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# Type specimens of fossil and extant species of dipterans (Insecta: Diptera) in the collection of the Department of Invertebrate Zoology and Parasitology, University of Gdańsk (Poland)

# Okazy typowe kopalnych i współczesnych gatunków muchówek (Insecta: Diptera) w kolekcji Katedry Zoologii Bezkręgowców i Parazytologii Uniwersytetu Gdańskiego (Polska)

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**ABSTRACT.** A list of the type specimens of 95 fossil and extant dipteran species (15 and 80 respectively) from the collection of the Department of Invertebrate Zoology and Parasitology, University of Gdańsk is provided. The holotype, neotype and/or paratype specimens belong to the species of the following seven families of nematocerous flies: Cecidomyiidae (2 spp.), Ceratopogonidae (59 spp.), Chaoboridae (1 spp.), Chironomidae (29 spp.), Corethrellidae (1 sp.), Culicidae (1 sp.), and Limoniidae (2 spp.).

**KEY WORDS:** Types, Cecidomyiidae, Ceratopogonidae, Chaoboridae, Chironomidae, Corethrellidae, Culicidae, Limoniidae, amber inclusions, CEI UG, MAI UG

## INTRODUCTION

According to the Recommendation 72F.4 in the International Code of Zoological Nomenclature ‘every institution in which name-bearing types are deposited should publish lists of name-bearing types in its possession or custody’ (ICZN 1999). This, together with the fact that in many cases the location of type materials remains obscure for the researchers, has triggered the idea of summarizing data on the insect collection held at the Department of Invertebrate Zoology and Parasitology, Faculty of Biology, University of Gdańsk. In this paper we present a list of all type specimens, i.e. holotypes, neotypes and also paratypes of Diptera from this collection. The list is available on our Department’s website

(http://www.kzbp.biol.ug.edu.pl/pages/pl/strona-glowna.php), and is going to be updated on a regular basis.

The collection is divided into two main sections, namely the Collection of Amber Inclusions (MAI UG) and the Collection of Extant Invertebrates (CEI UG). As recommended in the Code (Recommendation 72F.3, op cit.), all of the type materials stored in the collection are available for scientific studies upon request (please contact the curators).

## TYPE SPECIMENS OF DIPTERA IN THE COLLECTION OF MAI UG & CEI UG

### Collection of Amber Inclusions (MAI UG)

Curator: Dr. ELŻBIETA SONTAG; Laboratory of Evolutionary Entomology and Museum of Amber Inclusions, Department of Invertebrate Zoology and Parasitology, University of Gdańsk.

The collection was formally established in 1998, under the name of 'Muzeum Inkluzji w Bursztynie' [Museum of Amber Inclusions] at the Department of Invertebrate Zoology (University of Gdańsk), and at that time it contained only 63 pieces of amber with the number of inclusions totaling up to 133. Currently, there are deposited here over 5,500 amber pieces with more than 14,500 inclusions, including over 11,000 insect inclusions. All materials were donated to the MAI UG by jewelers, amber collectors, amber dealers, scientists, students, or visitors. Among approximately 40 type specimens, there are holotypes and paratypes of 15 species belonging to Diptera and the following families: Ceratopogonidae (5 spp.), Chaoboridae (1 sp.), Chironomidae (5 spp.), Corethrellidae (1 sp.), Culicidae (1 sp.), Limoniidae (2 spp.). Types in the collection belong to species described by A. BORKENT (BORKENT 2008), W. GIŁKA (GIŁKA 2010, 2011), W. GIŁKA & M. ZAKRZEWSKA (ZAKRZEWSKA & GIŁKA 2015), I. KANIA (KANIA 2014), W. KRZEMIŃSKI (KRZEMIŃSKI 2000), R. SZADZIEWSKI (SZADZIEWSKI 1998ab, 2005; SZADZIEWSKI et AL. 2015), R. SZADZIEWSKI & W. GIŁKA (SZADZIEWSKI & GIŁKA 2007), and R. SZADZIEWSKI & W.L. GROGAN Jr. (SZADZIEWSKI & GROGAN 1998ab). Each piece of amber with inclusions, including those with the type specimens, has its own individual reference number. These numbers are given in square brackets in the following list.

