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Addition to the fauna of synanthropic woodlice in the south of Western Siberia, Russia (Isopoda: Oniscidea)

Дополнение к фауне синантропных мокриц юга Западной Сибири, Россия (Isopoda: Oniscidea)

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KEY WORDS: terrestrial isopods, woodlice, *Porcellio scaber*, *Porcellionides pruinosus*, *Protracheoniscus major*, synanthropic, faunistics, invasive species, Siberia.

КЛЮЧЕВЫЕ СЛОВА: наземные изоподы, мокрицы, *Porcellio scaber*, *Porcellionides pruinosus*, *Protracheoniscus major*, синантроп, фаунистика, инвазивные виды, Сибирь.

ABSTRACT. New records of woodlice from anthropogenic and semi-natural habitats of the south of W Siberia replenish the list by three more synanthropic species, and now it comprises at least 7 species from six genera and five families. The genus *Protracheoniscus* Verhoeff, 1917 and the species *P. major* (Dollfus, 1903) are reported from the Asian part of Russia for the first time. The following records are new to Siberia: *Porcellio scaber* Latreille, 1804; *Porcellionides pruinosus* (Brandt, 1833) and the genus *Porcellionides* Miers, 1877 to the south of W Siberia; *Trachelipus rathkii* (Brandt, 1833) to the Novosibirsk and Kemerovo areas, and the Republic of Altai. All new synanthropic woodlouse distributions in the region are mapped.

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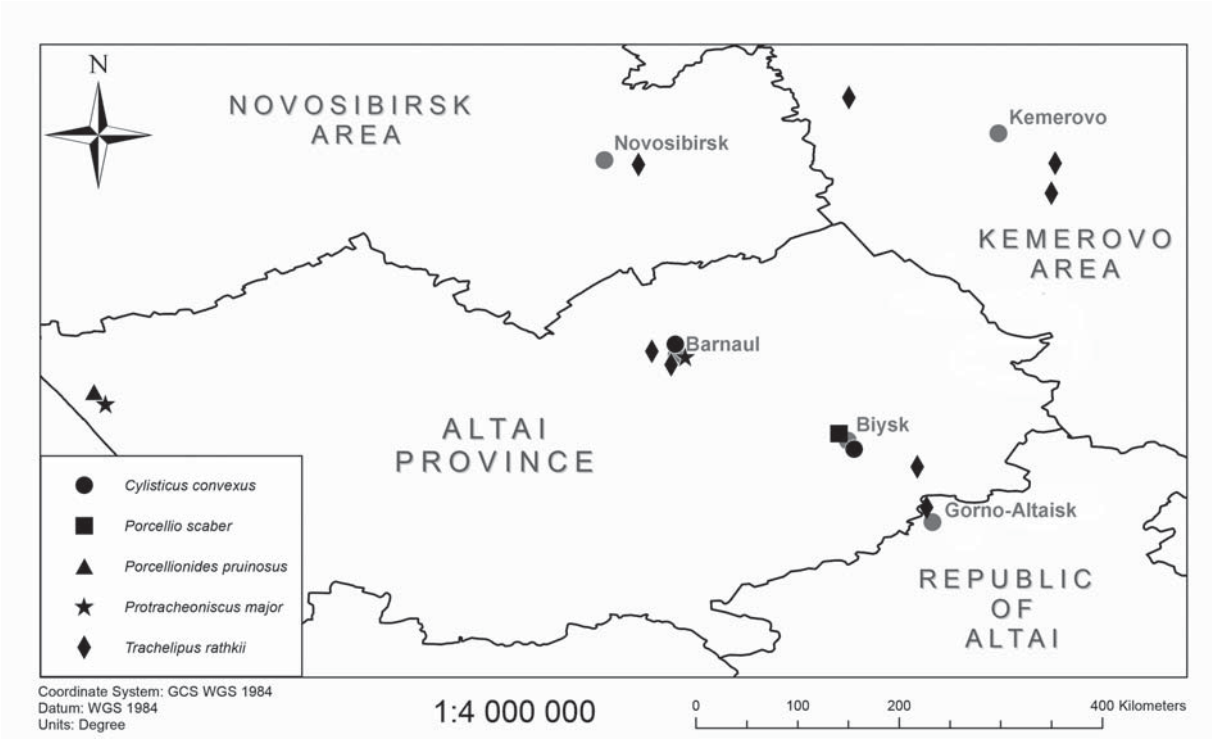
РЕЗЮМЕ. Новые находки мокриц из антропогенных и полуестественных местообитаний юга Западной Сибири пополняют список антропохоров тремя видами-вселенцами, который насчитывает на сегодняшний день как минимум 7 видов из шести родов и пяти семейств. В азиатской части России впервые отмечены род *Protracheoniscus* Verhoeff, 1917 и вид *P. major* (Dollfus, 1903). Указанные ниже находки оказались новыми для Сибири: *Porcellio scaber* Latreille, 1804; *Porcellionides pruinosus* (Brandt, 1833) и род *Porcellionides* Miers, 1877 для юга Западной Сибири; *Trachelipus rathkii* (Brandt, 1833) для Новосибирской и Кемеровской областей и Республики Алтай. Даны карты с распространением всех новых находок синантропных видов мокриц в указанном регионе.

