

A preliminary review of the centipede fauna of the Altai State Nature Biosphere Reserve, southwestern Siberia, Russia (Chilopoda: Lithobiomorpha, Geophilomorpha)

Предварительный обзор фауны губоногих многоножек Алтайского государственного природного биосферного заповедника, юг Западной Сибири, Россия (Chilopoda: Lithobiomorpha, Geophilomorpha)

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КЛЮЧЕВЫЕ СЛОВА: Lithobiidae, Geophilidae, Schendylidae, Linotaenidae, фаунистика, новые находки, Телецкое озеро.

ABSTRACT. Preliminarily, the centipede fauna of the near-Teletskoye Lake region of the Altai State Nature Biosphere Reserve comprises at least 14 species from four genera, four families and two orders. *Lithobius (Monotarsobius) franciscorum* Dányi et Tuf, 2012 is new to the fauna of Russia, *L. (M.) cf. nordenskioeldii* Stuxberg, 1876 is new to that of southwestern Siberia, while *L. (Ezembius) proximus* Sseliwanoff, 1878, *L. (E.) ostiacorum* Stuxberg, 1876, *L. (E.) sibiricus* Gerstfeldt, 1858, *L. cf. vagabundus* Stuxberg, 1876, *L. (M.) curtipes* C.L. Koch, 1847, *L. (M.) insolens* Dányi et Tuf, 2012, *Escaryus japonicus* Attems, 1927, *E. koreanus* Takakuwa, 1937, *E. retusidens* Attems, 1904 and *Strigamia pusilla* (Sseliwanoff, 1884) are new to the fauna of the Republic of Altai. All centipede distributions in the region are mapped.

РЕЗЮМЕ. Фауна губоногих многоножек прителецкого региона Алтайского государственного природного биосферного заповедника предварительно включает как минимум 14 видов из четырех родов, четырех семейств и двух отрядов. Указанные ниже находки оказались новыми для России: *Lithobius (Monotarsobius) franciscorum* Dányi et Tuf, 2012; для юга Западной Сибири: *L. (M.) cf. nordenskioeldii* Stuxberg, 1876; и для Республики Алтай: *L. (Ezembius) proximus* Sseliwanoff, 1878, *L. (E.) ostiacorum* Stuxberg, 1876, *L. (E.) sibiricus* Gerstfeldt, 1858, *L.*

cf. vagabundus Stuxberg, 1876, *L. (M.) curtipes* C.L. Koch, 1847, *L. (M.) insolens* Dányi et Tuf, 2012, 1876, *Escaryus japonicus* Attems, 1927, *E. koreanus* Takakuwa, 1937, *E. retusidens* Attems, 1904 и *Strigamia pusilla* (Sseliwanoff, 1884). Даны карты с распространением всех видов в указанном регионе.

Introduction

An object of the World Cultural and Natural Heritage, the Altai State Nature Biosphere Reserve is a unique strictly protected area located within the Turochak and Ulagan districts, northeastern Republic of Altai, southwestern Siberia. The Altai Nature Reserve surrounds Lake Teletskoye, the “pearl” of the Altai Mountains, from north, east and south. Being the largest and deepest lake in the Altai, Lake Teletskoye, or Altyn-Köl in the Altai people language, stretches ca 80 km long and 5 km wide, and reaches up to 325 m in depth.

Several attempts to reveal the myriapod fauna of the environs of Lake Teletskoye concern only millipedes (Diplopoda) [Nefedieva, Nefediev, 2008; Nefediev, Nefedieva, 2013; Mikhaljova et al., 2014; Nefedieva et al., 2014, 2015], while the fauna of centipedes (Chilopoda) of the Altai Nature Reserve has remained almost unknown. The only two geophilomorph centipedes, *Escaryus chadaevae* Titova, 1972 and *Arcto-*

geophilus macrocephalus Folkmanová et Dobroruka, 1960, have been recorded from the study area [Titova, 1972b; Zalesskaja et al., 1982]. The present study covers the near-Teletskoye Lake region within the Altai Nature Reserve.

The material treated herein has been deposited mainly in the collection of the Altai State University, Barnaul, Russia (ASU), partly shared also with the collections of the Perm State University, Perm, Russia (PSU) and the Zoological Museum of the Lomonosov Moscow State University, Moscow, Russia (ZMUM), as indicated in the text. Literature references to the species concern western Siberia only.

Taxonomic part

ORDER LITHOBIOMORPHA

Family LITHOBIIDAE

Lithobius (Ezembius) proximus Sseliwanoff, 1878 Map 1.

Lithobius proximus Sseliwanoff, 1878: Zalesskaja, 1978: 125–126; Striganova, Poryadina, 2005: 226, Bukhkalov, Sergeeva, 2012: 61; Sergeeva, 2013: 530–532; Bukhkalov et al., 2014: 71–72; Nefediev et al., 2017c.

MATERIAL EXAMINED (40 specimens: 12 ♂♂, 13 ♀♀, 5 subadult ♂♂, 7 subadult ♀♀, 4 juv. from 14 localities: all from Russia, southwestern Siberia, Republic of Altai). 1 ♂, 4 ♀♀ (PSU), Turochak District, north of Lake Teletskoye, near Artybash, *Betula pendula*, *Abies sibirica* and *Pinus sibirica* forest, litter, 4–13.07.1982, leg. S.I. Golovatch; 4 subadult ♂♂, 4 subadult ♀♀ (ASU), same District, north of Lake Teletskoye, ca 2 km E of Iogach, dark coniferous taiga with fern, foot of mountain, 14–17.07.2004; 1 ♂, 2 ♀♀ (ASU), Ulagan District, Altai State Nature Biosphere Reserve, south of Lake Teletskoye, near cordon Chiri, valley of Kyga River, Kyga Biogeocoenological Profile, site 2, 51°20'29.3"N, 87°51'40.0"E, ca 495 m a.s.l., *Abies sibirica* and *Pinus sibirica* forest with ferns, litter, 12.08.2005; 2 ♂♂ (ASU), same study area, site 15, 51°18'24.5"N, 87°55'31.0"E, ca 1960 m a.s.l., subalpine sparse *Pinus sibirica* stand, litter, under stones, 14.08.2005; 2 ♂♂ (ASU), same study area, site 18, 51°18'30.0"N, 87°56'10.7"E, ca 2195 m a.s.l., *Betula rotundifolia* and *Salix glauca* mountain tundra with *Dryas* and lichens, litter, 15.08.2005; 1 subadult ♀, 1 juv. (ASU), same study area, site 10A, 51°18'43.7"N, 87°54'23.7"E, ca 1700 m a.s.l., sparse *Pinus sibirica* with *Betula pendula* and *Abies sibirica* stand, litter, 16.08.2005; 1 subadult ♂, 1 ♀ (ASU), same study area, site 13A, 51°18'24.1"N, 87°55'06.9"E, ca 1875 m a.s.l., subalpine sparse *Pinus sibirica* stand, litter, 16.08.2005; 1 ♂ (ASU), same study area, site 9, 51°19'07.5"N, 87°53'15.0"E, ca 1415 m a.s.l., *Pinus sibirica* forest with *Abies sibirica*, litter, 17.08.2005; 2 ♂♂, 1 ♀ (ASU), same study area, site 4, 51°19'53.3"N, 87°51'78.0"E, 675 m a.s.l., *Abies sibirica* forest with *Pinus sibirica* and *Betula pendula*, litter, 18.08.2005; 2 ♂♂, 1 ♀, 3 juv. (ASU), same study area, site 6, 51°19'31.6"N, 87°52'16.1"E, ca 940 m a.s.l., *Populus tremula* forest with *Abies sibirica* and *Pinus sibirica*, litter, 18.08.2005; 1 ♂, 2 ♀♀ (ASU), same study area, site 7, 51°19'31.2"N, 87°52'21.1"E, 960 m a.s.l., *Abies sibirica*, *Pinus sibirica* and *Populus tremula* forest, litter, 18.08.2005; 1 subadult ♀ (ASU), same study area, site 8, 51°19'30.4"N, 87°52'50.0"E, 1100 m a.s.l., *Pinus sibirica* forest with *Abies sibirica*, litter, 17.08.2005, all leg. P.S. Nefediev and J.S. Nefedieva; 1 ♀ (ASU), Turochak District, Altai State Nature Biosphere Reserve, north of Lake Teletskoye, cordon Baigazan, 51°45'33.7"N, 87°25'58.9"E, ca 470 m a.s.l., *Padus avium* and *Sorbus sibirica*, 30.09.2013; 1 ♀ (ASU), Ulagan District, Altai



Map 1. Distribution of lithobiomorph centipedes in the environs of Lake Teletskoye (part 1).