**Family Ceratopogonidae** (biting midges)

1. *Forcipomyia antilleana* SZADZIEWSKI et GROGAN, 1998 (Dominican amber); paratype [MAI_26].
2. *Leptoconops ellenbergeri* SZADZIEWSKI, in SZADZIEWSKI et AL. 2015 (Burmese amber); holotype [MAI_5613].
3. *Mallochohelea martae* SZADZIEWSKI, 2005 (Baltic amber); holotype [MAI _4901].
4. *Metahelea serafini* SZADZIEWSKI, 1998 (Baltic amber); holotype [MAI_111].
5. *Stilobezzia dominicana* SZADZIEWSKI et GROGAN, 1998 (Dominican amber); holotype [MAI_23].

**Family Chaoboridae** (phantom midges)

1. *Gedanoborus kerneggeri* SZADZIEWSKI et GIŁKA, 2007 (Baltic amber); holotype [MAI _4995].

**Family Chironomidae** (nonbiting midges)

1. *Stempellinella electra* GIŁKA et ZAKRZEWSKA, 2015 (Baltic amber); holotype [MAI _4295a].
2. *Tanytarsus fereci* GIŁKA, 2011 (Baltic amber); holotype [MAI _4356].
3. *Tanytarsus glaesarius* GIŁKA et ZAKRZEWSKA, 2015 (Baltic amber); holotype [MAI _415a].
4. *Tanytarsus protogregarius* GIŁKA et ZAKRZEWSKA, 2015 (Baltic amber); holotype [MAI _4325a], paratypes [MAI _4325a].
5. *Tanytarsus serafini* GIŁKA, 2010 (Baltic amber); holotype [MAI _5157].

**Family Corethrellidae** (frog-biting midges)

1. *Corethrella baltica* BORKENT, 2008 (Baltic amber); holotype [MAI _3613].

**Family Culicidae** (mosquitoes)

1. *Aedes serafini* SZADZIEWSKI, 1998 (Baltic amber); holotype [MAI _112].

**Family Limoniidae** (limonioids)

1. *Dicranomyia kalandyki* KRZEMIŃSKI, 2000 (Baltic amber); holotype [MAI _2123].
2. *Helius gedanicus* KANIA, 2014 (Baltic amber); holotype [MAI _4073].

**Collection of Extant Invertebrates (CEI UG)**

Curator: Dr. PATRYCJA DOMINIAK; Laboratory of Evolutionary Entomology and Museum of Amber Inclusions, Department of Invertebrate Zoology and Parasitology, University of Gdańsk.

The CEI UG consists of several thousand slide mounted specimens of Diptera (most of them in Canada-balsam), and at least further few thousand of specimens preserved in ethanol. The most numerous family in the dry collection (slides) is Ceratopogonidae, represented by over 410 species and approximately 14,000 specimens identified to the species level, as well as roughly 4,000 specimens still awaiting examination. The collection contains also other families, mainly of nematocerous flies, including Cecidomyiidae and Chironomidae (altogether roughly 7,000 slide mounted specimens). The majority of the materials comes from Poland, but there are also specimens collected in other European countries, Asia, Africa, both Americas and Australia.

The collection stores few neotypes designated by R. SZADZIEWSKI (SZADZIEWSKI 1984a, 1986; SZADZIEWSKI et AL. 1994, 1996), and the holotypes and the paratypes of the species described by A. BORKENT (BORKENT & BISSETT 1990), A. BORKENT & W.L. GROGAN Jr. (BORKENT & GROGAN 1995), J. CLASTRIER (CLASTRIER 1957, 1958, 1966), P. DOMINIAK (DOMINIAK & ALWIN 2013), P. DOMINIAK & B. MATHIEU (DOMINIAK & MATHIEU 2015), P. DOMINIAK et AL. (DOMINIAK et AL. 2014), T. EKREM & E. STUR (EKREM & STUR 2009), W. GIŁKA (GIŁKA 2001ab, 2005, 2009), W. GIŁKA & Ł. ABRAMCZUK (GIŁKA & ABRAMCZUK 2006), W. GIŁKA & N. JAŻDŻEWSKA (GIŁKA & JAŻDŻEWSKA 2010, 2012), W. GIŁKA & L. PAASIVIRTA (GIŁKA & PAASIVIRTA 2007, 2008, 2009), W. GIŁKA & M. ZAKRZEWSKA (GIŁKA & ZAKRZEWSKA 2013), W. GIŁKA et AL. (GIŁKA et AL. 2013), W.L. GROGAN Jr. & B. DE MEILLON (GROGAN & DE MEILLON 1993), J. KRZYWIŃSKI (SZADZIEWSKI et AL. 1994), V.

