

## Notes on fungus gnats from the Lemmenlaakso area in southern Finland, including six species new to the Finnish list (Diptera: Sciaroidea excl. Sciariidae)

Olavi Kurina

Kurina, O. 2003: Notes on fungus gnats from the Lemmenlaakso area in southern Finland, including six species new to the Finnish list (Diptera: Sciaroidea excl. Sciariidae). – Sahlbergia 8: 84-88. Helsinki, Finland, ISSN 1237-3273.

Data on 61 fungus gnats species collected from the Lemmenlaakso area in Järvenpää ( $N: 6709:398$ ), are presented. Five species: *Impleta consorta* Plassmann, 1978, *Anatella gibba* Winnertz, 1863, *Exechiopsis clypeata* (Lundström, 1911), *Mycetophila pseudoforcipata* A.Zaitzev, 1998, *M. sublunata* A.Zaitzev, 1998 and *Phronia coritanica* Chandler, 1992 are reported from Finland for the first time. The second Fennoscandian record of *I. consorta* is reported.

Olavi Kurina, Institute of Zoology and Botany of Estonian Agricultural University, Riia st. 181, 51014 Tartu, Estonia; e-mail: olavi@zbi.ee

Fungus gnats are small to medium-size nematoceros diptera with highly characteristic facies (Fig. 1). They are distinguishable from other Nematocera by: strong thoracic and tibial bristles, wing venation, presence of ocelli, long coxae, strong apical spurs on tibiae. The majority of species are dendrophilous. General classification of Sciaroidea was the object of discussion throughout the 20<sup>th</sup> century. In the present communication, the superfamily is treated in accordance with Søli et al. (2000).

In the European perspective, sciaroids have been well studied in Finland. The fungus gnats studies in the region were initiated by C. Lundström in the beginning of the 20<sup>th</sup> century (e.g., Lundström 1906, 1909) and followed by R. Tuomikoski, W. Hackman and R. Väisänen in the second half of the century (e.g., Tuomikoski 1966, Hackman 1970, Väisänen 1984). A few papers were published recently by K. Hedmark and A. Polevoi (e.g., Hedmark 1998, Polevoi 1996). The checklist was published by Hackman (1980), while several corrections have been added by various authors: summarized by Silfverberg (1981, 1986, 1991, 1996, 2001).

The Lemmenlaakso area is located east of Järvenpää, along the north-south directed valley of the Keravanjoki river (Fig. 2), Grid 27° E

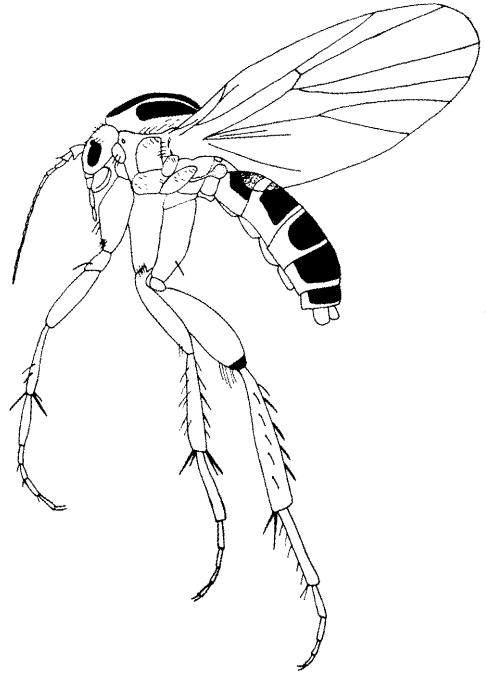


Fig. 1. *Mycetophila fungorum* (De Geer, 1776), ♂. (From Plassmann 1984)

6709:398. Most of the 94 ha are protected. Boreal broad-leaved forest occupies 20% of the area (Anttila 2000).

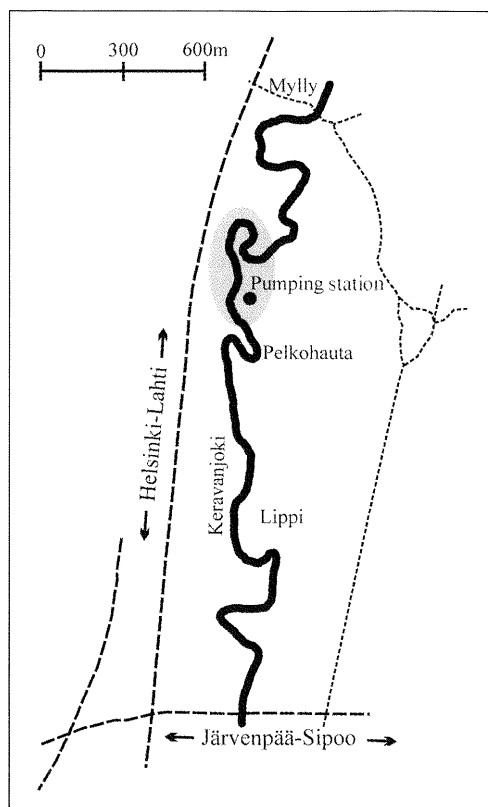


Fig. 2. Lemmenlaakso. The collecting area indicated by shading.

