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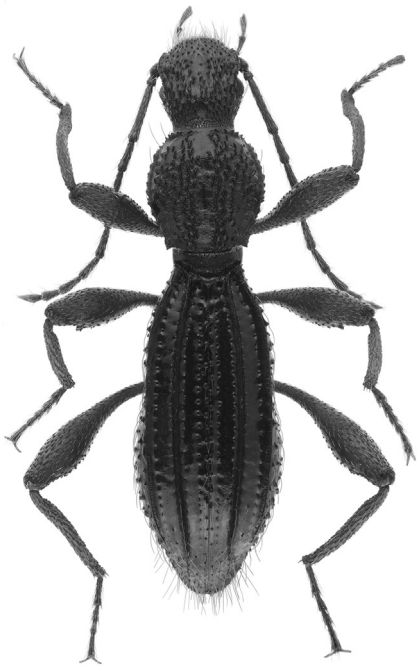

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History of Collembola research in Belarus with checklist

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Abstract. A comprehensive overview of the history of Collembola research and an annotated checklist of species in Belarus is presented. The class Collembola belongs to one of the least studied groups of invertebrates. At present, 113 species (4 orders and 15 families) have been identified in Belarus according to literary sources, eight of which require confirmation, 11 taxa were not identified to species. Furthermore, at least 125 additional springtail species can potentially be identified.

Key words: springtails, fauna, research history, checklist, Belarus.

История исследования Collembola в Беларуси со списком видов

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Резюме. Приведены сведения об истории изучения ногохвосток и аннотированный список видов Беларуси. Класс Collembola относится к одной из самых малоизученных групп беспозвоночных. В настоящее время по литературным источникам в Беларуси констатировано 113 видов (из 4 отрядов и 15 семейств), для восьми из них требуется подтверждение, 11 таксонов не определены до вида. Потенциально возможно выявление еще более чем 125 видов ногохвосток.

Ключевые слова: ногохвостки, фауна, история изучения, список видов, Беларусь.

History of the study

Collembola belongs to one of the least studied groups of invertebrates in the Republic of Belarus [Khot'ko et al., 1982; Buşmachiu, 2010]. According to some researchers, the springtail fauna consists of only 15 species [Burko, Lopatin, 2001; Lopatin, 2004]. In subsequent articles, 61 species of springtails were identified in Belarus [Buşmachiu, 2010; Borodin, 2013; Ryzhaya, 2014]. The purpose of this work is to analyze scientific publications to study the history of research of the springtail fauna structure in Belarus and to determine the prospects for further investigation.

The water springtail *Podura aquatica* Linnaeus, 1758 was firstly recorded for Belarus by Solovyov [1926] in a sample of water from Horki (Mogilev Region). The first significant records about the springtail fauna of Belarus were made in 1947 in the works of Jan W. Stach. The records were based on the samples collected on the territory of present-day Brest Region by M. Znamierowska in 1924 [Stach, 1960], by K. Traeczewski in 1929 and 1932 [Stach, 1947, 1949a, 1951, 1954, 1956, 1957, 1960, 1963], and by F. Krasnodębski in 1936 [Stach, 1947], on the samples collected on the territory of present-day Grodno Region by J. Prüffer in 1922 and 1930 [Stach, 1960] and by Prof. Federowicz in 1926 [Stach, 1956], as well as on the samples collected by S. Feliksiak in 1924, 1929–1932 on the territory of present-day Brest and Grodno regions [Stach, 1947, 1949a, 1949b (?) (the record does not allow to determine whether the material was collected from the Belarusian or Polish part of Belovezhskaya Pushcha), 1951, 1957].

Stach's papers provide an accurate annotated information about springtails supplemented with georeferences and some comments on the biological and ecological features of the identified species. Thus, an interesting discovery was made by F. Krasnodębski in Pinsk on the Pina River at a temperature of –22 °C on 25 January 1936 at 1:00 p.m. He discovered a group of *Isotoma viridis* (Bourlet, 1839) crawling on snow and ice [Stach, 1947]. Stach recorded 41 species from nine families and three orders found on the territory of Belarus for the first time. A number of springtail records from the works of J.W. Stach were also mentioned in the works of Grinbergs [1960] and Martynova [1964a, b].

There are other faunistic works that also contain the Collembola records on the territory of Belarus. Kipenvarlits [1961] discovered four species: *Entomobrya marginata* Tullberg, 1871, *Ceratophysella armata* Nicolet, 1842, *Onychiurus fimetarius* Linnaeus, 1758, *Stenaphorura quadrispina* Börner, 1901 (from four families and two orders). Radzymovsky and Polishchuk [1970] recorded in Belarus *Proisotoma ripicola* Linnaniemi, 1912.

Further studies were continued by Nataliya A. Kuznetsova. Together with co-authors she provided information on springtails of Vitebsk Region [Kuznetsova, 1984, 1988, 2002; Sterzyńska, Kuznetsova, 1995; Chernov et

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al., 2010]. In general, N.A. Kuznetsova recorded 46 species (from 11 families and four orders) for the Belarusian fauna for the first time.

A number of important faunistic records were made in the 80–90s of the 20th century. Molodova [1986] registered *Pogonognathellus longicornis* (Müller, 1776) (verified by M.P. Potapov and I.P. Vtorov) in Gomel Region. Vetrava [1986] recorded *Coecobrya tenebricosa* (Folsom, 1902) and *Entomobryoides purpurascens* (Packard, 1872) for the territory of Belarus, but the collector and locality were not specified. Potapov [1991] published new faunistic data on *Parisotoma ekmani* (Fjellberg, 1977). Two species (*Schoettella ununguiculata* (Tullberg, 1869) and *Willemia intermedia* (Mills, 1934)) from one family and one order were added to the key to springtails of the fauna of Russia and neighboring countries [Babenko et al., 1994], but also without exact locality in Belarus.

Another significant study of springtails in Belarus was made by Galina N. Buşmachiu. The research was conducted within a joint scientific project between Belarus and Moldova "Insect Biodiversity (Insecta: Collembola, Coleoptera, Lepidoptera) of the Coastal Areas of River Ecosystems in Belarus and Moldova in a Comparative Aspect" (2008–2010). The results of this project were summarized by Buşmachiu [2010]. Buşmachiu's work contains all available information on the springtail fauna of Belarus, including new faunistic records. Moreover, she carried out studies of the Collembola species composition in coastal ecosystems of Belarus (Vitebsk, Brest and Gomel regions). Buşmachiu [2010] firstly recorded for Belarus seven springtail species from three families and one order.

Furthermore, a lot of data on springtails were published by Moroz with co-authors [Moroz et al., 2002a, b, 2004a, b, 2005, 2007, 2008, 2012, 2013b, c, d, 2014, 2016, 2017a, b, c, 2018a, b, c, d, 2022; Moroz, Maksimenkov, 2006; Moroz, 2012, 2013a, b, c, 2015, 2016, 2018; Moroz, Laenko, 2013; Tishchikov et al., 2013; Moroz, Vezhnavets, 2015, 2019; Moroz, Lipinskaya, 2017]. *Lepidocyrtus lanuginosus* Linnaeus, 1788 was firstly recorded on the territory of Belarus [Tishchikov et al., 2013], as well as *Deuterosminthurus* sp. [Moroz et al., 2013b].

