

## 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 seg-

ments 4–8 developed. *Lepimormia* is a rather small genus, six species are known from the Holarctic 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.

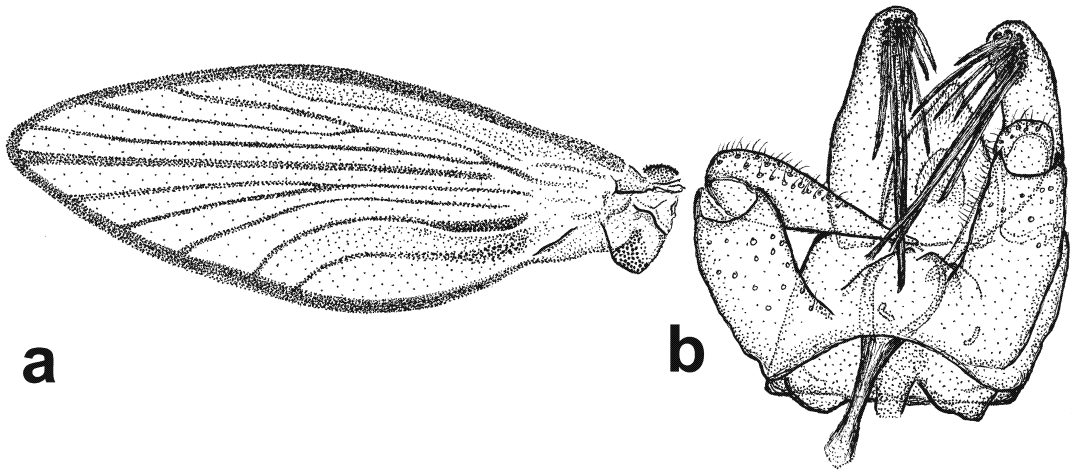


Fig. 1. *Lepimormia hemiboreale* sp. n. – a. Wing. – b. Hypopygium, dorsal view (holotype).

### 3. Species description

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

**Material.** Holotype ♂: Estonia, Saaremaa Island, Viidumäe Nature Reserve, Kanna spring fen, 58°17'48" N 22°05'11" E, 13.IV.–15.V.2002. T. Talvi leg. Paratypes: 19 ♂♂ from the same locality. Holotype and 6 paratypes are deposited in the Zoological Museum, the University of Helsinki, two paratypes in the collection of Dr. R. Wagner,

Schlitz, and other paratypes in collection of J. Salmela, Jyväskylä.

**Diagnosis.** Small species, wing length 1.5–1.7 mm. Pedicel almost cylindrical, porthole organs on segments 4–8, ascoids 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-

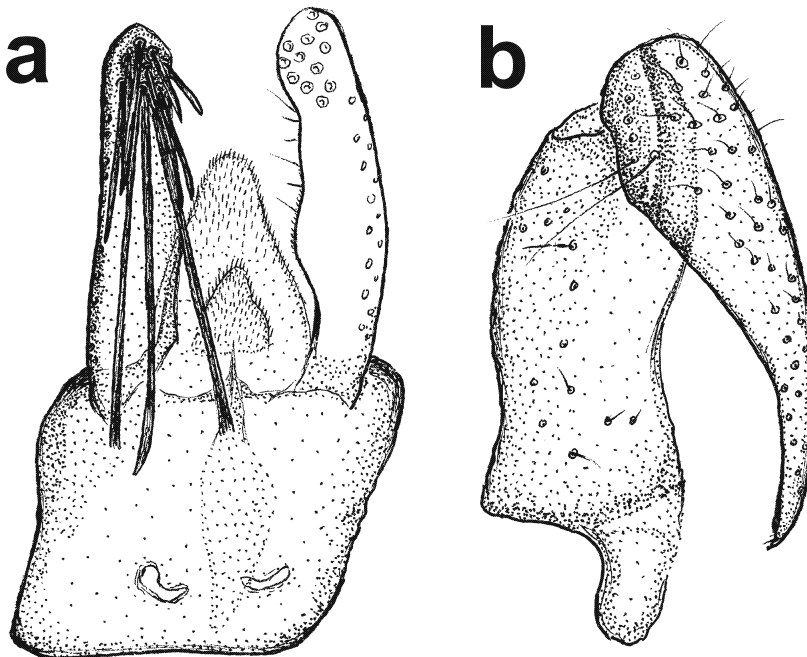


Fig. 2. *Lepimormia hemiboreale* sp. n. – a. Hypandrium, dorsal view. – b. Gonocoxite and gonostylus, dorso-lateral view.