Карта 1. Распространение многоножек-костянок в окрестностях Телецкого озера (часть 1).

State Nature Biosphere Reserve, central part of Lake Teletskoye, cordon Chelyush, 51°29'43.8"N, 87°44'54.4"E, ca 445 m a.s.l., *Duschekia fruticosa*, 11.06.2014; all leg. M.B. Sakhnevich.

DISTRIBUTION. A Euroasian species widely distributed in Russia, ranging from the Volga and Northwestern Federal districts, European Russia through southwestern and southeastern Siberia (Altai Province, Tyumen and Irkutsk areas and the Republic of Buryatia) to the Russian Far East (Maritime Province, Sakhalin Island and the Kuriles) [Zalesskaja, 1978; Striganova, Poryadina, 2005; Bukhkalov, Sergeeva, 2012; Sergeeva, 2013; Bukhkalov et al., 2014; Nefediev et al., 2017c].

REMARKS. This species has hitherto not been recorded from the Republic of Altai, SW Siberia. In the study area, *L. proximus* inhabits different habitats around Lake Teletskoye, ranging from taiga on the lake shore up to mountain tundra at ca 2200 m a.s.l.

Lithobius (Ezembius) ostiacorum Stuxberg, 1876 Map 1.

Lithobius (Ezembius) ostiacorum Stuxberg, 1876: Nefediev et al., 2017c.

MATERIAL EXAMINED (12 specimens: 5 ♂♂, 1 ♀, 1 adult, 1 subadult ♀, 4 juv. from 2 localities: all from Russia, southwestern Siberia, Republic of Altai). 1 ♂, 4 ♀♀ (ASU), Turochak District, north of Lake Teletskoye, ca 2 km E of Iogach, dark coniferous taiga with fern, foot of mountain, 14–17.07.2004; 3 ♂♂, 1 adult without caudal body part, 4 juv. (ASU), Ulagan District, Altai State Nature Biosphere Reserve, south of Lake Teletskoye, near cordon Chiri, valley of Kyga River, Kyga Biogeocoenological Profile, site 19, 51°18'30.5"N, 87°56'21.7"E, ca 2265 m a.s.l., summit of Mt Malaya Koliusha, *Betula rotundifolia* and *Salix glauca* rocky mountain tundra with *Dryas*, *Festuca* and lichens, 15.08.2005;

2 ♂♂, 1 ♀, 1 subadult ♀ (ASU), site 11, 51°18'41.3"N, 87°55'34.7"E, ca 1735 m a.s.l., old fire-site, *Betula rotundifolia* and *Salix glauca* bushes with sparse *Pinus sibirica* and *Abies sibirica* stand, litter, 16.08.2005, all leg. P.S. Nefediev and J.S. Nefedieva.

DISTRIBUTION. Originally described by Stuxberg [1876] from the Yenisei River region (Krasnoyarsk Province, eastern Siberia), later reported from the Irkutsk Area [Zalesskaja, 1978], likewise recently found in northern Mongolia [Poloczek et al., 2016] and the Altai Province [Nefediev et al., 2017c].

REMARKS. *Lithobius ostiacorum* is recorded here-with from the Republic of Altai for the first time. In the Altai Nature Reserve, the species is known from the northern and southern parts of Lake Teletskoye, where it lives in taiga, high-mountain dwarf bush and rocky mountain tundra habitats at 2265 m a.s.l.

Lithobius (Ezembius) sibiricus Gerstfeldt, 1858
Map 1.

Lithobius sibiricus Gerstfeldt, 1858: Nefediev, 2001: 85.

Lithobius (Ezembius) sibiricus Gerstfeldt, 1858: Nefediev et al., 2016: 263; 2017c.

MATERIAL EXAMINED (142 specimens: 48 ♂♂, 57 ♀♀, 8 subadult ♂, 9 subadult ♀♀, 20 juv. from 17 localities: all from Russia, southwestern Siberia, Republic of Altai). 12 ♂♂, 18 ♀♀ (PSU), Turochak District, north of Lake Teletskoye, near Artybash, *Betula pendula*, *Abies sibirica* and *Pinus sibirica* forest, litter, 4–13.07.1982, leg. S.I. Golovatch; 12 ♂♂, 16 ♀♀, 6 subadult ♂♂, 6 subadult ♀♀, 6 juv. (ASU), same District, north of Lake Teletskoye, ca 2 km E of Iogach, dark coniferous taiga with fern, foot of mountain, 14–17.07.2004; 2 ♂♂, 1 ♀, 3 juv. (ASU), same study area, dark coniferous taiga with *Bergenia crassifolia*, N slope, 15.07.2004; 1 ♂, 2 ♀♀, 4 juv. (ZMUM), same study area, dark coniferous taiga, N slope, 17.07.2004; 5 ♂♂, 5 ♀♀ (ASU), Ulagan District, Altai State Nature Biosphere Reserve, south of Lake Teletskoye, cordon Chiri, mouth of Chiri River, *Betula pendula* forest, litter, 11–12.08.2005; 1 ♀ (ASU), same study area, near cordon Chiri, valley of Kyga River, Kyga Biogeocoenological Profile, site 8A, 51°19'23.6"N, 87°53'02.1"E, ca 1190 m a.s.l., *Pinus sibirica* forest with *Abies sibirica*, litter, 17.08.2005; 1 ♂, 1 ♀ (ASU), Turochak District, Altai State Nature Biosphere Reserve, central part of Lake Teletskoye, near cordon Kokshi, *Betula pendula* and *Pinus sylvestris* forest, litter, 18.08.2005; 1 ♀ (ASU), same District, Altai State Nature Biosphere Reserve, north of Lake Teletskoye, near Yailyu, broad gully with *Betula pendula* and *Pinus sylvestris*, 19.08.2005, all leg. P.S. Nefediev and J.S. Nefedieva; 3 ♂♂, 1 ♀, 2 subadult ♀♀, 3 juv. (ASU), same District, Altai State Nature Biosphere Reserve, north of Lake Teletskoye, cordon Baigazan, 51°45'34.9"N, 87°25'55.9"E, 460 m a.s.l., *Padus avium* and *Sorbus sibirica*, 30.09.2013; 2 ♀♀ (ASU), same study area, 51°45'33.7"N, 87°25'58.9"E, ca 470 m a.s.l., *Padus avium* and *Sorbus sibirica*, 30.09.2013; 2 juv. (ASU), same study area, 51°45'35.0"N, 87°26'02.3"E, ca 480 m a.s.l., *Salix caprea*, 30.09.2013; 1 ♂, 1 subadult ♂, 1 subadult ♀ (ASU), same study area, 51°45'34.1"N, 87°26'03.6"E, 490 m a.s.l., *Padus avium*, 1.10.2013; 4 ♀♀ (ASU), same study area, 51°45'32.7"N, 87°26'05.8"E, ca 480 m a.s.l., *Padus avium* and *Betula pendula*, 1.10.2013; 1 subadult ♂ (ASU), same study area, 51°45'34.4"N, 87°25'51.3"E, 465 m a.s.l., *Padus avium*, *Sorbus sibirica* and *Salix caprea*, 3.10.2013; 2 ♂♂ (ASU), same District, Altai State Nature Biosphere Reserve, north of Lake Teletskoye, cordon Kamga, 51°47'54.8"N, 87°42'26.4"E, ca 440 m a.s.l., *Salix* and *Padus avium*, 10.06.2014; 1 juv. (ASU), same District, north of Lake Teletskoye, Korbu Waterfall, 51°42'22.5"N, 87°40'58.7"E, ca 445 m a.s.l., *Spiraea*, *Rhododendron*, 10.06.2014; 3 ♂♂, 1 ♀, 1 juv. (ASU), same District, Altai State Nature Biosphere Reserve, central part of Lake Teletskoye, near cordon Kokshi, 51°34'35.1"N, 87°44'05.9"E, 445 m a.s.l., *Pinus sylvestris* with *Spiraea*, 10.06.2014; 2 ♂♂, 1 ♀ (ASU), Ulagan District, Altai State Nature

