New data on the fungus gnats (Diptera: Bolitophilidae, Keroplatidae, Mycetophilidae) of the Taimyr Peninsula with a description of two new species of the genus Boletina Staeger

Новые данные по фауне грибных комаров (Diptera: Bolitophilidae, Keroplatidae, Mycetophilidae) полуострова Таймыр с описанием двух новых видов рода Boletina Staeger

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СЛОВА: грибные комары, фауна, новые виды, Таймыр, Россия.

ABSTRACT. New data on the fungus gnats fauna of the Taimyr Peninsula (Russia) are presented. Seventy-two species of the families Bolitophilidae, Keroplatidae and Mycetophilidae are reported, 65 of which are new for the area. Five species are newly recorded from Russia and two species — from the Palaearctic region. Two new species: Boletina rodentistyla Polevoi, sp.n. and Boletina pyasina Maximova et Subbotina, sp.n. are described.

РЕЗЮМЕ. Представлены новые данные по фауне грибных комаров полуострова Таймыр (Россия). Аннотированный список включает 72 вида из семейств Bolitophilidae, Keroplatidae и Mycetophilidae, 65 из которых впервые зарегистрированы в регионе. Пять видов впервые зарегистрированы на территории России, два вида — впервые в палеарктическом регионе. Приводятся описания двух новых видов: Boletina rodentistyla Polevoi, sp.n. и Boletina pyasina Maximova et Subbotina, sp.n.

Introduction

The fauna of fungus gnats in Russia is comparatively well studied in general, however, the knowledge on different parts of its territory is highly unequal. Taimyr peninsula is among the regions with very little data available. Three species were reported from the west Taimyr at the beginning of the XX century [Lundström, 1915], and the only later addition includes seven species of the genera Sciophila Meigen, 1818, Boletina Staeger, 1840, Coelosia Winnertz, 1863 and Gnoriste Meigen, 1818 [Zaitzev, 1994]. During recent years we can observe a growing interest of entomologists to the northern areas of Russia. As a result, significant new materials were obtained from subarctic and arctic zones. In this paper, we present new data on the fungus gnats of the Taimyr peninsula. The list includes 72 species, 65 of which are new for the area. Five species are newly recorded from Russia and two species — from the Palaearctic region. Two species of the genus Boletina are described as new for science.

Study area

The study area lies in the limits of the subarctic permafrost zone and characterized by excessive humidity. It comprises four localities in the west part of the Taimyr Peninsula (Fig. 1), which administratively belongs to the Dolgano-Nenetskiy Autonomous District of the Krasnoyarsk Region of Russia. Details on each locality, including brief information on habitats and collecting methods, are given below.

1. The Lemberov River, 12.5 km S of Dikson, 73.40°N, 80.65°E (Lemberov in the species list). River bank. Yellow pan traps. Collected by A. Barkalov.
2. Right bank of the River Pyasina, near the River Tareya, 73.26°N, 90.59°E (Tareya). Zonal tundra communities, river banks, river-side ravines. Pitfall traps and yellow pan traps. Collected by O. Makarova and A. Babenko.
3. Nyapan Ridge, 9 km NW of the Lake Pyasino, near the Lake Ladannah, 70.08°N, 87.50°E (Ladannah). Sedge-dwarf tundra communities, sedge mires, open Larix forest. Pitfall traps. Collected by O. Makarova.

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4. The River Pyasina, 90–93 km N of Norilsk, 70.15°N, 88.28°E; 70.18°N, 88.18°E (Pyasina). Sedge-dwarf tundra communities and open boreal woodland. Malaise trap and sweep-netting. Collected by M. Shcherbakov.

Methods

All materials were initially kept in 70% or 96% alcohol. After identification, the specimens were partly pinned together with dissected terminalia in glycerine filled micro vials. Z-stacked images of male genitalia were obtained with a Leica DM1000 microscope equipped with LOMO MC-60 digital camera. Images were combined using Helicon Focus software (version 7.5.4). The morphological terminology follows Söli [1997a], except for wing venation, which is given following newer interpretation [Saigusa, 2006; Amorim, Rindal, 2007; Borkent, Wheeler, 2012]. Species are listed in alphabetic order inside higher taxonomic groups, which order follows Kjærandsen et al. [2007a].

Materials are stored in the following collections:

FRIP — Forest Research Institute (Petrozavodsk, Russia)
ISEA — Institute of Systematics and Ecology of Animals, Siberian Branch of the Russian Academy of Sciences (Novosibirsk, Russia)
UTR — Tomsk State University (Tomsk, Russia)
ZISP — Zoological Institute (Saint-Petersburg, Russia)

Species list

Family Bolitophilidae

Bolitophila (Bolitophila) cinerea Meigen, 1818

MATERIAL. 1 ♂, Tareya, 2–7.08.2010 (FRIP); 97 ♂♂, 2 ♀♀, Lemberov, 19.07.2012 (ISEA).

