

Bibionomorph gnats (Diptera: Nematocera) collected from Lažany village, Slovakia

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Abstract: We present records of 103 fly species from six families of Bibionomorpha (namely: Anisopodidae, Ditomyiidae, Bolitophilidae, Diadocidiidae, Keroplatidae, and Mycetophilidae) collected by a single Malaise trap in an Eastern Slovakia locality during the vegetation period in 2023. Data on five species, viz., *Mycomya* (*Neomycomya*) *fimbriata* (Meigen, 1818), *Synapha fasciata* Meigen, 1818, *Cordyla pusilla* Edwards, 1925, *Mycetophila freyi* Lundstrom, 1909, and *Sceptonia tenuis* Edwards, 1925 (all Mycetophilidae) represent the first records for the fauna of Slovakia, and habitus photographs of these species have been provided. A very rare Central European species – *Neoclastobasis draskovitsae* Matile, 1978 – has also been recorded and photographed.

Key words: Bibionomorpha, faunistic, fungus gnats, new records, Slovakia.

Introduction

Bibionomorpha, a megadiverse infraorder of Nematocera, comprises at least 15 families and several enigmatic genera in its broader sense (Ševčík *et al.* 2016). These insects are diverse and abundant in terrestrial habitats, especially in forest ecosystems. Fungus gnats, which constitute a portion of Bibionomorpha, include five families: Ditomyiidae, Bolitophilidae, Diadocidiidae, Keroplatidae, and Mycetophilidae, with more than 1200 species in Europe (e.g. Chandler 2005). In Slovakia, fungus gnats are relatively well studied, with over 580 species documented (Jedlička *et al.* 2009, Ševčík & Kurina 2011a, b, Ševčík *et al.* 2013, Kurina *et al.* 2023, Sikora *et al.* 2023). In its broader classification, the Bibionomorpha also includes Anisopodidae, a family that encompasses *Mycetobia* Meigen (Ševčík *et al.* 2016), known with two species in the Slovak Republic (Ševčík 2009a).

Faunistic research of Diptera is quite common in protected or ecological significant areas in Slovakia (e.g. Roháček *et al.* 1995, Roháček & Ševčík 2009, Ševčík & Kurina 2011a, b, etc.). However, areas that are not considered interesting from a nature conservation perspective are often overlooked. Urban and rural areas exemplify such neglected ecosystems. These highly degraded remnants of native habitats, along with areas frequently occupied by non-native species, are often neglected by researchers, leaving the biodiversity of most towns and villages unstudied or understudied (Hartop *et al.* 2015). Therefore, the main goal of this work is to provide faunistic data on the rural habitats of village Lažany in Eastern Slovakia.

Material and methods

The material was collected using a Townes' type Malaise trap (Fig. 1) in Slovakia, Prešov district, Lažany village, at coordinates 49°02'13.7"N 21°05'45.6"E, by P. Manko. The trap was set up for one week each month during the vegetation period in 2023 as follows: May (12.v. – 16.v.), June (16.vi. – 23.vi.), July (20.vii. – 29.vii.), August (19.viii. – 23.viii.), September (19.ix. – 25.ix.). For more details about the collecting process, see Grundmann *et al.* (2024).



Fig. 1: Malaise trap set in Lažany village.

The collected material, preserved in 75% ethyl alcohol, was sorted to the family level. Specimens from six bibionomorph families were identified to species level using a Leica S8APO stereomicroscope. In case of Mycetophilidae, most female specimens could only be morphologically identified to the genus level and are therefore not included in the following species list. On several occasions, detailed examination of male genitalia was necessary for accurate species identification. For this, detached genitalia were treated with 10% KOH, neutralized in acetic acid, washed in distilled water, studied in glycerine, and preserved in small plastic microvials as glycerine preparations (see also Kurina 2003).

Habitus photos of the species were taken with a Leica K5C camera attached to a Leica 205C stereomicroscope and combined using LAS X software. Topaz Sharpen AI software was used to enhance sharpness, and Adobe Photoshop CS5 was used for the final editing of the plate (see also Kjærandsen *et al.* 2022).

The studied material is deposited in the insect collection of the Institute of Agricultural and Environmental Science, Estonian University of Life Sciences (IZBE).

Abbreviations: * = new records for Slovakia.

