submontane pasture, 1♂, (M).

All the material was collected on *Astrantia major* L. if not stated otherwise.

Trioza schrankii is distributed in montane and subalpine regions throughout Europe: in the Alps (Italy, CONCI et al. 1996, Austria, e.g. WAGNER & FRANZ 1961, Switzerland, SCHÄFER 1949, BURCKHARDT 1983) and the Carpathians (Slovakia, VONDRÁČEK 1957, LAUTERER 1974, Poland, KLIMASZEWSKI 1967, Ukraine, LOGINOVA 1964, Rumania, DOBREANU & MANOLACHE 1962). HAUPT (1935) reports one male from Germany, Sachsen-Anhalt: Petersberg near Halle a. Saale (51°37'N 12°1'E); this locality was erroneously referred by KLIMASZEWSKI (1973) to Austria. The species is new for France and the Czech Republic. The French record extends the known distribution of the species to the Pyrénées mountain range. In the Czech Republic *Trioza schrankii* has to date been found scattered in suitable habitats in lower elevations than in other countries (400–670 m a. s. l.), where it is considered to be orophilous. Here it prefers mesophilic meadows with rich vegetation and especially shaded mesophilous herbaceous fringes with growths of *Astrantia major* in submontane areas; it appears to be absent from a large part of the Czech territory. It overwinters in the adult stage on conifers. According to CONCI et al. (1996), it has one generation per year (nymphs occur in July and August) and does not cause deformations of the host plant leaves.

Trioza dispar LÖW, 1878

Czech Republic, Bohemia mer.: Šumava Mts., Dobrá (7149), the Vltava river valley, part Mrtvý luh, 740 m a. s. l., 3.viii.1998, *Pinus uncinata*, 1♂, (M); Volary, part Dolní Sněžná and Horní Sněžná (7149), E slopes of the Mt. Větrný, 850–1030 m a. s. l., 9.viii.1999, *Picea abies* and *Pinus sylvestris*, 4♂ 25♀, (M); Černá v Pošumaví, part Muckov (7250), 760 m a. s. l., 21.viii.1998, swept from a pasture with *Taraxacum* sp. and *Picea abies*, 8♀, (M); Loučovice, part Kapličky (7451), 920 m a. s. l., 10.viii.1998, 1♀, on *Picea abies*, (M).

A new species for Bohemia. *Trioza dispar* builds up, together with *T. tatrensis*, *T. megacerca*, *T. proxima*, a group of morphologically and biologically closely related species, which was only recently revised by BURCKHARDT (1983). Thus, the old

determinations are partly doubtful or erroneous and in need of confirmation. Definite records of *T. dispar* come from Austria and Switzerland (BURCKHARDT 1983), Sweden, Norway and Finland (OSSIANNILSSON 1992), Poland (e.g. KLIMASZEWSKI 1967), Italy (CONCI et al. 1996), the Czech Republic, Moravia (MALENOVSKÝ & LAUTERER 1997) and Slovakia (LAUTERER 1974, material re-examined). The material quoted by VONDRÁČEK (1953) from Hungary (Göda, Horváth leg.) was re-examined and found to belong to *T. dispar*, its locality (the correct spelling Göde-Mesterháza) is, however, situated in the present territory of Rumania (HORVÁTH 1897). Records from Bulgaria, France and Mongolia (KLIMASZEWSKI 1973), the Ukraine (Transcarpathian province) and Kazakhstan (Tian-Shan) (LOGINOVA 1972) and Caucasus (GEGECHKORI & LOGINOVA 1990) need further examination. There is no record from Germany. The occurrence in Great Britain seems doubtful (HODKINSON & WHITE 1979). The biology of *T. dispar* was described by LÖW (1880). The larvae live on the undersides of the leaves of *Taraxacum* spp., the ovipositing females producing typical pit galls. *T. dispar* has one generation per year and overwinters in the adult stage on conifers. The host records on *Leontodon hispidus* L. (= *L. hastilis* L.) and *Aposeris foetida* L. (LESS.) published by LÖW (1888) need to be confirmed. In the Czech Republic, *T. dispar* occurs in montane and submontane habitats and is known to date only from the Šumava, Javorníky and Bílé Karpaty Mts. We collected it especially in extensive pastures, mostly from *Picea abies* L. (KARST.) on their margins and on *Juniperus communis* L.

Trioza tatrensis KLIMASZEWSKI, 1965

Slovakia bor.: Vel'ký Choč Mts.: Valaská Dubová (6881), the path from the saddleback to Mt. Havran, 950–1100 m a. s. l., 23.vii.1992, forest undergrowth and meso-xerothermophilous meadow, 1♂ 1♀, (L); ibid., Valaská Dubová, part Žiar (6881), towards Mt. Havran, 850–900 m a. s. l., 23.vii.1992, montane meadows on limestone, 1♂ 1♀, (L). Belanské Tatry Mts.: Tatranská Kotlina (6787), on the path to the Šumivý pramen Spring, 850–950 m a. s. l., 7.ix.1967, xeric meadows and undergrowth of a sparse forest, 1♀, (L); Kežmarské Žlaby (6787), 1km NE along the Cesta Slobody path, 900 m a. s. l., 6.ix.1967, spruce forest undergrowth, 1♀, (L).

An orophilous species, new for Slovakia. It was described from the Polish part of the High Tatras mountain range and then collected locally in montane habitats of Norway, Austria, Switzerland, North Italy, France and Rumania. It is considered as strictly oligophagous on *Hieracium* spp., has probably one generation per year and overwinters as adult on conifers (CONCI et al. 1996).

