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***Agnathus decoratus* (Coleoptera: Pyrochroidae:
Agnathinae) in Poland**

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Abstract: We present the first reliable records of *Agnathus decoratus* (GERMAR, 1818) (Coleoptera: Pyrochroidae: Agnathinae) from Poland. Several specimens were found on a dead elm (*Ulmus* sp.) tree trunk, which was partially submerged in water, lying on the bank of the Oder river near the community Zabelków in the Silesian Voivodeship (province) on the southern border of Poland. Another two specimens were found on the bank of the Vistula river in the community Ciszycza, ca 10 km south of Warsaw. Collection circumstances and insights on the species' bionomy and ethology are reported.

Key words: faunistics, ecology, Pyrochroidae, Agnathinae, *Agnathus decoratus*, Oder river, Vistula river, Zabelków, Ciszycza, Poland.

INTRODUCTION

World-wide, there are only two species of the genus *Agnathus* GERMAR, 1818 (Coleoptera: Pyrochroidae: Agnathinae): *Agnathus decoratus* (GERMAR, 1818) and *A. secundus* JELÍNEK & KUBÁŇ, 2009. *Agnathus secundus* has been reported from China only (JELÍNEK & KUBÁŇ 2009), whereas *A. decoratus* has a discontinuous range in Europe (except its northern part) and western Asia. YOUNG *et al.* (2020) report its occurrence in Austria, Bosna and Hercegovina, Bulgaria, Belarus, Croatia, Czechia, France, Georgia, Germany, Hungary, Italy, Luxembourg, Poland, Romania, Russia (European part), Slovakia, Slovenia, Switzerland, Turkey (European part) and Ukraine. Additional to that, the species was recently also reported from Greece (KONVIČKA 2017) and Latvia (TELNOV *et al.* 2020). From the Czech part of Silesia, close to the Polish border, records of *A. decoratus* were published from the vicinity of the rivers Oder (Odra), Ostravice and Stonávka (REITTER 1870) and most recently from the vicinity of the Ostravice river close to the community Ostravice in the Moravian-Silesian Beskids (Moravskoslezské Beskydy) (HLISNIKOVSÝ 1958).

The species has been reported from Poland without further details in both Catalogues of Palaearctic Coleoptera (POLLOCK & YOUNG 2008, YOUNG *et al.* 2020). This was questioned by JELÍNEK & KUBÁŇ (2009) and later also by KUBISZ *et al.* (2015). According to JELÍNEK

& KUBÁŇ (2009), the reported occurrence of *A. decoratus* in Poland was based on the works of SCHILSKY (1888, 1909), who had given the very general locality “Silesia”. However, they pointed out that according to BURAKOWSKI *et al.* (1987) Schilsky’s records did not refer to the large part of Silesia within modern Poland. Therefore, JELÍNEK & KUBÁŇ (2009) consider its occurrence in Poland as uncertain. In the present paper we report finds of *A. decoratus* at two localities in Poland, comprising a mass-occurrence at the Oder river close to the community of Zabelków on the Polish-Czech border and the find of two specimens on the bank of the Vistula river near the community Ciszycza south of Warsaw.

RESULTS

Agnathus decoratus (GERMAR, 1818) (Fig. 1)

Material examined: Poland mer., Zabelków [CA03], 49°56'7.44"N 18°20'54.96"E: 2.VIII.2022, 18 spec., V. Rýznar lgt., det. et coll.; 5.VIII.2022, 6 spec. (5 spec. on the trunk of *Ulmus*, and 1 spec. at UV-light), J. Vávra lgt., det. et coll.; same date, 15 spec., R. Szopa (Bystrice nad Olší, Czechia) lgt., det. et coll.; 6.VIII.2022, 5 ex., J. Stanovský (Ostrava, Czechia) lgt., det. et coll.; 8.VIII.2022, 4 spec., M. Mantič (Hlučín-Bobrovniky, Czechia) lgt., det. et coll.

Poland centr., Ciszycza [EC17], 52°6'32.4"N 21°11'40.2"E: 12.v.2023, 2 spec. (1 spec. on sand, and 1 spec. on the trunk of *Populus*), V. Rýznar observ. et documentary photo of imago.



Fig. 1. Habitus of *Agnathus decoratus* (GERMAR, 1818) from Zabelków (Poland), dorsal habitus, body length 5.1 mm. Photo by J. Sitek.

All specimens at the locality Zabełków were found on a dead elm (*Ulmus* sp.) trunk lying on the Oder river beach, consisting of sand and gravel. This trunk was partially submerged in a river pool created by the stream during times of high water flow (Fig. 2). Adults were active during the night in numbers of several dozens both on the tree bark and on dry branches. At daytime only a few beetles were found on the lower side of the trunk above the water surface. One specimen was also lured to a UV-light exposed some 100 m away.

At the Ciszycza site, one specimen was found accidentally on the ground of the sandy beach of the Vistula river, a second one on a poplar (*Populus* sp.) trunk, lying in a moist depression in the sand on the river bank (Fig. 3). This trunk had been already stripped of most of its bark. Both specimens were found after nightfall.

The above reported finds of *Agnathus decoratus* are the first reliable records for Poland.

Ecology. *Agnathus decoratus* lives in natural riparian habitats of meandering rivers where it is associated with dead tree trunks of broad-leaved species either partially lying in the river bed or such lying on the banks that are at least regularly overflowed by water (JELÍNEK & KUBÁŇ 2009, KONVIČKA 2017, VÁVRA 2017). For their reproduction the presence of bark, under which their larvae occur, is required. Probably they develop in the moist, decomposing subcortical detritus. In central Moravia at the Bečva river close to the community Skalička (Czechia) a pupa of *A. decoratus* was found in the thick bark of a dead poplar (*Populus* sp.) trunk that was partially submerged in water (KONVIČKA 2017). Imagoes are active on the surface of tree trunks in particular during the night. At daytime lower numbers of specimens can be found on the lower sides of dead trunks suspended above water (JELÍNEK & KUBÁŇ 2009, KONVIČKA 2017), rarely some individuals are also active during the day (JELÍNEK & KUBÁŇ 2009). Imagoes hibernate mostly in cracks of bark at the foot of live trees close to water streams (JELÍNEK & KUBÁŇ 2009, KONVIČKA 2017).

DISCUSSION

The Zabełków site is important by the natural development of the river bed of the Oder, which is meandering and creating temporal beaches made of sand and gravel, banks and stands of natural alluvial vegetation. This provides suitable conditions for a specific, ecologically distinct animal community, in particular of ripicolous but also further riparian species of invertebrates. Bank erosion leads to trees falling into the river channel, thus creating habitat suitable for the development of *Agnathus decoratus*. The Vistula river close to Ciszycza is partially regulated. However, due to the wide river bed and levees placed rather far from the river, there is sufficient space for the development of natural, periodically inundated beaches and banks, including stranded tree trunks, which are a prerequisite for the development of *A. decoratus*.

Agnathus decoratus is an important indicator species for such types of natural habitat, which are amongst the most threatened ones due to the continuing regulation of most river courses. It would be advisable to support the occurrence of the species by stream revitalization and targeted increase of dead wood in streams and rivers.

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Fig. 2. The trunk of an elm (*Ulmus* sp.) with *Agnathus decoratus* (GERMAR, 1818) near the Oder river (Zabelków, Poland). Photo by V. Rýznar.



Fig. 3. Habitat of *Agnathus decoratus* (GERMAR, 1818): the trunk of *Populus* sp. in sandy beach of the Vistula river (Ciszyca, Poland). Photo by V. Rýznar.

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