

Research article

The type specimens of Keroplatidae and Mycetophilidae (Diptera: Sciarioidea) in the collection of the National Museum of Natural History, Sofia

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Abstract: A catalogue of type specimens of fungus gnats (Diptera: Sciarioidea) in the collection of the National Museum of Natural History, Bulgarian Academy of Sciences, Sofia (NMNHS) is presented. Label information, specimen condition, and preservation details are provided. Primary types include 11 extant and one fossil Mycetophilidae species (*Acnemia vrazzatica* Bechev, *Anaclileia beshovskii* Bechev, *Chalastonepsia vumanhi* Kazandzhieva, †*Ectrepesthoneura arturi* Bechev, *Ectrepesthoneura ledenikiensis* Bechev, *Greenomyia tomovi* Bechev & Pavlova, *Leia graeca* Bechev, *Mycetophila devioidea* Bechev, *Polylepta meridionalis* Bechev (junior syn. of *P. zonata*), *Sciophila muglolutea* Bechev & Koç, *Sciophila turkolutea* Bechev & Koç, *Sciophila zaitzevi* Bechev) and six Keroplatidae species (*Macrocera gemagea* Bechev, *Macrorrhyncha thracica* Bechev, *Macrorrhyncha veleka* Bechev, *Monocentrotia matilei* Bechev, *Orfelia gruevi* Bechev, *Urytalpa chandleri* Bechev & Koç). Paratypes of five Mycetophilidae (*A. vrazzatica* Bechev, *A. beshovskii* Bechev, *Dziedzickia pectinata* Ševčík, Bechev & Hippa, *M. devioidea* Bechev, *P. meridionalis* Bechev) and three Keroplatidae species (*Macrorrhyncha anatolica* Bechev, *M. matilei* Bechev, *O. gruevi* Bechev) are also documented.

Keywords: Bulgaria, fungus gnats, Greece, Oriental Region, Turkey, types

Introduction

Fungus gnats from the families Mycetophilidae and Keroplatidae (Diptera: Sciarioidea) are a highly diverse group and exhibit substantial morphological variation, yet their taxonomy and distribution remain incompletely known in the Balkans (Bechev, 1997a). This study examines holotypes of seventeen extant Mycetophilidae and Keroplatidae species – eleven from Bulgaria, three from Turkey, two from Greece, and one from Vietnam – along with a fossil species from Poland preserved in Baltic amber. In addition, paratypes of nine species are documented, including seven from Bulgaria, two from Turkey, and one from Thailand. The main part of the collection has been deposited in the National Museum of Natural History, Bulgarian Academy of Sciences, Sofia (NMNHS) by

Dimitar Bechev in 2023. These specimens form an important reference for taxonomic verification and comparative studies. Aside from the type material documented in the present article, the NMNHS collections represent a valuable research resource, comprising more than 75,000 ethanol-preserved specimens of Keroplatidae and Mycetophilidae from Bulgaria collected during 2002–2004 and 2018–2019 (Pavlova, 2020).

In Bulgaria, the only other substantial collection is at the Regional Natural History Museum – Plovdiv, comprising 308 Palearctic species, type material of five Oriental species, and additional unsorted specimens (Kazandzhieva, 2025).

The work of Dimitar Bechev has been significant in advancing knowledge of fungus gnats. By documenting and analysing these types, this study rein-



Fig. 1. Preservation of dry type specimens in the Entomological collection of NMNHS.



Fig. 2. Preservation of ethanol type specimens in the Entomological collection of NMNHS.

forces the value of museum collections for future taxonomic research, species identification, and integration of molecular data.

Material and methods

Type specimens are listed alphabetically, with entries providing family, subfamily, tribe, genus, original combination, taxonomic status, original description, type locality, specimen details (including labels), and preservation notes. Label text is quoted in double quotation marks, specifying paper type and technique (handwritten or printed). Placement hierarchy (from top to bottom) of the label on the pin or vial is noted in

round brackets. Individual lines of text are separated by “|”, while larger spaces created by one or more blank lines, or text written on opposite sides of the label, are indicated by “||”. All dry type specimens were photographed using an Olympus TG-7 camera in microscope mode. Figures were assembled in GIMP v3.04, with measurements and scale bars generated in FIJI (v1.54p; Schindelin et al., 2012). Each dry type specimen is illustrated; Fig. 1 shows the full dry type collection. Ethanol-preserved specimens are summarised in Fig. 2.

The collection was digitised in the Specify database. Each specimen received a two-sided label: one side with the catalog number and QR code, the reverse reproducing the original label data. Catalog numbers are provided for all specimens.

Results

Family Keroplatidae Rondani, 1856
Subfamily Keroplatinae Rondani, 1856
Tribe Orfeliini Matile, 1990
Macrorrhyncha Winnertz, 1846

Macrorrhyncha anatolica Bechev, 2010

Bechev, 2010: 336 (original description). Type locality: Turkey, Aydın, Bozdoğan. Paratype ♂ with labels: (1) printed (on white paper) in large vial “*Macrorrhyncha anatolica* | Bechev, PARATYPE

[sic!], male” (2) printed (on white paper) in small vial “*Macrorrhyncha anatolica* | Bechev, Paratype [sic!], male” (3) printed (on white paper) “TURKEY: Aydın, Bozdoğan, Yaka | Village, 37°38' N/ 28°22' E, | 115 m a.s.l., 22.04.2005, leg. H. | Koç, A. Karaman & O. Özgül”. Preservation: In ethanol, in two plastic vials, male genitalia in glycerol microvial within same vial as specimen. Catalog number: BG-NMNHS-ENT-000000034435. Paratype ♀ with labels: (1) printed (on white paper) in large vial “*Macrorrhyncha anatolica* | Bechev, female | det. D. Bechev, 2008 | (handwritten) paratype || TURKEY: Aydın, Çine, Eskiçine | Village, Çine Stream, 37°31' N/ | 28°04' E, 80 m a.s.l., | 21.04.2005, leg. H. Koç, A. | Karaman & O. Özgül” (2) handwritten (on white paper) “paratype | female” (3) printed (on white paper) in small vial “*Macrorrhyncha anatolica* | Bechev, female | det. D. Bechev, 2008”. Preservation: In ethanol in two plastic vials, genitalia not detached. Catalog number: BG-NMNHS-ENT-000000034436.