Willemia scandinavica Stach, 1949 was mensioned for Belarus by Kahrarian [2014] with reference to "Synopses on Palaearctic Collembola" [Thibaud et al., 2004].

Fauna Europaea database [Fjellberg et al., 2013] contains 38 species of collembolans recorded for Belarus, four of which have not been mentioned for the country in other scientific publications: *Entomobrya muscorum* (Nicolet, 1842), *Pseudosinella zygophora* (Schille, 1908), *Ballistura tuberculata* (Stach, 1947), *Morulina gigantea* (Tullberg, 1877).

Orchesella villosa (Linnaeus, 1767) was mentioned for the first time as a representative of the fauna of Belarus in the Global Biodiversity Information Facility [GBIF.org, 2023]. The data presented in the GBIF publication [Borodin, Krasouski, 2020] were previously published by Borodin and Tsinkevich [2016a, b].

Coecobrya tenebricosa Folsom, 1902 and *Desoria olivacea* (Tullberg, 1871) were mentioned in scientific works [Kuznetsova, 1984; Antipov et al., 1986, 1989], but require confirmation.

Other scientific publications reproduce information from earlier sources [Vetrava, 1983a, b, c, 1984, 1986; Chumakov, 1985; Sławska, Sławaki, 2009; Fiera, Weiner, 2016; Borodin, Tsinkevich, 2016a, b; Skarżyński, 2019; Borodin, Krasouski, 2020].

The collection of the Siberian Zoological Museum confirmed the discovery of three species, *Isotomurus maculatus* (Schäffer, 1896), *Friesea mirabilis* (Tullberg, 1871), *Micranurida pygmaea* Börner, 1901, in Belarus [Berezina, 2002].

We did not find any information about the history of the formation of the collembolan fauna of Belarus. Only Perkovsky [2017] mentioned an inclusion of a representative of the order Symphypleona in Eocene Rovno amber found in the surroundings of Rechitsa (Brest Region, Stolin District, left bank of the Goryn River, 7 km from the Ukraine border).

In fact, the complete analysis of all available literary sources allowed to expand the checklist up to 113 species (including 8 unconfirmed species). For comparison, more than 130 Collembola species are known in the European part of Russia [Grinbergs, 1960; Babenko et al., 1994], 197 species in Latvia [Juceviča, 2003], 146 species in Lithuania [Grendienė, Rimšaitė, 2009; Grendienė, 2010], 441 species (including 31 unconfirmed species) in Poland [Skarżyński et al., 2002; Sławska, Sławaki, 2009], 527 species (including 90 unconfirmed species) in Ukraine [Kaprus et al., 2004, 2006]. Taking into account the number of species from neighboring regions, the potential for studying this group is huge considering that the Collembola fauna on the territory of Belarus is estimated to be at least 238 species [Ulrich, Fiera, 2009].

Material and methods

This work contains only exact records of springtail species on the territory of Belarus.

The subfamilies are listed alphabetically along with the genera and species within each subfamily. Question marks indicate the information that requires confirmation.

The names of the Collembola species in Antipov et al. [1986, 1989] are given in Russian, so specialized books were used to accurately translate the names of species into Latin [Striganova, Zakharov, 2000; Birg, Snitko, 2001; Ümüt, 2018].

Systematic position and synonymy are given according to the Global Biodiversity Information Facility and scientific publications [Janssens, Christiansen, 2011; Hopkin, 2014; Potapov et al., 2021; Collembola, 2023].

Checklist of Collembola

Order Entomobryomorpha
Family Entomobryidae
Genus *Coecobrya* Yosii, 1956

(?) *Coecobrya tenebricosa* (Folsom, 1902)

Records for the region. *Sinella caeca*: Vetrava, 1986: 428.

Sinella tenebricosa Mills, 1934: Antipov et al., 1986: 420; Antipov et al., 1989: 422.

Genus *Entomobrya* Rondani, 1861
Entomobrya corticalis (Nicolet, 1842)

Records for the region. *Entomobrya coricalis* (Nicolet, 1842): Buşmachiu, 2010: 119–120.

Entomobrya corticalis: Stach, 1963: 64; Kuznetsova, 1984: 257; Sterzyńska, Kuznetsova, 1995: 149; Fjellberg et al., 2013; Baquero et al., 2014: 1566; Borodin, Tsinkevich, 2016b: 14; Borodin, Krasouski, 2020.

Entomobrya marginata (Tullberg, 1871)

Records for the region. *Entomobrya marginatsa* (Tullberg, 1871): Borodin, Tsinkevich, 2016b: 14.

Entomobrya marginata: Kipenvarlits, 1961: 57; Kuznetsova, 1984: 257; Kuznetsova, 1988: 40; Buşmachiu, 2010: 121.

(?) *Entomobrya muscorum* (Nicolet, 1842)

Records for the region. Fjellberg et al., 2013.

Entomobrya nivalis (Linnaeus, 1758)

Records for the region. Stach, 1963: 27; Kuznetsova, 1984: 257; Vetrava, 1986: 428; Antipov et al., 1986: 420; Kuznetsova, 1988: 33, 36–37; Antipov et al., 1989: 422; Sterzyńska, Kuznetsova, 1995: 149; Buşmachiu, 2010: 119, 121; Borodin, Tsinkevich, 2016b: 14; Fjellberg et al., 2013.

Entomobrya quinquelineata Börner, 1901

Records for the region. *Entomobrya quinquelineata* subsp. *quinquelineata* Börner, 1901: Fjellberg et al., 2013.

Entomobrya quinquelineata: Stach, 1963: 57; Sterzyńska, Kuznetsova, 1995: 149; Baquero, Jordana, 2008: 4; Fjellberg et al., 2013; Borodin, Tsinkevich, 2016b: 14; Borodin, Krasouski, 2020.

Entomobrya superba (Reuter, 1876)

Records for the region. *Entomobria superba*: Kurachenko, 2008: 133.

Entomobrya superba: Kuznetsova, 1984: 257.

Entomobrya xerothermica Stach, 1963

Records for the region. Buşmachiu, 2010: 119.

Genus *Entomobryoides* Maynard, 1951
(?) *Entomobryoides purpurascens* (Packard, 1872)

Records for the region. *Entomobrya myrmecophila*: Vetrava, 1986: 428.

Genus *Lepidocyrtus* Bourlet, 1839
Lepidocyrtus sp.

Records for the region. Moroz et al., 2007: 102; Moroz, 2013b: 876; Moroz, Laenko, 2013: 79; Moroz et al., 2013b: 92.

Lepidocyrtus curvicollis Bourlet, 1839

Records for the region. Buşmachiu, 2010: 121.