Results

In compiling the list of species, we generally follow the classification from Fungus Gnats Online (<http://www.sciaroidea.info/>), supplemented by updates from Magnussen (2021) and Chandler (2022). Additionally, the concepts of the subfamilies Gnoristinae and Leiinae are based on recent molecular studies by Kaspřák *et al.* (2019) and Burdíková *et al.* (2023). In the electronic checklist of Czech and Slovak Diptera (Jedlička *et al.* 2009), the genus *Mycetobia* Meigen, 1818, is placed within the family Mycetobiidae. However, in our species list, we adopt the latest classification by Evenhuis and Pape (2021), which places the Mycetobiinae, including *Mycetobia*, as a subfamily of Anisopodidae. New country records and other notable species have been annotated, with distributional notes added in accordance with Chandler (2005, 2022), unless otherwise specified.

ANISOPODIDAE

Mycetobiinae

Mycetobia pallipes Meigen, 1818

Material examined: May, 1 ♂, 1 ♀.

Comment. A widely distributed European species, first recorded from Slovakia by Ševčík (1999a). Male specimens are rarely encountered in Malaise trap samples.

BOLITOPHILIDAE

Bolitophila (C.) glabrata Loew, 1869

Material examined: August, 1 ♂.

DIADOCIDIIDAE

Diadocidia (D.) ferruginosa (Meigen, 1830)

Material examined: May, 2 ♂♂; June, 2 ♂♂, 1 ♀; July, 4 ♂♂, 1 ♀; August 1 ♂, 1 ♀; September, 7 ♂♂.

DITOMYIIDAE

Symmerus annulatus (Meigen, 1830)

Material examined: June, 2 ♂♂.

KEROPLATIDAE (13 spp.)

Keroplantinae

Cerotelion racovitzai Matile & Burghele-Balacesco, 1969

Material examined: July, 1 ♂.

Cerotelion striatum (Gmelin, 1790)

Material examined: August, 1 ♂.

Keroplatus reaumuri Dufour, 1839

Material examined: August, 3 ♂♂; September, 1 ♂.

Comments. A widely distributed European species, recently found also from Slovakia (Sikora *et al.* 2023). Discovery of the species from Lažany village represents the second record for Slovakia.

Keroplatus testaceus (Dalman, 1818)

Material examined: September, 3 ♂♂.

Keroplatus tipuloides Bosc, 1792

Material examined: September, 1 ♀.

Comments. A widely distributed but rare European species, found also from Slovakia (Ševčík *et al.* 2013). Discovery of the species from Lažany village represents the second record for Slovakia.

Macrorrhyncha flava Winnertz, 1846

Material examined: July, 2 ♂♂.

Neoplatyura modesta (Winnertz, 1864)

Material examined: August, 4 ♂♂.

Neoplatyura nigricauda (Strobl, 1893)

Material examined: September, 2 ♂♂.

Orfelia fasciata (Meigen, 1804)

Material examined: June, 2 ♂♂.

Orfelia nemoralis (Meigen, 1818)

Material examined: May, 1 ♂, 1 ♀; June, 1 ♂; July, 1 ♂.

Orfelia ochracea (Meigen, 1818)

Material examined: June, 1 ♂.

Pyratula zonata (Zetterstedt, 1855)

Material examined: June, 1 ♂.

Urytalpa dorsalis (Staeger, 1840)

Material examined: June, 1 ♂.

MYCETOPHILIDAE (86 spp.)

Mycomyinae

Mycomya (*Mycomya*) *cinerascens* (Macquart, 1826)

Material examined: July, 1 ♂; September, 1 ♂.

Mycomya (*Cymomya*) *circumdata* (Staeger, 1840)

Material examined: May, 1 ♂; July, 4 ♂♂; August, 1 ♂.

Mycomya (*Mycomya*) *danielae* Matile, 1972

Material examined: August, 1 ♂.

**Mycomya* (*Neomycomya*) *fimbriata* (Meigen, 1818) (Fig. 2 A)

Material examined: June, 3 ♂♂; July, 1 ♂; August, 2 ♂♂.

Comments. A widely distributed Holarctic species, with a record documented from the Oriental Region (Väisänen 1984, Chandler 2005).

Mycomya (*Mycomya*) *flavicollis* (Zetterstedt, 1852)

Material examined: June, 1 ♂; August, 1 ♂; September, 2 ♂♂.