DISTRIBUTION. Holarctic: Greenland [Söli et al., 2015], widely distributed in the Palaearctic region [Zaitzev, 1999, Kjærandsen et al., 2007a].

Bolitophila (Clionisa) hybrida (Meigen, 1804)

MATERIAL. 2 ♂♂, Pyasina, 9–13.08.2015 (UTR).

DISTRIBUTION. Palaearctic, widely distributed [Zaitzev, 1999, Kjærandsen et al., 2007a].
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*Bolitophila* (*Cliopisa*) *rossica* Landrock, 1912
MATERIAL. 8 ♂♀, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Palaearctic, widely distributed [Zaitzev, 1999, Kjærandsen et al., 2007a].

*Family Keroplatidae*
*Subfamily Keroplatinae*
*Urytalpa* *nigrita* (Johannsen, 1910)
MATERIAL. 4 ♂♂, Ladannah, 4–15.07.1999 (FRIP).
DISTRIBUTION. Nearctic, known by two specimens from USA and Canada [Kjærandsen et al., 2009]. Here for the first time recorded from the Palaearctic region and Russia.
REMARKS. Taimyr specimens (Fig. 2) have minor differences in the basal part of the male aedeagal apparatus (e.g. presence of additional basal appendages), comparing with Canadian specimen, figured by Kjærandsen et al. [2009]. We, however, believe they are conspecific, considering the general similarity of terminalia and especially characteristic apex of aedeagus, forming four small projections [cf. Kjærandsen et al. 2009, p. 45, Fig. 9 A]. There are 3 other specimens in the series with slightly different structure of male terminalia (Fig. 3), and probably representing distinct species somewhat more similar to *U. rhapsodica* Chandler, 1995.

*Family Mycetophilidae*
*Subfamily Mycomyinae*
*Mycomya* (*Mycomya*) *denmax* Väisänen, 1979
MATERIAL. 2 ♂♂, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Holarctic, widely distributed [Väisänen, 1984; Kjærandsen et al., 2007a; Zaitzev, 1999].

*Mycomya* (*Mycomya*) *fornicata* (Lundström, 1911)
MATERIAL. 2 ♂♂, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Palaearctic: European Alps, NW and E Russia [Väisänen, 1984; Zaitzev, 1999].

Figs 2–3. *Urytalpa* spp., male terminalia, ventral view: 2 — *Urytalpa* *nigrita*; 3 — unrecognized species. Scale bar: 0.2 mm.
Abbreviation: cba — complementary basal appendages.

Рис. 2–3. Гениталии самцов *Urytalpa* spp., с вентральной стороны: 2 — *Urytalpa* *nigrita*; 3 — неописанный вид. Масштаб: 0,2 мм. Сокращение: cba — дополнительные базальные отростки.
**Mycomya (Mycomya) humida** Garrett, 1924
MATERIAL. 1 ♀, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Holarctic: USA, Canada, Russia (Karelia and Unal), Finland, Sweden, Norway [Väisänen, 1984; Kjærandsen et al., 2007a]. Here for the first time recorded from the Asian part of the Palaearctic region.

**Mycomya (Mycomya) islandica** Väisänen, 1984
MATERIAL. 1 ♀, Ladannah, 4–15.07.1999 (FRIP).
DISTRIBUTION. Holarctic, known from northern localities [Väisänen, 1984; Kjærandsen et al., 2007a; Söli et al., 2015]. In Russia was recorded from Murmansk Province [Väisänen, 1984] and N Karelia [Jakovlev et al., 2014].

**Mycomya (Mycomya) neohyalinata** Väisänen, 1984
MATERIAL. 1 ♂, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Holarctic: USA, Canada, Europe. In Russia recorded from European part to Siberia. [Väisänen, 1984; Zaitzev, 1994].

Subfamily Sciophilinae

**Acnemia angusta** Zaitzev, 1982
MATERIAL. 1 ♂, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Palaearctic: NW Russia (Karelia and Murmansk Province), Finland, Sweden, Norway, Czech Republic, and Bulgaria. [Zaitzev, 1994; Kjærandsen et al., 2007a]. Here for the first time recorded from the Asian part of the Palaearctic region.

**Acnemia falcata** Zaitzev, 1982
MATERIAL. 1 ♂, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Palaearctic: NW Russia (Karelia and Murmansk Province), Finland, Sweden, Norway, Czech Republic, and Bulgaria. [Zaitzev, 1994; Kjærandsen et al., 2007a]. Here for the first time recorded from the Asian part of the Palaearctic region. [Väisänen, 1984; Zaitzev, 1994; Kjærandsen et al., 2007a; Söli et al., 2016].

**Boletina hirta** Meigen, 1818
MATERIAL. 1 ♂, Ladannah, 6–14.07.1999 (FRIP).
DISTRIBUTION. Holarctic: USA, Canada, Finland, Russia (Novaya Zemlya and Taimyr peninsula). Limited to arctic zone [Jakovlev et al., 2014].