SPUNGIS (SPUNGIS 1989), E. STUR & T. EKREM (STUR & EKREM 2006), R. SZADZIEWSKI (SZADZIEWSKI 1975, 1977, 1983ab, 1984b, 1985, 1990, 1992ab, 2000, 2001; SZADZIEWSKI et AL. 1994), R. SZADZIEWSKI & P. DOMINIAK (SZADZIEWSKI & DOMINIAK 2015, SZADZIEWSKI et AL. 2015), R. SZADZIEWSKI & D.V. HAGAN (SZADZIEWSKI & HAGAN 2000), R. SZADZIEWSKI & M. HIRVENOJA (SZADZIEWSKI & HIRVENOJA 1981), and R. SZADZIEWSKI et AL. (SZADZIEWSKI et AL. 2011).

Among the types of 80 species held in the collection (Ceratopogonidae - 54 spp., Cecidomyiidae - 2 spp., Chironomidae - 24 spp.), there is as much as 63 name-bearing specimens (53 holotypes, 10 neotypes). Six neotypes designated for the biting midge species of the genus *Culicoides* LATREILLE (*C. citrinellus* KIEFFER, *C. griseidorsum* KIEFFER, *C. sahariensis* KIEFFER, *C. sergenti* KIEFFER), *Atrichopogon albiscapulus* KIEFFER and *Stilobezzia virescens* KIEFFER are still housed in CEI UG, although they should be ultimately deposited in the Museum and Institute of Zoology of the Polish Academy of Sciences (MIIZ) in Warsaw (Poland) (see SZADZIEWSKI 1984a, 1986).

**Family Cecidomyiidae** (gall midges)

1. *Arnoldiola margaritae* SZADZIEWSKI, 1975 (Poland); holotype, paratypes.
2. *Camptomyia szadziewskii* SPUNGIS, 1989 (Poland); holotype.

**Family Ceratopogonidae** (biting midges)

1. *Afrostilobezzia clastrieri* SZADZIEWSKI et DOMINIAK, 2015 (Nigeria); holotype.
2. *Allohelea vespertilio* SZADZIEWSKI, GWIZDALSKA-KENTZER et GIŁKA, 2011 (United Arab Emirates); holotype.
3. *Alluaudomyia canariensis* SZADZIEWSKI et DOMINIAK, in SZADZIEWSKI et AL. 2015 (Canary Is.); holotype, paratype.
4. *Alluaudomyia remmi* SZADZIEWSKI, 1983 (Algeria); holotype.
5. *Alluaudomyia wyskokensis* SZADZIEWSKI et DOMINIAK, in SZADZIEWSKI et AL. 2015 (Poland); holotype, paratypes.
6. *Atrichopogon albiscapulus* KIEFFER, 1918 (Algeria); neotype [MIIZ coll., temporarily deposited in CEI UG].
7. *Atrichopogon arabicus* SZADZIEWSKI, GWIZDALSKA-KENTZER et GIŁKA, 2011 (United Arab Emirates); holotype, paratypes.
8. *Atrichopogon flaveolus* ZILAHI-SEBESS, 1936 (Poland); neotype.
9. *Atrichopogon muelleri* (MÜLLER, 1905) (Poland); neotype.
10. *Atrichopogon rostratus* (WINNERTZ, 1852) (Poland); neotype.
11. *Brachypogon arabicus* SZADZIEWSKI, GWIZDALSKA-KENTZER et GIŁKA, 2011 (United Arab Emirates); holotype.
12. *Brachypogon babiogorensis* SZADZIEWSKI, in SZADZIEWSKI et AL. 1994 (Poland); holotype.
13. *Brachypogon beskidicus* KRZYWINSKI, in SZADZIEWSKI et AL. 1994 (Poland); holotype.
14. *Brachypogon bialoviesicus* KRZYWINSKI, in SZADZIEWSKI et AL. 1994 (Poland); holotype, paratypes.
15. *Brachypogon carpaticus* SZADZIEWSKI, in SZADZIEWSKI et AL. 1994 (Poland); holotype.
16. *Brachypogon clastrieri* SZADZIEWSKI, 1983 (Algeria); paratypes.