Mycomya (*Mycomya*) *tenuis* (Walker, 1856)

Material examined: August, 1 ♂; September, 1 ♂.

Neoempheria bimaculata (Roser, 1840)

Material examined: September, 1 ♂.

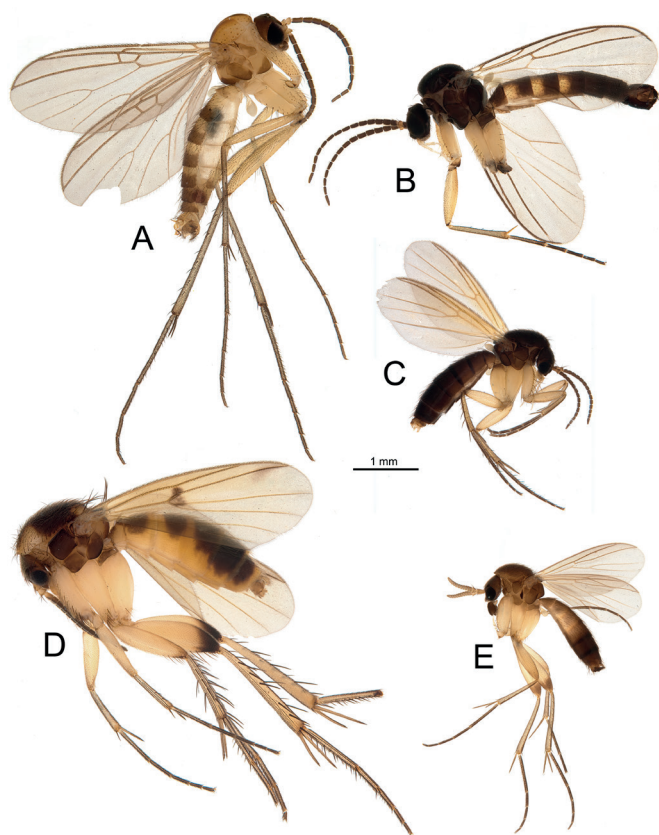


Fig. 2: Fungus gnat species new to the Slovakian fauna. **A** – *Mycomya* (*Neomycomya*) *fimbriata* (Meigen, 1818); **B** – *Synapha fasciata* Meigen, 1818; **C** – *Sceptonia tenuis* Edwards, 1925; **D** – *Mycetophila freyi* Lundstrom, 1909; **E** – *Cordyla pusilla* Edwards, 1925.

Neompheria striata (Meigen, 1818)

Material examined: September, 1 ♂.

Sciophilinae

Acnemia amoena Winnertz, 1864

Material examined: May, 1 ♂.

Acnemia nitidicollis (Meigen, 1818)

Material examined: June, 1 ♂; July, 3 ♂♂; August, 4 ♂♂; September, 2 ♂♂.

Azana anomala (Staeger, 1840)

Material examined: May, 1 ♂.

Megalopelma nigroclavatus (Strobl, 1909)

Material examined: June, 1 ♂; August, 11 ♂♂; September, 6 ♂♂.

Monoclona rufilatera (Walker, 1836)

Material examined: May, 11 ♂♂, 4 ♀♀; June, 3 ♂♂, 1 ♀; July, 26 ♂♂, 2 ♀♀; August, 40 ♂♂, 5 ♀♀; September, 7 ♂♂.

Phthinia mira (Ostroverkhova, 1977)

Material examined: May, 1 ♂.

Phthinia winnertzi Mik, 1869

Material examined: July, 1 ♂.

Sciophila fenestella Curtis, 1837

Material examined: May, 2 ♂♂; July, 1 ♂; August, 1 ♂.

Sciophila modesta Zaitzev, 1982

Material examined: May, 1 ♂.

Sciophila geniculata Zetterstedt, 1838

Material examined: August, 1 ♂.

Comments. A widely distributed European species, found also from Slovakia (Sikora *et al.* 2023). Discovery of the species from Lažany village represents the second record for Slovakia.

Sciophila thoracica Staeger, 1840

Material examined: May, 3 ♂♂; June, 1 ♂; August, 1 ♂.

Gnoristinae

Boletina basalis (Meigen, 1818)

Material examined: May, 2 ♂♂.

Boletina gripha Dziedzicki, 1885

Material examined: June, 3 ♂♂; July, 1 ♂.