Lepidocyrtus cyaneus Tullberg, 1871

Records for the region. *Lepidocyrtus violaceus* (Geoffroy, 1762): Kuznetsova, 1984: 257; Chernov et al., 2010: 564.

Lepidocyrtus cyaneus: Buşmachiu, 2010: 121; Borodin, Tsinkevich, 2016b: 14.

Lepidocyrtus lignorum (Fabricius, 1775)

Records for the region. Kuznetsova, 1984: 257; Kuznetsova, 1988: 33, 36–37, 39, 40, 42; Sterzyńska, Kuznetsova, 1995: 149; Buşmachiu, 2010: 121; Chernov et al., 2010: 563; Borodin, Tsinkevich, 2016b: 14; Borodin, Krasouski, 2020.

Lepidocyrtus paradoxus Uzel, 1890

Records for the region. Buşmachiu, 2010: 121; GBIF.org, 2023.

Lepidocyrtus lanuginosus (Linnaeus, 1788)

Records for the region. *Lepidocyrtus rivularis* Bourlet, 1843: Tishchikov et al., 2013: 160.

Lepidocyrtus lanuginosus Gmelin, 1788: Borodin, Tsinkevich, 2016b: 14.

Lepidocyrtus rivularis Bourlet, 1942: Borodin, Tsinkevich, 2016b: 14.

Lepidocyrtus lanuginosus: Borodin, Krasouski, 2020.

Genus *Pseudosinella* Schäffer, 1897
Pseudosinella horaki Rusek, 1985

Records for the region. Chernov et al., 2010: 563.

(?) *Pseudosinella zygophora* (Schille, 1908)

Records for the region. Fjellberg et al., 2013.

Genus *Willowsia* Shoebotham, 1917
Willowsia buski (Lubbock, 1870)

Records for the region. *Willowsia buskii* Lubbock, 1870: Borodin, Tsinkevich, 2016b: 14.

Willowsia buski: Kuznetsova, 1984: 257; Sterzyńska, Kuznetsova, 1995: 149; Buşmachiu, 2010: 121; GBIF.org, 2023.

Family Orchesellidae
Genus *Orchesella* Templeton, 1836
Orchesella cincta (Linnaeus, 1758)

Records for the region. Stach, 1960: 125; Buşmachiu, 2010: 119; Fjellberg et al., 2013; GBIF.org, 2023.

Orchesella flavescens (Bourlet, 1839)

Records for the region. *Orchesella flavescens* Bourlet, 1839 var. *lateralis*: Stach, 1960: 45.

Orchesella flavescens: Kuznetsova, 1984: 257; Molodova, 1986: 300–301; Sterzyńska, Kuznetsova, 1995: 149; Buşmachiu, 2010: 119–121; Chernov et al., 2010: 563; Fjellberg et al., 2013; Borodin, Tsinkevich, 2016b: 14; Borodin, Krasouski, 2020; GBIF.org, 2023.

Orchesella pulchra Scherbakov, 1898

Records for the region. Buşmachiu, 2010: 120–121.

Orchesella spectabilis Tullberg, 1871

Records for the region. Stach, 1960: 53; Buşmachiu, 2010: 119–121; Fjellberg et al., 2013.

Orchesella sphagneticola Stach, 1960

Records for the region. Stach, 1960: 132; Potapov, Kremenitsa, 2008: 108, 112; Buşmachiu, 2010: 120–121; Fjellberg et al., 2013; Borodin, Tsinkevich, 2016b: 14.

Orchesella villosa (Linnaeus, 1767)

Records for the region. GBIF.org, 2023.

Family Tomoceridae
Genus *Pogonognathellus* Paclt, 1944
Pogonognathellus flavescens (Tullberg, 1871)

Records for the region. Kuznetsova, 1984: 257; Kuznetsova, 1988: 36–37, 42; Sterzyńska, Kuznetsova, 1995: 149; Buşmachiu, 2010: 121; Chernov et al., 2010: 563; Borodin, Tsinkevich, 2016b: 13; Borodin, Krasouski, 2020.

Pogonognathellus longicornis (Müller, 1776)

Records for the region. *Tomocerus longicornis* Müller, 1776: Molodova, 1986: 300–301; Buşmachiu, 2010: 121; Borodin, Tsinkevich, 2016b: 13.

Genus *Tomocerus* Nicolet, 1842
Tomocerus vulgaris (Tullberg, 1871)

Records for the region. Kuznetsova, 1984: 257; Buşmachiu, 2010: 121; Borodin, Tsinkevich, 2016b: 13.

Order Neelipleona
Family Neelidae
Genus *Megalothorax* Willem, 1900
Megalothorax minimus Willem, 1900

Records for the region. Kuznetsova, 1984: 257; Kuznetsova, 1988: 36–37, 39; Sterzyńska, Kuznetsova, 1995: 149; Borodin, Krasouski, 2020.

Genus *Neelus* Folsom, 1896
Neelus murinus Folsom, 1896

Records for the region. Sterzyńska, Kuznetsova, 1995: 149; Borodin, Krasouski, 2020.

Order Poduromorpha
Family Hypogastruridae
Genus *Ceratophysella* Börner, 1932
Ceratophysella armata (Nicolet, 1842)

Records for the region. *Hypogastrura armata* (Nicolet, 1842): Kipenvarlits, 1961: 57.

Ceratophysella armata: Vetrava, 1983b: 60; Kuznetsova, 1984: 257; Antipov et al., 1986: 420; Antipov et al., 1989: 422; Martynova, 1964b: 850.

Ceratophysella mosquensis (Becker, 1910)

Records for the region. *Ceratophysella monstruosa* Gisin, 1949: Kuznetsova, 1984: 257; Kuznetsova, 1988: 42.

Ceratophysella mosquensis: Kuznetsova, 2002: 380.

Ceratophysella scotica (Carpenter et Evans, 1899)

Records for the region. Kuznetsova, 1984: 257; Kuznetsova, 1988: 42; Babenko et al., 1994: 142; Sławska, Sławaki, 2009: 41; Buşmachiu, 2010: 118–119; Fjellberg et al., 2013; Skarżyński, 2019: 152; Skarżyński et al., 2021: 12.

Genus *Choreutinula* Paclt, 1944
Choreutinula inermis (Tullberg, 1871)

Records for the region. Kuznetsova, 1984: 257; Sterzyńska, Kuznetsova, 1995: 148; Borodin, Tsinkevich, 2016a: 13; Borodin, Krasouski, 2020.

Genus *Seira* Lubbock, 1870
Seira squamoornata (Scherbakov, 1898)

Records for the region. Sterzyńska, Kuznetsova, 1995: 149; Borodin, Tsinkevich, 2016b: 14; Borodin, Krasouski, 2020.

