

Rediscovery of the false click beetle *Microrhagus pyrenaeus* BONVOULOIR, 1872 for the fauna of Germany (Coleoptera, Elateroidea, Eucnemidae)

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Introduction

The family Eucnemidae is represented with only 24 species in Middle Europe (LOHSE 1979). In 1992 (LUCHT 1992) and in 1998 (LUCHT 1998) two new species were considered. In Germany 18 species of this family are known (KÖHLER 2000), but two of them are applied to be lost for the fauna of Germany. With *Dirrhagofarsus attenuatus* MÄKLIN 1845 a new species was found in the recent years (BRENNER 2011). Within the most southern province Baden-Württemberg 14 species of this family are familiar (BENSE 2001). All species of this family known from Europe have an association to dead wood structures. Now the species *Microrhagus pyrenaeus* BONVOULOIR, 1872 could be rediscovered after more than a hundred years of extinction.

Materials and methods

During the growing season of the years 2014 and 2015 investigations in an oak-rich hardwood-meadow, a protected landscape in the physical region Offenburger Rheinebene, about saproxylic beetles were conducted in the order of Regierungspräsidium Freiburg, Referat 56, Naturschutz und Landschaftspflege. In addition to different kinds of traps and sampling methods three flight traps and one flight bait trap were used. They were all attached to about 200 years old oaks with structures such as dead wood, nest holes and tree fungi. The traps were filled with a mixture of alcohol, vinegar concentrate and water in a proportion of 60-20-20. The flight bait trap was also filled with pigeon dung. The Emptying of the traps was carried out in a rhythm of three weeks from the 03/31/2014 to the 10/06/2014, respectively from the 03/30/2015 to the 10/05/2015. On the 06/23/2014, on the 07/14/2014 and on the 07/13/2015 one specimen of *Microrhagus pyrenaeus* BONVOULOIR, 1872 was captured with a flight trap in each case. Besides at 07/13/2015 another specimen of this species was captured with the flight bait trap.

Distribution

Microrhagus pyrenaeus BONVOULOIR, 1872 is one of the rarest beetles in Europe. Its main distribution in Europe seems to be across France. There are about 15 localities in central and south-western France (HORÁK ET AL. 2010). In Bulgaria there exists only one record from 1998 (HORÁK ET AL. 2010). In 2008 the species was also recorded for Greece (MERTLIK ET AL. 2009) and in 2015 the species could be found in Poland for the first time (HILSZAŃSKI ET AL. 2015). Besides there are detections from Switzerland, Czech Republic and Italy (MERTLIK ET AL. 2009). In Germany the last discovery goes back to the 19th century. It was found in the province Hessen close to the cities Frankfurt and Aschaffenburg (HEYDEN 1904).

Notes to the habitat and the ecology

Microrhagus pyrenaeus BONVOULOIR, 1872 is an obligate saproxylic beetle and its larvae develop in dead branches infested with fungi causing white rot (HILSZAŃSKI ET AL. 2015). It has been found in dead branches of *Carpinus*, *Alnus*, *Quercus* (BRUSTEL & VAN MEER 2008, HORÁK ET AL. 2010), but also in *Fraxinus*-dominated forests (HILSZAŃSKI ET AL. 2015).

Illustration: Specimen of *Microthagus pyrenaeus* BONVOULOIR, 1872 (top left), flight trap attached to an oak (top right) and the habitat (below) of *Microthagus pyrenaeus* BONVOULOIR, 1872 in an oak-rich hardwood-meadow, a protected landscape in the physical region Offenburger Rheinebene (pictures were taken in 2014 & 2015 by the author).



Within the recent investigation specimen could only be caught with flight traps. It seems *Microrhagus pyrenaeus* BONVOULOIR, 1872 prefers to develop in branches from the treetop-region. The same detections made HILSZAŃSKI ET AL. (2015).

The habitat, where the specimen could be found was a hardwood-meadow rich in old oaks with a lot of standing dead wood and other structures as tree fungi and nest holes. The location leads to a sunny, warm and dry exposition of the trees.

Discussion

It seems *Microrhagus pyrenaeus* BONVOULOIR, 1872 is spreading the recent years. The species could be contributed to the fauna of Greece (MERTLIK ET AL. 2009) and Poland (HILSZAŃSKI ET AL. 2015) and now rediscovered for the fauna of Germany.

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