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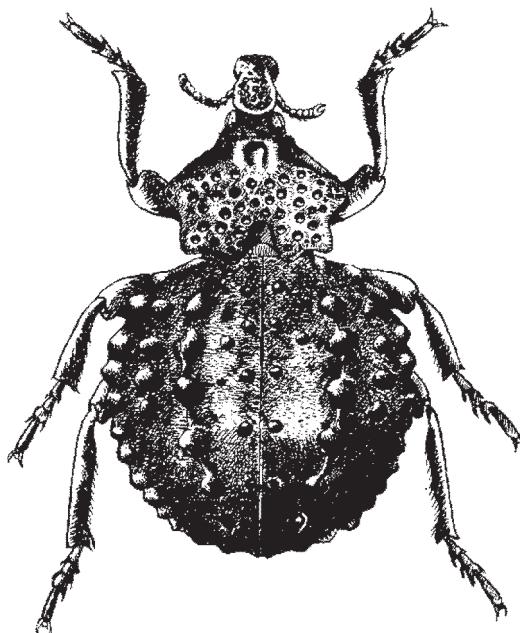


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Checklist of the springtails (Collembola) of Georgia Список ногохвосток (Collembola) Грузии

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Abstract. 84 species of springtails from 4 orders, 15 families and 51 genera are registered for the fauna of Georgia. Of them 13 species are recorded for this territory the first time.

Резюме. На сегодняшний день на территории Грузии отмечен 84 вида ногохвосток из 4 отрядов, 15 семейств и 51 родов. 13 из них впервые обнаружены в Грузии.

Introduction

Collembolans are one of the most numerous and diverse soil Hexapoda in terrestrial ecosystems. They are important ecotoxicological test organisms and have been used extensively to indicate the effects of environmental pollutants and different agricultural regimes on biodiversity in soils [Hopkin, 1997].

The investigation of the Georgian springtails began at the end of 1940s, but unfortunately collapsed in 1980s. Now we try to push them forward again.

A restudy of R. Djanashvili's collection permits us to add 13 species, namely *Arrhopalites caecus* (Tullberg, 1871), *A. pygmaeus* (Wankel, 1860), *Ceratophysella cavicola* (Börner, 1901), *Desoria trispinata* (MacGillivray, 1896), *Deuteraphorura variabilis* (Stach, 1954), *Folsomia spinosa* Kseneman, 1936, *Neelus murinus* Folsom, 1896, *Oligaphorura schoetti* (Lie-Pettersen, 1896), *Onychiurodes granulosus* (Stach, 1930), *Proisotoma minuta* (Tullberg, 1871), *Pseudachorutes dubius* Krausbauer, 1898, *Willowsia buski* (Lubbock, 1871), *W. nigromaculata* (Lubbock, 1873) to the springtail list of Georgia.

Contrary, some of the Grinberg records based on Stach's monographies [1947, 1949a,b, 1951, 1954, 1956], viz. *Deutonura alticola* (Stach, 1951), *Hypogastrura crassaegranulata* (Stach, 1949), *H. manubrialis* (Tullberg, 1869), *Micraphorura absoloni* (Börner, 1901), *Pseudachorutes dubius* Krausbauer, 1898, *Pseudisotoma sensibilis* (Tullberg, 1877), *Spatulosminthurus guthriei* (Stach, 1919), *Tetracanthella afurcata* Handschin, 1919, *Vertagopus cinereus* (Nicolet, 1842) were deleted from the list, as after checking the exact localities mentioned by Stach, it became clear that they were found in other places of the Caucasus and Europe but not in Georgia.

The following 7 unidentified species aren't included in this checklist: *Deuterosminthurus* sp. from W.G.: Cave:

Ghliana (Proper data), *Entomobrya* sp. from W.G.: Lapari (Rusek, 1961), *Lepidocyrtus* sp. from W.G.: Cave: Tetri (Proper data), *Megalothorax* sp. from W.G.: Caves: Sataplia I, Tsakhi (Proper data), *Neanura* sp. from W.G.: Mestia (Rusek, 1961), *Seira* sp. from W.G.: Lapari (Rusek, 1961) and *Sphaeridia* sp. from W.G.: Cave: Orpiri I (Proper data).

Abbreviations: E.G.: East Georgia, W.G.: West Georgia, S.G.: South Georgia, Rep. - Republic, Reg. - Region, distr. - district, IZG - Institute of Zoology of Georgia.

Remark. In the checklist new record species for Georgia are indicated by an asterisk.

Materials and methods

Material examined is based on IZG (Institute of Zoology of Georgia) collections gathered by R. Djanashvili, V. Jishkariani and S. Levushkin in 1964–1971. Remounting of damaged slides was performed by using widely use standard method.

