New and poorly known fungus gnats of the families Bolitophilidae, Diadocidiidae and Keroplatidae from Eastern Fennoscandia (Diptera, Nematocera)

A.V. Polevoi


New data on six species of Bolitophilidae, Diadocidiidae and Keroplatidae poorly known in Eastern Fennoscandia are given. New species Bolifophilina melanoleucia from Russian Karelia, Bolitophila limiis and Diadocidio irispina kom from Finland and the previously unknown female of Bolitophila aperta Lundström are described. Notes on biology are provided wherever possible.

A. V. Polevoi, Forest Research Institute, Karelian Centre of Russian Academy of Sciences, Pushkin'skaya 11, 185610 Petrozavodsk, Russia.

In the extensive material collected since 1989 in Russian Karelia and Eastern Finland, some new or poorly known fungus gnats species were found. The present paper comprises ten species, of which three are new to science. Types are deposited in the Zoological Institute, St.Petersburg (ZIN). The rest of the material is kept in the Forest Research Institute, Petrozavodsk (FRI).

Family BOLITOPHILIDAE

Bolitophila (Bolitophila) austriae (Mayer, 1950)


Bolitophila (Cliopisa) aperta Lundström, 1914 (Fig. 1)

Material. Russia, Karelia: 1 ♂, 4 ♀, Kivach, 28.V.1991, Polevoi leg. (FRI). Collected in mixed stand. B. aperta is widely distributed in Palaearctic (Plassmann, 1988; Zaitzev, 1994). The female described here has been collected together with four B. aperta males in a group of gnats swarming near decaying spruce stump. This evidently allows to consider it as female of the same species, previously unknown.

Female. Head black. Mouthparts and palpi brown. Antennae yellowish brown with short pubescence. Sixth flagellomere about 6 times longer than wide. Pleurae yellowish brown. Mesonotum yellowish brown, with three fused brown stripes. Scutellum yellow. Legs yellow. Leg ratios: t1 : b1 = 1.2, t2 : b2 = 1.5, t3 : bt3 = 1.4. Fore tarsomeres not modified. Wing length 5.5 mm. Wings hyaline, stigma scarcely developed. Costa extending far beyond the tip of R4+5. Crossvein l present or missing, M3+4 somewhat weaker at base. Halter yellow with darkened knob. Abdomen light brown. Female terminalia (Fig. 1) brown. Sternite VIII with short spines along upper and lower margins. Cerci 1-segmented.

Bolitophila (Cliopisa) limitis sp. n. (Figs 2-3)


Description. Male. Head black. Mouthparts and palpi brown. Antennae brown; scape and pedicel black. Antennal pubescence short, hairs approximately equal to width of flagellar
segments. Sixth flagellomere about 5 times longer than wide. Pleurae dark brown, with lighter pteropleura and prothoracic region. Mesonotum brown with three black longitudinal stripes fused almost along the whole length. Scutellum brown. Legs yellow. Leg ratios: $t_1 : bt_1 = 1:1$, $t_2 : bt_2 = 1:4$, $t_3 : bt_3 = 1:3$. Wing length 4.4 mm. Wings hyaline with dark stigma distinctly wider than half distance between $R_1$ and $R_{4+5}$. Costa extending far beyond tip of $R_{4+5}$. $M_{3+4}$ at base well developed. Halter with yellow stem and dark brown knob. Abdomen dark brown. Male genitalia (Fig. 2) brown. Gonostylus with elongated sclerotized apical processes.

**Female.** Similar to male, but somewhat more brightly coloured. Pleurae with brighter yellow spots. Mesonotum yellow with three distinct black stripes fused only at base. Scutellum yellowish brown. Leg ratios: $t_2 : bt_2 = 1:5$, $t_3 : bt_3 = 1:4$. Wing length 5.6 mm. Wings with brown stigma and distinct spot over $RM$. Abdomen brown. Female terminalia (Fig. 3) brown.

**Remarks.** *B. limitis* is related to *B. bimaculata* Zetterstedt and *B. subbimaculata* A. Zaitzev, differing in the black basal segments of antenna and presence of more or less developed yellow pleural spots in both sexes. Its male gonostylus differs in the elongated apical processes.