Macrorrhyncha thracica Bechev, 1997

Described as *Macrorrhyncha geranias thracica* in Bechev, 1997b: 105. Raised to species level by Bechev, 2010: 340. Type locality: Greece, Trakia, NE of Sanda. Holotype ♂ with labels (1) printed (on red paper) in large vial “Diptera: Keroplatidae | *Macrorrhyncha thracica* Bechev, 1997 | HOLOTYPE ♂” (2) printed (on white paper) in small vial “*Macrorrhyncha geranis* [sic!] | *thracica* ssp. n. | det. Bechev, 1996 | Holotype, male (3) printed (on white paper) in small vial “*Macrorrhyncha thracica* Bechev, | 1997 stat. n. | det. Bechev, 2008” (4) printed (on white paper with black borders marked PRIRODOSLOVNI MUZEJ SLOVENJE) in small vial “GREECE: Trakia | NE of Sanda, Sapka Mts. | 41°07'06"N, 25°49'43"E | 24.5.1994 220 m | Leg. I. Sivec, B. Horvat”. Preservation: In ethanol, in two plastic vials, male genitalia in glycerol microvial within same vial as specimen. Catalog number: BG-NMNHS-ENT-000000034437.

Macrorrhyncha veleka Bechev, 1992

Bechev, 1992: 62 (original description). Type locality: Bulgaria, Sinemorets. Holotype ♂ (Fig. 3) with labels (1) printed (on carton paper) “BG



Fig. 3 Habitus of *Macrorrhyncha veleka*. Holotype ♂ (BG-NMNHS-ENT-000000034467). Scale bar 1 mm.

Sinemoretz | 21.6.89 | D. Bechev” (2) printed (on white paper) “*Macrorrhyncha | veleka* Bechev | HOLOTYPE ♂”. Preservation: Mounted dry on a cardboard point; male genitalia in glycerol-filled microtube pinned between labels 1 and 2. Catalog number: BG-NMNHS-ENT-000000034467.

Monocentrotia Edwards, 1925

Monocentrotia matilei Bechev, 1989

Bechev, 1989: 173 (original description). Type locality: Bulgaria, Osenovlag. Holotype ♂ with labels (1) printed (on pale red paper) in large vial “Bulgaria | W Balkan Range | v. Osenovlag | 6.08.1987 | leg. D. Bechev || *Monocentrotia | matilei* Bechev | Holotype, male” (2) handwritten two-sided (on carton paper) folded in small vial “*Monocentrotia matilei* | holotype” || “Bulgaria, West Balkan Range | v. Osenovlag, 6.08.87, D. Bechev”. Preservation: In ethanol, in two plastic vials, male genitalia in glycerol microvial within same vial as specimen. Catalog number: BG-NMNHS-ENT-000000034440. Paratype ♂ (Fig. 4) with labels (1) handwritten (on carton paper) “Bulgaria | Vratza | 10.7.1982 | D. Bechev” (2) / handwritten (on carton paper) “*Monocentrotia | matilei* Bechev | paratype” (3) printed (on white paper) “*Monocentrotia matilei* | Bechev, 1989 | PARATYPE ♂”. Preservation: Mounted dry on a cardboard point, one severed leg, glued on the same card; male genitalia in glycerol-filled microvial pinned between labels 1 and 2. Catalog number: BG-NMNHS-ENT-000000034469. Paratype ♂ (Fig. 5) with labels (1)

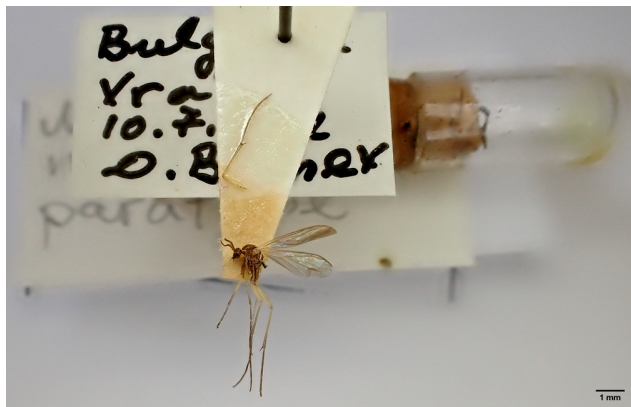


Fig. 4. Habitus of *Monocentrotia matilei*. Paratype ♂ (BG-NMNHS-ENT-000000034469). Scale bar 1 mm.



Fig. 5. Habitus of *Monocentrotia matilei*. Paratype ♂ (BG-NMNHS-ENT-000000034470). Scale bar 1 mm.

handwritten (on carton paper) "Bulgaria | Vratza | 21.07.87 | D. Bechev" (2) / handwritten (on carton paper) "*Monocentrotia matilei* | paratype" (3) printed (on white paper) "*Monocentrotia matilei* | Bechev, 1989 | PARATYPE ♂". Preservation: Mounted dry on a cardboard point; male genitalia in glycerol-filled microtube pinned above label 1. Catalog number: BG-NMNHS-ENT-000000034470.

Orfelina Costa, 1857

Orfelina gruevi Bechev, 2002

Bechev, 2002: 199 (original description). Type locality: Bulgaria, Varna. Holotype ♂ (Fig. 6) with labels (1) handwritten (on carton paper) "BG, Varna |



Fig. 6. Habitus of *Orfelina gruevi*. Holotype ♂ (BG-NMNHS-ENT-000000034460). Scale bar 1 mm.

