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New data on some rare planthoppers and leafhoppers in Poland (Hemiptera: Auchenorrhyncha)

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Musik K. & Taszakowski A. 2013: New data on some rare planthoppers and leafhoppers in Poland (Hemiptera: Auchenorrhyncha). In: Kment P., Malenovský I. & Kolibáč J. (eds.): Studies in Hemiptera in honour of Pavel Lauterer and Jaroslav L. Stehlík. *Acta Musei Moraviae, Scientiae biologicae* (Brno) **98(2):** 265–271. – This contribution presents new distribution data on nine rarely-collected species of planthopper and leafhopper in Poland: *Pentastiridius beieri* (Wagner, 1970), *Asiraca clavicornis* (Fabricius, 1794), *Kelisia praecox* Haupt, 1935, *Stenocranus fuscovittatus* (Stål, 1858), *Aphrophora major* Uhler, 1896, *Stictocephala bisonia* Kopp et Yonke, 1977, *Handianus flavovarius* (Herrich-Schäffer, 1835), *Metalimnus steini* (Fieber, 1869), and *Sonronius dahlbomi* (Zetterstedt, 1840). Distributional and ecological data are provided for each species.

Keywords. Fulgoromorpha, Cicadomorpha, faunistics, central Europe, Silesian Upland, the Białowieża Primeval Forest, the Eastern Beskidy Mountains

Introduction

The Polish fauna of Auchenorrhyncha comprises 538 species (Chudzicka 2004; Łabanowski & Soika 1997; Gębicki 2003; Świerczewski & Gębicki 2003; Gaj *et al*. 2009; Świerczewski & Stroiński 2011a, b; Świerczewski & Walczak 2011; Walczak *et al*. 2012; Musik *et al*. 2013). This group of insects still requires a long-term field survey in Poland, since many species are known from only a few localities or have not been recorded for a long time; their actual distribution around the country is not clear. Further, many of the zoogeographical regions of Poland still lack proper study, and many new species for the country may thus await discovery. At present, faunistic studies are carried out mainly in the Silesian Upland and the Krakowsko-Wieluńska Upland.

This contribution presents new localities for nine rarely-collected species of Auchenorrhyncha, found by the authors in the course of faunistic studies in the Silesian Upland, the Białowieża Primeval Forest, and the Eastern Beskidy Mountains.

Material and methods

The material was collected in 2010–2013 with a standard sweep net and an aspirator. The insects were identified in the laboratory on the basis of external morphological characters and the anatomy of the male genitalia. Keys by Biederman & Niedringhaus (2009) and Dlabola (1954) were used for identification. Ecological and biological data are taken from Nickel (2003). The zoogeographical division of Poland adopted in this paper follows that presented in the Catalogue of Polish Fauna (Nast 1976). Codes of the fields of the UTM map grid are given in square brackets in the lists of material examined.

All the material is held in the entomological collection of the Department of Zoology, University of Silesia, Katowice.

Results

Family CIXIIDAE

Pentastiridius beieri (Wagner, 1970)

Material examined. Silesian Upland, Ruda Śląska, vicinity of Bieszowice II spoil tip [UTM:CA47], 06.vii.2012, 1 ♂ 2 ♀♀, leg. K. Musik.

Remarks. The species is known from Austria, Germany, Italy, Switzerland, and Ukraine (Nast 1987, Nickel 2003). Rarely collected in Poland, this planthopper is known from the western Beskids: Rabka-Słone and Myślenice (Nast 1977) and the Silesian Upland: Rybnik, Ruda Śląska and Bytom, where it was collected in the first half of the 1980s (Świerczewski & Gruca 2010). The new locality lies in Ruda Śląska Bielszowice at the bottom of the Bielszowice II spoil tip. It is a sandy, dry site with scattered grasses as its main growth. According to the literature, *P. beieri* feeds on willow *Salix* spp. but it has also been collected from German tamarisk *Myricaria germanica* and Alder *Alnus* spp., and is considered stenotopic on the gravel banks of mountain rivers (Nickel 2003).

Family DELPHACIDAE

Asiraca clavicornis (Fabricius, 1794)

Material examined. Silesian Upland, Piekary Śląskie Dołki, spoil tip [UTM:CA57], 02.ix.2011, 1 ♀, leg. K. Musik.