Biosphere Reserve, central part of Lake Teletskoye, cordon Chelyush, 51°29'43.8"N, 87°44'54.4"E, ca 445 m a.s.l., *Duschekia fruticosa*, 11.06.2014; 2 ♂♂, 2 ♀♀ (ASU), same District, south of Lake Teletskoye, near cordon Chiri, trail to Lake Chiri, low ridge, 51°25'23.1"N, 87°51'05.9"E, ca 1615 m a.s.l., *Pinus sylvestris* and *Betula pendula* forest, 1.07.2014; 4 ♂♂, 1 ♀ (ASU), same District, south of Lake Teletskoye, cordon Chiri, 51°21'40.9"N, 87°50'19.7"E, ca 445 m a.s.l., *Betula pendula* and *Padus avium*, 9.07.2014, all leg. M.B. Sakhnevich.

DISTRIBUTION. *Lithobius sibiricus* is one of the most widespread lithobiid centipedes in Asian Russia, ranging from southwestern Siberia (Tomsk Area and Altai Province) through eastern Siberia (Krasnoyarsk Province, Irkutsk Area, Zabaikalskii Province and the republics of Buryatia and Sakha) to northern Mongolia and the Far East of Russia (Amur Area, Maritime Province and Sakhalin Island) [Nefediev et al., 2016, 2017c].

REMARKS. The above records of the species are formally new to the Republic of Altai. In the study area, the species is recorded from almost of all of the surveyed cordons around Lake Teletskoye, and it tends to dwell in low-mountain taiga habitats. A single large female from Iogach has 4+4 spurs on the gonopods.

Lithobius cf. vagabundus Stuxberg, 1876
Map 1.

Lithobius vagabundus Stuxberg, 1876: Nefediev et al., 2017c.

MATERIAL EXAMINED (19 specimens: 8 ♂♂, 7 ♀♀, 1 subadult ♀, 3 juv. from 8 localities: all from Russia, southwestern Siberia, Republic of Altai). 1 ♂, 2 ♀♀ (PSU), 2 juv. (ASU), Turochak District, north of Lake Teletskoye, ca 2 km E of Iogach, dark coniferous taiga with ferns, foot of mountain, 14–17.07.2004; 1 ♂, 2 ♀♀, 2 juv. (ZMUM), same study area, dark coniferous taiga, N slope, 17.07.2004; 2 ♂♂ (ASU), Ulagan District, Altai State Nature Biosphere Reserve, south of Lake Teletskoye, near cordon Chiri, valley of Kyga River, Kyga Biogeocoenological Profile, site 14, 51°18'23.0"N, 87°55'22.1"E, ca 1905 m a.s.l., subalpine sparse *Pinus sibirica* stand, litter, 14.08.2005; 1 ♀ (ASU), site 12, 51°18'27.8"N, 87°54'57.4"E, ca 1845 m a.s.l., old fire-site, *Betula rotundifolia* and *Salix glauca* bushes with sparse *Pinus sibirica* and *Abies sibirica* stand, litter, 16.08.2005; 1 ♂ (ASU), site 13A, 51°18'24.1"N, 87°55'06.9"E, ca 1875 m a.s.l., subalpine sparse *Pinus sibirica* stand, litter, 16.08.2005; 2 ♂♂, 1 juv. (ASU), site 8A, 51°19'23.6"N, 87°53'02.1"E, ca 1190 m a.s.l., *Pinus sibirica* forest with *Abies sibirica*, litter, 17.08.2005; 1 ♂ (ASU), site 9, 51°19'07.5"N, 87°53'15.0"E, ca 1415 m a.s.l., *Pinus sibirica* forest with *Abies sibirica*, litter, 17.08.2005; 2 ♀♀ (ASU), site 10, 51°18'58.5"N, 87°53'33.3"E, ca 1470 m a.s.l., *Pinus sibirica* forest with *Abies sibirica*, litter, 17.08.2005; 1 subadult ♀ (ASU), site 4, 51°19'53.3"N, 87°51'78.0"E, 675 m a.s.l., *Abies sibirica* forest with *Pinus sibirica* and *Betula pendula*, litter, 18.08.2005, all leg. P.S. Nefediev and J.S. Nefedieva.

DISTRIBUTION. Originally described by Stuxberg [1876] from the Yenisei River region, *Lithobius vagabundus* has been recently recorded in lowlands of the Altai Province [Nefediev et al., 2017c].

REMARKS. This species has hitherto not been recorded from the Republic of Altai, SW Siberia. In the Altai Nature Reserve, the species lives in taiga forest low- and mid-mountain habitats in the northern and southern parts of Lake Teletskoye, as well as high-mountain subalpine sparse stands, the highest being ca 1900 m a.s.l.

In the redescription of *Lithobius vagabundus*, Eason [1976: 113] described tarso-metatarsal articula-

tions of the anterior legs as follows: "... with, at most, a faint indication of an articulation on the first to 12th, sometimes rather more distinct on the 13th". However, he did not include the species in the subgenus *Monotarsobius*. Apparently based on this sentence, the species has recently been assigned to *Monotarsobius* [Bonato et al., 2016]. Our study of the fresh material shows this species to actually have clearly bipartite tarsi, a trait only poorly expressed in young individuals. The other diagnostic characters are similar to Eason's redescription, but there are some differences: leg 15 with a well-developed accessory claw in all specimens, while the redescription states that "15th leg: ... accessory apical claw absent; sensory spur short or vestigial" [Eason, 1976: 114]. Thus, for the time being, we only provisionally attribute our specimens to *L. vagabundus*.

Lithobius (Monotarsobius) curtipes C.L. Koch, 1847
Map 2.

Lithobius curtipes C.L. Koch, 1847: Striganova, Poryadina, 2005: 226; Bukhkalov, Sergeeva, 2012: 61; Sergeeva, 2013: 530–532; Bukhkalov et al., 2014: 70–71; Nefediev et al., 2016: 261; 2017b: 116; 2017c.