Boletina nitida Grzegorzek, 1885

Material examined: June, 1 ♂.

Coelosia flava (Staeger, 1840)

Material examined: June, 2 ♂♂.

Docosia fumosa Edwards, 1925

Material examined: June, 1 ♂.

Docosia gilvipes (Walker, 1856)

Material examined: June, 2 ♂♂; August, 2 ♂♂.

Docosia moravica Landrock, 1916

Material examined: May, 1 ♂.

Ectrepesthoneura hirta (Winnertz, 1846)

Material examined: July, 2 ♂♂.

Grzegorzekia collaris (Meigen, 1818)

Material examined: June, 1 ♂.

**Synapha fasciata* Meigen, 1818 (Fig. 2 B)

Material examined: June, 1 ♂.

Comments. A Palearctic species, widely distributed in Europe (Chandler 2005).

Synapha vitripennis (Meigen, 1818)

Material examined: May, 1 ♂; June, 1 ♂; September, 1 ♂.

Tetragoneura sylvatica (Curtis, 1837)

Material examined: June, 1 ♂.

Leiinae

Greenomyia mongolica Lastovka & Matile, 1974

Material examined: July, 3 ♂♂.

Leia bimaculata (Meigen, 1804)

Material examined: May, 16 ♂♂; June, 4 ♂♂; July, 4 ♂♂; August, 1 ♂; September, 1 ♂.

Leia crucigera Zetterstedt, 1838

Material examined: May, 12 ♂♂, 1 ♀; June, 5 ♂♂; August, 2 ♂♂; September, 1 ♂.

Leia cylindrica (Winnertz, 1864)

Material examined: June, 1 ♂; July, 1 ♂.

Leia subfasciata (Meigen, 1818)

Material examined: May, 11 ♂♂; June, 6 ♂♂; August, 2 ♂♂.

Leia winthemi Lehmann, 1822

Material examined: September, 1 ♀.

Neoclastobasis draskovitsae Matile, 1978 (Fig. 3)

Material examined: August, 2 ♀♀; September, 2 ♀♀.

Comments. This is a very rare Central European species. First described from Hungary (Matile 1978), it has since been recorded only in the Czech and Slovak Republics (Ševčík 1999b, 2007, 2009b). In the Czech Republic, it is classified as vulnerable (VU) (Ševčík 2005). The male genitalia were illustrated by Matile (1978: figs 1, 2). Additionally, Oliveira & Amorim (2021: figs 86, 106) provided an image of the male genitalia as well as a photograph of the general habitus of the species. To provide further details for distinguishing *N. draskovitsae*, a new high-resolution habitus photograph is included here.

Rondaniella dimidiata (Meigen, 1804)

Material examined: June, 1 ♀; August, 2 ♀♀; September, 1 ♂, 1 ♀.



Fig. 3: Habitus of *Neoclastobasis draskovitsae* Matile, 1978, female.

Mycetophilinae

Brachycampta grata (Meigen, 1830)

Material examined: September, 1 ♂.

Brachycampta silvatica (Landrock, 1912)

Material examined: July, 1 ♂.

Brevicornu fuscipenne (Staeger, 1840)

Material examined: August, 1 ♂.

Brevicornu griseicolle (Staeger, 1840)

Material examined: July, 2 ♂♂; September, 2 ♂♂.

Brevicornu proximum (Staeger, 1840)

Material examined: May, 1 ♂.

Brevicornu sericoma (Meigen, 1830)

Material examined: August, 3 ♂♂; September, 2 ♂♂.

Cordyla crassicornis Meigen, 1818

Material examined: June, 3 ♂♂; July, 10 ♂♂; August, 6 ♂♂; September, 1 ♂.

Cordyla fissa Edwards, 1925

Material examined: July, 1 ♂.

**Cordyla pusilla* Edwards, 1925 (Fig. 2 E)

Material examined: May, 4 ♂♂; June, 9 ♂♂; July, 3 ♂♂; August, 2 ♂♂.

Comments. A Palearctic species, widely distributed in Europe (Chandler 2022).

Exechia dentata Lundström, 1916

Material examined: July, 1 ♂.

Rymosia fasciata (Meigen, 1804)

Material examined: May, 1 ♂; September, 1 ♂.

Dynatosoma fuscicorne (Meigen, 1818)

Material examined: August, 1 ♂.