Genus *Schoettella* Schäffer, 1896
Schoettella ununguiculata (Tullberg, 1869)

Records for the region. Babenko et al., 1994: 197; Sterzyńska, Kuznetsova, 1995: 148; Buşmachiu, 2010: 118–119; Fjellberg et al., 2013; Borodin, Tsinkevich, 2016a: 13; Borodin, Krasouski, 2020.

Genus *Willemia* Börner, 1901
Willemia anophthalma Börner, 1901

Records for the region. Kuznetsova, 1984: 257; Kuznetsova, 1988: 30, 33, 36–37, 39–40, 42; Sterzyńska, Kuznetsova, 1995: 148; Kuznetsova, 2002: 379; Borodin, Tsinkevich, 2016a: 13; Borodin, Krasouski, 2020.

Willemia denisi Mills, 1932

Records for the region. *Willemia aspinata* Stach, 1949: Kuznetsova, 1984: 257; Kuznetsova, 1988: 36–37, 42.

Willemia denisi: Sterzyńska, Kuznetsova, 1995: 148; Borodin, Tsinkevich, 2016a: 13; Borodin, Krasouski, 2020.

Willemia intermedia Mills, 1934

Records for the region. Babenko et al., 1994: 243; Buşmachiu, 2010: 118–119; Fjellberg et al., 2013.

(?) *Willemia scandinavica* Stach, 1949

Record for the region. Kahrarian, 2014: 23.

Genus *Xenylla* Tullberg, 1869
Xenylla sp.

Records for the region. Kuznetsova, 1984: 257; Kuznetsova, 1988: 33; Buşmachiu, 2010: 120; Chernov et al., 2010: 564.

Xenylla brevicauda Tullberg, 1869

Records for the region. Kuznetsova, 1984: 257; Kuznetsova, 1988: 36–37, 40; Sterzyńska, Kuznetsova, 1995: 148; Kuznetsova, 2002: 377; Borodin, Tsinkevich, 2016a: 13; Borodin, Krasouski, 2020.

Xenylla grisea Axelson, 1900

Records for the region. Stach, 1949a: 225; Grinbergs, 1960: 27; Buşmachiu, 2010: 119.

Family Isotomidae
Genus *Anurophorus* Nicolet, 1842
Anurophorus laricis Nicolet, 1842

Records for the region. Kuznetsova, 1984: 257; Sterzyńska, Kuznetsova, 1995: 148; Buşmachiu, 2010: 120–121; Fjellberg et al., 2013; Borodin, Tsinkevich, 2016b: 14.

Anurophorus septentrionalis Palissa, 1966

Records for the region. Kuznetsova, 1988: 30, 33, 36–37, 39–40, 42; Sterzyńska, Kuznetsova, 1995: 148; Kuznetsova, 2002: 376–377; Buşmachiu, 2010: 118–119; Fjellberg et al., 2013; Borodin, Tsinkevich, 2016b: 14; Borodin, Krasouski, 2020.

Genus *Bagnallella* Salmon, 1951
Bagnallella sp.

Records for the region. Potapov et al., 2021: 170.

Bagnallella ripicola (Linnaniemi, 1912)

Records for the region. *Proisotoma ripicola* Linnaniemi, 1912: Radzymovsky, Polishchuk, 1970: 179; Moroz et al., 2002a: 90; Moroz et al., 2002b: 89; Moroz et al., 2007: 102; Buşmachiu, 2010: 118–119; Moroz, 2013a: 99; Moroz, 2013b: 876; Moroz et al., 2013b: 92; Tishchikov et al., 2013: 160; Borodin, Tsinkevich, 2016b: 14; Moroz, 2018: 203; Borodin, Krasouski, 2020.

Genus *Ballistura* Börner, 1906
(?) *Ballistura tuberculata* (Stach, 1947)

Records for the region. Fjellberg et al., 2013.

Genus *Desoria* Agassiz et Nicolet, 1841
Desoria hiemalis (Schött, 1893)

Records for the region. *Isotoma hiemalis* Schött, 1893: Kuznetsova, 1984: 257; Kuznetsova, 1988: 30, 33, 36–37, 39–40, 42; Sterzyńska, Kuznetsova, 1995: 149.
Desoria hiemalis: Fjellberg et al., 2013; Borodin, Tsinkevich, 2016b: 14; Borodin, Krasouski, 2020.

Desoria blekeni Leinaas, 1980

Records for the region. Buşmachiu, 2010: 120–121; Borodin, Tsinkevich, 2016b: 14.

Desoria divergens (Axelson, 1900)

Records for the region. Chernov et al., 2010: 563.

(?) *Desoria olivacea* (Tullberg, 1871)

Records for the region. *Isotoma* gr. *olivacea*: Kuznetsova, 1984: 258.

Desoria violacea (Tullberg, 1877)

Records for the region. *Isotoma violacea* Tullberg, 1876: Stach, 1947: 415.
Isotoma neglecta Schäffer: Kuznetsova, 1984: 257; Kuznetsova, 1988: 42.
Desoria neglecta (Schaeffer, 1900): Fjellberg et al., 2013.
Desoria violacea: Kuznetsova, 2002: 380.

Genus *Folsomia* Willem, 1902
Folsomia fimetarioides (Axelson, 1903)

Records for the region. Kuznetsova, 1984: 257.

Folsomia manolachei Bagnall, 1939

Records for the region. Chernov et al., 2010: 563.

Folsomia quadrioculata (Tullberg, 1871)

Records for the region. Stach, 1947: 169; Grinbergs, 1960: 37; Kuznetsova, 1984: 257; Kuznetsova, 1988: 30, 33, 36–37, 39, 42; Sterzyńska, Kuznetsova, 1995: 148; Kuznetsova, 2002: 376; Buşmachiu, 2010: 119; Chernov et al., 2010: 563; Fjellberg et al., 2013; Borodin, Tsinkevich, 2016b: 14; Borodin, Krasouski, 2020.

Genus *Isotoma* Bourlet, 1839
Isotoma sp.

Records for the region. Kuznetsova, 1984: 257.

Isotoma riparia (Nicolet, 1842)

Records for the region. Buşmachiu, 2010: 120–121.

Isotoma viridis Bourlet, 1839

Records for the region. *Isotoma* (*Isotoma*) *viridis* Bourlet, 1838: Grinbergs, 1960: 43.

Isotoma viridis: Stach, 1947: 428; Vetrava, 1983c: 399; Kuznetsova, 1984: 257; Antipov et al., 1986: 420; Kuznetsova, 1988: 42; Antipov et al., 1989: 422; Baichorov et al., 2002: 76; Moroz et al., 2002a: 90; Moroz et al., 2004a: 201; Moroz et al., 2005: 101; Moroz, Maksimenkov, 2006: 58; Moroz et al., 2007: 102; Moroz et al., 2008: 44; Buşmachiu, 2010: 118–121; Moroz, 2012: 52; Moroz et al., 2012: 159; Moroz, 2013a: 99; Moroz, 2013c: 11; Moroz, Vezhnovets, 2013: 83; Moroz, Laenko, 2013: 79; Moroz et al., 2013b: 92; Moroz et al., 2013c: 107; Moroz et al., 2013d: 71; Tishchikov et al., 2013: 160; Fjellberg et al., 2013; Moroz et al., 2014: 23; Moroz, 2015: 194; Borodin, Tsinkevich, 2016b: 14; Moroz, 2016: 50; Moroz et al., 2016: 58; Moroz, Lipinskaya, 2017: 34; Moroz et al., 2017c: 70, 72; Moroz, 2018: 203; Moroz et al., 2018a: 16; Moroz et al., 2018c: 75; Moroz et al., 2018b: 404; Borodin, Krasouski, 2020.