## Material and methods

The material was collected by the author from the Lemmenlaakso area: surroundings of the pumping station (gray grid in Fig. 2) from 27 July to 16 August 1993. Sweep netting and light trap were used as collecting methods. In addition, a few specimens were collected from umbelliferous flowers. The male specimens were pinned on micro-pins. Females were usually not preserved as they could not be associated with the males and a quantitative analysis was not made.

The males were determined mainly by genital characters, which were treated in the standard way (heating in the solution of KOH followed by neutralization in acetic acid and washing in distilled water). The genitalia were placed into glycer-

erin for detailed study and later preserved as glycerin preparations.

In the following species list the number of determined specimens, the collecting method and date are referred to. All material is deposited in the collection of the Institute of Zoology and Botany, Estonian Agricultural University (Tartu).

## Results

With a few exceptions only male specimens were determined. The data on 202 specimens are presented. The material determined includes 61 species: 4 species of Bolitophilidae, 1 species of Diadocidiidae, 5 species of Keroplatidae and 51 species of Mycetophilidae. Six species are reported for the first time in Finland (indicated by asterisks). In addition, one male specimen was determined to the genus level only and exact data about it will be published elsewhere. In the list, the recorded distribution and some systematic features for species new to Finland are discussed.

## List of species

### Bolitophilidae

*Bolitophila (Bolitophila) basicornis* (Mayer, 1951) - 1 ♂, sweep netting, 27.VII.

*Bolitophila (Bolitophila) cinerea* Meigen, 1818 - 2 ♀♀, sweep netting, 12.VIII.

*Bolitophila (Cliopisa) hybrida* (Meigen, 1804) - 1 ♂, light trap, 12-14.VIII.

*Bolitophila (Cliopisa) maculipennis* Walker, 1836 - 1 ♀, light trap, 8-10.VIII.

### Diadocidiidae

*Diadocidia ferruginosa* (Meigen, 1830) - 2 ♂♂, light trap, 6-10.VIII.

### Keroplatidae

#### Keroplatinae

*Macrorrhyncha flava* Winnertz, 1846 - 2 ♂♂, on umbelliferous flowers, 12.VIII.

*Neoplatyura flava* (Macquart, 1826) - 4 ♂♂ 1♀, sweep netting, 4.VIII. and 10.VIII.; 18 ♂♂ 2♀♀, light trap, 29.VII-10.VIII.

*Orfelia fasciata* (Meigen, 1804) - 1 ♂, sweep netting, 28.VII.

### Macrocerinae

*Macrocera centralis* Meigen, 1818 - 1 ♂, sweep netting, 27.VII.; 1 ♂, light trap, 8-10.VIII.

*Macrocera vittata* Meigen, 1830 - 2 ♂♂, sweep netting, 12. and 15.VIII.

**Mycetophilidae****Sciophilinae****Mycomyini**

*Mycomya fimbriata* (Meigen, 1818) - 1 ♂, sweep netting, 4.VIII.

*Mycomya kaurii* Väisänen, 1979 - 1 ♂, light trap, 6-8.VIII.

*Mycomya shermani* Garrett, 1924 - 1 ♂, sweep netting, 6.VIII.

*Neoempheria pictipennis* (Haliday, 1833) - 2 ♂♂, sweep netting, 6. and 14.VIII.

**Sciophilini**

*Paratinia sciarina* Mik, 1874 - 3 ♂♂, light trap, 12-16.VIII.

**Gnoristini**

*Coelasia fusca* Bezzi, 1892 - 1 ♂, sweep netting, 15.VIII.

\**Impleta consorta* Plassmann, 1978 - 1 ♂, light trap, 4-6.VIII. The species as well as the genus have been described by one Swedish specimen collected in Kal-tisjokk (Plassmann 1978). The species was recently also found in Bialowieza National Park in Poland (Mikolajczyk 2001). This specimen is the second known record from Fennoscandia. The systematic position of the species was discussed and the male genitalia were figured by Plassmann (1978) and subsequently by Matile (1983). Nothing is known about the biology, but the holotype was also collected by a light trap (Plassmann 1980)

**Mycetophilinae****Exechiini**

*Allodia (Allodia) anglofennica* Edwards, 1921 - 1 ♂, sweep netting, 12.VIII.

