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Research article

New data about the distribution of *Plectophloeus fischeri* (Aubé, 1833) and *Dicentrius biroi* Besuchet, 1999 (Coleoptera: Staphylinidae: Pselaphinae) in Bulgaria

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Abstract: New data for the rare and poorly known species *Plectophloeus fischeri* (Aubé, 1833) and *Dicentrius biroi* Besuchet, 1999 in Bulgaria are presented.

Keywords: distribution, endemic, new records, rare species, saproxylic

Introduction

Plectophloeus fischeri (Aubé, 1833) is a widespread species in Europe, distributed from Great Britain, through Central Europe and Italy to the Balkans (Löbl & Löbl, 2015). It is a typical saproxylic beetle inhabiting dead wood, often found under the bark of various trees. It is one of the first representatives of the subfamily Pselaphinae reported from Bulgaria, from Rila Mts and Chamkoria (Borovets) (Rambousek, 1909). Later, Karaman added another record from the vicinity of Varna (Karaman, 1969). In the last decade, a few more findings were accumulated, some of them already published, they are from Vitosha, Belasitsa, Western Rhodopes, and Pirin (Bekchiev, 2008, 2011; Bekchiev & Kostova, 2022; Bekchiev & Shishiniova, 2007). Despite the increasing information of its distribution, the species is rare and reported in relatively low number of localities at least on the territory of Bulgaria. Nevertheless, it remains the most widespread and most common compared to the others species of the genus *Plectophloeus* Reitter, 1891 (*Plectophloeus nitidus* (Fairmaire, 1858), *Plectophloeus nubigena* (Reitter, 1877), *Plectophloeus rhenanus* (Reitter, 1882)) in our country (Bekchiev, 2016).

The genus *Dicentrius* (Reitter, 1882) was considered monospecific until 1999, when Besuchet (1999) described 8 new species from the Balkans (mainly from Bulgaria, Albania and Northern Macedonia) and one new species from Serbia was added later (Bekchiev & Hlaváč, 2008). Most species of the genus are characterised by narrow distribution ranges, as they have a low dispersal ability, restricted to mountainous regions. The species of the genus are microphthalmous, they are very similar morphologically and they identification is only possible when male aedeagus is studied. All representatives of the genus are litter dwellers, most abundant in forest habitats, but could also be met in high altitude in the subalpine belt (2000–2500 m). The genus, as well as the closely related genus *Pselaphogenius* Reitter, 1910 most likely speciated relatively recently, possibly during the Pleistocene glaciations (Sabella et al., 2019). In accordance with the framework outlined above, it can be assumed that the alternation during the Pleistocene of cold glacial periods and hot and dry interglacial periods played a fundamental role in the specific differentiation between species in this group, which is reflected in the different affinity levels between them and in their current geographic distribution. In this regard, the finding of

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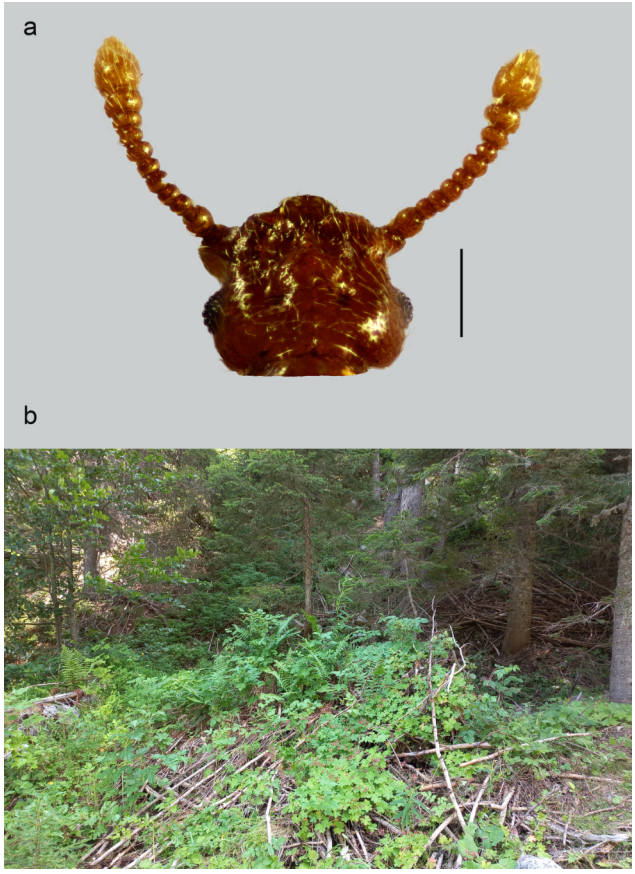
Fig. 1. Habitat of *Plectophloeus fischeri* at Banderitsa Hut, Pirin Mts, Bulgaria.



← Fig. 2. (a) Head of *Plectophloeus fischeri* – male (scale: 0.1 mm); (b) microhabitat where the specimens were collected.

Dicentius biroi Besuchet, 1999 in Rila Mountains, known before only from Osogovo and Stara Planina Mountains (Bekchiev, 2008), raises many interesting questions about the phylogenetic relationships within the genus.

The material is preserved in the collection of the National Museum of Natural History-Sofia (NMNHS). Additional data from the collection of Muséum d'histoire naturelle, Genève – Switzerland (MHNG) are also provided.

Results

Plectophloeus fischeri (Aubé, 1833)
Figs 1; 2a, b)

Pirin Mts, Banderitsa River Valley, near Banderitsa Hut, 27.07.2022, N41.7680°, E23.4239°, 1 ♂, 4 ♀♀, leg. R. Bekchiev, R. Kostova (NMNHS); Stara Planina

Fig. 3. Microhabitat of *Dicentrius biroi* in Rila Mts, Treshtenik.

Mts, Kalofer Town env., 10.07.1928, 1 ♂, leg. J. Fodor; Sopot Town env., 1 ♀ (MHNG).

Note: The material from Pirin Mts was collected in 2022, during the field expeditions in Pirin Mts, in the valley Banderishka River (Fig. 1), near Bansko Town, in mixed *Pinus heldreichii* and *Picea abies* forest. Adult specimens (Fig. 2a) were caught by sifting rotten wood, death branches and litter (Fig. 2b). This is the second known locality from the mountain.

The species is new for Stara Planina Mts.

Dicentrius biroi Besuchet, 1999
(Fig. 3)

Rila Mts, Treshtenik Hut, 30.06.2021, N42.0821° E23.6179°, 4 ♂♂, 2 ♀♀ leg. R. Bekchiev, R. Kostova (NMNHS).

Note: For the first time the species *Dicentrius biroi,* known until now only from Stara Planina Mts and Osogovo Mts, was found in the forest of *Pinus peuce* Griseb., 1846 by sifting litter and rotten wood near Treshtenik Hut in the Rila Mountains.

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