MATERIAL EXAMINED (31 specimens: 20 ♂♂, 9 ♀♀, 2 juv. from 16 localities: all from Russia, southwestern Siberia, Republic of Altai). 1 ♂, 1 ♀ (ASU), Turochak District, north of Lake Teletskoye, ca 2 km E of Iogach, dark coniferous taiga with fern, foot of mountain, 14–17.07.2004; 1 ♂ (ASU), Ulagan District, Altai State Nature Biosphere Reserve, south of Lake Teletskoye, near cordon Chiri, valley of Kyga River, Kyga Biogeocoenological Profile, site 1, 51°20'47.3"N, 87°51'14.2"E, ca 445 m a.s.l., *Pinus sylvestris* and *Betula pendula* forest with *Larix sibirica*, *Abies sibirica* and *Pinus sibirica*, litter, 12.08.2005; 6 ♂♂, 1 ♀ (ASU), same study area, site 14, 51°18'23.0"N, 87°55'22.1"E, ca 1905 m a.s.l., subalpine sparse *Pinus sibirica* stand, litter, 14.08.2005; 1 ♂, 2 ♀♀ (ASU), same study area, site 15, 51°18'24.5"N, 87°55'31.0"E, ca 1960 m a.s.l., subalpine sparse *Pinus sibirica* stand, litter, under stones, 14.08.2005; 1 juv. (ASU), same study area, site 16, 51°18'33.6"N, 87°55'32.9"E, ca 2030 m a.s.l., sparse *Pinus sibirica* stand with *Betula rotundifolia* and *Salix glauca* bushes below scree, litter, 15.08.2005; 2 ♂♂, 2 ♀♀ (ASU), same study area, site 10A, 51°18'43.7"N, 87°54'23.7"E, ca 1700 m a.s.l., sparse *Pinus sibirica* stand with *Betula pendula* and *Abies sibirica*, litter, 16.08.2005; 1 ♂ (ASU), same study area, site 12, 51°18'27.8"N, 87°54'57.4"E, ca 1845 m a.s.l., old fire-site, *Betula rotundifolia* and *Salix glauca* bushes with sparse *Pinus sibirica* and *Abies sibirica* stand, litter, 16.08.2005; 1 ♂ (ASU), same study area, site 13A, 51°18'24.1"N, 87°55'06.9"E, ca 1875 m a.s.l., subalpine sparse *Pinus sibirica* stand, litter, 16.08.2005; 1 ♀ (ASU), same study area, site 4, 51°19'53.3"N, 87°51'78.0"E, 675 m a.s.l., *Abies sibirica* forest with *Pinus sibirica* and *Betula pendula*, litter, 18.08.2005; 2 ♂♂ (ASU), same study area, site 6, 51°19'31.6"N, 87°52'16.1"E, ca 940 m a.s.l., *Populus tremula* forest with *Abies sibirica* and *Pinus sibirica*, litter, 18.08.2005; 1 ♀ (ASU), same study area, site 7, 51°19'31.2"N, 87°52'21.1"E, 960 m a.s.l., *Abies sibirica*, *Pinus sibirica* and *Populus tremula* forest, litter, 18.08.2005; 2 ♂♂ (ASU), same study area, site 8, 51°19'30.4"N, 87°52'50.0"E, 1100 m a.s.l., *Pinus sibirica* forest with *Abies sibirica*, litter, 17.08.2005, all leg. P.S. Nefediev and J.S. Nefedieva; 1 ♀ (ASU), Turochak District, Altai State Nature Biosphere Reserve, north of Lake Teletskoye, cordon Baigazan, 51°45'34.9"N, 87°25'55.9"E, 460 m a.s.l., *Padus avium* and *Sorbus sibirica*, 30.09.2013; 1 ♂ (ASU), Ulagan District, Altai State Nature Biosphere Reserve, central part of Lake Teletskoye, cordon Chelyush, 51°29'43.8"N, 87°44'54.4"E, ca 445 m a.s.l., *Duschekia fruticosa*, 11.06.2014; 1 ♂ (ASU), same District, south of Lake



Map 2. Distribution of lithobiomorph centipedes in the environs of Lake Teletskoye (part 2).

Карта 2. Распространение многоножек-костянок в окрестностях Телецкого озера (часть 2).

Teletskoye, near cordon Chiri, trail to Lake Chiri, low ridge, 51°25'23.1"N, 87°51'05.9"E, ca 1615 m a.s.l., *Pinus sylvestris* and *Betula pendula* forest, 1.07.2014; 1 ♂, 1 juv. (ASU), same District, Altai State Nature Biosphere Reserve, south of Lake Teletskoye, near cordon Chiri, Lake Chiri, 51°24'48.6"N, 87°53'01.4"E, 1850 m a.s.l., *Pinus sibirica* and *Betula rotundifolia*, in mosses, 8.07.2014; all leg. M.B. Sakhnevich.

DISTRIBUTION. A Central Asian – European species very widespread in Europe, the Near East and the Arabian Peninsula, likewise in northern Mongolia. In Russia, *Lithobius curtipes* is known from numerous administrative units of the European part of Russia, while in Siberia the species has been reported from the Novosibirsk, Omsk, Tyumen and Tomsk areas, and the Altai and Krasnoyarsk provinces [Nefediev et al., 2016, 2017b, c].

REMARKS. This is the first formal record of *L. curtipes* from the Republic of Altai. It tends to dwell there in different habitats, ranging from taiga to subalpine sparse stands at 2030 m a.s.l. The female from site 7 of the Kyga Biogeocoenological Profile is abnormal, with two small teeth at the inner edge of the gonopod claw.

Lithobius (Monotarsobius) franciscorum Dányi et Tuf, 2012

Map 2.

MATERIAL EXAMINED (4 specimens: 1 ♂, 1 ♀, 2 subadult ♀♀ from 4 localities: all from Russia, southwestern Siberia, Republic of Altai, Ulagan District, Altai State Nature Biosphere Reserve, south of Lake Teletskoye, near cordon Chiri, valley of Kyga River, Kyga Biogeocoenological Profile). 1 ♀ (ZMUM), site 19, 51°18'30.5"N, 87°56'21.7"E, ca 2265 m a.s.l., summit of Mt Malaya Koliushka, *Betula rotundifolia* and *Salix glauca* rocky moun-

tain tundra with *Dryas*, *Festuca* and lichens, 15.08.2005; 1 ♂ (ZMUM), site 13A, 51°18'24.1"N, 87°55'06.9"E, ca 1875 m a.s.l., subalpine sparse *Pinus sibirica* stand, litter, 16.08.2005; 1 subadult ♀ (ASU), site 9, 51°19'07.5"N, 87°53'15.0"E, ca 1415 m a.s.l., *Pinus sibirica* forest with *Abies sibirica*, litter, 17.08.2005; 1 subadult ♀ (ASU), site 10, 51°18'58.5"N, 87°53'33.3"E, ca 1470 m a.s.l., *Pinus sibirica* forest with *Abies sibirica*, litter, 17.08.2005, all leg. P.S. Nefediev and J.S. Nefedieva.

DISTRIBUTION. Originally described by Dányi and Tuf [2012] from eastern Kazakhstan's Altai, *Lithobius franciscorum* has hitherto been known from its *terra typica* alone.

REMARKS. The above is the first report of the species from Russia, expanding its distribution area to the north. The gonopods in both subadult females are with 2+2 spurs.

Lithobius (Monotarsobius) insolens Dányi et Tuf, 2012

Map 2.

Lithobius (Monotarsobius) insolens Dányi et Tuf, 2012: Nefediev et al., 2017b: 116; 2017c.