Dynatosoma rufescens (Zetterstedt, 1838)

Material examined: June, 1 ♂.

Mycetophila czizekii Landrock, 1911

Material examined: August, 1 ♂.

Comments. A widely distributed but rather rare European species. Second record for Slovakia (see Ševčík & Kurina 2011b).

Mycetophila confluens Dziedzicki, 1884

Material examined: July, 1 ♂.

Mycetophila devioidea Bechev, 1988

Material examined: July, 1 ♂.

Mycetophila eppingensis Chandler, 2001

Material examined: August, 1 ♂.

Comments. A widespread species in Western and Northern Europe (Chandler 2022). Second record for Slovakia (see Ševčík & Kurina 2011b).

**Mycetophila freyii* Lundstrom, 1909 (Fig. 2 D)

Material examined: May, 1 ♂; June, 1 ♂.

Comments. A European species with rather scattered distribution (Chandler 2022).

Mycetophila fungorum (De Geer, 1776)

Material examined: May, 4 ♂♂, 3 ♀♀; June, 2 ♂♂, 8 ♀♀; July, 2 ♂♂, 2 ♀♀; August, 4 ♂♂; 1 ♀; September, 2 ♂♂, 1 ♀.

Mycetophila idonea Lastovka, 1972

Material examined: May, 1 ♂; June, 2 ♂♂; July, 1 ♂; September, 6 ♂♂.

Mycetophila luctuosa Meigen, 1830

Material examined: July, 1 ♂.

Mycetophila moravica Landrock, 1925

Material examined: July, 1 ♂.

Mycetophila occultans Lundstrom, 1913

Material examined: July, 1 ♂; September, 2 ♂♂.

Mycetophila pseudoforcipata Zaitzev, 1998

Material examined: September, 1 ♂.

Comments. A Palaearctic species with rather scattered distribution in Europe. Second record for Slovakia (see Ševčík & Kurina 2011b).

Mycetophila sigillata Dziedzicki, 1884

Material examined: August, 1 ♂; September, 1 ♂.

Mycetophila signatoides Dziedzicki, 1884

Material examined: May, 1 ♂; July, 2 ♂♂; August, 3 ♂♂; September, 1 ♂.

Mycetophila strigata Staeger, 1840

Material examined: September, 1 ♂.

Mycetophila strigatoides (Landrock, 1927)

Material examined: July, 1 ♂; September, 3 ♂♂.

Mycetophila stolidata Walker, 1856

Material examined: June, 3 ♂♂; July, 5 ♂♂.

Mycetophila subsigillata Zaitzev, 1999

Material examined: July, 1 ♂.

Mycetophila trinotata Staeger, 1840

Material examined: June, 1 ♂.

Mycetophila unguiculata Lundstrom, 1913

Material examined: August, 1 ♂.

Phronia conformis (Walker, 1856)

Material examined: August, 1 ♂.

Phronia signata Winnertz, 1864

Material examined: June, 1 ♂; July, 1 ♂.

Comments. A widespread Palaearctic species. Second record for Slovakia (see Ševčík & Kurina 2011b).

Phronia strenua Winnertz, 1864

Material examined: September, 1 ♂.

Phronia tenuis Winnertz, 1864

Material examined: August, 1 ♂.

Platurocypta punctum (Stannius, 1831)

Material examined: June, 1 ♂; July, 1 ♂.

Platurocypta testata (Edwards, 1925)

Material examined: June, 1 ♂.

Sceptonia membranacea Edwards, 1925

Material examined: June, 1 ♂; July, 6 ♂♂; September, 1 ♂.

Sceptonia flavipuncta Edwards, 1925

Material examined: July, 3 ♂♂; September, 1 ♂.

Sceptonia nigra (Meigen, 1804)

Material examined: June, 2 ♂♂; July, 3 ♂♂; August, 4 ♂♂.

**Sceptonia tenuis* Edwards, 1925 (Fig. 2 C)

Material examined: July, 3 ♂♂.

Comments. A widely distributed European species (Chandler 2022).

Trichonta hamata Mik, 1880

Material examined: July, 1 ♂.

Trichonta melanura (Staeger, 1840)

Material examined: August, 1 ♂.

Comments. A Holarctic species, widely distributed in Europe. Second record for Slovakia (see Ševčík & Kurina 2011b).