Remarks. This species is widely distributed in central and southern Europe, the Near East and North Africa (Nast 1972, 1987). In Poland, it has been recorded in the Pomeranian Lake District (Wagner 1941), the Wielkopolsko-Kujawska Lowland (Szulczewski 1933), the Silesian Upland (Szulczewski 1931), the Krakowsko-Wieluńska Upland (Smreczyński 1954), the Małopolska Upland, the Lubelska Upland (Nast 1976), and the Western Beskids (Smreczyński 1906). Localities for *A. clavicornis* are scattered, mainly in the southern part of the country. The locality in Piekary Śląskie is a spoil tip covered in various species of grass and shrub. This species is usually found in dry, disturbed sites (Nickel 2003).

Kelisia praecox Haupt, 1935

Material examined. Silesian Upland, Katowice Panweniki, Ślepiotka river valley [UTM:CA56], 30.v.2012, 1 ♀; 19.ix.2013, 3 ♂♂, leg. K. Musik.

Remarks. In Europe this species has been recorded in Bulgaria, Czech Republic, Estonia, Germany, Greece, Latvia, Lithuania, Slovakia, and Yugoslavia (Nast 1987).

Further distribution includes Iran (Mozaffarian & Wilson 2011), Georgia, Kazakhstan, Russia, and Mongolia (Nast 1976). In Poland, *K. praecox* has been collected in the Krakowsko-Wieluńska Upland, the Western Beskidy Mountains (Smreczyński 1954), and the the Sandomierska Lowland (Bednarczyk & Gębicki 1998). The locality cited here is the first in the Silesian Upland. It is a moist meadow near the Ślepiotka river and a forest edge. The species is frequently associated with *Carex brizoides* in moist sites, usually forest meadows or clearings (Nickel 2003).

Stenocranus fuscovittatus (Stål, 1858)

Material examined. Silesian Upland, Katowice Panweniki, Ślepiotka river valley [UTM:CA56], 19.iv.2013, 4 ♂♂, leg. K. Musik.

Remarks. This Eurosiberian species is widely distributed in western, central, and eastern Europe including the Balkans (Nast 1972, 1987; Borodin 2004), Georgia, Russia, Kazakhstan, China, and Mongolia (Dlabola 1967, Nast 1972). In Poland, it is widely distributed and locally fairly common but rarely recorded. It feeds on certain species of *Carex* (*C. elata, C. paniculata, C. panicea* and others). It inhabits moist sites such as meadows, fens or spring mires (Nickel 2003).

Family APHROPHORIDAE

Aphrophora major Uhler, 1896

Material examined. Eastern Beskidy Mountains, Libusza, disturbed meadow [UTM:EA10], 14.ix.2012, 1 ♀, leg. A. Taszakowski.

Remarks. This Eurosiberian species has been recorded to date in Austria, Great Britain, Czech Republic, France, Germany, Italy, Switzerland, Netherlands, Ukraine and Yugoslavia (Hoch 2013). Further distribution includes central and northern Russia, Mongolia, north-eastern China, Japan and the Kuril Islands (Świerczewski & Gębicki 2003). In Poland, it has been collected in the Masurian Lake District (Andrzejewska 1965, Gębicki *et al*. 1982), the Białowieża Primeval Forest (Nast 1936), and the Lubelska Upland (Bednarczyk & Gębicki 1998). The last-cited locality is the southernmost record in Poland. A single female was collected in a disturbed meadow with shrubs. *A. major* is listed in the Polish Red Data Book as a species at lower risk (Szwedo 2004); it is not protected by law. It feeds on birch *Betula* spp. and *Salix* spp. Its nymphal host plants are poorly known, but development probably takes place on *Phragmites*, *Pedicularis*, *Salix* and *Artemisia* (Nickel 2003).

Family MEMBRACIDAE

Stictocephala bisonia Kopp et Yonke, 1977

Material examined. Eastern Beskidy Mountains, Libusza, disturbed meadow [UTM:EA10], 14.ix.2012, 1 ♂, leg. A. Taszakowski.

Remarks. Originally a Nearctic species introduced into Europe and currently present in Albania, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, France, Germany, Greece, Hungary, Italy, Macedonia, Moldavia, Portugal, Romania, Slovakia, Slovenia, Spain, Switzerland, Ukraine and Yugoslavia (Arzone *et al*. 1987, Janský *et al*. 1988, Hoch 2013). Recently recorded in Poland from localities near Warsaw, Rzeszów and Zagorzyce. This is the first record in Polish mountains. *S. bisonia* is a polyphagous species, with nymphs developing on a variety of herbaceous plants. Oviposition takes place on woody species (Świerczewski & Stroiński 2011a).