*Allodia (Allodia) lugens* (Wiedemann, 1817) - 1 ♂, sweep netting, 10.VIII.

*Allodia (Allodia) truncata* Edwards, 1921 - 1 ♂, sweep netting, 10.VIII.; 1 ♂, light trap, 29-30.VII.

*Allodiopsis rustica* (Edwards, 1941) - 4 ♂♂, sweep netting, 10.VIII.

*Anatella ciliata* Winnertz, 1863 - 3 ♂♂, light trap, 5-6.VIII. and 4-6.VIII.

\**Anatella gibba* Winnertz, 1863 - 1 ♂, light trap, 14-16.VIII. Widely distributed in the Palaearctic region (Zaitzev 1989). In Fennoscandia recorded from Norway (Økland & Zaitzev 1997), Sweden (Plassmann 1979) and Russian Karelia (Polevoi 2000).

*Anatella setigera* Edwards, 1921 - 2 ♂♂, light trap, 12-16.VIII.

*Anatella simpatica* Dziedzicki, 1923 - 2 ♂♂, light trap, 8-10.VIII.

*Brevicornu fissicauda* (Lundström, 1911) - 1 ♂, sweep netting, 10.VIII.

*Exechia exigua* Lundström, 1909 - 1 ♂, sweep netting, 12.VIII.

*Cordyla brevicornis* (Staeger, 1840) - 1 ♂, light trap, 4-6.VIII.

*Cordyla crassicornis* Meigen, 1818 - 1 ♂, sweep netting, 12.VIII.

*Cordyla nitidula* Edwards, 1925 - 2 ♂♂, light trap, 8-10.VIII.

*Cordyla semiflava* (Staeger, 1840) - 4 ♂♂, light trap, 27.VII-10.VIII.

\**Exechiopsis (Exechiopsis) clypeata* (Lundström, 1911) - 1 ♂, light trap, 8-10.VIII.; 1 ♂, light trap, 14-16.VIII. Widely distributed in Europe (Krivoshchina et al. 1986, Hackman et al. 1988). In Fennoscandia recorded from Norway (Økland & Zaitzev 1997), Sweden (Plassmann 1979, 1980) and Russian Karelia (Polevoi 2000).

*Exechiopsis (Exechiopsis) intersecta* (Meigen, 1818) - 1 ♂, light trap, 27-28.VII.

*Notolopha cristata* (Staeger, 1840) - 66 ♂♂, sweep netting, 10., 12. and 15.VIII.

*Tarnania tarnanii* (Dziedzicki, 1910) - 1 ♂, sweep netting, 10.VIII

**Mycetophilini**

*Mycetophila confluens* Dziedzicki, 1884 - 2 ♂♂, sweep netting, 31.VII. and 10.VIII.

*Mycetophila fungorum* (De Geer, 1776) - 7 ♂♂, light trap, 29-30.VII and 4-8.VIII

*Mycetophila ichneumonea* Say, 1823 - 2 ♂♂, light trap, 6-8.VIII.

*Mycetophila luctuosa* Meigen, 1830 - 1 ♂, sweep netting, 10.VIII.; 1 ♂, light trap, 6-8.VIII.

*Mycetophila marginata* Winnertz, 1863 - 6 ♂♂, sweep netting, 10. and 15.VIII.

*Mycetophila mohilivensis* Dziedzicki, 1884 - 1 ♂, sweep netting, 10.VIII.

*Mycetophila ocellus* Walker, 1848 - 1 ♂, sweep netting, 12.VIII.

\**Mycetophila pseudoforcipata* A.Zaitzev, 1998 - 1 ♂, sweep netting, 15.VIII. Recently found to be a distinct species from *M. forcipata* Lundström, 1913, the difference from it was discussed by Zaitzev (1998a). Probably widely distributed, recorded so far from Russia: Moscow district, Altai, Kuril Islands and the Czech Republic (Zaitzev 1998a, Ševčík 2001).

*Mycetophila signatoides* Dziedzicki, 1884 - 1 ♂, sweep netting, 10.VIII.

*Mycetophila strobli* Laštovka, 1972 - 1 ♂, light trap, 10-12.VIII.