Results

Class Collembola Lubbock, 1870
Order Poduromorpha Börner, 1913, sensu D'Haese, 2002
Superfamily Hypogastruroidea Salmon, 1964, sensu Deharveng, 2004
Family Hypogastruridae Börner, 1906

Genus *Ceratophysella* Börner in Brohmer, 1932

C. armata (Nicolet, 1842)

Distribution: Georgia, without exact locality [Grinbergs, 1960]; W.G.: Imereti Reg.: Tskaltubo distr. – Orpiri I cave, leg. R. Djanashvili, S. Levushkin (IZG).

C. caucasica Martynova, 1971

Distribution: W.G.: Abkhazia Autonomic Rep.: Gagra

distr: Bichvinta; surroundings of Sokhumi [Martynova, 1964 (as *stercoraria*), 1971].

C. cavicola (Börner, 1901) *

Distribution: W.G.: Abkhazia Autonomic Rep.: Sokhumi distr. - Tskaro cave, leg. R. Djanashvili (IZG); Racha, Lechkhumi, Kvemo Svaneti Reg.: Ambrolauri distr. - Nikortsminda cave, leg. R. Djanashvili (IZG).

C. kolchidica (Babenko, 1994)

[*Hypogastrura kolchidica* Babenko, 1994]

Distribution: W.G.: Guria Reg.: Chokhatauri distr. surroundings of Bakhmaro [Babenko, 1994].

C. stercoraria Stach, 1963

Distribution: W.G.: Abkhazia Autonomic Rep.: Sokhumi [Babenko in Babenko et al., 1994].

Genus *Hypogastrura* Bourlet, 1839

Subgenus *Hypogastrura* Bourlet, 1839

H. gisini Strenzke, 1954

Distribution: W.G.: Abkhazia Autonomic Rep.: Sokhumi (Babenko, pers. comm.).

H. manubrialis (Tullberg, 1869)

Distribution: W.G.: Ajameti reserve (Babenko, pers. comm.).

H. vernalis (Carl, 1901)

Distribution: W.G.: Abkhazia Autonomic Rep.: Sokhumi (Babenko, pers. comm.).

H. viatica (Tullberg, 1872)

Distribution: W.G.: Abkhazia Autonomic Rep.: Sokhumi (Babenko, pers. comm.); Imereti Reg.: Tskaltubo distr. - Orpiri I cave, Sataplia IV cave, leg. R. Djanashvili, S. Levushkin (IZG).

Genus *Mesogastrura* Bonet, 1930

M. ojcoviensis (Stach, 1919)

Distribution: W.G.: Abkhazia Autonomic Rep.: Gudauta distr. - Chasm of Abkhazian Speleologist (Akui), leg. R. Djanashvili (IZG); Imereti Reg.: Chiatura distr. - Mgjalaklde cave, Taroklde cave, leg. R. Djanashvili (IZG); Tkibuli distr. - Maghara (Tsutskhvati) cave, leg. R. Djanashvili (IZG); Tskaltubo distr. - Tetri cave; leg. R. Djanashvili (IZG) [Babenko et al., 1994].

Genus *Microgastrura* Stach, 1922

M. duodecimoculata Stach, 1922

Distribution: W.G.: Imereti Reg.: Tskaltubo distr. - Ajameti reserve [Babenko et al., 1994 just as "Caucasus"].

Genus *Pseudacherontides* Djanashvili, 1971

P. zenkevitchi Djanashvili, 1971

Distribution: W.G.: Imereti Reg.: Tskaltubo distr. - Orpiri I cave, leg. R. Djanashvili (IZG) [Djanashvili, 1971].

Genus *Schoettella* Schäffer, 1896

S. ununguiculata (Tullberg, 1869)

Distribution: W.G.: Imereti Reg.: Tskaltubo distr. - Ajameti reserve and 10 km from Kutaisi, under bark [Babenko, pers. comm.].

Genus *Typhlogastrura* Bonet, 1930

T. morozovi Babenko, 1987

Distribution: W.G.: Cave: Abkhazia Autonomic Rep.: Gudauta distr. - Mt. Bzipi - "Snezhnaya" cave [Babenko, 1987].

Genus *Xenylla* Tullberg, 1869

X. maritima Tullberg, 1869

Distribution: W.G.: Abkhazia Autonomic Rep., without exact locality [Potapov, Stebaeva in Babenko et al., 1994].

Superfamily *Neanuroidea* Massoud, 1967, sensu D'Haese, 2002

Family *Neanuridae* Börner, 1901, sensu Deharveng, 2004

Subfamily *Neanuridae* Börner, 1901, sensu Cassagnau, 1989

Tribe *Neanurini* Börner, 1901, sensu Cassagnau, 1983

Genus *Neanura* MacGillivray, 1893

N. muscorum (Templeton, 1835)

Distribution: Georgia, without exact locality [Grinbergs, 1960]; W.G.: Racha, Lechkhumi, Kvemo Svaneti Reg.: Ambrolauri distr. - Nikortsminda cave, leg. R. Djanashvili (IZG).