Family CICADELLIDAE

Handianus flavovarius (Herrich-Schäffer, 1835)

Material examined. Eastern Beskidy Mountains, Wysowa-Zdrój, wet meadow [UTM:EV17], 07.viii.2012, 1 ♂ 2 ♀♀; Libusza, disturbed meadow [UTM:EA10], 14.ix.2012, 5 ♀♀, leg. A. Taszakowski.

Remarks. An Eurosiberian species known from Czech Republic, Estonia, Germany, Latvia, Lithuania, Moldavia, Romania, Russia, Slovakia, Ukraine, and Yugoslavia (Nast 1972, 1987). Quite rare in Poland: it has been published from only three localities in the Bieszczady Mountains (the Tarnawa Nature Reserve; Szwedo *et. al* 1998), the Pieniny Mountains (Zielone Skałki range; Nast 1973), and the Biebrza river valley in the Podlasie (Gębicki *et al*. 1982). It occurs in dry meadows and probably feeds on herbaceous Fabaceae (*Vicia, Trifolium, Lotus*) (Malenovský *et al.* 2011).

Metalimnus steini (Fieber, 1869)

Material examined. Silesian Upland, Piekary Śląskie Dołki, spoil tip [UTM:CA57], 02.ix.2011, 4 ♀♀, leg. K. Musik; Białowieża Primeval Forest, old railway [UTM: FD84], 25.vii.2012, 1 ♂, leg. K. Musik.

Remarks. A Palaearctic species recorded from Austria, Azerbaijan, Czech Republic, Germany, Hungary, Japan, Russia and Ukraine (Nast 1972, Nickel 2003, Malenovský & Lauterer 2010). It has been only recently reported from Poland and was known to date from four localities: Silesian Upland – Jaworzno; Krakowsko-Wieluńska Upland – Częstochowa (Góra Kamieniołom, Stradom) and Małopolska Upland – Murawy Dobromierskie Nature Reserve (Świerczewski & Walczak 2011, Świerczewski & Stroiński 2011b). The new locality in the Silesian Upland lies in the Piekary Śląskie suburban district at the bottom of a spoil tip. The specimens were collected in a moist pit covered in various species of grasses. The other locality, in the Białowieża Forest, is the most northern in Poland. One male specimen was collected as part of a faunistic survey of an old railway line in the Białowieża. This locality has a ruderal character, with species of grasses and shrubs. *Metalimnus steini* feeds on hairy sedge *Carex hirta* and may be encountered in ruderal habitats and meadows (Nickel 2003).

***Sonronius dahlbomi* (Zetterstedt, 1840)**

Material examined. Eastern Beskidy Mountains, Wysowa-Zdrój, disturbed meadow [UTM:EV17], 20.vii.2010, 1 ♂, leg. A. Taszakowski.

Remarks. Rarely recorded in Poland, this Holarctic species is known from Belgium, Finland, France, Germany, Great Britain, Italy, Latvia, Norway, Slovakia, Sweden, Switzerland, Ukraine and Yugoslavia. Further distribution includes Russia, Kazakhstan and North America (Nast 1972, 1976, 1987). In Poland it was previously known from two localities: Mazowiecka Lowland (Nast 1936) and the Pieniny Mountains (Nast 1976). This is the first report from the Beskidy Mountains. One male specimen was collected in disturbed grassland in the Lower Beskids. *Epilobium angustifolium, Rubus idaeus, Alchemilla* sp. and *Filipendula ulmaria* have been cited as host plants (Nickel 2003).

Conclusions

Recent field surveys carried out in the Silesian Upland, the Białowieża Primeval Forest and the eastern Beskidy Mountains have revealed a number of rarely-collected species of Auchenorrhyncha.

Perhaps the most interesting species, *Pentastiridius beieri*, was collected at the bottom of a mining spoil tip in Ruda Śląska. This locality is an example of how mining spoil tips can provide substitute habitats for rare and specialized species: according to the literature, *P. beieri* is a specialist in the gravel banks of mountain rivers (Nickel 2003).

Additional recent localities for the Nearctic treehopper *Stictocephala bisonia* may suggest that this species is currently already widespread in southern Poland and that the number of known localities may increase rapidly in the near future.

The distribution of *Metalimnus steini* still needs to be assessed by a more detailed survey, but the locality in the Białowieża Primeval forest suggests that this species is widely distributed, at least in southern and north-eastern Poland.

With an increasing number of field surveys focused on the Auchenorrhyncha in the different zoogeographical regions of Poland, one may presume that in the near future many additional interesting and rare species will be recorded, including new species for the country, as the current number of 538 species in Poland cannot be considered as definitive.

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