Zygomyia humeralis (Wiedemann, 1817)

Material examined: May, 2 ♂♂; July, 1 ♂.

Zygomyia valida Winnertz, 1864

Material examined: September, 1 ♂.

Conclusion

In total, more than 600 flies belonging to six families of Bibionomorpha were collected using a single Malaise trap in the village Lažany during the summer season of 2023. A total of 103 species were recorded: 1 sp. Anisopodidae, 1 sp. Bolitophilidae, 1 sp. Ditomyiidae, 1 sp. Diadocidiidae, 13 spp. Keroplatidae, and 86 spp. Mycetophilidae.

Five records of Mycetophilidae (*Mycomya* (*Neomycomya*) *fimbriata*, *Cordyla pusilla*, *Mycetophila freyii*, *Sceptonia tenuis*, and *Synapha fasciata*) represent the first records for the fauna of Slovakia. All these species are widely distributed in Europe but have surprisingly not been recorded in Slovakia until now. Two species of Keroplatidae (*Keroplatus reaumuri* and *K. tipuloides*) and six of Mycetophilidae (*Mycetophila czizekii*, *M. eppingensis*, *M. pseudoforcipata*, *Phronia signata*, *Sciophila geniculata*, *Trichonta melanura*) represent the second records for Slovakia (Ševčík & Kurina 2011b, Ševčík *et al.* 2013, Sikora *et al.* 2023).

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References

- Burdíková N., Kaspřák D., Kjærandsen J., Špalek Tóthová A. & Ševčík J. (2023): Molecular phylogeny of the fungus gnat subfamilies Sciophilinae and Leiinae (Mycetophilidae), with notes on *Sciaroidea incertae sedis* (Diptera: Bibionomorpha). – *Zoological Journal of the Linnean Society* 20: 1–11.
- Chandler P.J. (2005): Fauna Europaea: Mycetophilidae. In: Beuk P. & Pape T. (2013) Fauna Europaea: Diptera, Nematocera. Fauna Europaea, version 2017.06. <http://www.faunaeur.org>. Accessed on: 2023-10-07.
- Chandler P. (2022): Fungus Gnats (Diptera: Mycetophilidae: Mycetophilinae). *RES Handbooks for the Identification of British Insects* 9 (8): 1–398.
- Evenhuis N.L. & Pape T. (Eds.) (2021): Systema dipterorum, Version [2.8]. <http://diptera.org/>. Accessed on: 2024-30-05.
- Grundmann B., Manko P. & Oboňa J. (2024): Overlooked insects in neglected ecosystem: new records of Phoridae for Slovakia discovered in rural environment. – *Historia naturalis bulgarica* 46(4): 109–118.
- Hartop E.A., Brown B.V. & Disney R.H.L. (2015): Opportunity in our ignorance: urban biodiversity study reveals 30 new species and one new Nearctic record for *Megaselia* (Diptera: Phoridae) in Los Angeles (California, USA). – *Zootaxa* 3941(4): 451–484.
- Jedlička L., Kúdela M. & Stloukalová V. (Eds.) (2009): Checklist of Diptera of the Czech Republic and Slovakia. Electronic version 2. <http://zoology.fns.uniba.sk/diptera2009>. Accessed on: 2024-30-05.
- Kaspřák D., Kerr P., Sýkora V., Tóthová A. & Ševčík J. (2019): Molecular phylogeny of the fungus gnat subfamilies Gnoristinae and Mycomyinae, and their position within Mycetophilidae (Diptera). – *Systematic Entomology* 44: 128–138.
- Kjærandsen J., Jakovlev J., Polevoi A., Salmela J. & Kurina O. (2022): A rarely seen taxonomic revision with immense value for 41 years and counting: reflections on the 1981 monograph of *Trichonta* Winnertz, 1864 (Diptera, Mycetophilidae) by Raymond Gagné, with an integrative revision of the *Trichonta vulcani* (Dziedzicki, 1889) species complex. – *Proceedings of the Entomological Society of Washington* 124 (3): 1–43.
- Kurina O. (2003): Notes on the palaearctic species of the genus *Polylepta* Winnertz (Diptera: Mycetophilidae) with a new synonymization. – *Entomologica Fennica* 14(2): 91–97.
- Kurina O., Kjærandsen J., Kirik H., Hadbavná D., Dénes A., Oboňa J. & Manko P. (2023): On the identity and distribution of the rare *Rymosia tolleti* Burgehele-Balacesco, 1965 (Diptera, Mycetophilidae) encountered in European caves. – *Check List* 19(3): 381–389.
- Magnussen T., Johnsen A., Kjærandsen J., Struck T.H. & Söli G.E. (2021): Molecular phylogeny of *Allodia* (Diptera: Mycetophilidae) constructed using genome skimming – *Systematic Entomology* 47(1): 267–281.
- Matile L. (1978): Description d'un *Neoclastobasis* nouveau de Hongrie et remarques sur divers Leiini (Diptera: Mycetophilidae). – *Folia Entomologica Hungarica*, S. N. 31: 167–172.
- Oliveira S.S. & Amorim D.S. (2021): Phylogeny, classification, mesozoic fossils, and biogeography of the Leiinae (Diptera: Mycetophilidae). – *Bulletin of the American Museum of Natural History* 446: 1–108.
- Roháček J. & Ševčík J. (Eds.) (2009): Diptera of the Poľana Protected Landscape Area – Biosphere Reserve (Central Slovakia). SNC SR, Administration of the PLA – BR Poľana, Zvolen. 340 pp.
- Roháček J., Starý J., Martinovský J. & Vála M. (Eds.) (1995): Diptera Bukovských vrchov. Diptera of the Bukovské hills. Humenné. 232 pp.
- Ševčík J. (1999a): First record of *Mycetobia pallipes* (Diptera, Mycetobiidae) from Slovakia. – *Biologia*, Bratislava 54: 168.
- (1999b): Fifty species of fungus gnats (Diptera: Mycetophilidae) new for the Czech Republic and/or Slovakia, including a new species of *Allodia* Winnertz. – *Časopis Slezského zemského muzea, Opava (A)* 48: 97–105.
- (2005): Mycetophilidae (bedľobytkovití). In Farkač J., Král D. & Škorpík M. (Eds.): Červený seznam ohrozených druhů České republiky. Bezobratlí. Red list of threatened species in the Czech Republic. Invertebrates. 760 pp. (pp. 252–254). Agentura ochrany přírody a krajiny České republiky, Praha.
- (2007): Faunistic records from Czech Republic and Slovakia. Mycetophilidae. In Stloukalová V. (ed.): Dipterologica bohemoslovaca, Vol. 14. *Acta Zoologica Universitatis Comenianae* 47: 250.
- (2009a): Mycetobiidae Crampton, 1924. In: Jedlička L., Kúdela M. & Stloukalová V. (Eds.): Checklist of Diptera of the Czech Republic and Slovakia. Electronic version 2. <http://zoology.fns.uniba.sk/diptera2009> Accessed on: 2024-30-05