N. transcaucasica (Stach, 1951)

[*Biloba transcaucasica* (Stach, 1951)]

Distribution: E.G.: Tbilisi [Stach, 1951; Grinbergs, 1960].

Subfamily *Pseudachorutinae* Börner, 1906

Genus *Anurida* Laboulbene, 1865

A. kaya Babenko, 1998

Distribution: W.G.: Imereti Reg.: Baghdati distr. - Ajameti reserve [Babenko, 1998].

Genus *Micranurida* Börner, 1901

M. pygmaea Börner, 1901

Distribution: Georgia, without exact locality [Grinbergs, 1960]; W.G.: Imereti Reg.: Tskaltubo distr. - Chuneshi cave, leg. R. Djanashvili, S. Levushkin (IZG).

Genus *Pseudachorutes* Tullberg, 1871

P. dubius Krausbauer, 1898 *

Distribution: W.G.: Imereti Reg.: Tskaltubo distr. - Orpiri I cave, leg. R. Djanashvili, S. Levushkin (IZG).

Superfamily Onychiuroidea, sensu D' Haese, 2002

Family Onychiuridae Lubbock, 1867

Subfamily Onychiurinae Börner, 1901

Tribe Hymenaphorurini Pomorski, 1996

Genus *Heteraphorura* Bagnall, 1948

H. variotuberculata (Stach, 1934)

Onychiurus variotuberculatus Stach, 1934

Distribution: E.G.: Georgia, without exact locality [Grinbergs, 1960].

Genus *Kalaphorura* Absolon, 1901

K. burmeisteri (Lubbock, 1873)

Distribution: E.G.: Shida Kartli Reg.: Mtskheta [Stach, 1954; Grinbergs, 1960].

Tribe Oligaphorurini Bagnall, 1949

Genus *Oligaphorura* Bagnall, 1949

O. schoetti (Lie-Pettersen, 1896)*

Distribution: W.G.: Abkhazia Autonomic Rep.: Gudauta distr. - Chasm of Abkhazian Speleologists (Akuiu), leg. R. Djanashvili (IZG); Gulripshi distr. - Shakurani II cave, leg. R. Djanashvili (IZG).

Tribe Onychiurini Börner, 1906

Genus *Deuteraphorura* Absolon, 1901

D. inermis (Tullberg, 1869)

Distribution: W.G.: Georgia, without exact locality [Grinbergs, 1960].

D. variabilis (Stach, 1954) *

Distribution: W.G.: Abkhazia Autonomic Rep.: Gudauta distr. - Maanikvara cave, leg. R. Djanashvili (IZG).

Genus *Onychiuroides* Bagnall, 1948

O. bureschii (Handschin, 1928)

Distribution: Georgia, without exact locality [Grinbergs, 1960].

O. granulosus (Stach, 1930) *

Distribution: W.G.: Abkhazia Autonomic Rep.: Sokhumi distr. - Kelasuri cave, Tskaro cave, leg. R. Djanashvili (IZG).

Tribe Protaiphorurini Bagnall, 1949

Genus *Protaiphorura* Absolon, 1901

P. armata (Tullberg, 1869)

Distribution: Georgia, without exact locality [Grinbergs, 1960].

P. octopunctata (Tullberg, 1877) [?]

Distribution: E.G.: Shida Kartli Reg.: Mtskheta, surroundings of Tbilisi [Stach, 1954; Grinbergs, 1960].

Family Tullbergiidae Bagnall, 1935

Subfamily Stenaphorurinae Bagnall, 1935

Genus *Mesaphorura* Börner, 1901

M. krausbaueri Börner, 1901

Distribution: Georgia, without exact locality [Grinbergs, 1960].

Order Entomobryomorpha Börner, 1913, sensu D'Haese, 2002

Superfamily Entomobryoidea Womersley, 1934, sensu Szeptycki, 1979

Family Cyphoderidae Börner, 1913

Genus *Cyphoderus* Nicolet, 1842

C. komareki Rusek, 1961

Distribution: W.G.: Samegrelo, Zemo Svaneti Reg.: Mestia distr. - Becho [Rusek, 1961].

Family Entomobryidae Schäffer, 1896

Subfamily Entomobryinae Schäffer, 1896

Tribe Entomobryini Börner, 1906

Genus *Entomobrya* Rondani, 1861

E. atrocincta Schött, 1896

Distribution: E.G.: Tbilisi [Stach, 1963].

E. handschini Stach, 1922

Distribution: E.G.: Tbilisi [Stach, 1963].

E. nivalis (Linnaeus, 1758)

Distribution: E.G.: Tbilisi [Stach, 1963].

E. subcaucasica Stach, 1963

Distribution: E.G.: Tbilisi [Stach, 1963].

Subfamily Lepidocyrtinae Wahlgren, 1906, sensu Stach, 1955

Tribe Lepidocyrtini Yoshii et Yayuk, 1989

Genus *Pseudosinella* Schäffer, 1897

P. alba (Packard, 1873)

Distribution: Georgia, without exact locality [Grinbergs, 1960].