**Boletina hyperborea** Salmela, 2016
MATERIAL. 2 ♂♂, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Holarctic: Russia (Novaya Zemlya) and Canada [Zaitzev, 1982].

Subfamily Gnoristinae

**Boletina arctica** Holmgren, 1872
MATERIAL. 2 ♂♂, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Holarctic: Arctic Russia (Novaya Zemlya and Dikson Isl.), Canada and Greenland [Zaitzev 1994, Salmela et al., 2016].

**Boletina birulai** Lundström, 1915
MATERIAL. 9 ♂♂, 1 ♀, Lemberov, 19.07.2012 (ISEA); 6 ♂♂, 4 ♀♀, Ladannah, 4–15.07.1999 (FRIP).
DISTRIBUTION. Palaearctic: from Europe to Japan [Zaitzev, 1999; Jakovlev et al., 2014].

**Boletina dubia** (Meigen, 1804)
MATERIAL. 2 ♂♂, Lemberov, 8–15.07.1999 (FRIP).
DISTRIBUTION. Europe, widely distributed [Jakovlev et al., 2014]. In Russia was known from Leningrad Province [Zaitzev, 1994]. Here for the first time recorded from the Asian part of the Palaearctic region.

**Boletina gripha** Dziedzicki, 1885
MATERIAL. 3 ♂♂, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Palaearctic, widely distributed [Zaitzev, 1999; Kjærandsen et al., 2007a].

**Boletina hedstroemi** Polevoi et Hedmark, 2004
MATERIAL. 3 ♂♂, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Europe: NW Russia (Karelia and Murmansk Province), Finland, Sweden [Kjærandsen et al., 2007a; Polevoi, 2010]. Here for the first time recorded from the Asian part of the Palaearctic region.

**Boletina lapponica** Polevoi et Hedmark, 2004
MATERIAL. 25 ♂♂, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Europe: NW Russia (Karelia), Finland, and Sweden [Jakovlev et al., 2014]. Here for the first time recorded from the Asian part of the Palaearctic region.

**Boletina onegensis** Polevoi, 1995
MATERIAL. 1 ♂, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Palaearctic: N Russia (Karelia, Murmansk Province), Finland and Sweden [Kjærandsen et al., 2007a; Polevoi, 2010].

REMARKS. Kjærandsen et al. [2007a] pointed out that B. takagii Sasakawa et Kimura, 1974 in the sense of Zaitzev [1994] is in fact B. onegensis. This statement was probably inaccurate and further investigation is necessary.
based on the terminalia figures [Zaitzev 1994, p. 228, Fig. 9, 11] which indeed show some similarity with B. onegensis. However, the male specimen of B. takagi from Sakhalin, stored in Moscow (examined by the first author) represents true B. takagi, agreeing well with the description and figures by Sasakawa and Kimura [1974]. The new record is hence the first one confirming the occurrence of B. onegensis in the Asian part of the Palaearctic region.

**Boletina palmata** Polevoi, 2013
MATERIAL. 3 ♂♂, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Palaearctic: Russia (Karelia, Murmansk Province, and Chukotka), Finland, Norway, Sweden [Jakovlev et al., 2014; Polevoi, Barkalov, 2017].

**Boletina scarina** Staeger, 1840
MATERIAL.●, Pysina, 9–13.08.2015 (UTR).
DISTRIBUTION. Holartic, widely distributed [Zaitzev, 1999; Kjærandsen et al., 2007a].
REMARKS. Older records of C. truncata from the Palaeartic region need verification to avoid confusion with closely related C. gracilis Johannsen, 1912, which has been recently discovered in Finland [Jakovlev et al., 2014].

**Coelostia truncata** Lundström, 1909
MATERIAL.●, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Holartic, widely distributed [Söli, 1997b].
REMARKS. Older records of C. truncata from the Palaeartctic region need verification to avoid confusion with closely related C. gracilis Johannsen, 1912, which has been recently discovered in Finland [Jakovlev et al., 2014].

**Coelostia tundrica** Zaitzev, 1994
MATERIAL.●, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. E Siberia, so far recorded only from Dikson Isl. [Zaitzev, 1994].

**Katotapgia erythropha** (Holmgren, 1883)
MATERIAL.●, 1 ♀, Lemberov, 19.07.2012 (ISEA).
DISTRIBUTION. Holartic: NW USA and N Palaearctic [Martinsson, Kjærandsen, 2012]. In Russia was recorded from Karelia, Murmansk Province, Novaya Zemlya, Vaigach Isl., and Chukotka [Holmgren, 1883; Zaitzev, Polevoi, 2001; Polevoi, 2010; Polevoi, Barkalov, 2017].
REMARKS. Some older records of this species (including those from the E Palaearctic) are questionable due to possible confusion with K. sahlbergi (Lundström, 1906) [Zaitzev, Polevoi, 2001].