- (2009b): Mycetophilidae. In Roháček J. & Ševčík J. (Eds.): *Diptera of the Poľana Protected Landscape Area – Biosphere Reserve (Central Slovakia)*. SNC SR, Administration of the PLA – BR Poľana, Zvolen, pp. 56–78.
- Ševčík J. & Kurina O. (2011a): Fungus gnats (Diptera: Sciaroidea) of the Gemer region (Central Slovakia): Part 1 – Bolitophilidae, Diadocidiidae, Ditomyiidae and Keroplatidae. – *Časopis Slezijského zemského muzea (A)* 60: 11–23.
- (2011b): Fungus gnats (Diptera: Sciaroidea) of the Gemer region (Central Slovakia): Part 2 – Mycetophilidae. – *Časopis Slezijského zemského muzea Opava (A)* 60: 97–126.
- Ševčík J., Kasprák D. & Mantič M. (2013): New records of nematoceros Diptera from Muranska planina National park (Central Slovakia)/Nove nalezky nematocernich dvoukridlych z Narodniho parku Muranska planina (stredni Slovensko). – *Acta Musei Silesiae, Scientiae Naturales* 62(2): 185–189.
- Sikora T., Sopuch K. & Ševčík J. (2023): New records of Cecidomyiidae and other Sciaroidea (Diptera) from Slovakia. – *Acta Musei Silesiae, Scientiae Naturales* 72(3): 195–207.
- Väisänen R. (1984): A monograph of the genus *Mycomya* Rondani in the Holarctic region (Diptera, Mycetophilidae). – *Acta Zoologica Fennica* 177: 1–346.

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