Genus *Isotomiella* Bagnall, 1939
Isotomiella minor (Schäffer, 1896)

Records for the region. Stach, 1947: 303; Kuznetsova, 1984: 257; Kuznetsova, 1988: 30, 33, 36–37, 39–40, 42; Sterzyńska, Kuznetsova, 1995: 148; Kuznetsova, 2002: 376–377; Buşmachiu, 2010: 118–120; Chernov et al., 2010: 563; Fjellberg et al., 2013; Borodin, Tsinkevich, 2016b: 14; Borodin, Krasouski, 2020.

Genus *Isotomurus* Börner, 1903
Isotomurus sp.

Records for the region. Moroz et al., 2013b: 92.

Isotomurus maculatus (Schäffer, 1896)

Records for the region. *Orchesella bifasciata* (Bourlet, 1839): Stach, 1960: 108; Kuznetsova, 1984: 257; Kuznetsova, 1988: 40; Sterzyńska, Kuznetsova, 1995: 149; Buşmachiu, 2010: 119–121; Fjellberg et al., 2013; Borodin, Tsinkevich, 2016b: 14; Borodin, Krasouski, 2020.

Collection. Berezina [2002].

Isotomurus palustris (Müller, 1776)

Records for the region. *Isotomurus* (*Isotomurus*) *palustris* Müller, 1776: Grinbergs, 1960: 46.

Isotomurus palustris: Stach, 1947: 456; Moroz et al., 2007: 102; Buşmachiu, 2010: 119–121; Moroz, 2012: 52; Moroz et al., 2012: 159; Fjellberg et al., 2013; Moroz, 2013b: 876; Moroz et al., 2013b: 92; Tishchikov et al., 2013: 160; Moroz, Vezhnovets, 2015: 73; Borodin, Tsinkevich, 2016b: 14; Moroz et al., 2017a: 49; Moroz et al., 2017c: 70, 72; Moroz, 2018: 203; Moroz et al., 2018c: 75; Borodin, Krasouski, 2020.

Isotomurus stuxbergi (Tullberg, 1877)

Records for the region. *Isotomurus ciliatus* Stach, 1947: Stach, 1947: 479.

Isotomurus (*Isotomurus*) *ciliatus* Stach, 1947: Grinbergs, 1960: 45.

Isotomurus ciliatus Stach, 1947: Martynova, 1964a: 75; Buşmachiu, 2010: 118–119.

Isotomurus stuxbergi: Fjellberg et al., 2013.

Genus *Pachyotoma* Bagnall, 1949
Pachyotoma crassicauda (Tullberg, 1871)

Records for the region. *Ballistura crassicauda* Tullberg, 1871: Stach, 1947: 244.

Pachyotoma crassicauda: Grinbergs, 1960: 40; Buşmachiu, 2010: 119; Fjellberg et al., 2013.

Genus *Parisotoma* Bagnall, 1940
Parisotoma ekmani (Fjellberg, 1977)

Records for the region. *Isotoma ekmani* Fjellberg, 1977: Potapov, 1991: 276.

Parisotoma ekmani: Fjellberg et al., 2013.

Parisotoma notabilis (Schäffer, 1896)

Records for the region. *Isotoma notabilis* Schäffer, 1896: Stach, 1947: 378; Kuznetsova, 1984: 257; Kuznetsova, 1988: 30, 33, 36–37, 39; Sterzyńska, Kuznetsova, 1995: 148; Kuznetsova, 2002: 376–377; Kurachenko, 2008: 133.

Isotoma (*Isotoma*) *notabilis* Schäffer, 1896: Grinbergs, 1960: 42.

Parisotoma notabilis: Buşmachiu, 2010: 119–120; Chernov et al., 2010: 563; Fjellberg et al., 2013; Borodin, Tsinkevich, 2016b: 14; Borodin, Krasouski, 2020.

Genus *Proisotoma* Börner, 1901
Proisotoma minima (Absolon, 1901)

Records for the region. Kuznetsova, 1984: 257.

Proisotoma minuta (Tullberg, 1871)

Records for the region. Stach, 1947: 213; Grinbergs, 1960: 40; Buşmachiu, 2010: 119; Fjellberg et al., 2013.

Genus *Subisotoma* Stach, 1947
Subisotoma pusilla (Schäffer, 1900)

Records for the region. *Subisotoma pussila* Schäffer, 1896: Buşmachiu, 2010: 120.

Subisotoma pusilla: Borodin, Tsinkevich, 2016b: 14.

Genus *Vertagopus* Börner, 1906
Vertagopus cinereus (Nicolet, 1842)

Records for the region. *Vertagopus cinerea*: Kuznetsova, 1984: 258.

Family Neanuridae
Genus *Anurida* Laboulbène, 1865
Anurida granulata Agrell, 1943

Records for the region. Kuznetsova, 1984: 257.

Genus *Friesea* von Dalla Torre, 1895
Friesea mirabilis (Tullberg, 1871)

Records for the region. *Friesea* (*Friesea*) *mirabilis* Tullberg, 1871: Grinbergs, 1960: 28.

Friesea mirabilis: Stach, 1949a: 292; Kuznetsova, 1984: 257; Kuznetsova, 1988: 36–37; Sterzyńska, Kuznetsova, 1995: 148; Buşmachiu, 2010: 119; Fjellberg et al., 2013; Fiera, Weiner, 2016: 23; Borodin, Tsinkevich, 2016a: 13; Borodin, Krasouski, 2020.

Collection. Berezina [2002].

Genus *Micranurida* Börner, 1901
Micranurida pygmaea Börner, 1901

Records for the region. Kuznetsova, 1984: 257; Kuznetsova, 1988: 30, 33, 36–37, 39–40, 42; Sterzyńska, Kuznetsova, 1995: 148; Borodin, Tsinkevich, 2016a: 13; Borodin, Krasouski, 2020.

Collection. Berezina [2002].

Genus *Morulina* Börner, 1906
(?) *Morulina gigantea* (Tullberg, 1877)

Records for the region. *Morulina verrucosa* (Börner, 1903): Fjellberg et al., 2013.

Genus *Neanura* MacGillivray, 1893
Neanura muscorum (Templeton, 1836)

Records for the region. *Biloba muscorum* Templeton, 1835: Stach, 1951: 45.

Neanura (*Neanura*) *muscorum* Templeton, 1835: Grinbergs, 1960: 32.