MATERIAL EXAMINED (20 specimens: 1 ♂, 12 ♀♀, 1 subadult ♀, 1 juv. from 8 localities: all from Russia, southwestern Siberia, Republic of Altai). 4 ♂♂, 6 ♀♀ (PSU), Turochak District, north of Lake Teletskoye, near Artybash, *Betula pendula*, *Abies sibirica* and *Pinus sibirica* forest, litter, 4–13.07.1982, leg. S.I. Golovatch; 1 ♂ (PSU), same District, north of Lake Teletskoye, ca 2 km E of Iogach, dark coniferous taiga with fern, foot of mountain, 14–17.07.2004; 1 juv. (ASU), Ulagan District, Altai State Nature Biosphere Reserve, south of Lake Teletskoye, near cordon Chiri, valley of Kyga River, Kyga Biogeocoenological Profile, site 16, 51°18'33.6"N, 87°55'32.9"E, ca 2030 m a.s.l., sparse *Pinus sibirica* stand with *Betula rotundifolia* and *Salix glauca* bushes below screes, litter, 15.08.2005; 1 subadult ♀ (ASU), site 10A, 51°18'43.7"N, 87°54'23.7"E, ca 1700 m a.s.l., sparse *Pinus sibirica* stand with *Betula pendula* and *Abies sibirica*, litter, 16.08.2005; 2 ♀♀ (ASU), site 12, 51°18'27.8"N, 87°54'57.4"E, ca 1845 m a.s.l., old fire-site, *Betula rotundifolia* and *Salix glauca* bushes with sparse *Pinus sibirica* and *Abies sibirica* stand, litter, 16.08.2005; 1 ♂, 2 ♀♀ (ASU), site 13A, 51°18'24.1"N, 87°55'06.9"E, ca 1875 m a.s.l., subalpine sparse *Pinus sibirica* stand, litter, 16.08.2005; 1 ♀ (ASU), site 10, 51°18'58.5"N, 87°53'33.3"E, ca 1470 m a.s.l., *Pinus sibirica* forest with *Abies sibirica*, litter, 17.08.2005; 1 ♀ (ASU), site 4, 51°19'53.3"N, 87°51'78.0"E, 675 m a.s.l., *Abies sibirica* forest with *Pinus sibirica* and *Betula pendula*, litter, 18.08.2005, all leg. P.S. Nefediev and J.S. Nefedieva.

DISTRIBUTION. A Central Asian species originally described from eastern Kazakhstan [Farzalieva, 2006], very recently found in the Omsk Area [Nefediev et al., 2017b] and the Altai Province [Nefediev et al., 2017c].

REMARKS. This is the first record of *Lithobius insolens* from the Republic of Altai. The species tends to dwell there in the northern and southern parts of Lake Teletskoye, mainly in mid- and high-mountain habitats such as taiga forest, subalpine sparse stand, dwarf bush and below scree belt up to 2030 m a.s.l.

Lithobius (Monotarsobius) cf. nordenskioeildii Stuxberg, 1876

Map 2.

MATERIAL EXAMINED (3 specimens: 3 ♀♀ from a single locality). 1 ♀ (ASU), Russia, southwestern Siberia, Republic of Altai, Turochak District, north of Lake Teletskoye, ca 2 km E of

Iogach, dark coniferous taiga with ferns, 15.07.2004; 2 ♀♀ (ZMUM), same study area, dark coniferous taiga, N slope, 17.07.2004, leg. P.S. Nefediev and J.S. Nefedieva.

DISTRIBUTION. Originally described by Stuxberg [1876] from the Yenisei River region and redescribed a century later by Eason [1976] from Stuxberg's type material, the species has never since been found.

REMARKS. The above record of apparently this species is new to the lithobiid list of southwestern Siberia.

ORDER GEOPHILOMORPHA

Family GEOPHILIDAE

Arctogeophilus macrocephalus Folkmanová et Dobroruka, 1960

Map 3.

?*Arctogeophilus* sp.: Byzova, Chadaeva, 1965: 337.

Arctogeophilus macrocephalus Folkmanová et Dobroruka, 1960: Zalesskaja et al., 1982: 189; Nefediev et al., 2017a: 8–9; 2017c.

MATERIAL EXAMINED (7 specimens: 3 ♂♂, 1 ♀, 3 juv. from 3 localities: all from Russia, southwestern Siberia, Republic of Altai). 1 ♂, 1 ♀ (ZMUM), 2 ♂♂, 1 juv. (ASU), Turochak District, north of Lake Teletskoye, ca 2 km E of Iogach, dark coniferous taiga with ferns, foot of mountain, 14–17.07.2004; 1 juv. (ASU), Ulagan District, Altai State Nature Biosphere Reserve, south of Lake Teletskoye, near cordon Chiri, mouth of Chiri River, *Betula pendula* forest, litter, 11–12.08.2005; 1 juv. (ASU), mouth of Kyga River, Kyga Biogeocoenological Profile, site 1, 51°20'47.3"N, 87°51'14.2"E, ca 445 m a.s.l., *Pinus sylvestris* and *Betula pendula* forest with *Larix sibirica*, *Abies sibirica* and *Pinus sibirica*, litter, 12.08.2005, all leg. P.S. Nefediev and J.S. Nefedieva.

DISTRIBUTION. A Euroasian species widely distributed in Russia, ranging from the Tatarstan Republic, European Russia through SW and SE Siberia (Kemerovo and Tomsk areas, Republic of Altai, Krasnoyarsk and Altai provinces) to the Far East of Russia (Jewish Autonomous Area, Khabarovsk and Maritime provinces, Chukotka Autonomous Region and Sakhalin Area) [Nefediev et al., 2017a, 2017c]. *Arctogeophilus macrocephalus* is one of the few geophilids that has previously been recorded from the Altai Nature Reserve [Zalesskaja et al., 1982].

REMARKS. In the study area, the species is reported from the NW environs of the Altai Nature Reserve and from the south of Lake Teletskoye, living in different forest habitats.

Family SCHENDYLIDAE

Escaryus chadaevae Titova, 1972

Escaryus chadaevae Titova, 1972: 105.

DISTRIBUTION. Originally described by Titova [1972] from the Kemerovo Area and the Altai Nature Reserve, Republic of Altai, both SW Siberia, as well as from the Bashkiria (= Republic of Bashkortostan), European Russia, *Escaryus chadaevae* has since been found in the valley of Yenisei River [Rybalov, 2002; Vorobiova et al., 2002] and in northern Mongolia [Poloczek et al., 2016].



Map 3. Distribution of geophilomorph centipedes in the environs of Lake Teletskoye.

Карта 3. Распространение многоножек-землянок в окрестностях Телецкого озера.

REMARKS. There are no specimens of this species in our samples.

Escaryus japonicus Attems, 1927
Map 3.

Escaryus japonicus Attems, 1927: Byzova, Chadaeva, 1965: 337; Titova, 1972a: 135; 1972b: 113–114; Pereira, Hoffman, 1993: 9; Nefediev et al., 2017a: 11.

MATERIAL EXAMINED (25 specimens: 18 ♂♂, 5 ♀♀, 2 juv. from 8 localities: all from Russia, southwestern Siberia, Republic of Altai, Altai State Nature Biosphere Reserve). 1 ♂ (ASU), Ulagan District, south of Lake Teletskoye, near cordon Chiri, valley of Kyga River, Kyga Biogeocoenological Profile, site 15, 51°18'24.5"N, 87°55'31.0"E, ca 1960 m a.s.l., subalpine sparse *Pinus sibirica* stand, litter, 14.08.2005; 3 ♀♀, 1 juv. (ASU), same study area, site 16, 51°18'33.6"N, 87°55'32.9"E, ca 2030 m a.s.l., sparse *Pinus sibirica* stand with *Betula rotundifolia* and *Salix glauca* bushes below screes, litter, 15.08.2005; 2 ♂♂ (ASU), same study area, site 18, 51°18'30.0"N, 87°56'10.7"E, ca 2195 m a.s.l., *Betula rotundifolia* and *Salix glauca* mountain tundra with *Dryas* and lichens, litter, 15.08.2005; 7 ♂♂, 1 ♀ (ASU), same study area, site 19, 51°18'30.5"N, 87°56'21.7"E, ca 2265 m a.s.l., summit of Mt Malaya Koliushka, *Betula rotundifolia* and *Salix glauca* rocky mountain tundra with *Dryas*, *Festuca* and lichens, 15.08.2005; 1 ♂ (ASU), same study area, site 7, 51°19'31.2"N, 87°52'21.1"E, 960 m a.s.l., *Abies sibirica*, *Pinus sibirica* and *Populus tremula* forest, litter, 18.08.2005, all leg. P.S. Nefediev and J.S. Nefedieva; 1 juv. (ASU), Turochak District, north of Lake Teletskoye, cordon Baigazan, 475 m a.s.l., *Populus tremula*, litter, 3.09.2005; 1 ♂, 1 ♀ (ZMUM), same study area, 51°45'34.4"N, 87°25'51.3"E, 465 m a.s.l., *Padus avium*, *Sorbus sibirica* and *Salix caprea*, 3.10.2013; 6 ♂♂ (ASU), Ulagan District, south of Lake Teletskoye, upper reaches of Kozhlon River, 51°24'55.8"N, 87°53'49.1"E, ca 1830 m a.s.l., *Pinus sibirica* forest with *Lonicera*, in mosses, 6.07.2014, all leg. M.B. Sakhnevich.