\*? *Mycetophila sublunata* A.Zaitzev, 1998 - 1 ♂, sweep netting, 10.VIII.; 1 ♂, light trap, 8-10.VIII. Distinguished from *M. lunata* Meigen, 1830 by structure of male genitalia, particularly, by having two spines on the ventral lobe of gonostylus (Zaitzev 1998b). However, according to the results of study of the Estonian material, this character is variable and further investigation is required to clarify the systematic position of the species. Recorded only from Russia: Karelia, Kostroma, Moscow and Kaluga districts, Altai and Sakhalin Is-

- land (Zaitzev 1998b). The widespread sibling species, *M. lunata*, is provided with a question mark in the Finnish list (Hackman 1980), but subsequently confirmed by Silfverberg (2001).
- Mycetophila unipunctata* Meigen, 1818 - 1 ♂, sweep netting, 10.VIII.
- Phronia braueri* Dziedzicki, 1889 - 1 ♂, sweep netting, 4.VIII.
- \**Phronia coritanica* Chandler, 1992 - 1 ♂, sweep netting, 12.VIII. Recently described from the British Isles. Chandler (1992) reported it also from France, Belgium, Spain, Croatia and Turkey, and Ševčík (1999) from Czech Republic. Clearly distinguishable from other species in the "*tarsata*" group by the lateral appendage of the gonostylus (Chandler 1992).
- Phronia exigua* (Zetterstedt, 1852) - 1 ♂, sweep netting, 15.VIII.
- Phronia flavipes* Winnertz, 1863 - 4 ♂♂, sweep netting, 4. and 10.VIII.
- Phronia humeralis* Winnertz, 1863 - 8 ♂♂, sweep netting, 10. and 12.VIII.
- Phronia nigricornis* (Zetterstedt, 1852) - 2 ♂♂, sweep netting, 10. and 15.VIII.
- Phronia nigripalpis* Lundström, 1909 - 1 ♂, sweep netting, 15.VIII.
- Phronia obtusa* Winnertz, 1863 - 1 ♂, sweep netting, 15.VIII.
- Phronia sudetica* Dziedzicki, 1889 - 3 ♂♂, sweep netting, 15. VIII.; 4 ♂♂, light trap, 8-16.VIII.
- Phronia tenuis* Winnertz, 1863 - 1 ♂, sweep netting, 10.VIII.
- Phronia triangularis* Winnertz, 1863 - 1 ♂, sweep netting, 6.VIII.
- Trichonta brevicauda* Lundström, 1906 - 1 ♂, sweep netting, 10.VIII.
- Trichonta melanura* (Staeger, 1840) - 1 ♂, sweep netting, 10.VIII.
- Trichonta submaculata* (Staeger, 1840) - 4 ♂♂, sweep netting, 10.VIII.
- Acknowledgements:** I express my best thanks to Dr. P. Chandler (Melksham, United Kingdom) for the comments on a particular species. The study was financially supported by grant 4990 of the Estonian Science Foundation.
- References**
- Anttila, J. 2000: Lemmenlaakson lehto. — <http://www.vyh.fi/luosuo/n2000/uyk/Kunnat/jarvenp/lemmenla.htm>, last revised 21.3.2000.
- Chandler, P. J. 1992: A review of the British *Phronia* Winnertz, and *Trichonta* (Dipt., Mycetophilidae). — Entomol. Mon. Mag. 128: 237-254.
- Hackman, W. 1970: New species of the genus *Phronia* Winnertz (Diptera, Mycetophilidae) from Eastern Fennoscandia and notes on the synonymies in this genus. — Notulae Entomol. 50: 41-60.
- Hackman, W. 1980: A check list of the Finnish Diptera I. Nematocera and Brachycera (s. str.). — Notulae Entomol. 60: 17-48.
- Hackman, W., Laštovka, P., Matile, L. & Väisänen, R. 1988: Family Mycetophilidae. — Pp. 220-327. In Soós, A. & Papp, L. (eds.). Catalogue of Palaearctic Diptera. Vol. 3. Ceratopogonidae – Mycetophilidae. Budapest.
- Hedmark, K. 1998: Fungus gnats - new species to Sweden and Finland (Diptera: Mycetophilidae s. lat.). — Entom. Tidskr. 119: 1-12. [in Swedish]
- Krivosheina, N. P., Zaitzev, A. I. & Yakovlev, E. B. 1986: Insects as decomposers of fungi in the forest of the European part of USSR. — Moscow, 309 pp. (In Russian).
- Lundström, C. 1906: Beiträge zur Kenntnis der Dipteren Finland. I. Mycetophilidae. — Acta Soc. Fauna Flora Fennica 29: 1-50.
- Lundström, C. 1909: Beiträge zur Kenntnis der Dipteren Finland. IV. Supplement Mycetophilidae. — Acta Soc. Fauna Flora Fennica 32: 1-63.
- Matile, L. 1983: Notes taxonomiques et chlorologiques sur les Gnoristini paléarctiques (Diptera, Mycetophiloidea). — Ann. Soc. Entomol. Fr. (n. s.) 19: 426-432.
- Mikolajczyk, W. 2001: Mycetophilidae s.l. (Diptera) of linden-oak-hornbeam woods in the Białowieża National Park. — Fragm. Faun. 44: 341-351.
- Økland, B. & Zaitzev, A. I. 1997: Mycetophilids (Diptera, Sciaroidea) from southeastern Norway. — Fauna norv. Ser. B. 44: 27-37.
- Plassmann, E. 1978: Neue Pilzmücken aus Schweden und Bulgarien (Insecta: Diptera: Mycetophilidae). — Senckenbergiana biol. 58: 205-214.
- Plassmann, E. 1979: Pilzmücken aus Messaure in Schweden. II. Luftstrom-Fallenfänge (Insecta: Diptera: Mycetophilidae). — Senckenbergiana Biol. 59: 371-388.
- Plassmann, E. 1980: Pilzmücken aus Messaure in Schweden. III. Lichtfallenfänge (Insecta: Diptera: Mycetophilidae). — Senckenbergiana Biol. 60: 175-189.

