Description of a new Psychodidae (Diptera) species from Estonia

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Lepimormia hemiboreale sp. n. (Diptera, Psychodidae) from Estonia, Saaremaa Island, is described. The description of the species is based on Malaise trap material collected from an eutrophic spring fen in Viidumäe Nature Reserve. Lepimormia hemiboreale sp. n. is quite similar to L. georgica (Wagner, 1981), L. sibirica Ježek, 1994 and L. vardarica (Krek, 1982) but the shape of aedeagus, subgenital and anal valves readily distinguish L. hemiboreale sp. n. from these. In addition to the new species, 13 moth fly species are reported for the first time from Estonia.

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1. Introduction

In 2002, adult flies were collected from two springs in Viidumäe Nature Reserve, Saaremaa Island, Estonia. A total of 15 moth fly taxa (Diptera: Psychodidae) were determined, including a new species belonging to genus Lepimormia Enderlein, 1936. In this paper, the species is described and its affinities to other members of the genus are discussed.

Ježek (1984) has confirmed the status of Lepimormia as a valid genus. The distinguished morphological characteristics for the genus are, for example, pedicellus without a strong protuberance laterally; neither third nor fourth segments of antennae conspicuously enlarged; sensory filaments of the flagellar segments in the shape of a comb with bent base; circular organs (porthole/bull eye organs) of the antennal segments 4–8 developed. Lepimormia is a rather small genus, six species are known from the Holartic region (Ježek 1994a).

2. Material and methods

The studied insect material was collected by Malaise traps, two traps in a spring fen (Kanna) and two other ones in a nearby spring brook (Nakimetsa). Ethylene glycol was used as a preservative in the traps and the material was finally preserved in 70% ethanol. The traps were in the field from the middle of April to the middle of November 2002 and the traps were emptied in monthly intervals. Psychodids were later sorted out from the material and slide mounted permanently in Euparal.
3. Species description

*Lepimormia hemiboreale* sp.n. (Figs. 1–3)


*Diagnosis.* Small species, wing length 1.5–1.7 mm. Pedicel almost cylindrical, porthole organs on segments 4–8, ascods rake shaped. Cercopods bearing 10–13 retinaculi.

*Description.* Male: Head. Eyes contiguous, contact zone as long as 2 facet diameters, eye-bridge consists of 3 rows of facets. Scape apically increasing in diameter, 1.9 times longer than greatest diameter. Pedicel shorter, almost cylin-

Fig. 1. *Lepimormia hemiboreale* sp. n. – a. Wing. – b. Hypopygium, dorsal view (holotype).

Fig. 2. *Lepimormia hemiboreale* sp. n. – a. Hypandrium, dorsal view. – b. Gonocoxite and gonostylus, dorso-lateral view.
Fig. 3. *Lepimormia hemiboreale* sp. n.  


Thorax. Coloration brown. Wing (Fig. 1a) 1.5–1.7 mm. Length/width index 2.66–3. Basic color light brown, cells a₁, a₂, and sc somewhat darker, clouded. Base of M₁ thickened and sinuous, distinctly darker than distal part of the vein. Cu basally sinuous and slightly thickened. Sc without connection to R₁.

Hypopygium (Fig. 1b). Subgenital valve (Fig. 2a) triangular, very setose in the distal 2/3, pointed or slightly rounded distally. Subanal valve (Fig. 2a) setose and rounded, but shorter in length. Ventral bridge of equal thickness. Gonostylus as long as gonocoxite (Fig. 2b). For aedeagus and cercopod, see Fig. 3a–b.

Female: Unknown.

Remarks. *Lepimormia hemiboreale* sp. n. is similar to other members of the genus. *Lepimormia bryophila* (Vaillant, 1960) has 10 retinaculi, and its 3rd palpal segment is incomplete. *Lepimormia palposa* (Tonnoir, 1919) and *L. josanicana* (Krek, 1972) both have 15–17 retinaculi and complete 3rd palpal segment (see Vaillant 1974). *Lepimormia georgica* (Wagner, 1981), *L. sibirica* (Ježek, 1994) and *L. vardarica* (Krek, 1982) however, are perhaps most closely related to *L. hemiboreale* sp. n. but the structure of the male hypopygium, especially the shape of aedeagus and subgenital and anal valves, readily distinguish *L. hemiboreale* sp. n. from these.

4. Type locality and other recorded Psychodidae species

The type locality is an open, eutrophic spring fen. Percolation of groundwater around the fen is moderate and only a small and slowly flowing brook runs the water from the fen. Water characteristics of the brook were measured in 14.VI.2002 and the results indicate lime rich ground water area, since pH was 8.07 and conductivity 414 μS/cm.

A list of Psychodidae species of the Kanna spring fen and Nakimetsa spring brook is presented in Table 1. According to Wagner (1990) all listed species are reported for the first time from Estonia. Interestingly, *Lepimormia hemiboreale* sp. n. was the second numerous species in the material (together with Panimerus albibifacies), outnumbered only by a common and widespread Clitocerus ocellaris. Species like Sycorax silacea, Telmatoscopus carthusianus, Panimerus albibifacies, Peripsychoda auriculata
Table 1. A list of Psychodidae from two springs of Viidumäe Nature Reserve 2002, J. Salmela det.

<table>
<thead>
<tr>
<th>Species</th>
<th>Nakimetsa Kanna</th>
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<tbody>
<tr>
<td>Sycorax silacea Haliday, 1839</td>
<td>– 9</td>
</tr>
<tr>
<td>Clytocerus ocellaris (Meigen, 1804)</td>
<td>49 55</td>
</tr>
<tr>
<td>Clytocerus tetracorniculus Wagner, 1977</td>
<td>1</td>
</tr>
<tr>
<td>Pneumia mutua (Eaton, 1893)</td>
<td>2 –</td>
</tr>
<tr>
<td>Peripsychoda auriculata (Curtis, 1839)</td>
<td>1</td>
</tr>
<tr>
<td>Lepimormia hemiboreale sp.n.</td>
<td>– 20</td>
</tr>
<tr>
<td>Paramormia polyascoidea (Linnaeus, 1758)</td>
<td>1</td>
</tr>
<tr>
<td>Philocephedon humerale (Meigen, 1818)</td>
<td>– 2</td>
</tr>
<tr>
<td>Logima albipennis Zett. group</td>
<td>– 1</td>
</tr>
<tr>
<td>Psychoda phalaenoides</td>
<td>– 1</td>
</tr>
<tr>
<td>Feuerborniella obscura (Tonnoir, 1919)</td>
<td>2</td>
</tr>
<tr>
<td>Jungiella consors (Eaton, 1893)</td>
<td>– 2</td>
</tr>
<tr>
<td>Panimerus albifacies (Tonnoir, 1919)</td>
<td>2 18</td>
</tr>
<tr>
<td>Parajungiella pseudolongicornis (Wagner, 1975)</td>
<td>1</td>
</tr>
<tr>
<td>Telmatoscopus carthusianus (Vaillant, 1972)</td>
<td>2 2</td>
</tr>
</tbody>
</table>

and Feuerborniella obscura perhaps prefer springs (Vaillant 1978). In addition, Parajungiella pseudolongicornis and Clytocerus tetracorniculatus were described from spring habitats (Wagner 1975, 1977), but both species are reported from other habitats, too (Salmela 2003).

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References


Wagner, R. 1981. Some psychodidae (Diptera) from the Southern Caucasus and Iran. — Aquatic Insects 3: 45–56.