Subfamily Mycetophilinae

**Tribe Exechiini**

**Allodria (Allodria) embla** Hackman, 1971
MATERIAL. 15 ♂♂, Ladannah, 4–15.07.1999 (FRIP).
DISTRIBUTION. Holartic: USA [Zaitzev, 1983]; NW Europe [Kjærandsen et al., 2007a]; Karelia and Chukotka in Russia [Polevoi, 2000; Polevoi, Barkalov, 2017].

**Allodria (Allodria) septentrionalis** Hackman, 1971
MATERIAL. 15 ♂♂, Lemberov, 19.07.2012 (ISEA); 7 ♂♂, Ladannah, 4–15.07.1999 (FRIP).
DISTRIBUTION. Palaeartic, widely distributed [Zaitzev, 1983; Kjærandsen et al., 2007a].

**Allodria (Allodria) tuomikoski** Hackman, 1971
MATERIAL. 1 ♂, Lemberov, 19.07.2012 (ISEA).
DISTRIBUTION. Holartic: USA [Zaitzev, 1983]; Europe and E Russia [Zaitzev, 2003; Polevoi, Barkalov, 2017].

**Allodria (Brachycamptia) subpistillata** Ševčík, 1999
MATERIAL. 1 ♂, Ladannah, 4–15.07.1999 (FRIP).
DISTRIBUTION. Europe: Finland, NW Russia (Karelia), Sweden, and Czech Republic [Jakovlev et al., 2014].

**Anatella ciliata** Winneertz, 1863
MATERIAL. 1 ♂, Ladannah, 4–15.07.1999
DISTRIBUTION. Holartic, widely distributed [Zaitzev, 2003; Kjærandsen et al., 2007a].

**Brevicornu arcticoides** Caspers, 1985
MATERIAL. 1 ♂, Tareya, 20.07–8.08.2010, (FRIP); 10 ♂♂, Lemberov, 19.07.2012 (ISEA); 6 ♂♂, Ladannah, 4–15.07.1999 (FRIP).
DISTRIBUTION. Europe: NW part [Kjærandsen et al., 2007a], Baltic, Transcaucasia, European part of Russia [Zaitzev, 2003]. Here for the first recorded from the Asian part of the Palaearctic region.

**Brevicornu auriculatum** (Edwards, 1925)
MATERIAL. 1 ♂, Tareya, 20.07–8.08.2010, (FRIP); 5 ♂♂, Lemberov, 19.07.2012 (ISEA).
DISTRIBUTION. Palaeartic: W Europe and Russian Far East [Jakovlev et al., 2014].

**Brevicornu bipartitum** Laštovka et Matlíček, 1974
MATERIAL. 1 ♂, Tareya, 20.07–8.08.2010, (FRIP); 22 ♂♂, Lemberov, 19.07.2012 (ISEA).
DISTRIBUTION. Holartic: USA [Zaitzev, 1988]; Fennoscandia, NW and E Russia, Mongolia [Zaitzev, 2003; Kjærandsen et al., 2007a; Polevoi, Barkalov, 2017].

**Brevicornu cognatum** Ostroverkhova, 1979
MATERIAL. 7 ♂♂, Lemberov, 19.07.2012 (ISEA).
DISTRIBUTION. Holartic: USA [Zaitzev, 1985], Sweden and Finland [Jakovlev et al., 2014], N Caucasus and E Russia [Zaitzev, 2003].

**Brevicornu griseolium** (Zetterstedt, 1852)
MATERIAL. 9 ♂♂, Lemberov, 19.07.2012 (ISEA).
DISTRIBUTION. Holartic: Greenland [Söli et al., 2015], NW Europe and mountainous regions in the south [Kjærandsen et al., 2007a]. In Russia recorded from Leningrad Province, Karelia, and Murmansk Province [Krivoshchina et al., 1986; Zaitzev, 2003, as B. boreale Lundström].

**Brevicornu proximum** (Staeger, 1840)
MATERIAL. 2 ♂♂, Ladannah, 5–14.07.1999 (FRIP).
DISTRIBUTION. Palaeartic: from Europe to Siberia [Zaitzev, 1985; Kjærandsen et al., 2007a].

**Cordyla fusca** Meigen, 1804
MATERIAL. 1 ♂, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Palaeartic: from Europe to Siberia [Zaitzev, 2003; Kjærandsen et al., 2007a].

**Cordyla murina** Winnertz, 1863
MATERIAL. 1 ♂, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Palaeartic, widely distributed [Zaitzev, 2003; Kjærandsen et al., 2007a].

**Cordyla semilabiata** (Staeger, 1840)
MATERIAL. 2 ♂♂, Pyasina, 9–13.08.2015 (UTR).
DISTRIBUTION. Palaearctic, widely distributed [Zaitzev, 2003; Kjærandsen et al., 2007a].

**Exechia cincta** Winnertz, 1863
MATERIAL. 2 ♂♂, Pysaina, 9–13.08.2015 (UTR).
DISTRIBUTION. Palaearctic, widely distributed [Zaitzev, 2003; Kjærandsen et al., 2007a].