9.VI.90 | D. Bechev" (2) printed (on white paper) "*Orfelina gruevi* Bechev | HOLOTYPE ♂". Preservation: Mounted dry on a cardboard point; male genitalia in glycerol, within a concave transparent celluloid plate, pinned between labels 1 and 2. Catalog number: BG-NMNHS-ENT-000000034460. Paratype ♂ (Fig. 7 A) with labels (1) printed (on carton paper) "Skorpilovtzi | 8.VI.90 | D. Bechev" (2) "*Orfelina gruevi* Bechev | PARATYPE ♂". Preservation: Mounted dry on a cardboard point; one leg and the male genitalia in glycerol within a concave transparent celluloid plate, pinned between labels 1 and 2. Catalog number: BG-NMNHS-ENT-000000034461. Paratypes 5 ♂♂ (Fig. 7 B–F) with labels (1) handwritten (on carton paper) "BG, Varna | 9.VI.90 | D. Bechev" (2) printed (on white paper) "*Orfelina gruevi* Bechev | PARATYPE ♂". Preservation: Mounted dry on a cardboard point; male genitalia in glycerol within a concave transparent celluloid plate, pinned between labels 1 and 2. Catalog numbers: BG-NMNHS-ENT-000000034462 (Fig. 7 B); BG-NMNHS-ENT-000000034463 (Fig. 7 C); BG-NMNHS-ENT-000000034464 (Fig. 7 D); BG-NMNHS-ENT-000000034465 (Fig. 7 E); BG-NMNHS-ENT-000000034466 (Fig. 7 F).

Urytalpa Edwards, 1929

Urytalpa chandleri Bechev & Koç, 2008

Bechev & Koç, 2008: 31 (original description). Type locality: Turkey, Aydın, Koçarlı. Holotype ♂ with labels (1) printed (on red paper) in large vial

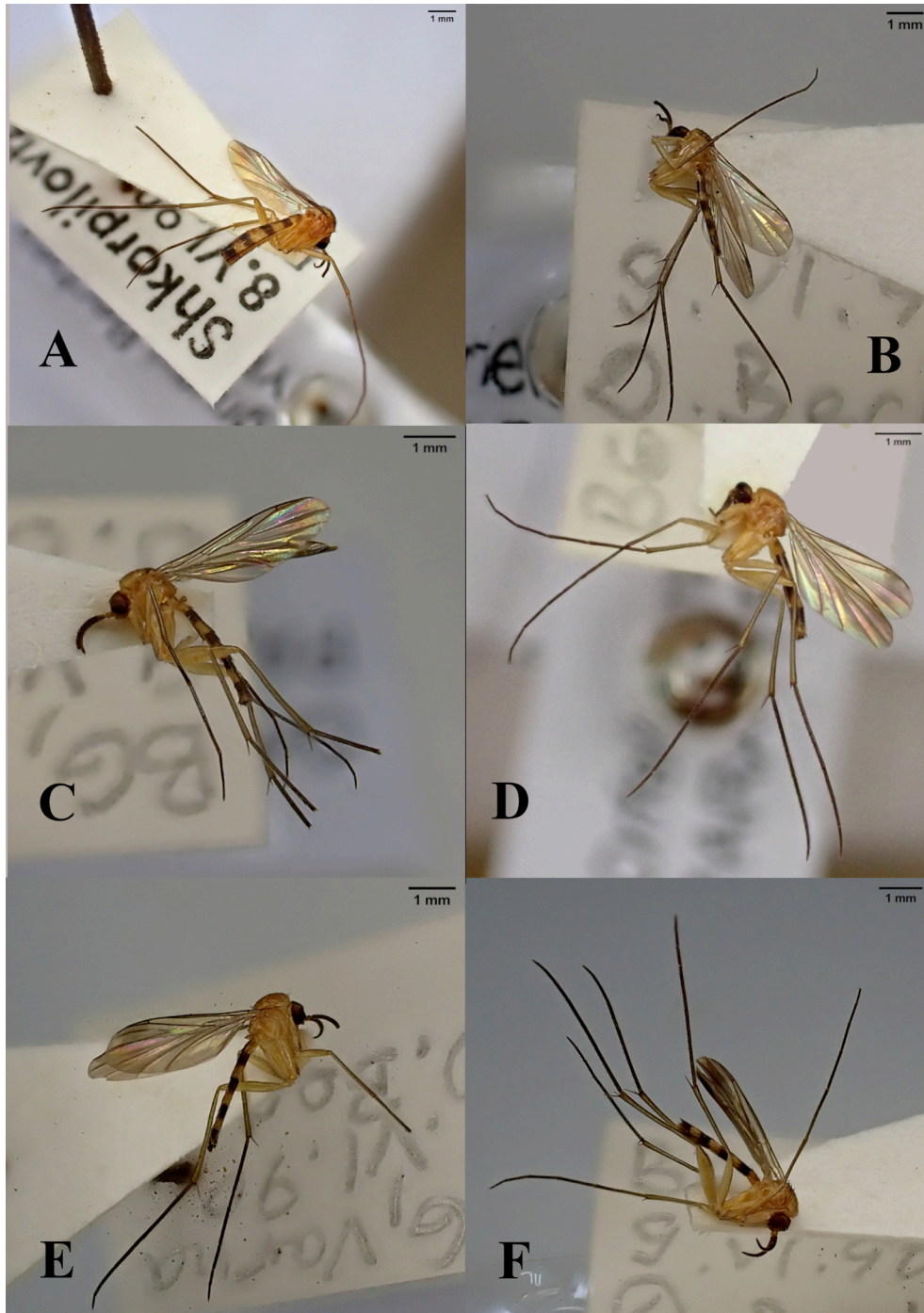


Fig. 7. Habitus of *Orfelia gruevi*. A – Paratype ♂ (BG-NMNHS-ENT-000000034461) B – Paratype ♂ (BG-NMNHS-ENT-000000034462) C – Paratype ♂ (BG-NMNHS-ENT-000000034463) D – Paratype ♂ (BG-NMNHS-ENT-000000034464) E – Paratype ♂ (BG-NMNHS-ENT-000000034465) F – Paratype ♂ (BG-NMNHS-ENT-000000034466). Scale bars 1 mm.