Neanura muscorum: Kuznetsova, 1984: 257; Kuznetsova, 1988: 39; Sterzyńska, Kuznetsova, 1995: 148; Buşmachiu, 2010: 119; Borodin, Tsinkevich, 2016a: 13; Borodin, Krasouski, 2020.

Genus *Pseudachorutes* Tullberg, 1871
Pseudachorutes dubius Krausbauer, 1898

Records for the region. Stach, 1949b: 103 (?) (the record does not allow to determine whether the material was collected from the Belarusian or Polish part of Belovezhskaya Pushcha); Kuznetsova, 1984: 257; Sterzyńska, Kuznetsova, 1995: 148.

Pseudachorutes corticicolus Schaffer, 1896

Records for the region. Kuznetsova, 1984: 257.

Pseudachorutes parvulus Börner, 1901

Records for the region. Kuznetsova, 1984: 257; Kuznetsova, 1984: 39; Sterzyńska, Kuznetsova, 1995: 148; Buşmachiu, 2010: 120–121; Borodin, Tsinkevich, 2016a: 13; Borodin, Krasouski, 2020.

Pseudachorutes subcrassus Tullberg, 1871

Records for the region. Kuznetsova, 1984: 257; Chernov et al., 2010: 563.

Family Onychiuridae
Genus *Deuteraphorura* Absolon, 1901
Deuteraphorura variabilis (Stach, 1954)

Records for the region. *Onychiurus variabilis* Stach, 1954: Stach, 1955: 56.

Genus *Oligaphorura* Bagnall, 1949
Oligaphorura absoloni (Börner, 1901)

Records for the region. *Onychiurus absoloni*: Kuznetsova, 1984: 257.

Micraphorura absoloni Börner, 1901: Kuznetsova, 2002: 376; Buşmachiu, 2010: 118–119; Borodin, Tsinkevich, 2016a: 13.

Oligaphorura absoloni: Kuznetsova, 1988: 30, 33, 36–37, 39–40, 42; Sterzyńska, Kuznetsova, 1995: 148; Borodin, Krasouski, 2020.

Genus *Onychiurus* Gervais, 1841
Onychiurus fimetarius (Linnaeus, 1758)

Records for the region. Kipenvarlits, 1961: 57; Vetrava, 1983a: 96; Antipov et al., 1986: 420; Antipov et al., 1989: 422.

Genus *Protaphorura* Absolon, 1901
Protaphorura armata (Tullberg, 1869)

Records for the region. *Onychiurus armatus* Tullberg, 1869: Stach, 1954: 127; Kipenvarlits, 1961: 57; Antipov et al., 1986: 420; Antipov et al., 1989: 422.

Onychiurus nemoratus Gisin, 1952: Kuznetsova, 1984: 257.

Protaphorura armata: Sterzyńska, Kuznetsova, 1995: 148; Borodin, Tsinkevich, 2016a: 13; Borodin, Krasouski, 2020.

Protaphorura nemorata (Gisin, 1952)

Records for the region. Kuznetsova, 1988: 40.

Protaphorura stogovi Pomorski, 1993

Records for the region. Kuznetsova, 2002: 379.

Protaphorura subarmata (Gisin, 1957)

Records for the region. *Onychiurus subarmatus* Gisin, 1957: Kuznetsova, 1984: 258.

Onychiuris armatus: Vetrava, 1983a: 96.

Protaphorura subarmata: Buşmachiu, 2010: 120–121; Chernov et al., 2010: 563; Borodin, Tsinkevich, 2016a: 13.

Protaphorura subuliginata (Gisin, 1956)

Records for the region. Sterzyńska, Kuznetsova, 1995: 148.

Genus *Xenyllodes* Axelson, 1903
Xenyllodes armatus Axelson, 1903

Records for the region. Kuznetsova, 1984: 257; Kuznetsova, 1988: 42; Kuznetsova, 2002: 380.

Family Poduridae
Genus *Podura* Linnæus, 1758
Podura sp.

Records for the region. *Hypogastrura* Bagnall, 1940: Kuznetsova, 1984: 257.

Podura aquatica Linnaeus, 1758

Records for the region. Solovyov, 1926: 41; Shalapenok, 1964: 198; Radzymovsky, Polishchuk, 1970: 179; Vetrava, 1984: 448; Antipov et al., 1986: 420; Antipov et al., 1989: 422; Baichorov et al., 2002: 76; Moroz et al., 2002a: 90; Moroz et al., 2002b: 89, 92; Moroz et al., 2004a: 200; Moroz et al., 2005: 101; Moroz, Maksimenkov, 2006: 58; Moroz et al., 2007: 102; Moroz et al., 2008: 44; Buşmachiu, 2010: 118–119; Moroz, 2013b: 876; Moroz, 2013c: 11; Moroz, Laenko, 2013: 79; Moroz et al., 2013a: 97; Moroz et al., 2013b: 92; Tishchikov et al., 2013: 160; Moroz et al., 2014: 23; Ryzhaya, 2014: 377; Moroz, Vezhnovets, 2015: 73; Borodin, Tsinkevich, 2016a: 13; Moroz et al., 2016: 58; Moroz, Lipinskaya, 2017: 34; Moroz et al., 2017a: 49; Moroz et al., 2017b: 54; Moroz et al., 2017c: 70, 72; Moroz, 2018: 203; Moroz et al., 2018c: 75; Moroz et al., 2018d: 84; Moroz, Vezhnavets, 2019: 67; Borodin, Krasouski, 2020.

Family Tullbergiidae
Genus *Mesaphorura* Börner, 1901
Mesaphorura sp.

Records for the region. Kuznetsova, 1988: 30, 33, 36–37, 39–40, 42; Chernov et al., 2010: 564.

Mesaphorura macrochaeta Rusek, 1976

Records for the region. *Tullbergia krausbaueri* Greenslade, 1992: Kuznetsova, 1984: 257.
Mesaphorura krausbaueri: Kurachenko, 2008: 133.
Mesaphorura macrochaeta: Sterzyńska, Kuznetsova, 1995: 148; Kuznetsova, 2002: 376; Buşmachiu, 2010: 118–119; Borodin, Tsinkevich, 2016a: 13; Borodin, Krasouski, 2020.

Mesaphorura sylvatica (Rusek, 1971)

Records for the region. *Tullbergia sylvatica* Rusek, 1971: Kuznetsova, 1984: 257.

Genus *Stenaphorura* Absolon, 1900
Stenaphorura quadrispina Börner, 1901

Records for the region. *Tullbergia quadrispina* (Börner, 1901): Kipenvarlits, 1961: 57.

Order Symphypleona
Family Arrhopalitidae
Genus *Pygmarrhopalites* Vargovitsh, 2009
Pygmarrhopalites benitus (Folsom, 1896)

Records for the region. *Arrhopalites principalis* Stach, 1945: Kuznetsova, 1984: 257; Kuznetsova, 1988: 42.