**Exechia frigida** (Boheman, 1865)
MATERIAL. 171 ♂♂, Tareya, 20.07–8.08.2010, (FRIP); 96 ♂♂, Lemberov, 19.07.2012 (ISEA), 12 ♂♂, Pysaina, 9–13.08.2015 (UTR).
DISTRIBUTION. Holarctic, widely distributed [Zaitzev, 2003; Kjærandsen et al., 2007a].

**Exechia macula** Chandler, 2001
MATERIAL. 8 ♂♂, Pysaina, 9–13.08.2015 (UTR).
DISTRIBUTION. Palaearctic: from Europe to Siberia [Zaitzev, 2003; Kjærandsen et al., 2007a].

**Exechia micans** Laštovka et Matile, 1974
MATERIAL. 5 ♂♂, Pysaina, 9–13.08.2015 (UTR).
DISTRIBUTION. Holarctic: Finland, Germany, Iceland, Norway, Sweden, Russia (Karelia, Murmansk Province and Chukotka), Mongolia [Jakovlev et al., 2014; Söli et al., 2015; Polevoi Barkalov, 2017].

**Exechia parvula** (Zetterstedt, 1852)
MATERIAL. 1 ♂, Pysaina, 9–13.08.2015 (UTR).
DISTRIBUTION. Palaearctic: from Europe to Siberia [Zaitzev, 2003; Kjærandsen et al., 2007a].

**Exechia pseudofestiva** Lackschewitz, 1937
MATERIAL. 1 ♂, Ladannah, 8–15.07.1999 (FRIP).
DISTRIBUTION. Palaearctic: NW Europe and Russian Far East [Zaitzev, 2003; Kjærandsen et al., 2007a].

**Exechia separata** Lundström, 1912
MATERIAL. 1 ♂, Ladannah, 4–15.07.1999 (FRIP), 13 ♂♂, Pysaina, 9–13.08.2015 (UTR).
DISTRIBUTION. Holarctic, widely distributed [Zaitzev, 2003; Kjærandsen et al., 2007a].

**Exechia similis** Laštovka et Matile, 1974
MATERIAL. 1 ♂, Lemberov, 19.07.2012 (ISEA); 5 ♂♂, Ladannah, 4–15.07.1999 (FRIP), 32 ♂♂, Pysaina, 9–13.08.2015 (UTR).
DISTRIBUTION. Palaearctic: Europe, W Siberia and Mongolia [Zaitzev, 2003; Kjærandsen et al., 2007a; Subbotina, 2014].

**Exechia spinigera** Winnertz, 1863
MATERIAL. 64 ♂♂, Tareya, 25.07–7.08.2010, (FRIP).
DISTRIBUTION. Palaearctic, widely distributed [Zaitzev, 2003; Kjærandsen et al., 2007a].
REMARKS. The identity of *E. spinigera* is questionable due to the loss of the type material [Kjærandsen et al., 2007a]. Here we follow the interpretation by A. Zaitzev [2003].

**Exechia spinigeria** Lundström, 1912
MATERIAL. 33 ♂♂, Tareya, 25.07–7.08.2010, (FRIP); 3 ♂♂, Lemberov, 19.07.2012 (ISEA).
DISTRIBUTION. Palaearctic: Europe and Russian Far East [Zaitzev, 2003; Kjærandsen et al., 2007a].

**Exechia unimaculata** (Zetterstedt, 1860)
MATERIAL. 1 ♂, Tareya, 2–7.08.2010, (FRIP).
DISTRIBUTION. Palaearctic: N Europe and E Russia [Zaitzev, 2003; Kjærandsen et al., 2007a; Polevoi, Barkalov, 2017].

**Rymosia coulsoni** Chandler, 1994
MATERIAL. 4 ♂♂, Pysaina, 9–13.08.2015 (UTR).
DISTRIBUTION. Europe, so far only known from Great Britain [Chandler, 1994]. Here for the first time recorded from the Asian part of the Palaearctic region and Russia.

**Rymosia sagulata** Plassmann, 1976
MATERIAL. 3 ♂♂, 1 ♂, Tareya, 20.07–8.08.2010, (FRIP); 36 ♂♂, Lemberov, 19.07.2012 (ISEA).
DISTRIBUTION. Palaearctic: E Russia (Altai Mts. and Tuva), Sweden and Slovakia [Zaitzev, 2003; Kjærandsen et al., 2007a].

**Rymosia sphyae** Chandler, 1994
MATERIAL. 1 ♂, Lemberov, 19.07.2012 (ISEA).
DISTRIBUTION. Europe: Great Britain and Iceland [Kjærandsen et al., 2007b]. Here for the first time recorded from the Asian part of the Palaearctic region and Russia.

**Tarnania tarnanii** (Dziedzicki, 1910)
MATERIAL. 5 ♂♂, 1 ♂, Tareya, 20.07–8.08.2010, (FRIP); 11 ♂♂, Lemberov, 19.07.2012 (ISEA), 2 ♂♂, Pysaina, 9–13.08.2015 (UTR).
DISTRIBUTION. Holarctic, widely distributed [Kjærandsen, 2006].