P. duodecimocellata Handschin, 1928

Distribution: Georgia, without exact locality [Grinbergs, 1960].

P. sexoculata Schött, 1902

Distribution: Georgia, without exact locality [Grinbergs, 1960].

Tribe Willowsiini Yoshii et Yayuk, 1989

Genus *Willowsia* Shoebotham, 1917

W. buski (Lubbock, 1871) *

Distribution: W.G.: Samegrelo-Kvemo Svaneti Reg.: Martvili distr. — Jortsku cave, leg. R. Djanashvili (IZG).

W. nigromaculata (Lubbock, 1873) *

Distribution: W.G.: Imereti Reg.: Tskaltubo distr. — Sakajia cave, leg. R. Djanashvili, S. Levushkin (IZG).

Subfamily Orchesellinae Börner, 1906

Tribe Heteromurini Mari Mutt, 1980

Genus *Heteromurus* Wankel, 1860

Subgenus *Heteromurus* Wankel, 1860

H. nitidus (Templeton, 1835)

Distribution: Georgia, without exact locality [Grinbergs, 1960]; W.G.: Imereti Reg.: Tkibuli distr. - Maghara (Tsutskhvati) cave, leg. R. Djanashvili (IZG).

Tribe Orchesellini Börner, 1906

Genus *Orchesella* Templeton, 1835

O. palestinenensis Stach, 1960

Distribution: W.G.: Samegrelo, Zemo Svaneti Reg.: Mestia distr. — Lapari, Mestia [Rusek, 1961].

O. quadriguttata Stach, 1960

Distribution: E.G.: Tbilisi [Stach, 1960].

Superfamily Isotomoidea Szeptycki, 1979

Family Isotomidae Schäffer, 1896

Subfamily Anuroporinae Börner, 1901

Genus *Anuroporus* Nicolet, 1842

A. alpinus Potapov et Stebaeva 1990

Distribution: W.G.: Abkhazia Autonomic Rep.: Gudauta distr. — Mt. Avadkhara, Ritsa reserve, surroundings of the lake Mzi [Potapov, Stebaeva, 1990].

A. laricis Nicolet, 1842 [?]

Distribution: Georgia, without exact locality [Grinbergs, 1960].

Genus *Cryptopygus* Willem, 1901

C. ponticus (Stach, 1947)

[*Proisotoma pontica* Stach, 1947]

Distribution: E.G.: Shida Kartli Reg.: Mtskheta [Stach, 1947; Grinbergs, 1960].

Genus *Folsomides* Stach, 1922

F. parvulus Stach, 1922

Distribution: Georgia, without exact locality [Grinbergs, 1960]; W.G.: Imereti Reg.: Tskaltubo distr. - Opripi I cave, leg. R. Djanashvili, S. Levushkin (IZG).

Genus *Uzelia* Absolon, 1901

U. setifera Absolon, 1901

Distribution: Georgia, without exact locality [Grinbergs, 1960].

Subfamily Isotominae Schäffer, 1896

Genus *Desoria* Agassiz et Nicolet in Desor, 1841

D. trispinata (MacGillivray, 1896) *

Distribution: W.G.: Abkhazia Autonomic Rep.: Gudauta distr. - Chasm of Abkhazian Speleologists (Akuiu), leg. R. Djanashvili (IZG); Gulripshi distr. — Shakurani I cave, leg. R. Djanashvili (IZG); Imereti Reg.: Tskaltubo distr. - Sataplia IV cave, leg. R. Djanashvili, S. Levushkin (IZG).

D. violacea (Tullberg, 1877) [?]

Distribution: Georgia, without exact locality [Grinbergs, 1960].

Genus *Isotoma* Bourlet, 1839

I. viridis Bourlet, 1839

Distribution: Georgia, without exact locality [Grinbergs, 1960].