Introduction

Despite the recently appeared a few papers on southwestern Siberian terrestrial isopods, the woodlouse fauna of the region still remains very poorly studied. The only four woodlouse species have currently been known as synanthropic introductions to SW Siberia: *Porcellio laevis* Latreille, 1804, *Cylisticus convexus* (De Geer, 1778), *Trachelipus rathkii* (Brandt, 1833) and *Trichoniscus pygmaeus* Sars, 1898 [Khisametdinova et al., 2016]. There are a number of previously published ecological articles on soil macrofauna of the Kemerovo and Tyumen areas, where terrestrial isopods had been mentioned at the order level and considered as one of components in soil ecosystems [Eremeeva, 2002, 2004, 2006, 2011; Eremeeva et al., 2013, 2014; Sergeeva, 2010, 2016].



Map 1. New records of synanthropic woodlice in the south of Western Siberia.
Карта 1. Новые находки синантропных мокриц на юге Западной Сибири.

The material treated herein has been deposited mainly in the collection of the Altai State University, Barnaul, Russia (ASU), partly retained in the collection of the Zoological Museum of the Lomonosov Moscow State University, Moscow, Russia (ZMUM), as indicated in the text. Literature references to the species concern southwestern Siberia only.

Taxonomic part

ORDER ONISCIDEA

Family AGNARIDAE

Protracheoniscus major (Dollfus, 1903)
Map 1.

MATERIAL EXAMINED. 2 ♂♂, 2 ♀♀ (ZMUM Mc-1411), 3 ♂♂, 5 ♀♀, 5 juv. (ASU), Russia, southwestern Siberia, **Altai Province**, Barnaul, Altai State University, 53.347405°N, 83.775501°E, basement, 03–04.2016, leg. L.A. Durnikin; 1 ♀ (ASU), same Province, Barnaul, Skiing Lodge "Dinamo", 53.303271°N, 83.765472°E, mixed forest, 22.07.2010, leg. I.S. Denisova; 1 ♂ (ASU), same Province, Barnaul, 53.356059°N, 83.770351°E, inside apartment, in bathroom, 17.06.2016, leg. V. Zaritovskaya, V. Novichikhina; 1 ♂, 8 ♀♀ (ASU), same Province, Slavgorod District, Yarovoe, 52.923446°N, 78.569601°E, plant debris near gardens, 20–27.07.2016, leg. D.A. Efimov; 1 ♀ (ASU), same Province, Barnaul, shopping center "Plaza", 53.330447°N, 83.782153°E, 13.02.2017, leg. J.S. Nefedieva.

DISTRIBUTION. The species is widespread from SE Germany to Central Asia [Schmalfuss, 2003]. In Russia the species has previously been recorded in the southern part of European Russia [Kuznetsova, Gongalsky, 2012].

REMARKS. Both the genus *Protracheoniscus* Verhoeff, 1917, and the species *P. major* (Dollfus, 1903), are recorded in the Asian part of Russia for the first time.