**Tribe Mycetophilini**

**Mycetophila boreocruciator** Ševčík, 2003
MATERIAL. 2 ♂♂, Ladannah, 6–14.07.1999 (FRIP), 2 ♂♂, Pysaina, 9–13.08.2015 (UTR).
DISTRIBUTION. Europe: Estonia, Finland, Norway, NW Russia (Murmansk Province), Slovakia, and Sweden [Jakovlev et al., 2014].

**Mycetophila evanida** Laštovka, 1972
MATERIAL. 1 ♂, Tareya, 2–7.08.2010, (FRIP); 1 ♂, Lemberov, 19.07.2012 (ISEA).
DISTRIBUTION. Holarctic: Greenland [Söli et al., 2015], Europe and Mongolia [Laštovka, 1972; Jurgenstern et al., 2015]. In Russia was recorded from Karelia [Zaitzev, 2003].

**Mycetophila ichneumonea** Say, 1823
MATERIAL. 3 ♂♂, Lemberov, 19.07.2012 (ISEA).
DISTRIBUTION. Holarctic, widely distributed [Jurgenstern et al., 2015].

**Mycetophila luctuosa** Meigen, 1830
MATERIAL. 2 ♂♂, Lemberov, 19.07.2012 (ISEA).
DISTRIBUTION. Holarctic, widely distributed [Zaitzev, 2003; Kjærandsen et al., 2007a].

**Mycetophila riparia** Chandler, 1993
MATERIAL. 7 ♂♂, Pysaina, 9–13.08.2015 (UTR).
DISTRIBUTION. Holarctic: Russia (W Siberia and Chukotka), USA [Chandler, 1993; Ostrovekhova, Maksimova, 2000; Polevoi, Barkalov, 2017].

**Mycetophila sordida** van der Wulp, 1874
MATERIAL. 1 ♂, Pysaina, 9–13.08.2015 (UTR).
DISTRIBUTION. Holarctic: USA and Canada [Laffoon, 1956], from Europe to Siberia in the Palaearctic region [Zaitzev, 2003; Kjærandsen et al., 2007a].

**Mycetophila strobli** Laštovka, 1972
MATERIAL. 1 ♂, Pysaina, 9–13.08.2015 (UTR).
DISTRIBUTION. Palaearctic, widely distributed [Zaitzev, 2003; Jurgenstern et al., 2015].
**Mycetophila subsigillata** Zaitzev, 1999  
**MATERIAL.** 1 ♀, Lemberov, 19.07.2012 (ISEA).  
**DISTRIBUTION.** Palaearctic, widely distributed [Zaitzev, 2003; Kjærandsen et al., 2007a].  
**REMARKS.** Only scattered records are known from Europe, but the species is probably more abundant, as could be earlier mixed with *M. sigillata* Dziedzicki, 1884 [Kjærandsen et al., 2007a].

**Phronia egregia** Dziedzicki, 1889  
**MATERIAL.** 1 ♀, Lemberov, 19.07.2012 (ISEA).  
**DISTRIBUTION.** Holarctic, widely distributed [Zaitzev, 2003; Kjærandsen et al., 2007a; Söli et al., 2015].

**Sceptonia demeierei** Bechev, 1997  
**MATERIAL.** 1 ♀, Lemberov, 19.07.2012 (ISEA).  
**DISTRIBUTION.** Europe: NW Russia (Karelia), Czech Republic and Slovakia, Germany, The Netherlands, Fennoscandia [Kjærandsen et al., 2007a; Kjærandsen, Jordal, 2007]. Here for the first time recorded from the Asian part of the Palaearctic region.

**Sceptonia fumipes** Edwards, 1925  
**MATERIAL.** 4 ♂♂, Lemberov, 19.07.2012 (ISEA).  
**DISTRIBUTION.** Palaearctic: widely distributed in Europe [Kjærandsen et al., 2007a], NW and E Russia [Zaitzev, 2003; Polevoi, Barkalov, 2017].

**Trichonta venosa** (Staeger, 1840)  
**MATERIAL.** 1 ♀, Lemberov, 19.07.2012 (ISEA).  
**DISTRIBUTION.** Holarctic: widespread in N America [Gagné, 1981], in the Palaearctic region recorded from Europe to Siberia [Zaitzev, 2003; Kjærandsen et al., 2007a].

**Zygomia pseudohumeralis** Caspers, 1980  
**MATERIAL.** 1 ♀, Pyasina, 9–13.08.2015 (UTR).  
**DISTRIBUTION.** Palaearctic: from Europe to Siberia [Zaitzev, 2003; Kjærandsen et al., 2007a].