“*Urytalpa chandleri* Bechev & | Koç, 2008 Holotype, male | Turkey, Aydın, Koçarlı, Tekeli | Village 37°46' N / 27°38' E, 25 m | a.s.l, 09.04.2005, leg. H. Koç” (2) printed (on white paper) in small vial “Turkey, Aydın, Koçarlı, | Tekeli Village 37°46' N / 27°38' E | 25 m

a.s.l, 09.04.2005, leg. H. Koç | *Urytalpa chandleri* Bechev & | Koç, 2008 Holotype, male”. Preservation: In ethanol, in two plastic vials, male genitalia in glycerol microvial within same vial as specimen. Catalog number: BG-NMNHS-ENT-000000034431.

Subfamily Macrocerinae [Rondani, 1856]
Tribe Macrocerini Rondani, 1856

Macrocera Meigen, 1803

Macrocera gemagea Bechev, 1991

Bechev, 1991: 185 (original description). Type locality: Bulgaria, Veslets. Holotype ♂ (Fig. 8) with labels (1) printed (on pale red paper) “*Macrocera gemagea* Bechev | Holotype, male” (2) printed (on white paper) “Bulgaria | W Balkan Range | Vesletz | 20.07.1982 | leg. D. Bechev”. Preservation: Mounted dry on a cardboard point; male genitalia in glycerol within a concave celluloid plate, sealed with a transparent cover, pinned below label 2. Catalog number: BG-NMNHS-ENT-000000034468.

Family Mycetophilidae Newman, 1834
Subfamily Gnoristinae Edwards, 1925
Dziedzickia Johannsen, 1909

Dziedzickia pectinata Ševčík, Bechev & Hippa, 2011

Ševčík, Bechev & Hippa, 2011: 691 (original description). Type locality: Thailand, Nakhon Nayok, Khao Yai NP. Paratype ♂ with labels (1) printed (on green paper) in large tube “Diptera: Mycetophilidae | *Dziedzickia pectinata* Ševčík, Bechev & Hippa, 2011 PARATYPE ♂” (2) printed (on white paper in large vial “Thailand: Nakhon Nayok, Khao | Khao Yai N.P., Tao Tapoo, | 14.-24.5.2001” (3) printed (on white paper) in small vial “*Dziedzickia pectinata* | Ševčík, Bechev & Hippa, 2011 | Paratype, male” (4) printed (on white paper) in small vial “Thailand: Nakhon Nayok, Khao | Khao Yai N.P., Tao Tapoo, | 14.-24.5.2001”. Preservation: In ethanol, in two plastic vials, male genitalia in glycerol microvial within same vial as specimen. Catalog number: BG-NMNHS-ENT-000000034433. Paratypes 4 ♂♂ with labels (1) printed (on green paper) in large tube “Diptera: Mycetophilidae | *Dziedzickia pectinata* Ševčík, Bechev & Hippa, 2011 PARATYPE 4 ♂” (2) printed (on white paper in large vial “Thailand: Nakhon Nayok, Khao | Khao Yai N.P., Tao Tapoo, | 14.-24.5.2001” (3) printed (on white paper) in small vial “*Dziedzickia pectinata* | Ševčík, Bechev & Hippa, 2011 | Paratype, 4♂” (4) printed (on white



Fig. 8. Habitus of *Macrocera gemagea*. Holotype ♂ (BG-NMNHS-ENT-000000034468). Scale bar 1 mm.



Fig. 9. Habitus of *Ectrepesthoneura ledenikiensis*. Holotype ♂ (BG-NMNHS-ENT-000000034449). Scale bar 1 mm.

paper) in small vial “Thailand: Nakhon Nayok, Khao | Khao Yai N.P., Tao Tapoo, | 14.-24.5.2001”. Preservation: In ethanol in two plastic vials; male genitalia not detached. Catalog number: BG-NMNHS-ENT-000000034434.

Subfamily Leiinae Edwards, 1925
Ectrepesthoneura Enderlein, 1910

Ectrepesthoneura ledenikiensis Bechev, 1988

Bechev, 1988a: 185 (original description). Holotype ♂ (Fig. 9) with labels (1) printed (on pale red paper) “*Ectrepesthoneura ledenikiensis* | Bechev | Holotype, male” (2) “Bulgaria | W Balkan Range | Vrachanska Mts. | Ledenika | 5.04.1986 | leg. D. Bechev”. Preservation: Mounted dry on a cardboard

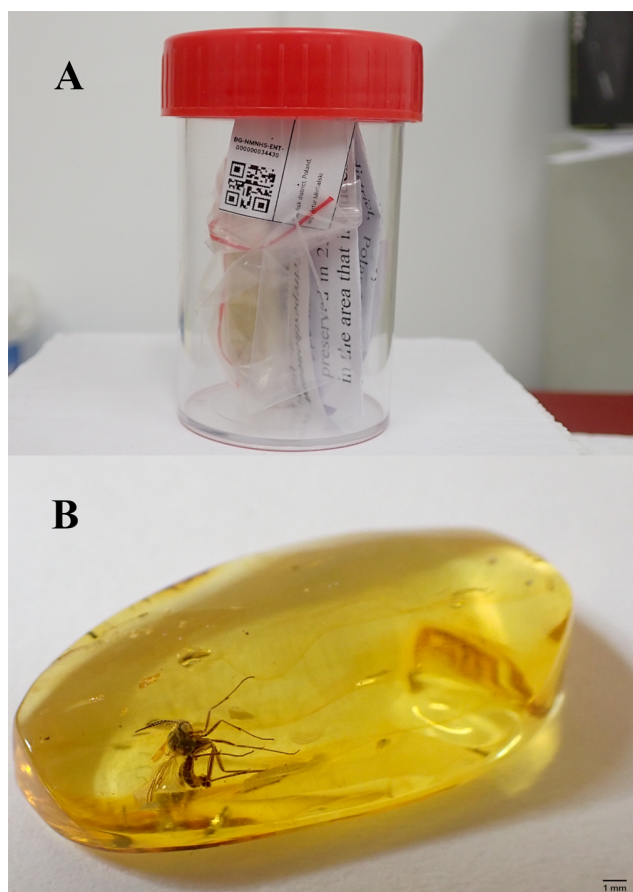


Fig. 10. Habitus of †*Ectrepesthoneura arturi*. A – Preservation in the collection of NMNHS. B. Amber inclusion with Holotype ♂ (BG-NMNHS-ENT-000000034430). Scale bar 1 mm.

point; male genitalia in glycerol-filled microtube, pinned below label 2. Catalog number: BG-NMNHS-ENT-000000034449.