DISTRIBUTION. Being a Euroasian species, *Escaryus japonicus* ranges from Japan and northern Chi-

na through the Far East of Russia (Maritime Province, Cisamuria and Sakhalin Island) and SW Siberia (Kemerovo and Tomsk areas and Altai) to the Urals and Volga region [Nefediev et al., 2017a].

REMARKS. This species has hitherto not been formally recorded from the Republic of Altai, southwestern Siberia [cf. Titova, 1972a]. In the study area, *E. japonicus* is the most abundant in the southern part of Lake Teletskoye, preferring mid-mountain taiga forests and subalpine sparse stands, and penetrating even the mountain tundra at 2265 m a.s.l.

Escaryus koreanus Takakuwa, 1937
Map 3.

Escaryus koreanus Takakuwa, 1937: Titova, 1972a: 135; 1972b: 112–113; Pereira, Hoffman, 1993: 9; Nefediev et al., 2017a: 11; 2017c.

MATERIAL EXAMINED (18 specimens: 5 ♂♂, 7 ♀♀, 1 subadult ♀, 5 juv. from 11 localities: all from Russia, southwestern Siberia, Republic of Altai, Altai State Nature Biosphere Reserve). 1 ♂ (ASU), Ulagan District, south of Lake Teletskoye, near cordon Chiri, valley of Kyga River, Kyga Biogeocoenological Profile, river crossing, 51°20'16.8"N, 87°51'47.6"E, ca 500 m a.s.l., *Duschekia fruticosa* forest on bank of Bayas River, litter, 12.08.2005; 1 ♂, 1 juv. (ASU), same study area, site 4, 51°19'53.3"N, 87°51'78.0"E, 675 m a.s.l., *Abies sibirica* forest with *Pinus sibirica* and *Betula pendula*, litter, 18.08.2005; 1 juv. (ASU), same study area, site 5, 51°19'28.5"N, 87°52'4.8"E, ca 855 m a.s.l., *Abies sibirica* forest with *Pinus sibirica*, *Populus tremula* and *Betula pendula*, litter, 18.08.2005; 1 ♀ (ASU), same study area, site 6, 51°19'31.6"N, 87°52'16.1"E, ca 940 m a.s.l., *Populus tremula* forest with *Abies sibirica* and *Pinus sibirica*, litter, 18.08.2005; 2 juv. (ASU), same study area, site 7, 51°19'31.2"N, 87°52'21.1"E, 960 m a.s.l., *Abies sibirica*, *Pinus sibirica* and *Populus tremula* forest, litter, 18.08.2005, all leg. P.S. Nefediev and J.S. Nefedieva; 1 ♂ (ASU), Turochak District, north of Lake Teletskoye, cordon Baigazan, 51°45'32.1"N, 87°25'54.8"E, ca 455 m a.s.l., *Padus avium*, 1.10.2013; 1 ♀ (ASU), same District, Altai State Nature Biosphere Reserve, north of Lake Teletskoye, cordon Kamga, 51°47'54.8"N, 87°42'26.4"E, ca 440 m a.s.l., *Salix* and *Padus avium*, 10.06.2014; 2 ♀♀, 1 subadult ♀ (ASU), same District, north of Lake Teletskoye, Korbu Waterfall, 51°42'22.5"N, 87°40'58.7"E, ca 445 m a.s.l., *Spiraea*, *Rhododendron*, 10.06.2014; 1 ♂, 1 ♀ (ZMUM), same District, central part of Lake Teletskoye, near cordon Kokshi, 51°34'35.1"N, 87°44'05.9"E, 445 m a.s.l., *Pinus sylvestris* with *Spiraea*, 10.06.2014; 1 ♂, 1 ♀ (ASU), Ulagan District, south of Lake Teletskoye, near cordon Chiri, trail to Lake Chiri, low ridge, 51°25'23.1"N, 87°51'05.9"E, ca 1615 m a.s.l., *Pinus sylvestris* and *Betula pendula* forest, 1.07.2014; 1 ♀, 1 juv. (ASU), same District, south of Lake Teletskoye, cordon Chiri, 51°21'40.9"N, 87°50'19.7"E, ca 445 m a.s.l., *Betula pendula* and *Padus avium*, 9.07.2014, all leg. M.B. Sakhnevich.

DISTRIBUTION. Originally described from the Korean Peninsula, *Escaryus koreanus* is widespread throughout the Asian part of Russia [Nefediev et al., 2017a, 2017c].

REMARKS. The species has hitherto not been formally recorded from the Republic of Altai, southwestern Siberia [cf. Titova, 1972a]. In the environs of Lake Teletskoye, it dwells in different low- and mid-mountain forest habitats, up to ca 1615 m a.s.l.

Escaryus retusidens Attems, 1904
Map 3.

Escaryus retusidens Attems, 1904: Titova, 1972a: 135; 1972b: 110–111; Pereira, Hoffman, 1993: 9; Volkova, 2016: 675; Nefediev et al., 2017a: 11–13; 2017c.

MATERIAL EXAMINED (5 specimens: 1 ♂, 1 ♀, 2 subadult ♀♀, 1 juv. from 2 localities: all from Russia, southwestern Siberia, Republic of Altai). 2 subadult ♀♀, 1 juv. (ASU), Turochak District, north of Lake Teletskoye, ca 2 km E of Iogach, dark coniferous taiga with ferns, foot of mountain, 14–17.07.2004; 1 ♀ (ASU), same study area, dark coniferous taiga, N slope, 17.07.2004, leg. P.S. Nefediev and J.S. Nefedieva; 1 ♂ (ASU), same District, Altai State Nature Biosphere Reserve, north of Lake Teletskoye, cordon Kamga, 51°47'54.8"N, 87°42'26.4"E, ca 440 m a.s.l., *Salix* and *Padus avium*, 10.06.2014, leg. M.B. Sakhnevich.

DISTRIBUTION. *Escaryus retusidens* is widespread in Eurasia, ranging from Moldova and Ukraine in the west, through eastern Kazakhstan, Kyrgyzstan and southwestern Siberia (Kemerovo Area and Altai Province), to Cisauria in the east [Nefediev et al., 2017a, 2017c].

REMARKS. This species has hitherto not been formally recorded from the Republic of Altai, SW Siberia [cf. Titova, 1972a], where it seems to be quite rare and has been found near the shore line in the north of Lake Teletskoye.

Family LINOTAENIDAE

Strigamia pusilla (Sselivanoff, 1884)

Map 3.

Strigamia pusilla (Sselivanoff, 1884): Nefediev et al., 2017c.

