Lasiodiamesa (Podonominae, Chironomidae), first record of the genus from Slovakia

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Abstract

Here we report the first record of *Lasiodimesa* (Podonominae) in Slovakia. A single larva was collected in a small (366 m^2) and shallow (max depth 0.6 m) alpine pond located at 1,654 m a.s.l. in the High Tatra Mountains. Acidotolerant taxa such as *Psectrocladius octomaculatus*, *Zalutschia tatrica, Synendotendipes* sp. and *Tanytarsus* cf. *gregarius* were present in the community of the pond. Our finding indicates that the typical habitat of *Lasiodiamesa* larva is not necessarily a bog, but can also be a small acidic waterbody.

Introduction

Lasiodiamesa is a genus of the Podonominae subfamily confined to the northern Holarctic. The larva can be distinguished from other Podonominae by the elongate and bicolored procerci bearing strong apical setae, and by the mentum with high number (up to 14) of teeth. The labrum is less laterally compressed relative to other Podonominae (Cranston). Species of the genus are known from North America and Canada (4 species) and Fennoscandia, some with their southernmost distribution in Middle Europe. Out of the nine known species (Brundin 1966; Sæther 1967, 1969a; Wirth and Sublette 1970a), pupae are known for seven species (Brundin 1966a; Sæther 1969a). Here we present a record of a *Lasiodimesa* larva from an alpine pond in Slovakia. It is the first record of this genus in Slovakia.

Material and methods

The study pond is located in the Dolina Bielych plies valley (Fig. 1) in the north-eastern part of the Tatra Mts. (Slovakia, Central Europe), at 49.22227° N 20.22376° E. The pond is surrounded by dense growths of

Figure 1. Location of the pond (indicated by arrow) in the Dolina Bielych plies valley where the larvae of *Lasiodiamesa* was recorded.

dwarf pine (*Pinus mugo*). Basic characteristics of study pond are presented in Table 1. The pond has no inlet, nor outlet and the substrate consists of 10 % megalithal (>40 cm), 70 % macrolithal (>20 – 40 cm) and 20 % organic mud.

A combination of drift sampling and the kicking technique was used to collect larvae and pupal exuviae. Preimaginal stages of chironomids were picked, mounted on permanent slides and identified using Sæther and Andersen (2013). The material is deposited at the Department of Biology and General Ecology, Technical University in Zvolen, Slovakia. For the list of other invertebrates recorded in the pond see Table 2.

Table 1. Basic physical, chemical and hydromorphological characteristics of the surveyed pond. Environmental variables were recorded during the field works or determined in laboratory by analysis of water samples taken in time of sampling.

Characteristic	Value
Area	368 m²
Altitude	1,654 m
Max. depth	0.6 m
pH	5.99
Conductivity (25 °C)	8 µS cm^{-1}
DOC	5.727 mg L^{-1}

Results

Chironomidae: Podonominae: *Lasiodiamesa* sp.

Material examined: Material: 1 larva (4 July 2013, Fig. 2a-d) out of 650 specimens collected (Table 2), leg. M. Veselská, det. L. Hamerlík.

Distribution: Four species are known from the Palaearctic (Spies and Sæther 2015). The most common member of the genus is the Holarctic *L. sphagnicola* (Kieffer 1925) recorded in 9 European countries including Scandinavia and countries from Western to Eastern Europe. *L. gracilis* (Kieffer, 1924) is known from Finland, Sweden, Poland, The Netherlands and Czech Republic (Syrovátka and Langton 2015). One species is known from Scandinavia (*L. armata* Brundin 1966) and one from Germany and Norway (*L. bipectinata* Sæther 1967). From the Palaearctic only *L. sphagnicola* is known as larva. The degree of specific differences among larvae of the genus is uncertain (Sæther and Andersen 2013), thus it is not possible to classify our record to any of the Palaeartic species.

Figure 2. Photograph of the head (a), mandible (b), mentum (c) and anal end with procerci (d) of the recorded *Lasiodiamesa* larva.

Ecology: Larvae of *Lasiodiamesa* live in bog waters and Sæther and Andersen (2013) state that in Central Europe immature stages are restricted to *Sphagnum* bogs. Interestingly, the site of our record in the Tatra Mts. is not a peat bog, however, it had slightly acidic water (pH 5.99), and we assume that due to its small size it is extremely prone to pH changes, especially during the spring snow thaw. The community composition with multiple aciodotolerant taxa such as *Zalutschia tatrica, Synendotendipes* sp. and *Tanytarsus* cf. *gregarius* confirm the acidic character of the surveyed pond and indicates that the typical habitat of *Lasiodiamesa* larva is a small acidic waterbody, however, not necessarily a bog.

Table 2. List and counts of taxa recorded in the study pond. PE refers to taxa recorded only as pupal exuviae.

Taxon name	**Abundance**
Hydracarina	
Hydracarina indet.	1
Heteroptera	
Sigara nigrolineata (Fieber, 1848)	4
Coleoptera	
Agabus sp.	3
Hydroporus melanarius Sturm, 1835	4
Hydroporus palustris (Linnaeus, 1761)	24
Hydroporus sp.	89
Trichoptera	
Limnephilus coenosus Curtis, 1834	6
Oligotricha striata (Linnaeus, 1758)	1
Diptera	
Procladius (Holotanypus) spp.	115
Zavrelimyia sp.	4
Diamesa sp.	5
Corynoneura scutellata group	27
Cricotopus (*Isocladius)* sp.	PE
Psectrocladius (s. str.) *octomaculatus* Wulker, 1956	109
Zalutschia tatrica (Pagast, 1935)	60
Micropsectra sp.	28
Synendotendipes sp.	11
Tanytarsus sp.	158
Tanytarsus cf. *gregarius* (Kieffer 1909)	PE
Lasiodiamesa sp.	1

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