†*Ectrepesthoneura arturi* Bechev, 2025

Bechev, 2025: 132 (original description). Type locality: Poland, Gdańsk district. Holotype ♂ (Fig. 10) with labels (1) printed (on white paper) “*Ectrepesthoneura arturi* sp. n. | urn:lsid:zoobank.org:act: | DF76F0ED-08B9-4124-A1D8-291175AAC268 | Type material. Holotype ♂: Baltic amber inclusion | preserved in 25×13×6 mm piece of amber collected | in the area that includes the villages of Mikoszewo, | Jantar, Stegna and Sztutowo, Gdańsk district, Poland, | leg. Artur Michalski, | in National Museum of Natural History, Sofia, | Bulgaria | Bechev, D. (2025)



Fig. 11. Habitus of *Leia graeca*. Holotype ♂ (BG-NMNHS-ENT-000000034448). Scale bar 1 mm.

Ectrepesthoneura arturi sp. n. from Baltic amber (Diptera: Mycetophilidae). *Historia naturalis bulgarica*, 47, 131-136” (2) printed (on white paper) “*Ectrepesthoneura arturi* sp. n. | Holotype ♂: Baltic amber inclusion”. Preservation: Piece of amber preserved in a plastic bag inside a plastic vial. Catalog number: BG-NMNHS-ENT-000000034430.

Greenomyia Brunetti, 1912

Greenomyia tomovi Bechev & Pavlova, 2012

Bechev & Pavlova, 2012: 109 (original description). Type locality: Bulgaria, Eastern Rhodopes. Holotype ♂ with labels (1) printed (on red paper) in large vial “Diptera: Mycetophilidae | *Greenomyia tomovi* Bechev & Pavlova, | 2012, HOLOTYPE ♂” (2) printed (on red paper) in small vial “Bulgaria, East Rhodopes Mts., | near Madzharovo Town, | 14.10.2000” (3) printed (on red paper) in small vial “*Greenomyia tomovi* Bechev & | Pavlova, 2012, HOLOTYPE ♂”. Preservation: In ethanol, in two plastic vials, male genitalia in glycerol microvial within same vial as specimen. Catalog number: BG-NMNHS-ENT-000000034432.

Leia Meigen, 1818

Leia graeca Bechev, 1997

Bechev, 1997c: 179 (original description). Type locality: Greece, Farsala. Holotype ♂ (Fig. 11) with labels (1) printed (on carton paper) “GREECE |



Fig. 12. Habitus of *Mycetophila devioides*. Holotype ♂ (BG-NMNHS-ENT-000000034451). Scale bar 1 mm.



Fig. 13. Habitus of *Mycetophila devioides*. Paratype ♂ (BG-NMNHS-ENT-000000034453). Scale bar 1 mm.

Farsala | 20.04.94 | D. Bechev” (2) handwritten (on carton paper) “*Leia | graeca* sp. n. | holotype” (3) printed (on white paper) “*Leia | graeca* Bechev | HOLOTYPE ♂”. Preservation: Mounted dry on a cardboard point; male genitalia in glycerol within a concave plastic plate, pinned below label 2. Catalog number: BG-NMNHS-ENT-000000034448.

Subfamily Metanepsiinae
Chalastonepsia Söli, 1996

Chalastonepsia vumanhi Kazandzhieva, 2025

Kazandzhieva, 2025 in Kazandzhieva, Langourov, Bechev & Van Nguyen, 2025: e153645 (original description). Type locality: Vietnam, Tam Dao NP. Holotype ♂ with labels (1) printed (on red paper) in

large vial “*Chalastonepsia vumanhi* Kazandzhieva, 2025 | Holotype, ♂ | N. VIETNAM: Vĩnh Phúc Province: Tam Dao NP, Tam Đảo, ab| Chùa Vàng Tam Đảo, 1067 m, 21° 27.6348' N, 105° 38.9184' E, | 16 Oct 2023, Bekchiev, Simov, Langourov leg. (NMNHS)”. (2) printed (on white paper) in small vial with round red sticker “N. VIETNAM: Vĩnh Phúc Province: Tam Dao NP, Tam Đảo, ab| Chùa Vàng Tam Đảo, 1067 m, 21° 27.6348' N, 105° 38.9184' E, | 16 Oct 2023, Bekchiev, Simov, Langourov leg. (NMNHS)” (3) printed (on white paper) “*Chalastonepsia vumanhi* Kazandzhieva, 2025 | Holotype, ♂” (4) printed (on white paper) in second small vial “*Chalastonepsia vumanhi* Kazandzhieva, 2025 | holotype ♂ Legs”. Note: The specimen is damaged, with several legs detached. These are preserved in a separate microvial and comprise: one fore leg (femur, tibia and tarsus), two mid legs (one partly attached to the specimen but lacking distal tarsomeres), and two hind legs (one lacking tarsus). Preservation: In ethanol in three plastic vials; male genitalia in glycerol microvial within same vial as specimen. Catalog number: BG-NMNHS-ENT-000000019865.