**Bolitophila (Cliopisa) melanoleucri** sp. n. (Figs 4-5)


**Paratypes.** 3 ♂♂, 3 ♀♀, same data.

**Description. Male.** Head black. Mouthparts and palpi brown. Antennae dark brown; scape, pedicel and base of first flagellomere lighter. Antennal peduncle short; hairs approximately equal to width of flagellar segments. Sixth flagellomere 6 times longer than wide. Pleurae yellowish brown. Mesonotum brown, somewhat shiny. Scutellum yellow. Legs entirely yellow. Leg ratios: $t_1 : bt_1 = 1:1$, $t_2 : bt_2 = 1:5$, $t_3 : bt_3 = 1:5$. Wing length 4.2-4.9 mm. Wings hyaline with faint stigma. Costa extending far beyond tip of $R_{4+5}$. $tp$ missing, seldom present. $M_{3+4}$ well developed at base. Halter yellow with dark brown knob. Abdominal tergite VIII (Fig. 4) brown, sternum analis narrowly narrowing and sclerotized.

**Female.** Similar to male. More hair with dark brown bases.

$t_1 : bt_1 = 1.2$, $t_2 : bt_2 = 1.4$, $t_3 : bt_3 = 1.7$. Wing length 4.7-4.9 mm. Female terminalia (Fig 5) brown.

**Remarks.** *B. melanoleucri* resembles *B. hybrida* Meigen, but distinctly differs in the structure of male and female genitalia (male gonostylus without apical process; female tergite X with shorter and broader basal projection not reaching the apex of cerci). Yakovlev (1993) reared *B. melanoleucri* from fungi *Melanoleuca melaleuca* (Fr.) Murr. and *M. brevipes* (Fr.) Pat. and referred to this species as *B. latipes* Tolet.

**Bolitophila (Cliopisa) nigrolineata** Landrock, 1912


Transpolar arctic species reported from territories between Germany and Japan (Plassmann, 1988). It has been recently found also in Britain (Chandler, 1992) and Finland (Polevoi, 1995).

**Bolitophila (Cliopisa) obscurior** Stackelberg, 1969 (Fig. 6)


This species has been known only from Russia (Zaitzev, 1994): Leningrad Province and Siberia. As rather small material of this species has been previously available, it seems worthy to give here a description based on new specimens.

**Male.** Head black, grey dusted. Mouthparts black, palpi dark brown. Antennae dark brown, with short peduncle. Sixth flagellomere about 8 times as long as wide. Thorax black, intensively grey dusted. Mesonotum with three distinct longitudinal stripes. Central stripe additionally divided by grey medial line. Legs brownish. Leg ratios: $t_1 : bt_1 = 1:1$, $t_2 : bt_2 = 1:1$, $t_3 : bt_3 = 1:1$. Wing length 4.7-4.9 mm. Wings hyaline with distinct brown Costa extending far beyond tip of $R_{4+5}$. $tp$ missing, seldom present. $M_{3+4}$ well developed at base. Halter yellow with dark brown knob. Abdominal tergite VIII (Fig. 4) brown, sternum analis narrowly narrowing and sclerotized.
Figs 7-12. 7-9. Diadocidia (Adiocida) trispinosus sp. n.; 7, male hypopygium, ventral view; 8, tergite IX; 9, apical part of gonostylus. 10-12. Keroplatus tovenisi A. Zaitzev; 10, male hypopygium, ventral view; 11, tergite IX; 12, gonostylus. Scales 0.1 mm.

Remarks. *D. trispinosa* is close to *D. borealis* Coquillet. The gonostylus in the latter however has only one strong apical seta (Lastovka & Matile, 1972), while in *D. trispinosa* it bears three strong setae. This species has been (Polevoi, 1995) misidentified as *D. ferruginosa* Meigen.

Family KEROPLATIDAE

*Keroplatus tuvensis* A. Zaitzev, 1991 (Figs 10-12)


This species has been known only from the type locality: Tuva, Russia (Zaitzev, 1991, 1994). The Karelian specimen has wing length 6.5 mm. Male genitalia are shown in Figs 10-12. Ventral medial processus of gonocoxites with an apical triangular depression distinguishing this species from other members of the *testaceus* group.

*Neoplatyura flava* (Macquart, 1826)


Occurring in Europe from British Islands to Baltic region (Krivosheina & Mamaev, 1988). Recently reported also from Carpathians, Altai Province (Zaitzev, 1994) and Finland (Polevoi, 1995).

*Orfelia falcata* A. Zaitzev, 1994 (Figs 13-15)


Zaitzev (1994) reported *O. falcata* from the Kuril Islands, Khabarovsk Territory and Vologda Province. Present findings are the westernmost. Finnish and Karelian males have wing length 4-4.8 mm. Unlike type material, some specimens, have almost entirely dark brown head and generally darker thorax and abdomen. Male genitalia as in Figs 13-15.

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References


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