- Genus *Isotomiella* Schäffer, 1896 Sokhumi [Martynova, 1973; Potapov, 2001].
- Isotomiella minor* (Schäffer, 1896) *F. penicula* Bagnall, 1939
- Distribution:** Georgia, without exact locality [Grinbergs, 1960].
- Genus *Isomurus* Börner, 1903 *F. quadrioculata* (Tullberg, 1871)
- I. alticolus* (Carl, 1899) **Distribution:** Georgia, without exact locality [Grinbergs, 1960].
- Distribution:** W.G.: Samegrelo, Zemo Svaneti Reg.: Mestia distr. - Becho, Lapari, Mestia [Rusek, 1961].
- Genus *Parisotoma* Bagnall, 1940 *F. similis* Bagnal, 1939
- P. notabilis* (Schäffer, 1896) **Distribution:** W.G.: Abkhazia Autonomic Rep., without exact locality [Potapov, 2001].
- Distribution:** Georgia, without exact locality [Grinbergs, 1960].
- Subfamily Proisotominae Stach, 1947** *F. spinosa* Kseneman, 1936 *
- Genus *Folsomia* Willem, 1902 *[Folsomia montigena* Stach, 1946]
- F. candida* Willem, 1902 **Distribution:** W.G.: Racha, Lechkhumi, Kvemo Svaneti Reg.: Ambrolauri distr. - Nikortsminda cave, leg. R. Djanashvili (IZG).
- [Folsomia abchasica* Martinova, 1964] **Distribution:** E.G.: Tbilisi [Stach, 1947; Grinbergs, 1960].
- Distribution:** W.G.: Abkhazia Autonomic Rep.: Gudauta distr. - Akhali Atoni-St. Simon Kanonik cave, leg. R. Djanashvili (IZG); Sokhumi distr. - Tskaro cave, leg. R. Djanashvili (IZG); Sokhumi [Martynova, 1964]; Imereti Reg.: Chiatura distr. - Khvedelidze cave, leg. R. Djanashvili (IZG); Tskaltubo distr. - Orpiri I cave, Sataplia I cave, Tetri cave, Tsikhe cave, leg. R. Djanashvili, S. Levushkin (IZG); Racha, Lechkhumi, Kvemo Svaneti Reg.: Ambrolauri distr. - Nikortsminda cave, leg. R. Djanashvili (IZG); Samegrelo, Zemo Svaneti Reg.: Zugdidi distr. - Cave in the Enguri gorge, 05.07.1968; leg. V. Jishkariani (IZG).
- F. diplophthalma* (Axelson, 1902) [?] **Distribution:** E.G.: Shida Kartli Reg.: Mtskheta [Stach, 1947; Grinbergs, 1960].
- Distribution:** Georgia, without exact locality [Grinbergs, 1960].
- F. fimetaria* (Linnaeus, 1758) **Distribution:** Georgia: locality is not indicated (non cave) [Potapov, 2001]; W.G.: Racha, Lechkhumi, Kvemo Svaneti Reg.: Ambrolauri distr. - Nikortsminda cave, leg. R. Djanashvili (IZG).
- F. inoculata* Stach, 1946 **Distribution:** Georgia, without exact locality [Grinbergs, 1960].
- Distribution:** Georgia: locality is not indicated (non cave) [Potapov, 2001]; W.G.: Racha, Lechkhumi, Kvemo Svaneti Reg.: Ambrolauri distr. - Nikortsminda cave, leg. R. Djanashvili (IZG).
- F. martynovae* Potapov, 2001 *P. caucasica* (Stach, 1947)
- [Folsomia duodecimoculata* Martynova, 1973]. **Distribution:** Family Tomoceroidea Szeptycki, 1979
- Distribution:** W.G.: Abkhazia Autonomic Rep.: near
- Oncopoduridae* Carl et Lebedinsky, 1905
- Genus *Oncopodura* Carl et Lebedinsky, 1905
- O. crassicornis* Shoebotham, 1911
- Distribution:** Georgia, without exact locality [Grinbergs, 1960].
- Family Tomoceridae Schäffer, 1896**
- Subfamily Tomocerinae Schäffer, 1896**
- Tribe Tomocerini Salmon, 1941**
- Genus *Plutomurus* Yosii, 1956
- P. abhasicus* Martynova, 1969
- Distribution:** W.G.: Abkhazia Autonomic Rep.: Gagra

distr. — Avadkhara, surroundings of Sokhumi [Martynova, 1969].

P. kelasuricus Martynova, 1969

Distribution: W.G.: Abkhazia Autonomic Rep.: Sokhumi distr. — Kelasuri cave [Martynova, 1969]; Gudauta distr. — Akhali Atoni-St. Simon Kanonik cave, leg. R. Djanashvili (IZG); Gulripshi distr. — Shakurani II cave, Shakurani IV cave, Tsebelda cave, leg. R. Djanashvili, (IZG); Sokhumi distr. - Adzaba cave, Eastern Gumista I cave, Eastern Gumista II cave, Kelasuri cave, leg. R. Djanashvili (IZG); Imereti Reg.: Tskaltubo distr. — Sataplia IV cave, Solkota cave, leg. R. Djanashvili, S. Levushkin (IZG); Samegrelo, Zemo Svaneti Region: Martvili distr. — Leskhulukhe cave, leg. R. Djanashvili (IZG).

Genus *Pogonognathellus* Paclt, 1944

P. longicornis (Müller, 1776)

Distribution: W.G.: Samegrelo, Zemo Svaneti Reg.: Mestia distr. - Becho [Rusek, 1961].

Genus *Tomocerina* Yosii, 1955

T. minuta (Tullberg, 1877)

Distribution: Georgia, without exact locality [Grinbergs, 1960]; W.G.: Abkhazia Autonomic Rep.: Gudauta distr. — Avadkhara; Sokhumi [Martynova, 1969]; Ajara Autonomic Rep. — Batumi [Martynova, 1969]; E.G.: Kakheti Reg. — Lagodekhi [Martynova, 1969]; S.G.: Samtskhe-Javakheti Reg. — Borjomi [Martynova, 1969].