17. *Brachypogon corneti* GROGAN et DE MEILLON, 1993 (Senegal); paratypes.
18. *Brachypogon incompletus* (KIEFFER, 1925) (Poland); neotype.
19. *Brachypogon jaroslavi* SZADZIEWSKI, 1983 (Algeria); paratypes.
20. *Brachypogon kokocinski* SZADZIEWSKI, 1983 (Algeria); paratypes.
21. *Brachypogon norvegicus* SZADZIEWSKI et HAGAN, 2000 (Norway); holotype, paratypes.
22. *Brachypogon obesus* SZADZIEWSKI, GWIZDALSKA-KENTZER et GIŁKA, 2011 (United Arab Emirates); holotype.
23. *Brachypogon silecis* SZADZIEWSKI, 1990 (Poland): holotype.
24. *Brachypogon sudowicus* SZADZIEWSKI, 2001 (Poland); holotype.
25. *Brachypogon surae* SZADZIEWSKI, 1984 (Algeria); paratypes.
26. *Brachypogon vanharteni* SZADZIEWSKI, GWIZDALSKA-KENTZER et GIŁKA, 2011 (United Arab Emirates); holotype.
27. *Brachypogon zavoicus* SZADZIEWSKI, in SZADZIEWSKI et AL. 1994 (Poland); holotype.
28. *Ceratopogon azari* DOMINIAK, ALWIN et GIŁKA, 2014 (Lebanon); holotype, paratypes.
29. *Ceratopogon cavatus* BORKENT et GROGAN, 1995 (North Korea); holotype.
30. *Culicoides algeriensis* CLASTRIER, 1957 (Algeria); paratypes.
31. *Culicoides citrinellus* KIEFFER, 1923 (Algeria); neotype [MIIZ coll., temporarily deposited in CEI UG].
32. *Culicoides griseidorsum* KIEFFER, 1918 (Algeria); neotype [MIIZ coll., temporarily deposited in CEI UG].
33. *Culicoides sahariensis* KIEFFER, 1923 (Algeria); neotype [MIIZ coll., temporarily deposited in CEI UG].
34. *Culicoides semimaculatus* CLASTRIER, 1958 (Algeria); paratypes.
35. *Culicoides sergenti* KIEFFER, 1921 (Algeria); neotype [MIIZ coll., temporarily deposited in CEI UG].
36. *Dasyhelea antonii* DOMINIAK, in DOMINIAK & ALWIN 2013 (United Arab Emirates); holotype, paratypes.
37. *Dasyhelea avia* DOMINIAK, in DOMINIAK & ALWIN 2013 (United Arab Emirates); holotype, paratypes.
38. *Dasyhelea desertorum* SZADZIEWSKI, GWIZDALSKA-KENTZER et GIŁKA, 2011 (United Arab Emirates); holotype.
39. *Dasyhelea grenieri* CLASTRIER, 1966 (Canary Is.); paratype.
40. *Dasyhelea libanensis* DOMINIAK, in DOMINIAK & ALWIN 2013 (Lebanon); paratypes.
41. *Dasyhelea nauta* DOMINIAK, in DOMINIAK & ALWIN 2013 (Yemen); holotype, paratypes.
42. *Dasyhelea nilssoni* SZADZIEWSKI, 2000 (Canary Is.); holotype, paratypes.
43. *Dasyhelea norvegica* SZADZIEWSKI et HAGAN, 2000 (Norway); holotype.
44. *Dasyhelea sandrageorgei* DOMINIAK, in DOMINIAK & ALWIN 2013 (Lebanon); holotype.
45. *Dasyhelea skierskie* SZADZIEWSKI, 1985 (Algeria); paratypes.
46. *Forcipomyia eremita* SZADZIEWSKI, GWIZDALSKA-KENTZER et GIŁKA, 2011 (United Arab Emirates); holotype, paratypes.
47. *Forcipomyia margaritae* SZADZIEWSKI, 1983 (Algeria); paratypes.
48. *Forcipomyia waldemari* SZADZIEWSKI, 1983 (Algeria); paratypes.
49. *Jenkinshelea paliki* SZADZIEWSKI, 1992 (North Korea); holotype, paratype.

50. *Serromyia arabica* SZADZIEWSKI, GWIZDALSKA-KENTZER et GIŁKA, 2011 (United Arab Emirates); holotype.
51. *Serromyia diabolica* DOMINIAK et MATHIEU, 2015 (Lebanon); holotype, paratypes.
52. *Serromyia nudicolis* BORKENT, in BORKENT & BISSETT 1990 (USA); paratypes.
53. *Stilobezzia pruefferi* SZADZIEWSKI, 1992 (Algeria); holotype, paratypes.
54. *Stilobezzia virescens* KIEFFER, 1919 (Bulgaria); neotype [MIIZ coll., temporarily deposited in CEI UG].