Family CYLISTICIDAE

Cylisticus convexus (De Geer, 1778)
Map 1.

Cylisticus convexus (De Geer, 1778): Khisametdinova et al., 2016: 53.

MATERIAL EXAMINED. 1 ♂, 3 ♀♀, 1 juv. (ASU), Russia, southwestern Siberia, **Altai Province**, Biysk, Centre of Hygiene and Epidemiology of the Altai Province, 52.536175°N, 85.212581°E, *Betula pendula* stand, 16.06.2015, leg. P.S. Nefediev, J.S. Nefedieva; 1 ♀ (ASU), same Province, Barnaul, Shukshin Street, 53.372176°N, 83.669328°E, *Betula pendula* stand, above cellars, 29.09.2017; 5 ♀♀, 1 juv. (ASU), same Province, Barnaul, near Altai Province Sport School, 53.355274°N, 83.727085°E, *Ulmus* and *Betula pendula* stand, above cellars, 3.11.2017, all leg. P.S. Nefediev.

DISTRIBUTION. *Cylisticus convexus* is widely distributed throughout Europe and Asia Minor, likewise introduced to northern Africa, both Americas and Australia [Schmalfuss, 2003]. In Russia it has been earlier reported from central, northeastern and southern parts of European Russia [Kuznetsova, Gongalsky, 2012], and also recently found introduced to a hothouse of the M.A. Lisavenko Research Institute for Horticulture of Siberia in the city Barnaul, Altai Province [Khisametdinova et al., 2016].

REMARKS. The above are the first formal records of this species from open grounds in semi-anthropogenic habitats in Siberia.

Family TRACHELIPODIDAE

Trachelipus rathkii (Brandt, 1833)
Map 1.

Trachelipus rathkii (Brandt, 1833): Khisametdinova et al., 2016: 52.

MATERIAL EXAMINED. 2 ♂♂ (ASU), Russia, southwestern Siberia, **Altai Province**, Barnaul, Novomikhailovka, 53.349704°N, 83.477753°E, open hand-made grounds, 1.05.2016, leg. G.N. Kuftina; 1 ♂ (ASU), same Province, Barnaul, Lake Pionerskoe, 14.06.2016, leg. E.V. Guskova; 1 ♀ (ASU), same Province, Krasnogorskoe District, 3 km N of Bystryanka, *Acer* and *Alnus* stands along Chuya Tract, 52.3275°N, 85.827222°E, 215 m a.s.l., 15.08.2016, leg. P.S. Nefediev, J.S. Nefedieva; 3 ♂♂, 4 ♀♀ (ASU), same Province, Barnaul, Solnechnaya Polyana, 53.374928°N, 83.647527°E, ruderal vegetation near buckwheat fields, 8.10.2017; 1 juv. (ASU), same Province, Barnaul, near Altai Province Sport School, 53.355274°N, 83.727085°E, *Ulmus* and *Betula pendula* stand, above cellars, 3.11.2017, all leg. P.S. Nefediev; 2 ♂♂, 2 ♀♀ (ZMUM Mc–1412), 4 ♂♂, 10 ♀♀, 4 juv. (ASU), Russia, southwestern Siberia, **Republic of Altai**, Maima District, Gorno-Altaisk, 51.966873°N, 85.908893°E, floodplain of Maima River, *Salix* on right bank, 22.06.2016, leg. J.S. Nefedieva; 1 ♂, 1 ♀ (ASU), Russia, southwestern Siberia, **Novosibirsk Area**, Novosibirsk District, valley of Krutikha River, near Geodezicheskaya Railway Station, 54°59′19″N, 83°22′30″E, 135 m a.s.l., anthropogenic rocky outcrops on roadside in *Betula* forest, 23.07.2016; 4 ind. (ZMUM Mc-1413), 26 ind. (ASU), same Area and District, valley of Inya River, right bank, "Izumrud" Gardening Partnership, 55°00′13″N, 83°21′30″E, 110 m a.s.l., open hand-made grounds, 23.07.2016; 49 ind. (ASU), same Area and District, valley of Inya River, right bank, 2 km SSW of Plotnikovo, 55°00′43″N, 83°22′33″E, 110 m a.s.l., small rocks and rocky outcrops at foot of slope, covered with *Pinus sylvestris*, *Betula pendula* and *Populus tremula* forest, on river bank, 23.07.2016, all leg. A.A. Fomichev; 1 ♂, 2 ♀♀ (ZMUM Mc-1414), Russia, southwestern Siberia, **Kemerovo Area**, Kemerovo District, Kriokovo, 55°31′N, 85°52′E, 20.08.2016; 1 ♂, 1 ♀ (ASU), same locality, plant debris, 28.05.2017; 5 ♀♀ (ASU), same Area, Krapivinskii District, near Zelenogorskii, 55°01′N, 87°03′E, on river bank, 9.07.2017; 8 ♀♀ (ASU), same Area and District, 8 km SSW of Saltymakovo, Kemerovo State University Biological Field Station "Azhendarovo", 54°45′N, 87°01′E, floodplain of Tom River, 28.07.2017, all leg. D.A. Efimov.