Genus *Tomocerus* Nicolet, [1842]

T. baudoti Denis, 1932

Distribution: W.G.: Abkhazia Autonomic Rep.: Gudauta distr. — Avadkhara; surroundings of Sokhumi [Martynova, 1969].

T. minor (Lubbock, 1862)

Distribution: Georgia, without exact locality [Grinbergs, 1960]; W.G.: Abkhazia Autonomic Rep.: Sokhumi [Martynova, 1969].

T. vulgaris (Tullberg, 1871)

Distribution: W.G.: Samegrelo, Zemo Svaneti Reg.: Mestia distr. - Lapari, Mestia [Rusek, 1961].

Order *Neelipleona* Massoud, 1971

Family *Neelidae* Folsom, 1896

Genus *Megalothorax* Willem, 1900

M. minimus Willem, 1900

Distribution: Georgia, without exact locality

[Grinbergs, 1960].

Genus *Neelus* Folsom, 1896

N. murinus Folsom, 1896 *

Distribution: W.G.: Imereti Reg.: Tskaltubo distr. — Tetri cave, leg. R. Djanashvili, S. Levushkin (IZG).

Order *Sympypleona* Börner, 1901, sensu Massoud, 1971

Superfamily *Dicyrtomoidea* Bretfeld, 1994

Family *Dicyrtomidae* Börner, 1906, sensu Deharveng, 2004

Subfamily *Ptenothricinae* Richards, 1968

Genus *Ptenothrix* Börner, 1906

P. kuraschvillii Djanaschvili, 1970

Distribution: W.G.: Imereti Reg.: Tskaltubo distr. - Sataplia IV cave [Djanashvili, 1970].

Superfamily *Katiannoidea* Bretfeld, 1994

Family *Arrhopalitidae* Richards, 1968, sensu Bretfeld, 1999

Genus *Arrhopalites* Börner, 1906

A. caecus (Tullberg, 1871) *

Distribution: W.G.: Abkhazia Autonomic Rep.: Gudauta distr. — Akhali Atoni — St. Simon kanonik cave, leg. R. Djanashvili (IZG); Imereti Reg.: Tskaltubo distr. — Solkota cave, leg. R. Djanashvili, S. Levushkin (IZG).

A. principalis Stach, 1945

Distribution: Georgia, without exact locality [Grinbergs, 1960]; W.G.: Imereti Reg.: Chiatura distr. — Bnelaklde cave, leg. R. Djanashvili (IZG); Tkibuli distr. — Maghara (Tsutskhvati) cave, leg. R. Djanashvili (IZG); Tskaltubo distr. — Sataplia I cave, Solkota cave, Tetri cave, leg. R. Djanashvili, S. Levushkin (IZG); Racha, Lechkhumi, Kvemo Svaneti Reg.: Ambrolauri distr. — Nikortsminda cave, Tsakhi (Gogoleti) cave, R. Janashvili (IZG).

A. pygmaeus (Wankel, 1860) *

Distribution: W.G.: Imereti Reg.: Tskaltubo distr. - Chuneshi cave, leg. R. Djanashvili, S. Levushkin (IZG).

Family *Katiannidae* Börner, 1913, sensu Bretfeld, 1999

Genus *Sminthurinus* Börner, 1901

S. reticulatus Cassagnau, 1964

Distribution: W.G.: Abkhazia Autonomic Rep.: near

Sokhumi, Nizhnaja Jashtuka tobacco plantation [Bretfeld, 2000].

Superfamily Sminthuroidea Bretfeld, 1994
Family Bourletiellidae Börner, 1912, sensu Bretfeld, 1994

Subfamily Bourletiellinae Börner, 1912, sensu Betsch, 1974

Genus *Bourletiella* Banks, 1899

B. hortensis (Fitch, 1862)

Distribution: Georgia, without exact locality [Grinbergs, 1960]; W.G.: Abkhazia Autonomic Rep.: near Sokhumi, Nizhnaja Jashtuka tobacco plantation [Bretfeld, 2000].

Genus *Heterosminthurus* Stach, 1955

H. quadristrigatus Bretfeld, 2000

Distribution: Georgia, without exact locality [Grinbergs, 1960]; W.G.: Abkhazia Autonomic Rep.: near Sokhumi, Nizhnaja Jashtuka, tobacco plantation [Bretfeld, 2000].

Family Sminthuridae Lubbock, 1862, sensu Deharveng, 2004

Subfamily Sphyrothecinae sensu Deharveng, 2004

Genus *Sphyrotheca* Börner, 1906

S. multifasciata (Reuter, 1881)

Distribution: W.G.: Abkhazia Autonomic Rep.: near Sokhumi, Nizhnaja Jashtuka tobacco plantation [Bretfeld, 2000].

