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SHORT COMMUNICATION

Two new localities of the zigzag elm sawfly *Aproceros leucopoda* Takeuchi, 1939 (Hymenoptera, Symphyta: Argidae) in Poland

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ABSTRACT

The paper presents information on two newly discovered localities of *Aproceros leucopoda* Takeuchi in Poland, namely in the northwestern part of the country: in Cedynia and nearby nature reserve "Bielinek". Geographical distribution of that species and its bionomy are also outlined.

Keywords: Hymenoptera, Symphyta, Argidae, *Aproceros leucopoda*, zigzag elm sawfly, Poland, new localities, bionomy, geographical distribution

Aproceros leucopoda is an Eastern Palaearctic species of sawflies, recently introduced and in the last 10 years quickly spreading mainly in Central Europe. First European reports (2003) refer to its occurrence in Poland and Hungary, in the following years the species was found in Romania (2005), Ukraine (2006), Slovakia (2007) and Austria (2009) (Blank & al. 2010), then in Moldavia (Timuş & al. 2008 as *Arge* sp.), Serbia (Hirka 2010) and Italy

(Zandigiaco & al. 2011). In 2011 single locality in southern Germany was discovered (Kraus & al. 2012) and in later publications not only central- but also western- and southeastern-European records appear: besides the above-mentioned countries *Aproceros leucopoda* has already been known from Netherlands (Mol & Vonk 2015), Belgium (Boevé 2014), Slovenia (Groot & al. 2012), Croatia (Matošević 2012), Bulgaria (Doychev 2015), Czech Republic (Jurášková & al. 2014) and European part of Russia (Artokhin & al. 2012).

In Poland the species has been originally reported from the vicinity of Tarnobrzeg (Forest Inspectorate Nowa Dęba), and in 2008 it was found in Warsaw, 200 km north of Tarnobrzeg (Blank & al. 2010). These two were hitherto the only known Polish localities; further two, discovered in 2017 in northwestern part of our country, are presented below.

- Pomeranian Lakeland, Cedynia, **UTM: VU45**, (N 52°52'31.5", E 14°12'11.1"), 29.V.2017, church park, on leaves of *Ulmus minor* Mill., numerous last feeding instar larvae and some nymphal cocoons, leg. J. Borowski, A. Byk, S. Tylkowski;

- Pomeranian Lakeland, nature reserve „Bielinek”, **UTM: VU46**, (N 52°55'20.9", E 14°10'39.4"), 3.VI.2017, 15♀♀, on *Ulmus minor* Mill., leg. J. Borowski.

Aproceros leucopoda feeds on elms (*Ulmus* spp.). Parthenogenetic development results in Europe in 4-5 generations a year, each cycle of spring and summer generations taking ca. 4 weeks. Females appear in late April or early May (Mol & Vonk 2015); eggs are laid inside of leaves at their edges; hatched larvae gnaw out a characteristic, zigzag gallery running from the edge to the main rib (Fig. 1) – this is the most distinctive trace of the species' feeding activity, making the search for it significantly easier; within ca. two weeks of feeding the entire leaf blade is devoured, usually only petiole and main nerve having been left. Larvae of the last feeding instar are green with characteristic narrow black bands on sides of head (Fig. 2); eonympha makes a short travel to the underside of the leaf and there builds a transparent cocoon (Fig. 2); the cocooned instars (eonympha, pronymph and pupa) live for only few days. Imagines in culture readily drink sugared water.

The sawflies found on these two localities belonged probably to the first (larvae) and second (imagines) generation. Last generation larvae build their cocoons, somewhat stronger and less transparent than those in spring and summer, in the litter and upper layer of soil. Cocooned eonympha winters, then in next year spring transforms into pronymph and then pupa (Mol & Vonk 2015).

As mentioned above, *Aproceros leucopoda* is the oligophage of *Ulmus*. Despite having been recorded from almost all species and varieties of elms (Vétek & al. 2017), it definitely prefers stately elm – *Ulmus minor*. In Cedynia two elm species – *Ulmus minor* and *Ulmus laevis* Pall. – grow together, but abandoned galleries as well as feeding larvae have been observed exclusively on the former: leaves of *U. laevis* remained untouched, although that species was much more numerous than *U. minor*.

Aproceros leucopoda seems a typical species of floodplain forests and thickets, river valleys being natural passage-ways. Parthenogenetic multigenerational development certainly affects the excessive vagility of this species. Its discovery in other regions of Poland, chiefly on elms growing in valleys of large rivers, is highly probable, as well as its detection, within few years, in the remaining countries of (especially southern and central part of) Europe.



Fig. 1. Characteristic zigzag pattern of *Aproceros leucopoda* Takeuchi on elm leaf (*Ulmus minor* Mill.). Poland, Cedynia, 29.V.2017.



Fig. 2. Larva and spring cocoon of *Aproceros leucopoda* Takeuchi. Poland, Cedynia, 29.V.2017.

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