DISTRIBUTION. The species is distributed throughout most of Europe except for the Mediterranean, and also introduced to the Americas [Schmalfuss, 2003]. In Russia *T. rathkii* is widely distributed in northwestern and southern European Russia, and also it has been recently found in anthropogenic and semi-natural habitats in the Altai Province, Asian Russia [Khisametdinova et al., 2016].

REMARKS. This species has hitherto been recorded neither in the Novosibirsk and Kemerovo areas nor in the Republic of Altai, southwestern Siberia.

Family PORCELLIONIDAE

Porcellio scaber Latreille, 1804
Map 1.

MATERIAL EXAMINED. 1 ♂, 2 ♀♀ (ZMUM Mc-1415), 2 ♂♂, 4 ♀♀, 1 juv. (ASU), Russia, southwestern Siberia, **Altai Province**, Biysk, Centre of Hygiene and Epidemiology of the Altai Province, 52.536175°N, 85.212581°E, *Betula pendula* stand, 16.06.2015, leg. P.S. Nefediev, J.S. Nefedieva.

DISTRIBUTION. This species is very widespread in Europe except its southeastern part, and also introduced to many localities of the world, e.g. Australia, Japan, etc. [Schmalfuss, 2003]. In Russia this species has previously been recorded in central and southern European Russia and the Russian Far East [Kuznetsova, Gongalsky, 2012].

REMARKS. The above is the first report of the species from Siberia.

Porcellionides pruinosus (Brandt, 1833)
Map 1.

MATERIAL EXAMINED. 1 juv. (ZMUM Mc–1416), Russia, southwestern Siberia, **Altai Province**, Slavgorod District, Yarovoe, 52.923446°N, 78.569601°E, plant debris near gardens, 20–27.07.2016, leg. D.A. Efimov.

DISTRIBUTION. Being Mediterranean in origin, this species is very widespread in Europe, as well as in Transcaucasia [Schmalfuss, 2003; Kuznetsova, Gongalsky, 2012]. In European Russia this species has previously been found introduced in central and southern parts of the country, and also known from eastern Siberia [Kuznetsova, Gongalsky, 2012; Khisametdinova et al., 2016].

REMARKS. Being synanthropically cosmopolitan this species had been predicted to occur in SW Siberia by Khisametdinova et al. [2016], now it is reported above for the first time.

Conclusions

At present, at least 7 species of terrestrial isopods from 6 genera and 5 families are known to occur in southwestern Siberia, Russia as synanthropic introductions. Both the genus *Protracheoniscus* Verhoeff, 1917, and the species *P. major* (Dollfus, 1903), are recorded in Asian Russia for the first time. *Porcellio scaber* Latreille, 1804 is formally new to the woodlouse fauna of Siberia, *Porcellionides pruinosus* (Brandt, 1833) and the genus *Porcellionides* Miers, 1877 are newly reported from the south of W Siberia, while *Trachelipus rathkii* (Brandt, 1833) has never been recorded in the Novosibirsk and Kemerovo areas, as well as in the Republic of Altai.

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