Pygmarrhopalites cochlearifer (Gisin, 1947)

Records for the region. *Arrhopalites cochlearifer* Gisin, 1947: Kuznetsova, 1984: 257; Sterzyńska, Kuznetsova, 1995: 149.

Pygmarrhopalites secundarius (Gisin, 1958)

Records for the region. *Arrhopalites secundarius* Gisin, 1958: Kuznetsova, 1984: 257; Kuznetsova, 1988: 42; Sterzyńska, Kuznetsova, 1995: 149.

Family Bourletiellidae
Genus *Bourletiella* Banks, 1899
Bourletiella hortensis (Fitch, 1863)

Records for the region. *Bourletiella* (*Bourletiella*) *hortensis* Fitch, 1863: Grinbergs, 1960: 59.
Sminthurus pruinosus: Chumakov, 1985: 71.
Bourletiella hortensis: Stach, 1956: 153; Buşmachiu, 2010: 120.

Genus *Deuterosminthurus* Börner, 1901
Deuterosminthurus sp.

Records for the region. Moroz et al., 2013b: 92.

Genus *Fasciosminthurus* Gisin, 1960
Fasciosminthurus circumfasciatus (Stach, 1956)

Records for the region. *Deuterosminthurus circumfasciastus* Stach, 1956: Stach, 1956: 178; Buşmachiu, 2010: 120.
Bourletiella (*Bourletiella*) *circumfasciata* Stach, 1956: Grinbergs, 1960: 59.
Fasciosminthurus circumfasciatus: Martynova, 1964a: 97; Fjellberg et al., 2013.

Genus *Heterosminthurus* Stach, 1955
Heterosminthurus sp.

Records for the region. Kuznetsova, 1984: 257.

Heterosminthurus insignis (Reuter, 1876)

Records for the region. *Bourletiella* (*Heterosminthurus*) *insignis* Reuter, 1876: Grinbergs, 1960: 58.
Heterosminthurus insignis Reuter, 1899: Stach, 1956: 200; Buşmachiu, 2010: 120.
Heterosminthurus insignis: Fjellberg et al., 2013.

Heterosminthurus linnaniemii (Stach, 1920)

Records for the region. *Heterosminthurus linnaniemii* Stach, 1919: Stach, 1956: 189.

Bourletiella (*Heterosminthurus*) *linnaniemi* Stach, 1919: Grinbergs, 1960: 59.

Heterosminthurus linnaniemi Stach, 1920: Buşmachiu, 2010: 120.

Heterosminthurus linnaniemii: Martynova, 1964a: 97; Fjellberg et al., 2013.

Heterosminthurus novemlineatus (Tullberg, 1871)

Records for the region. *Heterosminthurus novemlineatus* var. *pilosicauda* Stach, 1956: Stach, 1956: 196–197.

Bourletiella (*Heterosminthurus*) *novemlineata* Tullberg, 1871: Grinbergs, 1960: 58.

Bourletiella (*Heterosminthurus*) *novemlineata* var. *malopigmentata* Stach, 1956: Grinbergs, 1960: 58.

Deuterosminthurus novemlineatus (Tullberg, 1929): Moroz, Maksimenkov, 2006: 58; Moroz, Laenko, 2013: 79.

Heterosminthurus novemlineatus: Buşmachiu, 2010: 120; Fjellberg et al., 2013.

Family Dicyrtomidae
Genus *Dicyrtoma* Bourlet, 1842
Dicyrtoma fusca (Lubbock, 1873)

Records for the region. *Dicyrtoma fusca* Lucas, 1849 f. *principalis*: Stach, 1957: 70.

Dicyrtoma fusca Lucas, 1849: Grinbergs, 1960: 62.

Dicyrtoma fusca: Buşmachiu, 2010: 120; GBIF.org, 2023.

Genus *Dicyrtomina* Börner, 1903
Dicyrtomina minuta (Fabricius, 1783)

Records for the region. *Dicyrtomina minuta* Fabricius, 1783 f. *principalis*: Stach, 1957: 47.

Dicyrtoma minuta Fabricius, 1783: Grinbergs, 1960: 62.

Dicyrtomina minuta subsp. *minuta* (Fabricius, 1783): Fjellberg et al., 2013.

Dicyrtomina minuta: Buşmachiu, 2010: 120–121; Fjellberg et al., 2013.

Genus *Ptenothrix* Börner, 1906
Ptenothrix atra (Linnaeus, 1758)

Records for the region. *Prenothrix atra* Linnaeus, 1758: Stach, 1957: 90; Buşmachiu, 2010: 120.

Dicyrtoma atra Linnaeus, 1758: Grinbergs, 1960: 63.

Ptenothrix atra: Kuznetsova, 1984: 257; Kuznetsova, 1988: 42; Sterzyńska, Kuznetsova, 1995: 149; Fjellberg et al., 2013.

Ptenothrix leucostrigata Stach, 1957

Records for the region. *Prenothrix leucostrigata* Stach, 1957: Buşmachiu, 2010: 120.

Ptenothrix leucostrigata: Stach, 1957: 101; Fjellberg et al., 2013.

Family Katiannidae
Genus *Sminthurinus* Börner, 1901
Sminthurinus aureus (Lubbock, 1862)

Records for the region. Chernov et al., 2010: 564.

Sminthurinus domesticus Gisin, 1963

Records for the region. *Sminthurinus niger* Gisin, 1963: Kuznetsova, 1984: 257.

Sminthurinus igniceps Reuter, 1881

Records for the region. *Sminthurinus ignipes* Reuter, 1881: Grinbergs, 1960: 58.

Sminthurinus ignipes Reuter, 1881: Buşmachiu, 2010: 120.

Sminthurinus igniceps: Stach, 1956: 114; Martynova, 1964a: 96.

Sminthurinus niger (Lubbock, 1862)

Records for the region. *Sminthurinus niger* Lubbock, 1867: Kuznetsova, 1988: 42.

Family Sminthurididae
Genus *Allacma* Börner, 1906
Allacma fusca (Linnaeus, 1758)

Records for the region. *Sminthurus fuscus* Linnaeus, 1758: Grinbergs, 1960: 62; Molodova, 1986: 300–301.

Sminthurus fuscus Tullberg, 1871: Kuznetsova, 1984: 257.

Allacma fusca: Stach, 1956: 221; Buşmachiu, 2010: 120; GBIF.org, 2023.

Genus *Caprainea* Dallai, 1970
Caprainea marginata (Schött, 1893)

Records for the region. Chernov et al., 2010: 564.

Genus *Lipothrix* Börner, 1906
Lipothrix lubbocki (Tullberg, 1872)

Records for the region. *Sphyrotheca lubbocki* Tullberg, 1872: Stach, 1956: 214; Kuznetsova, 1984: 257.

Sminthurus (*Sphyrotheca*) *lubbocki* Tullberg, 1872: Grinbergs, 1960: 60.