Subfamily Mycetophilinae Newman, 1834
Tribe Mycetophilini Newman, 1834
Mycetophila Meigen, 1803

Mycetophila devioides Bechev, 1988

Bechev, 1988a: 185 (original description). Type locality: Bulgaria, Balkan Mountains. Holotype ♂ (Fig. 12) with labels (1) printed (on pale red paper) “*Mycetophila | devioides* Bechev | Holotype, male” (2) printed (on white paper) “Bulgaria | W Balkan Range | h. Bjalata voda | 26.6.1982 | leg. D. Bechev”. Preservation: Mounted dry on a cardboard point; male genitalia in glycerol-filled microtube, pinned below label 2. Catalog number: BG-NMNHS-ENT-000000034451. Paratypes 2 ♂♂ (Figs 13–14) with labels (1) handwritten (on carton paper) “Bulgaria | h. B. voda | 26.6.1982 | D. Bechev” (2) “*Mycetophila | devioides* Bech. | paratypus”. Preservation: Mounted dry on a cardboard point; male genitalia not detached. Catalog numbers: BG-NMNHS-ENT-000000034453 (Fig. 13); BG-NMNHS-ENT-000000034454 (Fig. 14). Paratype ♂ (Fig. 15) with labels (1) handwritten (on carton paper) “Bulgaria |

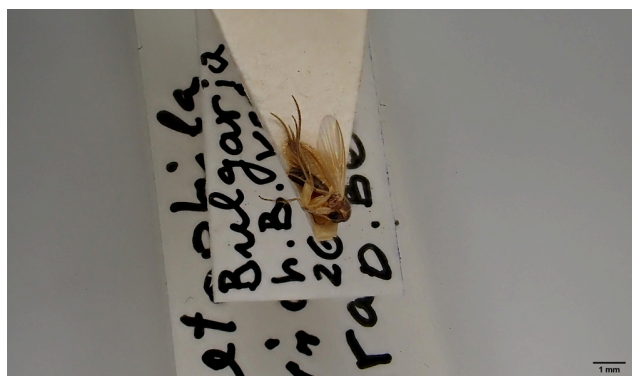


Fig. 14. Habitus of *Mycetophila devioidea*. Paratype ♂ (BG-NMNHS-ENT-000000034454). Scale bar 1 mm.

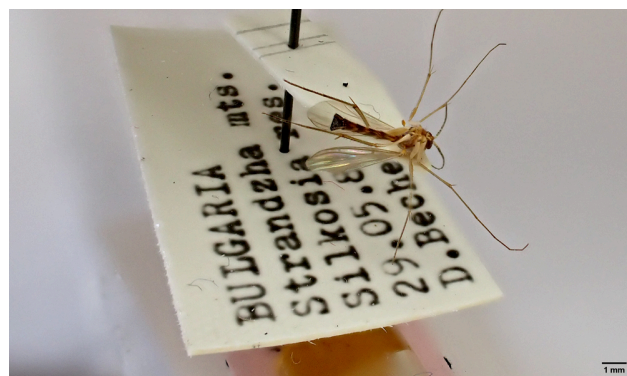


Fig. 17. Habitus of *Polylepta meridionalis*. Holotype ♂ (BG-NMNHS-ENT-000000034457). Scale bar 1 mm.



Fig. 15. Habitus of *Mycetophila devioidea*. Paratype ♂ (BG-NMNHS-ENT-000000034452). Scale bar 1 mm.

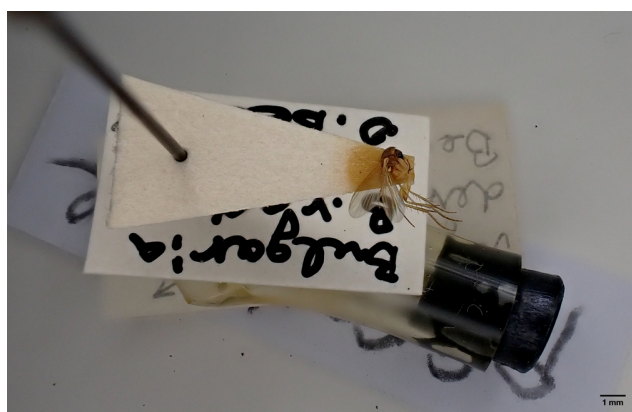


Fig. 16. Habitus of *Mycetophila devioidea*. Paratype ♂ (BG-NMNHS-ENT-000000034455). Scale bar 1 mm.

h. B. voda | 26.6.1982 | D. Bechev" (2) "*Mycetophila devioidea* Bech. | paratypus". Preservation: Mounted dry on a cardboard point; male genitalia in

glycerol within a concave transparent celluloid plate, pinned between labels 1 and 2. Catalog number: BG-NMNHS-ENT-000000034452. Paratype ♂ (Fig. 16) with labels (1) handwritten (on carton paper) "Bulgaria | h. B. voda | 10.7.1982 | D. Bechev" (2) handwritten (on white paper) "paratype" (3) handwritten (on carton paper) "*Mycetophila devioidea* | Bechev". Preservation: Mounted dry on a cardboard point; male genitalia in glycerol-filled microtube pinned between labels 1 and 2. Catalog number: BG-NMNHS-ENT-000000034455.

Polylepta meridionalis Bechev, 1990

Bechev, 1990: 182 (original description), junior synonym of *P. zonata* (Kurina, 2003: 94). Type locality: Bulgaria, Strandzha. Holotype ♂ (Fig. 17) with labels (1) printed (on carton paper) "Bulgaria | Strandzha mts. | Silkosia res. | 29.05.87 | D. Bechev" (2) printed (on pale red paper) "*Polylepta meridionalis* Bechev | Holotype, male" (3) "Bulgaria | Strandzha Mts. | Silkosia res. | 29.5.1987 | leg. D. Bechev". Preservation: Mounted dry on a cardboard point; male genitalia in glycerol-filled microtube pinned between labels 1 and 2. Catalog number: BG-NMNHS-ENT-000000034457. Paratype ♀ (Fig. 18) with labels (1) printed (on carton paper) "BG Slavyanka | Goleshovo 5.6.88 | D. Bechev" (2) printed (printed on green paper) "*Polylepta meridionalis* Bechev | Paratype, female". Preservation: Mounted dry on a cardboard point; female genitalia in glycerol-filled microtube pinned between labels 1 and 2. Catalog number: BG-NMNHS-ENT-000000034458. Paratype ♀ (Fig. 19)



Fig. 18. Habitus of *Polylepta meridionalis*. Paratype ♀ (BG-NMNHS-ENT-000000034458). Scale bar 1 mm.