Trioza megacerca BURCKHARDT, 1983

Slovakia occ., Malé Karpaty Hills: Višňové, Čachtice castle (7272), steppe on limestone, 280–380 m a. s. l., 28.vi.1968, 2♂, (L). Slovakia mer., Krupinská vrchovina Highland: Horné Príbelce (7781–7881), environs of cemetery, xerothermic pasture, 300–350 m a. s. l., 24.viii.1988, 2♂ 3♀, (L).
Bulgaria mer. occ.: Sandanski, towards Lilyanovo (41°37'N 23°19'E), steppe on NW slopes of the Sandanská Bystrica valley, 250–500 m a. s. l., 11.–14.vii.1971, 1♂ 2♀, (L); Lilyanovo, towards Sandanski, Sandanska Bystrica valley (41°38'N 23°20'E), steppe slopes, 300–350 m a. s. l., 13.vii.1971, 2♂, (L).

A rare species, new for Bulgaria and Slovakia, reported previously only from Croatia, Switzerland and northern Italy (CONCI et al. 1996). Its host plant is unknown.

However, all the closely related species of the *Trioza dispar*-group live on Cichoriaceae (*Hieracium* s. l. spp., *Taraxacum* spp., BURCKHARDT 1983). In Italy, *T. megacerca* has probably one generation per year and overwinters as adult on conifers, especially on *Juniperus communis* L., adults being swept from conifers from September until May (CONCI et al. 1996).

Trioza proxima FLOR, 1861

Czech Republic, Moravia or., Bílé Karpaty Mts.: Nedašov (6874), Jalovcová stráň Nature Reserve, 650 m a. s. l., 3.vii.1999, numerous males, females and larvae on *Pilosella officinarum* agg. and *Juniperus communis*, acidophilous fringe of a beech forest; ibid., 10.ix.1999, *Juniperus communis*, 2♀, (M); Nedašov (6874), pastures on the W slope of the Kaňur Hill, 650 m a. s. l., 3.vii.1999, *Picea abies*, 1♀, (M). Moravia occ., Hornosvratecká vrchovina Highland: Koroužné, part Švařec (6464), Švařec National Nature Heritage Area, 450 m a. s. l., 3.iv.1999, *Juniperus communis*, 1♀, J. Hřebíček leg.; Českomoravská vrchovina Highland: Domašov (6764), 23.iv.1999, 430–470 m a. s. l., field of *Trifolium pratense*, 1♀, (M).
Slovakia occ., Malé Karpaty Hills.: Višňové, Čachtice castle (7272), steppe on limestone, 280–380 m a. s. l., 28.vi.1968, 1♀, (L). Slovakia centr. bor., Vysoké Tatry Mts.: Štrbské Pleso (6986), 4 km W, secondary clearing in a spruce forest, 1000 m a. s. l., 8.viii.1967, 1♀, (L).
Germany, Baden-Württenberg, Schwarzwald Mts.: Schauinsland (7 km S from Freiburg, 47°56'N 07°54'E), 1200 m a. s. l., 5.viii.1997, 1♂, H. Nickel leg.

From the Czech Republic, only records of galls on *Hieracium* s. l. have been published so far (BAYER 1909, BAUDYŠ 1926, 1947, 1954, 1959, 1966, HUBÁČEK 1979). The species occurs there locally in open sunny, dry acidic habitats. From Slovakia, galls on *Hieracium pilosella* were reported by BAUDYŠ (1956). From Germany we know only the finding of NICOLAUS (1957) from Thuringia. Distributed from the Caucasus almost throughout Europe (including Great Britain), except Scandinavia (GEGECHKORI & LOGINOVA 1990). Probably strictly oligophagous on *Pilosella* spp., one generation per year, adults overwinter (CONCI et al. 1996).

Trioza neglecta LOGINOVA, 1978

Czech Republic, Moravia: Brno, part Slatina (6866), 270 m a. s. l., 6.iv.2001, *Eleagnus angustifolia*, 2♂ 3♀, (L).

Overwintered adults were swept from the host plant together with 1♀ of *Trioza remota* FÖRSTER and 2♂ 2♀ of *Cacopsylla melanoneura* (FÖRSTER). The specimens of *T. neglecta* were of dark black-grey with markings on the thorax. The species was introduced to Europe from south-western and middle Asia, the area of its origin, with its host plant, *Eleagnus angustifolia* L., grown as an ornamental shrub in parks and along roads. Nowadays it is widely distributed from Georgia, Armenia, Azerbaijan, Iran and Anatolia through Russia, Ukraine, Moldavia, Bulgaria, the former Yugoslavia and Rumania to Central Europe (Hungary, Slovakia, the Czech Republic, Austria) as reported by LAUTERER & JANÍČEK (1990), LAUTERER (1993a) and LAUTERER & HOLZINGER (1996) who describe the life cycle of *T. neglecta* in Central Europe as well. In the Czech Republic (South Moravia), the species is bivoltine. The first generation is not numerous – adult specimens of light white-green coloration with a greyish tinge

occur in June and July. The second generation is more numerous, nymphs emerging from September until the leaves fall in the first half of November, adults of light green-grey to grey coloration generally as late as at the end of September (exceptionally as early as August) to November. In autumn, ripe eggs were never found in the female abdomens, nor did males confined with females in experimental boxes copulate. Nevertheless, it has not yet been proved that *T. neglecta* overwinters at the adult stage. This hypothesis was corroborated by the finding of overwintered adults. The winter mortality must be very high in Central Europe. Even on sites where adults were abundant in autumn, none or only a few of them (the case cited above) were ascertained after overwintering.

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