MATERIAL EXAMINED (45 specimens: 19 ♂♂, 19 ♀♀, 2 subadult ♀♀, 5 juv. from 17 localities: all from Russia, southwestern Siberia, Republic of Altai). 1 ♂, 1 ♀ (ZMUM), 2 ♂♂, 2 ♀♀, 1 juv. (ASU), Turochak District, north of Lake Teletskoye, ca 2 km E of Iogach, dark coniferous taiga with fern, foot of mountain, 14–17.07.2004; 2 ♂♂, 1 juv. (ASU), same study area, dark coniferous taiga with *Bergenia crassifolia*, N slope, 15–17.07.2004; 1 ♂, 1 ♀ (ASU), Ulagan District, Altai State Nature Biosphere Reserve, south of Lake Teletskoye, near cordon Chiri, valley of Kyga River, Kyga Biogeocoenological Profile, site 14, 51°18'23.0"N, 87°55'22.1"E, ca 1905 m a.s.l., subalpine sparse *Pinus sibirica* stand, litter, 14.08.2005; 3 ♂♂, 2 ♀♀ (ASU), same study area, site 15, 51°18'24.5"N, 87°55'31.0"E, ca 1960 m a.s.l., subalpine sparse *Pinus sibirica* stand, litter, under stones, 14.08.2005; 1 ♀ (ASU), same study area, site 16, 51°18'33.6"N, 87°55'32.9"E, ca 2030 m a.s.l., sparse *Pinus sibirica* stand with *Betula rotundifolia* and *Salix glauca* bushes below screes, litter, 15.08.2005; 1 ♂, 1 ♀ (ASU), same study area, site 18, 51°18'30.0"N, 87°56'10.7"E, ca 2195 m a.s.l., *Betula rotundifolia* and *Salix glauca* mountain tundra with *Dryas* and lichens, litter, 15.08.2005; 1 ♂, 1 ♀, 1 juv. (ASU), same study area, site 19, 51°18'30.5"N, 87°56'21.7"E, ca 2265 m a.s.l., summit of Mt Malaya Koliushka, *Betula rotundifolia* and *Salix glauca* rocky mountain tundra with *Dryas*, *Festuca* and lichens, 15.08.2005; 3 ♂♂ (ASU), same study area, site 10A, 51°18'43.7"N, 87°54'23.7"E, ca 1700 m a.s.l., sparse *Pinus sibirica* stand with *Betula pendula* and *Abies sibirica*, litter, 16.08.2005; 1 ♀, 1 subadult ♀ (ASU), same study area, site 11, 51°18'41.3"N, 87°55'34.7"E, ca 1735 m a.s.l., old fire-site, *Betula rotundifolia* and *Salix glauca* bushes with sparse *Pinus sibirica* and *Abies sibirica* stand, litter, 16.08.2005; 1 ♀, 1 subadult ♀ (ASU), same study area, site 12, 51°18'27.8"N, 87°54'57.4"E, ca 1845 m a.s.l., old fire-site, *Betula rotundifolia* and *Salix glauca* bushes with sparse *Pinus sibirica* and *Abies sibirica* stand, litter, 16.08.2005; 1 ♂, 1 ♀ (ASU), same study area, site 13A, 51°18'24.1"N, 87°55'06.9"E, ca 1875 m a.s.l., subalpine sparse *Pinus sibirica* stand, litter, 16.08.2005; 1 ♂, 2 ♀♀ (ASU), same study area, site 8A, 51°19'23.6"N, 87°53'02.1"E, ca 1190 m a.s.l., *Pinus sibirica* forest with *Abies sibirica*, litter, 17.08.2005; 1 ♂, 3 ♀♀ (ASU), same study area, site 10, 51°18'58.5"N, 87°53'33.3"E, ca 1470 m a.s.l., *Pinus sibirica* forest with *Abies sibirica*, litter, 17.08.2005; 1 juv. (ASU), same study area, site 4, 51°19'53.3"N, 87°51'78.0"E, 675

m a.s.l., *Abies sibirica* forest with *Pinus sibirica* and *Betula pendula*, litter, 18.08.2005; 1 ♂ (ASU), same study area, site 5, 51°19'28.5"N, 87°52'04.8"E, ca 855 m a.s.l., *Abies sibirica* forest with *Pinus sibirica*, *Populus tremula* and *Betula pendula*, litter, 18.08.2005; 1 ♂ (ASU), same study area, site 7, 51°19'31.2"N, 87°52'21.1"E, 960 m a.s.l., *Abies sibirica*, *Pinus sibirica* and *Populus tremula* forest, litter, 18.08.2005, all leg. P.S. Nefediev and J.S. Nefedieva; 1 ♀ (ASU), Turochak District, north of Lake Teletskoye, cordon Baigazan, *Padus avium*, 3.09.2005; 1 juv. (ASU), same study area, 475 m a.s.l., *Populus tremula*, litter, 3.09.2005; 1 ♀ (ASU), Ulagan District, south of Lake Teletskoye, near cordon Chiri, Lake Chiri, 51°24'48.6"N, 87°53'01.4"E, 1850 m a.s.l., *Pinus sibirica* and *Betula rotundifolia*, in mosses, 8.07.2014, leg. M.B. Sakhnevich.

DISTRIBUTION. This species is widely distributed from the Sudetes, Carpathians and the Caucasus, through the Urals, to southwestern and central Siberia and northern Mongolia [Bonato et al., 2012; Poloczek et al., 2016; Nefediev et al., 2017c].

REMARKS. *Strigamia pusilla* is recorded from the Republic of Altai for the first time. In the environs of Lake Teletskoye, it is very common, occurring mainly in mid- and high-mountain habitats, such as taiga forest, subalpine sparse stands and mountain tundra, reaching up to 2265 m a.s.l. Males in the populations studied are with 30–31 pairs of legs, females with 33 ones.

Conclusions

To date, at least 14 species from four genera, four families and two orders are known to occur in the environs of Lake Teletskoye within the Altai State Nature Biosphere Reserve, SW Siberia, Russia. The lithobiid centipede *Lithobius (Monotarsobius) franciscorum* Dányi et Tuf, 2012 is new to Russia. One species appears to be new to southwestern Siberia: *Lithobius (Monotarsobius) cf. nordenskioeldii* Stuxberg, 1876. Ten species, (*Lithobius (Ezembius) proximus* Sselivanoff, 1878, *Lithobius (Ezembius) ostiacorum* Stuxberg, 1876, *Lithobius (Ezembius) sibiricus* Gerstfeldt, 1858, *Lithobius cf. vagabundus* Stuxberg, 1876, *Lithobius (Monotarsobius) curtipes* C.L. Koch, 1847, *Lithobius (Monotarsobius) insolens* Dányi et Tuf, 2012, *Escaryus japonicus* Attems, 1927, *Escaryus koreanus* Takakuwa, 1937, *Escaryus retusidens* Attems, 1904 and *Strigamia pusilla* (Sselivanoff, 1884)), are formally recorded from the Republic of Altai for the first time.

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References

- Bonato L., Chagas Junior A., Edgecombe G.D., Lewis J.G.E., Minelli A., Pereira L.A., Shelley R.M., Stoev P., Zapparoli M. 2016. Chilobase 2.0 – A World Catalogue of Centipedes (Chilopoda). Available at <http://chilobase.biologia.uniud.it> (accessed 30 June 2017).
- Bonato L., Dányi L., Succi A.A., Minelli A. 2012. Species diversity of *Strigamia* Gray, 1843 (Chilopoda: Linotaeniidae): a preliminary synthesis // *Zootaxa*. Vol.3593. P.1–39.