Fig. 19. Habitus of *Polylepta meridionalis*. Paratype ♀ (BG-NMNHS-ENT-000000034459). Scale bar 1 mm.

with labels (1) handwritten, in Cyrillic [here transliterated] (on carton paper) “[Hambar dere] | (2)” (2) handwritten on carton paper “*Polylepta* ♀ | ? n. sp.” (3) “*Polylepta* ♀ | *meridionalis* | n. sp.” (4) “paratype”. Preservation: Female genitalia in glycerol within a concave transparent celluloid plate, pinned between labels 2 and 3. Catalog number: BG-NMNHS-ENT-000000034459.

Subfamily Sciophilinae Rondani, 1840

Acnemia Winnertz, 1864

Acnemia vratzatica Bechev, 1985

Bechev, 1985: 35 (original description). Type locality: Bulgaria, Vratsa. Holotype ♂ (Fig. 20) with labels (1) handwritten (on carton paper) “*Acnemia* | *vratzatica* Bechev | holotype” (2) handwritten (on carton paper) “Bulgaria | Vratza Mnt., 550 m. | 13.07.1982 | leg. D. Bechev” (3) “5 km. south of Vratza” (4) printed (on pale red paper) “*Acnemia* | *vratzatica* Bechev | holotype, male” (5) printed (on white paper) “Bulgaria | The Balkans | Vtarsa Mts. | 13.07.1982 | leg. D. Bechev”. Preservation: Mounted dry on a cardboard point; male genitalia in a glycerol-filled microtube, pinned between labels 3 and 4. Catalog number: BG-NMNHS-ENT-000000034441. Paratype ♂ (Fig. 21) with labels (1) handwritten (on carton paper) “*Acnemia* | *vratzatica* Bechev | paratype” (2) “Bulgaria | Vratza Mnt., 550 m. | 5.07.1983 | leg. D. Bechev” (3) “5 km. south | of Vratza”. Preservation: Mounted dry on a cardboard point; male genitalia in a glycerol-filled microtube,

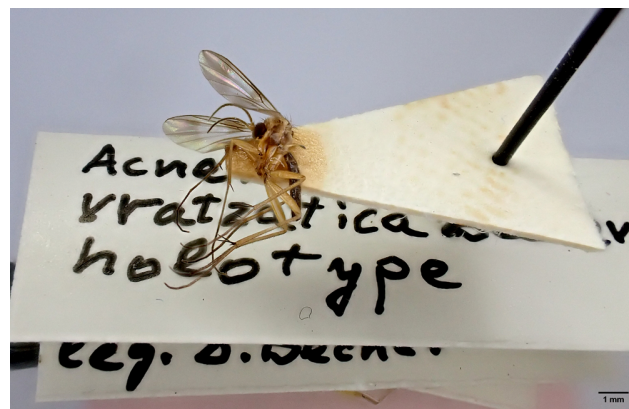


Fig. 20. Habitus of *Acnemia vratzatica*. Holotype ♂ (BG-NMNHS-ENT-000000034441). Scale bar 1 mm.



Fig. 21. Habitus of *Acnemia vratzatica*. Paratype ♂ (BG-NMNHS-ENT-000000034442). Scale bar 1 mm.

pinned below label 3. Catalog number: BG-NMNHS-ENT-000000034442.



Fig. 22. Habitus of *Anacileia beshovskii*. Holotype ♂ (BG-NMNHS-ENT-000000034443). Scale bar 1 mm.



Fig. 24. Habitus of *Anacileia beshovskii*. Paratype ♂ (BG-NMNHS-ENT-000000034446). Scale bar 1 mm.



Fig. 23. Habitus of *Anacileia beshovskii*. Paratype ♂ (BG-NMNHS-ENT-000000034445). Scale bar 1 mm.

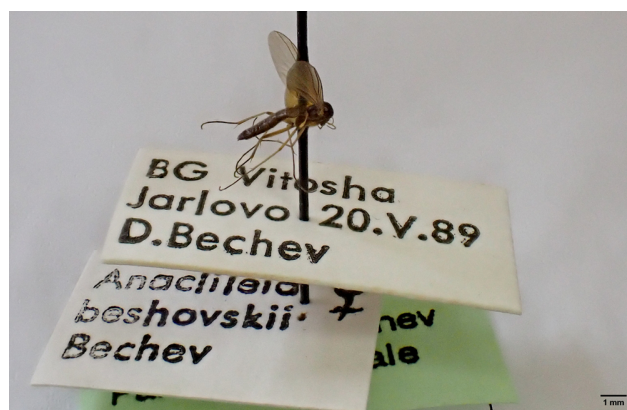


Fig. 25. Habitus of *Anacileia beshovskii*. Paratype ♀ (BG-NMNHS-ENT-000000034444). Scale bar 1 mm.

Anacileia Meunier, 1904

Anacileia beshovskii Bechev, 1990

Bechev, 1990: 68 (original description). Type locality: Bulgaria, Parshevitza. Holotype ♂ (Fig. 22) with labels (1) handwritten (on carton paper) “Bulgaria | Parshevitza | 12.6.1982 | D. Bechev” (2) printed (on pale red paper) “*Anacileia beshovskii* Bechev | Holotype, male” (3) printed (on white paper) “Bulgaria | Vrachanska Mts. | Patshevitza | 12.6.1982 | leg. D. Bechev”. Preservation: Mounted dry on a cardboard point; male genitalia in glycerol-filled microvial pinned between labels 1 and 2. Catalog number: BG-NMNHS-ENT-000000034443. Paratype ♂ (Fig. 23) with labels (1) handwritten (on carton paper) “Bulgaria | Boatin | 6.6.1982 | D. Bechev” (2) printed (on carton paper) “*Anacileia beshovskii* ♂ |



Fig. 26. Habitus of *Anacileia beshovskii*. Paratype ♀ (BG-NMNHS-ENT-000000034447). Scale bar 1 mm.

Bechev” (3) “PARATYPE”. Preservation: Mounted dry on a cardboard point; male genitalia in a glycerol-filled microtube, pinned between labels 1 and 2.