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References

- Babenko A.B. 1987. New species of springtails of the genus *Typhlogastrura* (Collembola, Hypogastruridae) from caves of the USSR // Zool. Zhurn. 66 (3): 463–472 [in Russian].
- Babenko A.B., Potapov M.B., Stebaeva S.K., Chernova N.M. 1994: Collembola of Russia and adjacent countries: Hypogastruridae. Moscow: Nauka. 336 p. [in Russian].
- Babenko A.B. 1998. New Palaearctic species of the genus *Anurida* (Collembola, Neanuridae) // Zool. Zhurn. 77 (6): 648–661 [in Russian].
- Bretfeld G. 2000. Third report on Symphypleona from Russia, and also from Georgia, Kazakhstan, Kirghizia, and the Ukraine (Insecta, Collembola) // Abhandlungen und Berichte des Naturkundemuseums, Görlitz. 72: 1–57.
- Djanashvili R. 1970. A new species of the genus *Ptenotrix* Börner (Collembola, Dicyrtomidae) from the cave of the surroundings of Kutaisi // Bull. Georg. Acad. Sci. 60 (1): 209–212 [in Russian].
- Djanashvili R. 1971. Hypogastruridae (Collembola) devoid of eyes and postantennal organ from the Transcaucasian caves. I // Zool. Zhurn. 50 (5): 666–676 [in Russian].
- Grinbergs A.P. 1960. Catalogue of the springtails of the USSR // Latv. Entomol. 2: 21–68 [in Russian].
- Hopkin S.P. 1997. Biology of Springtails (Insecta: Collembola). USA: Oxford University Press. 344 p.
- Martynova E.F. 1964. On the taxonomy of some springtails (Collembola) of the European part of the USSR and the Caucasus // Entomol. Rev. 43 (4): 849–857 [in Russian].
- Martynova E.F. 1969. Springtails of the family Tomoceridae (Collembola) of the USSR fauna // Entomol. Rev. 48 (2): 299–314 [in Russian].
- Martynova E.F. 1971. New collembolan species from mountainous and steppe regions of the Soviet Union // Entomol. Rev. 50 (3): 598–611 [in Russian].
- Martynova E.F. 1973. Diagnostics of springtails of the genus *Folsomia* Willem (Collembola, Isotomidae) occurring on the USSR territory // Fauna of Siberia. Novosibirsk: Nauka Publ. Vol. 2: 7–23 [in Russian].
- Potapov M.B., Stebaeva S.K. 1990. Species of the genus *Anurophorus* Nicolet, 1842 (Collembola: Isotomidae, Anurophorinae) of the USSR fauna // Insects and helminthes taxonomy. New and little known species from the fauna of Siberia. Novosibirsk: Nauka Publ.: 15–49 [in Russian].
- Potapov M.B. 2001. Isotomidae // Synopses on Palaearctic Collembola. Vol. 3. Abh.Ber.Naturkund.Mus. Görlitz. 73 (2): 1–603.
- Rusek J.T. 1961. Zur Kenntnis der Collembolen (Insecta, Apterygota) des Kaukasus // Publ. Fac. Sci. Univ. J.E. Purkyne, Brno, 421: 147–156.
- Stach J. 1947. Family Isotomidae // The Apterygotan fauna of Poland in relation to the world fauna of this group of insects. Krakow: Pol. Acad. Sci. Lett.: 1–488.
- Stach J. 1949a. Families Neogastruridae and Brachistomellidae // The Apterygotan fauna of Poland in relation to the world fauna of this group of insects. Acta Monogr. Mus. Hist. Natur. Poland. Krakow: 1–341.
- Stach J. 1949b. Families Anuridae and Pseudacherutidae // The Apterygotan fauna of Poland in relation to the world fauna of this group of insects. Acta Monogr. Mus. Hist. Natur. Poland. Krakow: 1–222.
- Stach J. 1951. Family Bilobidae // The Apterygotan fauna of Poland in relation to the world fauna of this group of insects. Acta Monogr. Mus. Hist. Natur. Poland. Krakow: 1–97.
- Stach J. 1954. Family Onychiuridae // The Apterygotan fauna of Poland in relation to the world fauna of this group of insects. Polska Akad. Nauk. Inst. Zool. Krakow: 1–219.
- Stach J. 1956. Family Sminthuridae // The Apterygotan fauna of Poland in relation to the world fauna of this group of insects. Polska Akad. Nauk. Inst. Zool. Krakow: 1–287.
- Stach J. 1960. Materialien zur Kenntnis der Collembolen fauna Afghanistans // Acta Zool. 5 (12): 507–579.
- Stach J. 1963. Tribe: Entomobryini // The Apterygotan fauna of Poland in relation to the world fauna of this group of insects. Krakow: Polska Akad. Nauk. Inst. Zool.: 1–126.