- Plassmann, E. 1984: Pilzmücken. (Diptera: Nematocera: Mycetophilidae). — Mitt. Int. Entomol. Ver. Frankfurt 9: 65-70
- Polevoi, A. I. 1996: New and poorly known fungus gnats of the families Bolitophilidae, Diadocidiidae and Keroplatidae from Eastern Fennoscandia (Diptera, Nematocera). — Zoosystematica Rossica 4: 177-182.
- Polevoi, A. I. 2000: Fungus gnats (Diptera: Bolitophilidae, Ditomyiidae, Keroplatidae, Diadocidiidae, Mycetophilidae) of Karelia. — Petrozavodsk, 84 pp. (In Russian).
- Silfverberg, H. 1981: Addition to the Finnish insect fauna during the years 1976-1980. — Notulae Entomol. 61: 45-61.
- Silfverberg, H. 1986: Addition to the Finnish insect fauna during the years 1981-1985. — Notulae Entomol. 66: 131-152.
- Silfverberg, H. 1991: Changes 1986-1990 in the list of Finnish insects. — Entomol. Fennica 2: 9-17.
- Silfverberg, H. 1996: Changes 1991-1995 in the list of Finnish insects. — Entomol. Fennica 7: 39-49.
- Silfverberg, H. 2001: Changes 1996-2000 in the list of Finnish insects. — Entomol. Fennica 12: 217-243.
- Søli, G. E. E., Vockeroth, R. J. & Matile, L. 2000: 4. Families of Sciaroidea. — Pp. 49-92. In Papp, L. & Darvas, B. (eds.) Contribution to a Manual of Palaearctic Diptera. Appendix. Budapest.
- Ševčík, J. 1999: Fifty species of fungus gnats (Diptera: Mycetophilidae) new for the Czech Republic and/or Slovakia, including a new species of *Allodia* Winnertz. — Čas. Slez. Mus. Opava (A) 48: 97-105.
- Ševčík, J. 2001: New records of Diadocidiidae, Keroplatidae and Mycetophilidae (Diptera: Sciaroidea) from the Czech Republic. — Čas. Slez. Mus. Opava (A) 50: 159-169.
- Tuomikoski, R. 1966: Generic Taxonomy of the Exechiini (Dipt., Mycetophilidae). — Ann. Entomol. Fenn. 32: 159-194.
- Väisänen, R. 1984: A monograph of the genus *Mycomya* Rondani in the Holarctic region (Diptera, Mycetophilidae). — Acta Zool. Fenn. 177: 1-346.
- Zaitzev, A. I. 1989: A review of fungus gnats of the genus *Anatella* Winn. (Diptera, Mycetophilidae of the fauna of the USSR. — Entomol. Obozr. 68: 809-820. [In Russian].
- Zaitzev, A. I. 1998a: New species of fungus gnats of the genus *Mycetophila* Meig. (Diptera, Mycetophilidae). — Int. J. Dipterol. Res. 9: 79-84.
- Zaitzev, A. I. 1998b: Six new species of fungus gnats of the genus *Mycetophila* Meigen from Russia (Diptera, Mycetophilidae). — Studia dipterologica 5: 211-216.