**Family Chironomidae** (nonbiting midges)

1. *Cladotanytarsus cyrylae* GIŁKA, 2001 (Poland); holotype, paratypes.
2. *Cladotanytarsus gedanicus* GIŁKA, 2001 (Poland); holotype, paratypes.
3. *Cladotanytarsus matthei* GIŁKA, 2001 (Poland); holotype, paratypes.
4. *Cladotanytarsus sagittifer* GIŁKA, 2009 (United Arab Emirates); holotype, paratypes.
5. *Cricotopus zavreli* SZADZIEWSKI et HIRVENOJA, 1981 (Poland); paratypes.
6. *Micropsectra appendica* STUR et EKREM, 2006 (Poland); paratype.
7. *Micropsectra bumasta* (GIŁKA et JAŻDŻEWSKA, 2010) (Poland); holotype, paratype.
8. *Micropsectra davigra* GIŁKA et ABRAMCZUK, 2006 (Poland); holotype, paratypes.
9. *Micropsectra malla* GIŁKA et PAASIVIRTA, 2008 (Finland); holotype, paratypes.
10. *Micropsectra rilensis* GIŁKA, 2001 (Bulgaria); holotype, paratypes.
11. *Micropsectra sofiae* STUR et EKREM, 2006 (Poland); paratypes.
12. *Micropsectra tatrica* GIŁKA et JAŻDŻEWSKA, 2012 (Poland); holotype.
13. *Micropsectra uva* GIŁKA, ZAKRZEWSKA, BARANOV et DOMINIAK, 2013 (Croatia); holotype, paratypes.
14. *Paratanytarsus paralaccophilus* GIŁKA et PAASIVIRTA, 2008 (Finland); holotype, paratype.
15. *Paratanytarsus praecellens* GIŁKA, 2009 (United Arab Emirates); holotype, paratypes.
16. *Stempellina tervolae* GIŁKA, 2005 (Finland); holotype, paratypes.
17. *Tanytarsus cayambe* GIŁKA et ZAKRZEWSKA, 2013 (Ecuador); holotype, paratype.
18. *Tanytarsus cotopaxi* GIŁKA et ZAKRZEWSKA, 2013 (Ecuador); holotype.
19. *Tanytarsus desertor* GIŁKA et PAASIVIRTA, 2007 (Sweden); holotype, paratypes.
20. *Tanytarsus paraniger* GIŁKA et PAASIVIRTA, 2008 (Finland); holotype, paratypes.
21. *Tanytarsus salmelai* GIŁKA et PAASIVIRTA, 2009 (Finland); holotype, paratypes.
22. *Tanytarsus trux* GIŁKA et PAASIVIRTA, 2007 (Finland); holotype, paratypes.
23. *Telmatogeton gedanensis* SZADZIEWSKI, 1977 (Poland); holotype, paratypes.
24. *Zavrelia sinica* EKREM et STUR, 2009 (North Korea); paratype.

## STRESZCZENIE

W pracy przedstawiony został wykaz 95 gatunków muchówek, których okazy typowe (holotypy, paratypy, neotypy) zdeponowane są w kolekcji Katedry Zoologii Bezkręgowców i Parazytologii Uniwersytetu Gdańskiego. Zbiór składa się z dwóch kolekcji, mianowicie Kolekcji Inkluzji w Bursztynie (MAI UG) oraz Kolekcji Bezkręgowców Współczesnych (CEI UG). Pierwsza z nich powstała w roku 1998 i obecnie gromadzi ponad 14500 inkluzji w bursztynie, wśród których znajdują się holotypy i paratypy 15 gatunków fosylnych muchówek należących do rodziny Ceratopogonidae (5 gat.), Chaoboridae (1 gat.),

Chironomidae (5 gat.), Corethrellidae (1 gat.), Culicidae (1 gat.) oraz Limoniidae (2 gat.). W Kolekcji Bezkręgowców Współczesnych zdeponowanych jest kilkadziesiąt tysięcy okazów muchówek i są to zarówno materiały spreparowane na szkiełkach mikroskopowych jak i zbiory mokre, przechowywane w alkoholu. W kolekcji preparatów mikroskopowych najliczniej reprezentowane są rodziny Ceratopogonidae (ponad 410 gatunków i około 14000 okazów oznaczonych do poziomu gatunku), Cecidomyiidae oraz Chironomidae. Wśród 80 gatunków muchówek (Ceratopogonidae - 54 gat., Cecidomyiidae - 2 gat., Chironomidae - 24 gat.), których typy znajdują się w CEI UG, są aż 53 holotypy i 10 neotypów.

## REFERENCES


BORKENT A. 2008. The frog-biting midges of the world (Corethrellidae: Diptera). Zootaxa **1804**: 1 - 456.

BORKENT A., BISSETT B. 1990. A revision of the Holarctic species of *Serromyia* MEIGEN (Diptera: Ceratopogonidae). Systematic Entomology **15**: 153 - 217.