References

- Babenko A.B. 1987. New species of springtails of the genus *Typhlogastrura* (Collembola, Hypogastruridae) from caves of the USSR. *Zoologicheskiy zhurnal*. 66(3): 463–472 (in Russian).
- Babenko A.B. 1998. New Palaearctic species of the genus *Anurida* (Collembola, Neanuridae). *Zoologicheskiy zhurnal*. 77(6): 648–661 (in Russian).
- Babenko A.B., Potapov M.B., Stebaeva S.K., Chernova N.M. 1994. Collembola of Russia and adjacent countries: Hypogastruridae. Moscow: Nauka. 336 p. (in Russian).
- Bretfeld G. 2000. Third report on Symphypleona from Russia, and also from Georgia, Kazakhstan, Kirghizia, and the Ukraine (Insecta, Collembola). *Abhandlungen und Berichte des Naturkundemuseums Görlitz*. 72: 1–57.
- Djanashvili R. 1970. A new species of the genus *Ptenotrix* Börner (Collembola, Dicyrtomidae) from the cave of the surroundings of Kutaisi. *Izvestiya Akademii nauk Gruzinskoy SSR*. 60(1): 209–212 (in Russian).
- Djanashvili R. 1971. Hypogastruridae (Collembola) devoid of eyes and postantennal organ from the Transcaucasian caves. I. *Zoologicheskiy zhurnal*. 50(5): 666–676 (in Russian).
- Grinbergs A.P. 1960. On the fauna of Collembola of the Soviet Union. Part 1. Catalogue of the springtails of the USSR. *Latvijas Entomologs*. 2: 21–68 (in Russian).
- Hopkin S.P. 1997. Biology of Springtails (Insecta: Collembola). USA: Oxford University Press. 344 p.
- Martynova E.F. 1964. On the taxonomy of some springtails (Collembola) of the European part of the USSR and the Caucasus. *Entomologicheskoe obozrenie*. 43(4): 849–857 (in Russian).
- Martynova E.F. 1969. Springtails of the family Tomoceridae (Collembola) of the USSR fauna. *Entomologicheskoe obozrenie*. 48(2): 299–314 (in Russian).
- Martynova E.F. 1971. New collembolan species from mountainous and steppe regions of the Soviet Union. *Entomologicheskoe obozrenie*. 50(3): 598–611 (in Russian).
- Martynova E.F. 1973. Diagnostics of springtails of the genus *Folsomia* Willem (Collembola, Isotomidae) occurring on the USSR territory. *In: Fauna Sibiri* [Fauna of Siberia]. Vol. 2. Novosibirsk: Nauka: 7–23 (in Russian).
- Potapov M.B. 2001. Isotomidae. *In: Synopses on Palaearctic Collembola. Vol. 3. Abhandlungen und Berichte des Naturkundemuseums Görlitz*. 73(2): 1–603.
- Potapov M.B., Stebaeva S.K. 1990. Species of the genus *Anuroporus* Nicolet, 1842 (Collembola: Isotomidae, Anuroporinae) of the USSR fauna. *In: Novye i maloizvestnye vidy iz fauny Sibiri. Vyp. 22. Taksonomiya nasekomykh i gel'mintov* [New and little known species from the fauna of Siberia. Vol. 22. Insects and helminths taxonomy]. Novosibirsk: Nauka: 15–49 (in Russian).
- Rusek J.T. 1961. Zur Kenntnis der Collembolen (Insecta, Apterygota) des Kaukasus. *Publications de la Faculté des sciences de l'Université J.E. Purkyně, Brno*. 421: 147–156.
- Stach J. 1947. The Apterygotan fauna of Poland in relation to the world fauna of this group of insects. Family Isotomidae. Krakow: Polska Akademia Nauk. 488 p.
- Stach J. 1949. The Apterygotan fauna of Poland in relation to the world fauna of this group of insects. Families Neogastruridae and Brachistomellidae. Krakow: Polska Akademia Nauk. 341 p.
- Stach J. 1949. The Apterygotan fauna of Poland in relation to the world fauna of this group of insects. Families Anuridae and Pseudachteridae. Krakow: Polska Akademia Nauk. 222 p.
- Stach J. 1951. The Apterygotan fauna of Poland in relation to the world fauna of this group of insects. Family Bilobidae. Krakow: Polska Akademia Nauk. 97 p.
- Stach J. 1954. The Apterygotan fauna of Poland in relation to the world fauna of this group of insects. Family Onychiuridae. Krakow: Polska Akademia Nauk. 219 p.
- Stach J. 1956. The Apterygotan fauna of Poland in relation to the world fauna of this group of insects. Family Sminthuridae. Krakow: Polska Akademia Nauk. 287 p.
- Stach J. 1960. Materialien zur Kenntnis der Collembolen fauna Afghanistans. *Acta Zoologica*. 5(12): 507–579.
- Stach J. 1963. The Apterygotan fauna of Poland in relation to the world fauna of this group of insects. Tribe: Entomobryini. Krakow: Polska Akademia Nauk. 126 p.