Catalog number: BG-NMNHS-ENT-000000034445. Paratype ♂ (Fig. 24) with labels (1) printed (on carton paper) “BG Vitosha | Jarlovo 20.V.89 | D. Bechev” (2) “*Anaclileia | beshovskii* ♂ | Bechev” (3) “PARATYPE”. Preservation: Mounted dry on a pin; male genitalia not detached. Catalog number: BG-NMNHS-ENT-000000034446. Paratype ♀ (Fig. 25) with labels (1) printed (on carton paper) “BG Vitosha | Jarlovo 20.V.89 | D. Bechev” (2) “*Anaclileia | beshovskii* ♀ | Bechev” (3) printed (on green paper) “*Anaclileia | beshovskii* Bechev | Paratype, female”. Preservation: Mounted dry on a pin; female genitalia not detached. Catalog number: BG-NMNHS-ENT-000000034444. Paratype ♀ (Fig. 26) with labels (1) printed (on carton paper) “BG Vitosha | Jarlovo 20.V.89 | D. Bechev” (2) “*Anaclileia | beshovskii* ♀ | Bechev” (3) “PARATYPE”. Preservation: Mounted dry on a pin; female genitalia not detached. Catalog number: BG-NMNHS-ENT-000000034447.

Sciophila Meigen, 1818

Sciophila muglolutea Bechev & Koç, 2006

Bechev & Koç, 2006: 64 (original description). Type locality: Turkey, Mugla, Fethiye. Holotype ♂ with labels (1) printed (on red paper) in large vial “*Sciophila muglolutea* | Bechev & Koç, 2006 | Holotype, male” (2) printed (on white paper) in large vial “*Sciophila muglolutea* | Bechev & Koç, 2006 | Holotype, male || TURKEY: Mugla, Fethiye, | Seki Plateau, 36°49' N | 29° | 33' E 1122 m, 28.06.2003, | Leg. H. Koç & O. Özgül” (3) printed (on white paper) in small vial printed (on white paper) in large vial “*Sciophila muglolutea* | Bechev & Koç, 2006 | Holotype, male” (4) TURKEY: Mugla, Fethiye, Seki | Plateau, 36°49' N/ 29° 33' E 1122 m, | 28.06.2003, Leg. H. Koç & O. Özgül”. Preservation: In ethanol, in two plastic vials, male genitalia in glycerol microvial within same vial as specimen. Catalog number: BG-NMNHS-ENT-000000034438.

Sciophila turkolutea Bechev & Koç, 2006

Bechev & Koç, 2006: 66 (original description). Type locality: Turkey, Denizli, Acipayam. Holotype ♂ with labels (1) printed (on red paper) in large vial “*Sciophila turkolutea* | Bechev & Koç, 2006 |



Fig. 27. Habitus of *Sciophila zaitzevi*. Holotype ♂ (BG-NMNHS-ENT-000000034456). Scale bar 1 mm.

Holotype, male” (2) printed (on white paper) in large vial “TURKEY: Denizli, Acipayam, | Kizilca Borough Road 10 km | 37° 28' N/29°13' E, 1287 m, | 22.04.2003, Leg. H. Koç, A. | Karaman & O. Özgül” (3) printed (on white paper) in small vial “*Sciophila turkolutea* | Bechev & Koç, 2006 | Holotype, male” (4) “TURKEY: Denizli, Acipayam, Kizilca | Borough Road 10 km 37° 28' N/29°13' | E, 1287 m, 22.04.2003, Leg. H. Koç, | A. Karaman & O. Özgül”. Preservation: In ethanol, in two plastic vials, male genitalia in glycerol microvial within same vial as specimen. Catalog number: BG-NMNHS-ENT-000000034439.

Sciophila zaitzevi Bechev, 1988

Bechev, 1988b: 187 (original description). Type locality: Bulgaria, Varshets. Holotype ♂ (Fig. 27) with labels (1) printed (on carton paper) “BULGARIA | Varshetz | B. voda | 30.5.85 | D.

Bechev” (2) handwritten (on carton paper) “*Sciophila* | *zaitzevi* Bechev | holotype” (3) printed (on white paper) “Bulgaria | W Stara Planina | Varshetz | h. Bjatala voda | 30.5.1985 | leg. D. Bechev” (4) printed (on pale red paper) “*Sciophila* | *zaitzevi* Bechev | Holotype, male”. Preservation: Mounted dry on a cardboard point; male genitalia in a glycerol-filled microtube, pinned below label 2. Catalog number: BG-NMNH-ENT-000000034456.

Discussion

This study presents the first in-depth account of the Sciaroidea type material housed in the National Museum of Natural History, Sofia, and provides a foundation for further research on the taxonomy of fungus gnats. The type collection is a key resource for advancing Mycetophilidae and Keroplatidae taxonomy and understanding regional biodiversity. Many of the specimens were described decades ago based on limited characters, and their re-examination with modern imaging and integrative approaches could provide updated redescrptions, clarify species boundaries, and reveal cryptic diversity. Linking type material to genomic data through museomics would further improve species identification and phylogenetic resolution, while non-destructive DNA extraction ensures the integrity and preservation of the specimens (Kapun, 2025; Hofreiter, 2012).

Beyond taxonomy, the collection offers unique insights into biogeographic patterns, enhances global accessibility through digitisation, and emphasises the significance of museum collections as repositories of biodiversity data.

Acknowledgements

This work was supported by the Bulgarian Ministry of Education and Science under the National Research Programme “Young scientists and postdoctoral fellows – 2” approved by DCM 206/07.04.2022.

This study was based on specimens deposited in the Entomological Collection of the National Museum of Natural History – Bulgarian Academy of Sciences, upgraded in the frames of the project DiSSCo-BG (Upgrade of the Research Infrastructure “Distributed System of Scientific Collections–Bulgaria”) funded by the National Roadmap for Research Infra-

structures, Ministry of Education and Science of the Republic of Bulgaria.

The author expresses gratitude to Dimitar Bechev for providing valuable information on the collection and to Mario Langourov for his advice and guidance.

Conflicts of interest

No potential conflict of interest has been reported by the author, reviewers, or subject editor.

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