- Bukhhalo S.P., Galitch D.E., Sergeeva E.V., Vazhenina N.V. 2014. [Synopsis of the invertebrate fauna of the southern taiga in western Siberia (basin of the Lower Irtysh)]. Moscow: KMK Scientific Press. 189 p. [in Russian]
- Bukhhalo S.P., Sergeeva E.V. 2012. [Interannual dynamics of the composition and structure of soil invertebrate communities in the root terrace of Irtysh River] // Belgorod State Univ. Scientific Bulletin. Natural Sciences. No.5(134). Iss.20. P.59–64 [in Russian].
- Byzova Yu.B., Chadaeva Z.V. 1965. [Comparative characteristics of soil fauna of various associations in an *Abies sibirica* forest (Kemerovo Area)] // Zoologicheskii Zhurnal. T.44. No.3. P.331–339 [in Russian, with English summary].
- Dányi L., Tuf I.H. 2012. *Lithobius (Monotarsobius) franciscorum* sp. nov., a new lithobiid species from the Altai, with a key to the Central Asian species of the subgenus (Chilopoda: Lithobiomorpha) // Zootaxa. Vol.3182. P.16–28.
- Eason E.H. 1976. The type specimens and identity of the Siberian species described in the genus *Lithobius* by Anton Stuxberg in 1876 (Chilopoda: Lithobiomorpha) // Zoological Journal of the Linnean Society. No.58. P.98–127.
- Farzalieva G.Sh. 2006. New species of the lithobiid genus *Lithobius (Monotarsobius)* (Chilopoda: Lithobiomorpha: Lithobiidae) from eastern Kazakhstan // Arthropoda Selecta. Vol.15. No.2. P.99–117.
- Farzalieva G.Sh., Zaleskaja N.T., Edgecombe G.D. 2005 [for 2004]. A new genus and species of lithobiomorph centipede (Chilopoda: Lithobiomorpha: Anopsobidae) from eastern Kazakhstan // Arthropoda Selecta. Vol.13. No.4. P.219–224.
- Mikhaljova E.V., Nefediev P.S., Nefedieva J.S., Sakhnevich M.B., Dyachkov Yu.V. 2014. Review of the millipede genus *Sibirius* Gulicka, 1972, with descriptions of three new species from Altai, Siberia, Russia (Diplopoda, Julida, Julidae) // Zootaxa. Vol.3866. No.1. P.30–52.
- Nefediev P.S. 2001. [On the fauna and ecology of Myriapoda in the environs of the village of Smolenskoe, Altai Province] // Landshafty Zapadnoj Sibiri: problemy issledovaniy, ekologiya i ratsionalnoe ispolzovanie. Materialy VII Mezhdunarodnoy mezhvuzovskoy konferentsii, posvyaschyonnoy Dnyu Zemli. Biysk: Biysk Pedagogical State Univ. Publ. P.84–86 [in Russian].
- Nefediev P.S., Farzalieva G.Sh., Tuf I.H., Nedoev H.Kh., Niyazov S.T. 2017c. Millipede and centipede assemblages on the northern and southern slopes of the lowland Altai, southwestern Siberia, Russia (Diplopoda, Chilopoda) // Tropical Natural History. Suppl.5. 17th International Congress of Myriapodology. 23–26 July 2017, Krabi, Thailand. Book of abstracts. P.13.
- Nefediev P.S., Knyazev S.Yu., Farzalieva G.Sh., Tuf I.H. 2017b. A contribution to the myriapod fauna of the Omsk Area, Siberia, Russia (Myriapoda: Diplopoda, Chilopoda) // Arthropoda Selecta. Vol.26. No.2. P.113–118.
- Nefediev P.S., Nefedieva J.S. 2013. [Biodiversity and ecology of millipedes in the environs of Lake Teletskoye (Diplopoda)] // Izvestia Altaiskogo gosudarstvennogo universiteta, Biologicheskie nauki. Vol.3(79). No.1. P.86–87 [in Russian, with English summary].
- Nefediev P.S., Tuf I.H., Farzalieva G.Sh. 2016. Centipedes from urban areas in southwestern Siberia, Russia (Chilopoda). Part 1. Lithobiomorpha // Arthropoda Selecta. Vol.25. No.3. P.257–266.
- Nefediev P.S., Tuf I.H., Farzalieva G.Sh. 2017a. Centipedes from urban areas in southwestern Siberia, Russia (Chilopoda). Part 2. Geophilomorpha // Arthropoda Selecta. Vol.26. No.1. P.8–14.
- Nefedieva J.S., Nefediev P.S. 2008. Ecofaunistic investigations of millipedes (Diplopoda) in the environs of Lake Teletskoe // Myriapoda and Onychophora of the World Diversity, Biology and Importance. Abstracts of 14th International Congress of Myriapodology. Staatliches Museum für Naturkunde, Görlitz. Peckiana. Vol.6. P.123–124.
- Nefedieva J.S., Nefediev P.S., Sakhnevich M.B., Dyachkov Yu.V. 2014. Distribution of millipedes (Diplopoda) along an altitudinal gradient in the south of Lake Teletskoye, Altai Mts // I.H. Tuf, K. Tajovský (eds.). 16th International Congress of Myriapodology. Book of abstracts. Institute of Soil Biology, BC ASCR & Faculty of Science, Palacký University, Olomouc. P.65.
- Nefedieva J.S., Nefediev P.S., Sakhnevich M.B., Dyachkov Yu.V. 2015. Distribution of millipedes (Diplopoda) along an altitudinal gradient in the south of Lake Teletskoye, Altai Mts, Russia // ZooKeys. Vol.510. P.141–161.
- Pereira L.A., Hoffman R.L. 1993. The American species of *Escaryus*, a genus of Holarctic centipedes (Geophilomorpha: Schendylidae) // Jeffersoniana. Vol.3. P.1–72.
- Poloczek A., Pfeiffer M., Schneider R., Mühlenberg M. 2016. The Chilopoda (Myriapoda) of the Khentey-Mountain Range, Northern Mongolia. Communities of different forest-types under a varying fire regime // European Journal of Soil Biology. Vol.74. P.114–120.
- Rybalov L.B. 2002. [Zonal and landscape changes in soil invertebrate populations in a near-Yenisei River region of middle Siberia and the role of temperature adaptations in the meridional (zonal) distribution of invertebrates] // Russian Entomological Journal. Vol.11. No.1. P.77–86 [in Russian, with English summary].
- Sergeeva E.V. 2013. [Biotopic distribution and the numbers of centipedes (Chilopoda) in the Irtysh Valley of West Siberia, Russia] // Euroasian Entomological Journal. Vol.12. No.6. P.529–533 [in Russian, with English summary].
- Striganova B.R., Poryadina N.M. 2005. [Soil animal population in boreal forests of the West-Siberian Plain]. Moscow: KMK Scientific Press Ltd. 234 p. [in Russian]
- Stuxberg A. 1876. Myriopoder från Sibirien och Waigatsch ön samlade under Nordenskiöldska expeditionen 1875 // Öfversigt af Kongl. Vetenskaps-Akademiens Förhandlingar. Årg.33. No.2. S.11–38.
- Titova L.P. 1972a. [Pattern of the distribution of the genus *Escaryus* (Chilopoda) in the USSR] // M.S. Ghilarov (ed.). Problemy pochvennoi zoologii. Materials of the 4th All-Union Conference. Baku, 1972. Moscow: Nauka Publ. P.135–136 [in Russian].
- Titova L.P. 1972b. [New species of the genus *Escaryus* Cook et Collins (Schendylidae, Chilopoda)] // M.S. Ghilarov (ed.). Ekologiya pochvennykh bespozvonochnykh. Moscow: Nauka Publ. P.94–119 [in Russian].
- Volkova Yu.S. 2016. [An annotated catalogue of geophilomorph centipedes (Chilopoda, Geophilomorpha) from the European part of Russia] // Zoologicheskii Zhurnal. T.95. No.6. P.669–678 [in Russian, with English summary].
- Vorobiova I.G., Rybalov L.B., Rossolimo T.E., Zaleskaja N.T. 2002. [Zonal and landscape distribution of the myriapod fauna and populations (Myriapoda) in the Yenisei River basin] // Izuchenie, sokhranenie i vosstanovlenie bioraznoobraziya ekosistem na Yeniseiskom ekologicheskom transekte: Zhivotnyi mir, etno-ekologicheskie issledovaniya, 2. Moscow: IPEE RAN Publ. P.60–71 [in Russian].
- Zaleskaja N.T. 1978. [Identification book of the lithobiomorph centipedes of the USSR]. Moscow: Nauka Publ. 212 p. [in Russian]
- Zaleskaja N.T., Titova L.P., Golovatch S.I. 1982. [The myriapod fauna of the Moscow Region] // M.S. Ghilarov (ed.). Pochvennye bespozvonochnye Moskovskoi oblasti. Moscow: Nauka Publ. P.179–200 [in Russian].