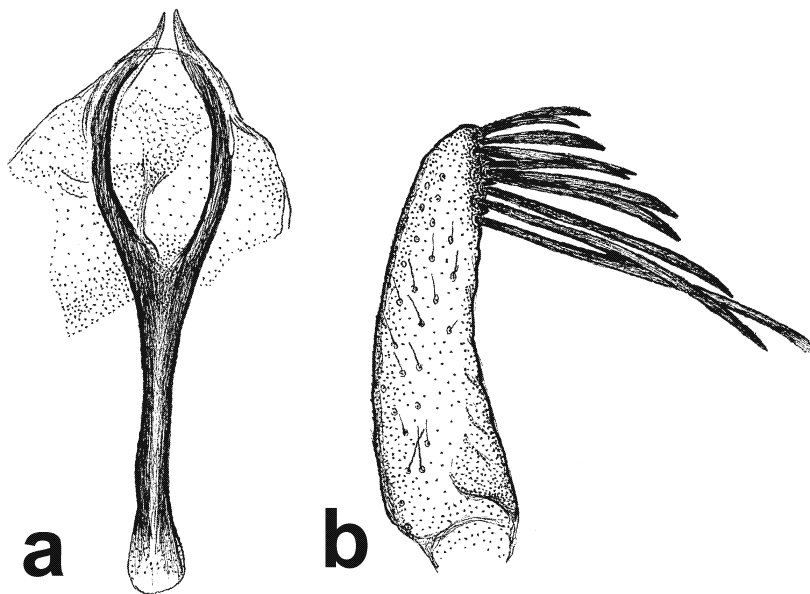


Fig. 3. *Lepimormia hemiboreale* sp. n.  
– a. Aedeagus, dorsal view. – b. Cercopod, lateral view.

dricul. Flagellar segments flask shaped, porthole organs on antennal segments 4–8. Segments 3–8 each with rake-shaped ascoid. Length ratio of antennal segments 1–9: 40; 24–25; 24–27; 24–27; 21–24; 21–23; 21–24; 21–23; 22. Other segments missing. Length ratio of palpal segments: 22–26; 31–35; 29–33; 29–43.

Thorax. Coloration brown. Wing (Fig. 1a) 1.5–1.7 mm. Length/width index 2.66–3. Basic color light brown, cells  $a_1$ ,  $a_2$  and sc somewhat darker, clouded. Base of  $M_4$  thickened and sinuous, distinctly darker than distal part of the vein. Cu basally sinuous and slightly thickened. Sc without connection to  $R_1$ .

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  $\mu$ S/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 albifacies*), outnumbered only by a common and widespread *Clytocerus ocellaris*. Species like *Sycorax silacea*, *Telmatoscopus carthusianus*, *Panimerus albifacies*, *Peripsychoda auriculata*

Table 1. A list of Psychodidae from two springs of Viidumäe Nature Reserve 2002, J. Salmela det.

Species	Nakimetsa	Kanna
<i>Scorax silacea</i> Haliday, 1839	–	9
<i>Clytocerus ocellaris</i> (Meigen, 1804)	49	55
<i>Clytocerus tetracorniculatus</i> Wagner, 1977	–	1
<i>Pneumia mutua</i> (Eaton, 1893)	2	–
<i>Peripsychoda auriculata</i> (Curtis, 1839)	1	–
<i>Lepimormia hemiboreale</i> sp.n.	–	20
<i>Paramormia polyascoidea</i> (Krek, 1971)	1	–
<i>Philosepedon humerale</i> (Meigen, 1818)	–	2
<i>Logima albipennis</i> Zett. group	–	1
<i>Psychoda phalaenoides</i> (Linnaeus, 1758)	–	1
<i>Feuerborniella obscura</i> (Tonnoir, 1919)	2	–
<i>Jungiella consors</i> (Eaton, 1893)	–	2
<i>Panimerus albifacies</i> (Tonnoir, 1919)	2	18
<i>Parajungiella pseudolongicornis</i> (Wagner, 1975)	–	1
<i>Telmatoscopus carthusianus</i> (Vaillant, 1972)	2	2

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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