BORKENT A., GROGAN W.L. 1995. A revision of the genus *Ceratopogon* MEIGEN with a discussion of phylogenetic relationships, zoogeography and bionomic divergence (Diptera: Ceratopogonidae). Memoirs of the Entomological Society of Washington **15**: 1 - 198.

CLASTRIER J. 1957. Notes sur les Cératopogonidés. II.-Quelques *Culicoides* à ailes tachetées. Archives de l'Institut Pasteur Algérie **35**: 404 - 444.

CLASTRIER J. 1958. Notes sur les Cératopogonidés. III. - *Culicoides semimaculatus* n. sp. d'Algérie. Archives de l'Institut Pasteur Algérie **36**: 55 - 60.

CLASTRIER J. 1966. Cératopogonidés des Iles Canaries (Dipt. Nematocera). Annales de la Société de Entomologique de France **2**: 693 - 710.

DOMINIAK P., ALWIN A. 2013. Five new species and new records of biting midges of the genus *Dasyhelea* KIEFFER from the Near East (Diptera: Ceratopogonidae). Zootaxa **3683**: 133 - 144.

DOMINIAK P., ALWIN A., GIŁKA W. 2014. New records of predaceous midges from the Middle East, with the description of two new species (Diptera: Ceratopogonidae). Zootaxa **3753**: 133 - 145.

DOMINIAK P., MATHIEU B. 2015. *Serromyia diabolica*, a new biting midge species from Lebanon (Diptera: Ceratopogonidae). Zootaxa **3946**: 436 - 444.

EKREM T., STUR E. 2009. A review of the genus *Zavrelia* (Diptera: Chironomidae). European Journal of Entomology **106**(1): 119 - 144.

GIŁKA W. 2001a. A review of Polish *Cladotanytarsus* KIEFFER (Diptera: Chironomidae) with description of three new species. Polish Journal of Entomology **70**: 307 - 328.

GIŁKA W. 2001b. A description of *Micropsectra rilensis* sp. n. (Diptera: Chironomidae) with a review of Bulgarian Tanytarsini. Polish Journal of Entomology **70**: 65 - 72.

GIŁKA W. 2005. A systematic review of European *Stempellina* THIENEMANN et BAUSE (Diptera: Chironomidae) with description of a new species from Fennoscandia. Annales Zoologici **55**: 413 - 419.

GIŁKA W. 2009. Order Diptera, family Chironomidae, tribe Tanytarsini. [In:] H.H. SHEIKH TAHNOON BIN ZAYED AL NAHYAN (patron), VAN HARTEN A. (editor). Arthropod fauna of the United Arab Emirates. Volume **2**. Dar Al Ummah Printing, Publishing, Distribution & Advertising, Abu Dhabi, UAE. Pp. 667 - 682.

GIŁKA W. 2010. A new species group in the genus *Tanytarsus* VAN DER WULP (Diptera: Chironomidae) based on a fossil record from Baltic amber. Acta Geologica Sinica (English Edition) **84**: 714 - 719.

GIŁKA W. 2011. A new fossil *Tanytarsus* from Eocene Baltic amber, with notes on systematics of the genus (Diptera: Chironomidae). Zootaxa **3069**: 63 - 68.

GIŁKA W., ABRAMCZUK Ł. 2006. *Micropsectra davigra* sp. n. from the Tatra Mountains - a contribution to the systematics of the *Micropsectra attenuata* species group (Diptera: Chironomidae). Polish Journal of Entomology **75**: 39 - 44.

GIŁKA W., JAŻDŻEWSKA N. 2010. A systematic review of the genus *Parapsectra* REISS (Diptera: Chironomidae: Tanytarsini) with description of a new species from Poland. Zootaxa **2350**: 1 - 21.

GIŁKA W., JAŻDŻEWSKA N. 2012. Description of a new species in the *Micropsectra atrofasciata* group, with notes on rare Tanytarsini in Poland (Diptera: Chironomidae). Polish Journal of Entomology **81**: 157 - 164.

GIŁKA W., PAASIVIRTA L. 2007. Two new species of the genus *Tanytarsus* VAN DER WULP (Diptera: Chironomidae) from Fennoscandia. [In:] T. ANDERSEN (ed.). Contributions to the Systematics and Ecology of Aquatic Diptera - A Tribute to Ole A. Sæther. The Caddis Press, Columbus, Ohio. Pp. 107 - 113.

GIŁKA W., PAASIVIRTA L. 2008. On the systematics of the tribe Tanytarsini (Diptera: Chironomidae) - three new species from Finland. Entomologica Fennica **19**: 41 - 48.