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**Fig. 4–8. Boletina rodentistyla, sp. n., details of male terminalia: 4 — male terminalia, ventral view; 5 — tegrite IX; 6 — gonostylus, internal view; 7 — aedeagal complex, ventral view; 8 — aedeagal complex, lateral view. Scale bar: 0.2 mm.**

Рис. 4–8. *Boletina rodentistyla, sp. n.*, детали строения гениталий самца: 4 — гениталии самца, вентрально; 5 — тергит IX; 6 — гоностиль, изнутри; 7 — комплекс эдеагуса, вентрально; 8 — комплекс эдеагуса, сбоку. Масштаб: 0.2 мм.
Description of new species

*Boletina rodentistyla* Polevoi, *sp.n.*

**Figs 4–13.**

**MATERIAL.** Holotype. ♂. Russia, Pasvik Nature Reserve, 1 km SE of the island Varlam (Niilansaari), 80 m above sea level, 3.08–10.10.2007, A. Bulychev leg. (ZISP).

Paratypes. 1 ♂, same data as holotype (ZISP); 1 ♂, Russia, Pasvik Nature Reserve, river Menikkajoki, 21 m above sea level, 14.08–25.09.2007, A. Bulychev leg. (ZISP); 1 ♂ Finland, Kotavaara, 190 m above sea level, 21.09–2.10.1998, M. Tietäväinen leg. (ZISP).

Other material. 4 ♀♂, Russia, Krasnoyarsk region, River Pyasina, 90 km N of Norilsk, 70.15° N, 88.28° E, 13.08.2015, M. Shcherbakov leg. (UTR); 5 ♀♂, same data, except 10.08.2015 (UTR). Also known from Finnish Lapland (J. Salmela pers. comm.) and N Norway (J. Kjaerandsen pers. comm.).

**Male** (n=6).

**Head,** including face and clypeus blackish-brown, mouthparts and palpi brownish-yellow. Antenna dark-brown with brownish pubescence. Sixth flagellomere 2.40–3.55 (mean value 3.04) times longer than wide.

**Thorax** brown to dark-brown. Mesonotum thinly dusted with subshining longitudinal stripes along acrostichal and lateral to dorsocentral rows of setae. Laterotergite bare.

**Wing** length 3.67–4.16 (3.90) mm. Wings hyaline. Veins yellow except C and R brownish. Costa extending beyond tip of R5 to approximately half of the distance from R5 to M1. Sc bare ending in costa opposite or slightly distal to the base of R5. Sc-r located slightly distal to the middle of Sc. The stem of M fork 1.11–1.35 (1.21) times as long as r-m. Base of
Posterior ($M_2$-$CuA$) fork slightly proximal to the base of $M$ fork. $R_4$ and $R_5$ with macrotrichia all over dorsal surface. $R-m$ bare. $M_1$ and $M_2$ bare at base. $M_3$ and $CuA_1$ with macrotrichia in the apical 1/2 to 2/3. Halteres yellow to brownish-yellow.

**Legs** yellow to yellowish-brown. Coxae yellowish-brown, sometimes mid and hind coxae or all coxa more or less strongly darkened. Trochanters brown to black. Fore tibia with 3–4 short pv. Mid tibia with 3 ad, 3–4 pd, 2–4 av, 5–7 pv. Hind tibia with 3–4 ad (+ 1–4 short ad at the apex), 4–5 pd, 4 av, 4 pv. Ratio of tibia to first tarsomere for fore, mid and hind legs: 1.22–1.47 (1.36), 1.26–1.57 (1.43), 1.42–1.9 (1.71). Fore tibia with 1 pv spur, mid and hind tibia each with two spurs (av spur about 3/4 as long as pv spur). Tarsal claws not modified.

**Abdomen** dark-brown with pale hairs.

**Terminalia** dark-brown. Sternal submedian appendages wide basally and narrowed to the apices (Fig. 4, 9). Gonostylus of characteristic shape, resembling a grotesque animal head when viewed from the inner side (Fig. 6, 11). Tergite 9 rectangular, with rather deep apical triangular depression, cercus with two combs of spines (Fig. 5, 10). Aedeagus with “cobra hood” like subapical widening, parameres rectangularly bent and widened subapically and then narrowed to apices (Fig. 7–8, 12–13).

**DIAGNOSIS.** A small dark *Boletina* with transparent wings and yellowish-brown legs (sometimes with darkened coxa). The species clearly differs from other members of the genus in the structure of the male terminalia, especially in the shape of the gonostylus and details of the aedeagal apparatus.

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**Fig. 14–18.** *Boletina pyasina*, sp. n., details of male genitalia: 14 — male genitalia, ventral view; 15 — tegrite IX; 16 — gonostylus, internal view; 17 — aedeagal complex, ventral view; 18 — aedeagal complex, lateral view. Scale bar: 0.2 mm.

**Рис. 14–18.** *Boletina pyasina*, sp. n., детали строения гениталий самца: 14 — гениталии самца, вентрально; 15 — тергит IX; 16 — гоностиль, изнутри; 17 — комплекс эдеагуса, вентрально; 18 — комплекс эдеагуса, сбоку. Масштаб: 0.2 мм.
ETYMOLOGY. The species name points to the characteristic shape of the male gonostylus, resembling a grotesque animal (e.g. rodent) head.