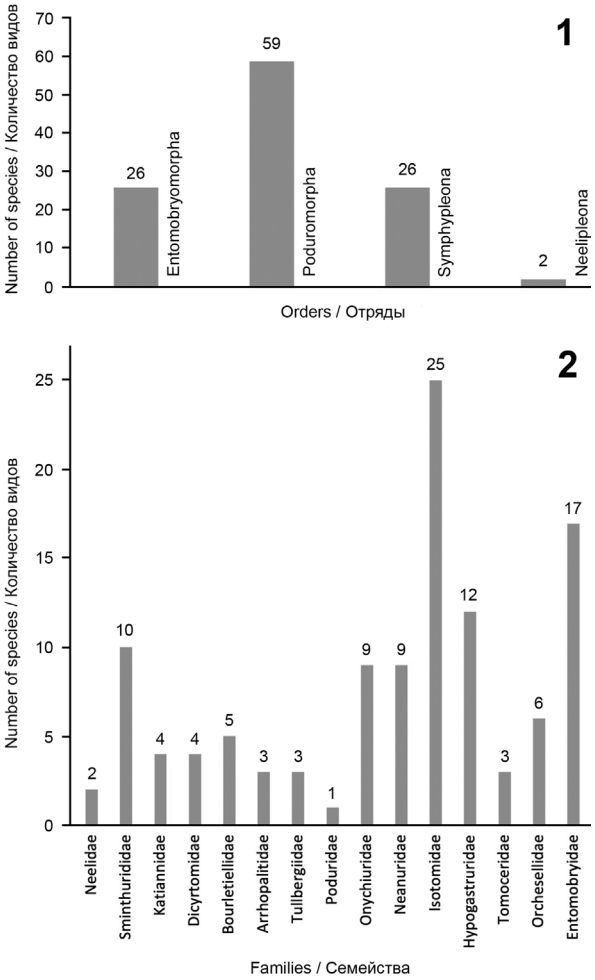
Lipothrix lubbocki: Kuznetsova, 1988: 40; Sterzyńska, Kuznetsova, 1995: 149; Buşmachiu, 2010: 120; Fjellberg et al., 2013.

Genus *Sminthurides* Börner, 1900
Sminthurides sp.

Records for the region. Radzymovsky, Polishchuk, 1970: 179; Kuznetsova, 1988: 42.

Sminthurides aquaticus (Bourlet, 1843)

Records for the region. *Sminthurides aquatica* (Bourlet, 1843): Moroz et al., 2022: 8.



Figs 1–2. Taxonomic structure of springtails of Belarus.
1 – orders; 2 – families.
Рис. 1–2. Таксономическая структура ногохвосток Беларуси.
1 – отряды; 2 – семейства.

Sminthurides aquaticus: Stach, 1956: 25; Grinbergs, 1960: 55; Radzymovsky, Polishchuk, 1970: 179; Moroz et al., 2002a: 90; Moroz et al., 2004a: 201; Moroz et al., 2005: 100–101; Moroz, Maksimenkov, 2006: 58; Moroz et al., 2013b: 92; Buşmachiu, 2010: 118–119, 121; Tishchikov et al., 2013: 160; Moroz, Laenko, 2013: 79; Moroz et al., 2018c: 75; Borodin, Krasouski, 2020.

Sminthurides malmgreni (Tullberg, 1877)

Records for the region. *Sminthurides malmgreni* Tullberg, 1876: Grinbergs, 1960: 56.

Sminthurides malmgreni: Stach, 1956: 31; Buşmachiu, 2010: 120.

Sminthurides pseudassimilis Stach, 1956

Records for the region. *Sminthurides pseudoassimilis* Stach, 1956: Buşmachiu, 2010: 120.

Sminthurides pseudassimilis: Stach, 1956: 45; Grinbergs, 1960: 56.

Sminthurides schoetti Axelson, 1903

Records for the region. Kuznetsova, 1984: 257.

Genus *Sminthurus* Latreille, 1802
Sminthurus sp.

Records for the region. Antipov et al., 1986: 420; Antipov et al., 1989: 422.

Sminthurus viridis (Linnaeus, 1758)

Records for the region. *Sminthurus* (*Sminthurus*) *viridis* Linnaeus, 1758: Grinbergs, 1960: 60.

Sminthurus viridis: Stach, 1956: 271; Chumakov, 1985: 71; Buşmachiu, 2010: 120; Fjellberg et al., 2013.

Genus *Spatulosminthurus* Betsch et Betsch-Pinot, 1983
Spatulosminthurus flaviceps (Tullberg, 1871)

Records for the region. *Sminthurus flaviceps* Tullberg, 1871: Stach, 1956: 259; Chumakov, 1985: 71.

Sminthurus (*Sminthurus*) *flaviceps* Tullberg, 1871: Grinbergs, 1960: 60.

Spatulosminthurus flaviceps: Buşmachiu, 2010: 119.

Genus *Sphaeridia* Linnaniemi, 1912
Sphaeridia pumilis (Krausbauer, 1898)

Records for the region. *Sminthurides pumilis* Krausbauer, 1898: Grinbergs, 1960: 55.

Sphaeridia pumilis: Stach, 1956: 52; Kuznetsova, 1984: 257; Sterzyńska, Kuznetsova, 1995: 149; Buşmachiu, 2010: 119; Borodin, Krasouski, 2020.

Conclusion

After conducting the analysis of all available scientific publications, a checklist of the species observed on the modern territory of Belarus has been compiled. In total, 113 species of Collembola from 4 orders and 15 families have been recorded (Figs 1, 2). Eleven taxa were not identified to species.

Confirmation is required for the following species: *Coecobrya tenebricosa*, *Willemia scandinavica*, *Desoria olivacea*, *Entomobrya muscorum*, *Entomobryoides purpurascens*, *Ballistura tuberculata*, *Pseudosinella zygophora*, *Morulina gigantea*.

Currently, several species mentioned earlier were identified sensu lato, but now they have been separated and consolidated into species-groups. As a result, many early records of springtails are obsolete. At present, the *Isotoma viridis* species-group includes the following species: *I. viridis*, *I. anglicana* Lubbock, 1862, *I. caerulea* Bourlet, 1839 and *I. riparia* [Burkhardt, Filser, 2005], as well as the *Parisotoma notabilis* species-group, including *P. notabilis*, *P. agrelli* (Deboutteville, 1950), *P. reducta* (Rusek, 1984), *P. ekmani*, *P. trichaetosa* Martynova, 1977 [Striuchkova et al., 2022], requires confirmation. Early records of *Lepidocyrtus lignorum* may correspond to the following species within the *lignorum* species-group: *L. lignorum*,

L. lanuginosus, *L. pallidus* Reuter, 1892, *L. violaceus* Lubbock, 1873 [Mateos, Álvarez-Presas, 2022].

At present, the estimated diversity of the Collembola species in Belarus is 47.48% of possibly identified species. Determination of the structure of the Collembola fauna in Belarus requires comprehensive studies in various biotopes and on different types of soils.

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