GIŁKA W., PAASIVIRTA L. 2009. Evaluation of diagnostic characters of the *Tanytarsus chinyensis* group (Diptera: Chironomidae), with description of a new species from Lapland. Zootaxa **2197**: 31 - 42.

GIŁKA W., ZAKRZEWSKA M. 2013. A contribution to the systematics of Neotropical *Tanytarsus* VAN DER WULP: first descriptions from Ecuador (Diptera: Chironomidae: Tanytarsini). Zootaxa **3619**: 453 - 459.

GIŁKA W., ZAKRZEWSKA M., BARANOV A.V., DOMINIAK P. 2013. Diagnostic clues for identification of selected species of the *Micropsectra atrofasciata* group, with description of *M. uva* sp. nov. from Croatia (Diptera: Chironomidae: Tanytarsini). Zootaxa **3702**: 288 - 294.

GROGAN W.L., DE MEILLON B. 1993. New *Brachypogon*, mainly from Senegal with a key to the Afrotropical species (Diptera: Ceratopogonidae). Annales de la Société de Entomologique de France **29**: 387 - 409.

ICZN 1999. International Code of Zoological Nomenclature. Fourth Edition. Chapter 16: Types in the species group. Article 72. General provisions. Recommendation 72F. Institutional responsibility. The International Trust for Zoological Nomenclature, London, UK, 306 pp.

KANIA I. 2014. Subfamily Limoniinae SPEISER, 1909 (Diptera, Limoniidae) from Baltic amber (Eocene): the genus *Helius* LEPELETIER & SERVILLE, 1828. Zootaxa **3814**: 333 - 352.

KRZEMIŃSKI W. 2000. A new species and other representatives of the genus *Dicranomyia* (Diptera: Limoniidae) in the collection of the Museum of Amber Inclusions, University of Gdansk. Polish Journal of Entomology **69**: 347 - 353.

SPUNGIS V. 1989. A revision of the European gall midge species of the genus *Camptomyia* KIEFFER (Diptera, Cecidomyiidae). Latvijas Entomologs **32**: 54 - 74.

STUR E., EKREM T. 2006. A revision of West Palaearctic species of the *Micropsectra atrofasciata* species group (Diptera: Chironomidae). Zoological Journal of the Linnean Society **146**: 165 - 225.

SZADZIEWSKI R. 1975. *Arnoldiola margaritae* sp. n. (Cecidomyiidae, Diptera) from Poland. Polish Journal of Entomology **45**: 365 - 368.
SZADZIEWSKI R. 1977. *Telmatogeton gedanensis* sp. n. (Clunioninae, Chironomidae, Diptera) - new marine chironomid from the Polish Baltic coast. Polish Journal of Entomology **47**: 175 - 184.
SZADZIEWSKI R. 1983a. Ceratopogonidae (Diptera) Algeria. III. New species and new data on the genera *Brachypogon* KIEFF. and *Alluaudomyia* KIEFF. Polish Journal of Entomology **53**: 385 - 399.
SZADZIEWSKI R. 1983b. Ceratopogonidae (Diptera) from Algeria. II. New species, new records and new synonymy in the genus *Forcipomyia* MEIG. Polish Journal of Entomology **53**: 363 - 384.
SZADZIEWSKI R. 1984a. Ceratopogonidae (Diptera) from Algeria. VI. *Culicoides* LATR. Polish Journal of Entomology **54**: 163 - 182.
SZADZIEWSKI R. 1984b. Ceratopogonidae (Diptera) from Algeria. V. *Brachypogon* (*Isohelea*) *surae* n. sp. (Ceratopogonini). Polish Journal of Entomology **53** (1983): 555 - 558.
SZADZIEWSKI R. 1985. A review of the Palaearctic *Dasyhelea* (*Pseudoculicoides*) species of the *johannseni* group, with a description of two new species (Diptera, Ceratopogonidae). Polish Journal of Entomology **55**: 79 - 98.
SZADZIEWSKI R. 1986. Redescriptions and notes on some Ceratopogonidae (Diptera). Polish Journal of Entomology **56**: 3 - 103.
SZADZIEWSKI R. 1990. *Brachypogon* (*Isohelea*) *silecis*, a new species from Poland (Diptera, Ceratopogonidae). Acta Zoologica Cracoviensia **33**: 485 - 488.
SZADZIEWSKI R. 1992a. A new biting midge of genus *Jenskinshelea* from the Democratic People's Republic of Korea (Diptera, Ceratopogonidae). Acta Universitatis Nicolai Copernici Biologia **39**: 77 - 82.
SZADZIEWSKI R. 1992b. Ceratopogonidae (Diptera) from Algeria. VII. *Stilobezzia* and *Kolenohelea*. Acta Universitatis Nicolai Copernici Biologia **39**: 83 - 95.
SZADZIEWSKI R. 1998a. New mosquitoes from Baltic amber (Diptera: Culicidae). Polish Journal of Entomology **67**: 233 - 244.
SZADZIEWSKI R. 1998b. A new species of the predaceous midge genus *Metahelea* from Baltic amber (Diptera: Ceratopogonidae). Polish Journal of Entomology **67**: 245 - 253.
SZADZIEWSKI R. 2000. A new species of *Dasyhelea* from the Canary Islands (Diptera: Ceratopogonidae). Polish Journal of Entomology **67**: 477 - 481.
SZADZIEWSKI R. 2001. A new species of *Brachypogon* from Poland (Diptera: Ceratopogonidae). Polish Journal of Entomology **70**: 211 - 214.
SZADZIEWSKI R. 2005. The first fossil species in the predaceous midge tribe Sphaeromiini (Diptera: Ceratopogonidae). Polish Journal of Entomology **74**: 363 - 368.
SZADZIEWSKI R., DOMINIAK P. 2015. *Afrostilobezzia*, a new genus of predatory biting midges from the Afrotropical Region (Diptera: Ceratopogonidae). Zootaxa **3941**: 445 - 450.
SZADZIEWSKI R., DOMINIAK P., FILATOV S. 2015. Two new species of predatory biting midges of the genus *Alluaudomyia* from Europe and the Canary Islands (Diptera: Ceratopogonide). Zootaxa **4039**: 345 - 358.
SZADZIEWSKI R., GIŁKA W. 2007. *Gedanoborus kerneggeri*, gen. et sp. nov. (Diptera: Chaoboridae) from Eocene Baltic amber. Insect Systematics and Evolution **38**: 193 - 200.