ECOLOGY. Specimens from Fennoscandia collected with Malaise’s traps in various forest habitats. The habitats in the Taimyr peninsula are sedge-dwarf tundra communities.

DISTRIBUTION. N Palaearctic: Finland, Norway, Russia (Murmansk Province and N Siberia).

**Boletina pyasina** Maximova et Subbotina, sp.n.

Figs 14–24.

MATERIAL. Holotype. ♂. Russia, Krasnoyarsk region, River Pyasina, 90 km N of Norilsk, 70.15°N, 88.28°E, 46 m above sea level, 13.08.2015, M. Shcherbakov leg. (UTR).

Paratypes. 2 ♂♂, same data as holotype (UTR); 2 ♂♂, same data as holotype (ZISP).

Other material. 12 ♂♂, same data as holotype (UTR); 2 ♂♂.

Fig. 19–24. *Boletina pyasina*, sp. n., details of male terminalia: 19 — male terminalia, ventral view; 20 — tegrite IX; 21 — aedeagal complex, ventral view; 22 — aedeagal complex, lateral view; 23 — gonostylus, external view; 24 — gonostylus, ventral view. Scale bar: 0.2 mm.

Рис. 19–24. *Boletina pyasina*, sp. n., детали строения гениталий самца: 19 — гениталии самца, вентрально; 20 — тергит IX; 21 — комплекс эдеагуса, вентрально; 22 — комплекс эдеагуса, сбоку; 23 — гоностиль, с внешней стороны; 24 — гоностиль, вентрально. Масштаб: 0,2 мм.
New data on the fungus gnats of the Taimyr Peninsula

Russia, Krasnoyarsk region, River Pyasina, 93 km N of Norilsk, 70.18°N, 88.18°E, 12.08.2015, M. Shcherbakov leg. (UTR).

Male (n=5).

**Head** dark brown. Mouthparts dark brown, palpi brownish. Clypeus brown. Antenna light brown. Sixth flagellomere about twice as long as wide.

**Thorax.** Mesonotum dark brown, thinly dusted with subshining longitudinal stripes along acrostichal and lateral to dorsoventral rows of setae. Pleurae brown. Laterotergite bare.

**Wing** length 3.39–3.45 (mean value 3.42) mm. Wings hyaline. Veins yellow, except C and R brownish. Costa extending beyond tip of R, up to the middle of the distance between R and M, Sc bare, ending in costa opposite to the base of R. Sc-r located slightly beyond the middle of Sc. The stem of M fork 1.1–1.2 times as long as r-m. Base of posterior (M-CuA) fork slightly beyond the base of r-m. R and Rs with macrotrichia all over dorsal surface. R-m bare. M1 and M2 bare at the basal 1/3. M1 and CuA with macrotrichia in the apical 1/2 to 2/3. Haltere yellow.

**Abdomen** brownish, with pale hairs.

**Terminalia** brown. Gonoxoites divided by deep median cleft, sternal submedian appendages relatively long, apically rounded (Fig. 14, 19). Gonostylus bears 3 short black spines and 2–3 longer setae apically, and with the well-developed cerci rounded, covered with irregularly arranged 13–18 spines (Fig. 15, 20). Parameres relatively narrow, slightly bent near the apex and then pointed (Fig. 17–18, 21–22). Female unknown.

**DIAGNOSIS.** A small dark Boletina with transparent wings and yellow legs. **Boletina pyasina** is most similar to B. silvatica Dziedzicki, 1885, which also has gonoxystus with the ventral horn-like process. These species can be easily distinguished by sternal submedian appendages of gonoxoites, which are relatively wide and rounded apically in B. pyasina, and pointed in B. sylvatica. Other related species B. triangularis Polevoi, 1995, B. subtriangularis Polevoi et Hedmark, 2004 have a shorter ventral process on the gonostylus and short triangular sternal submedian appendages of gonoxoites. Boletina muonti Salmela, 2016 is also somewhat similar, but lacking ventral process on the gonostylus and has distinctly shorter parameres as compared to all above-mentioned species.

**ETYMOLOGY.** The species name is derived from the River Pyasina in the Krasnoyarsk Region of Russia.

**ECOLOGY.** The habitats in the type locality are sedge-dwarf tundra communities. The species has been collected with Malaise traps and sweep net.

**DISTRIBUTION.** N Palaearctic: Russia (N Siberia).

**Conclusion.** With less than 80 known species, the fungus gnats fauna of the Taimyr Peninsula can’t be considered as sufficiently studied. It is however characterized by some traits similar to other local northern faunas, e.g. a significant ratio of widely distributed (Holarctic and Transpalaearctic) species and presence of certain species endemic to high latitude arctic and subarctic regions. A more detailed discussion on the biogeographical structure of the fauna will be possible when more materials are available from the area.

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