SZADZIEWSKI R., GIŁKA W., URBANEK A. 2015. A blood sucking biting midge from Upper Cretaceous Burmese amber with a key to the determination of fossil species in the relictual genus *Leptoconops* SKUSE (Diptera: Ceratopogonidae). Cretaceous Research **54**: 255 - 259.

SZADZIEWSKI R., GROGAN W.L. 1998a. Biting midges from Dominican amber. III. Species of the tribes Culicoidini and Ceratopogonini (Diptera: Ceratopogonidae). Insecta Mundi **12**: 39 - 52.

SZADZIEWSKI R., GROGAN W.L. 1998b. Biting midges from Dominican amber. IV. Species of the tribes Dasyheleini and Forcipomyiini (Diptera: Ceratopogonidae). Polish Journal of Entomology **67**: 255 - 290.

SZADZIEWSKI R., GWIZDALSKA-KENTZER M., GIŁKA W. 2011. Order Diptera, family Ceratopogonidae. [In:] H.H. SHEIKH TAHNOON BIN ZAYED AL NAHYAN (patron), VAN HARTEN A. (editor). Arthropod fauna of the United Arab Emirates. Volume 4. Dar Al Ummah Printing, Publishing, Distribution & Advertising, Abu Dhabi, UAE. Pp. 636 - 653.

SZADZIEWSKI R., HAGAN D.V. 2000. Two new species of biting midges from Norway (Diptera: Ceratopogonidae). Polish Journal of Entomology **59**: 459 - 464.

SZADZIEWSKI R., HIRVENOJA M. 1981. *Cricotopus zavreli* sp. n. (Diptera, Chironomidae), a halobiontic non-biting midge from Poland. Annales Entomologici Fennici **47**: 111 - 118.

SZADZIEWSKI R., KACZOROWSKA E., KRZYWIŃSKI J. 1994. The predaceous midges of the subgenus *Isohelea* of *Brachypogon* in Poland (Diptera, Ceratopogonidae). Acta Zoologica Cracoviensia **37**: 1 - 32.

SZADZIEWSKI R., KACZOROWSKA E., KRZYWIŃSKI J. 1996. Redescriptions of some European species of *Atrichopogon* (Diptera: Ceratopogonidae). Polish Journal of Entomology **65**: 297 - 318.

ZAKRZEWSKA M., GIŁKA W. 2015. The Tanytarsini (Diptera: Chironomidae) in the collection of the Museum of Amber Inclusions, University of Gdańsk. Zootaxa **3946**: 347 - 360.