

The millipedes (Diplopoda) of the Republic of Ingushetia, northern Caucasus, Russia

Двупарноногие многоножки (Diplopoda) Республики Ингушетия (Северный Кавказ, Россия)

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КЛЮЧЕВЫЕ СЛОВА: таксономия, иконография, распространение, карта, фауна.

ABSTRACT. No special studies on the millipede fauna of the Republic of Ingushetia have hitherto been performed, the known published records being quite few and highly sporadic. The fauna is summarized here and it presently totals 16 species from 13 genera, 8 families and four orders. All records are mapped, both new and old, several species illustrated, and each species account supplied with notes on its distribution. The fauna of the Republic is dominated by endemics and subendemics of the Caucasus.

РЕЗЮМЕ. Специальных исследований фауны многоножек Республики Ингушетия не проводилось, известные опубликованные данные немногочисленны и весьма спорадичны. Здесь приводится сводка фауны, которая в настоящее время насчитывает 16 видов из 13 родов, 8 семейств и 4 отрядов. Все данные нанесены на карту, как новые, так и старые, несколько видов проиллюстрированы, а описание каждого вида снабжено заметками о его распространении. В фауне республики преобладают эндемики и субэндемики Кавказа.

Introduction

Recent research on the diplopods of the Caucasus has experienced significant progress. In particular, a number of lists have been compiled for various countries and regions of the Caucasus. This concerns Georgia [Kokhia, Golovatch, 2018, 2020] and Russia: the Stavropol Province [Zuev, 2014, 2021], the Republic of Karachay-Cherkessia [Zuev *et al.*, 2023], the Republic of North Ossetia – Alania [Golovatch, Antipova, 2022], and the Chechen Republic [Golovatch *et al.*, 2024].

The present contribution summarizes the diplopod fauna of the Republic of Ingushetia, based both on fresh material and literature records.

Material and methods

The material underlying the present contribution, all stored in 75% ethanol, has been fully donated to the collection of the Don State Technical University (DSTU), Russia. Photographs were taken using a Zeiss StereoDiscovery V.20 microscope. SEM micrographs were taken using a Hitachi SU3500 scanning electron microscope (FRC IBSS, Sevastopol).

The distribution map was created using Google Earth Pro (ver. 7.3.4.8642). All collecting localities in and under the faunistic sections are referred to as the respective numbers on the map (Fig. 10) put in square brackets ([]).

All images were processed using Adobe Photoshop 2020 software.

Taxonomic part

Order Glomerida Brandt, 1833

Family Glomeridae Leach, 1816

Trachysphaera costata (Waga, 1857)

Fig. 1.

MATERIAL. 3 ex., Republic of Ingushetia, “Erzi” Nature Reserve, Dzheirakh Distr., Targim Basin, Leimi, valley of Tetrtskali River [4], mixed forest, under logs, 1360 m a.s.l., 42.829850°N, 44.905767°E, 1.VI.2023; 2 ex., same place, Targim, valley of Assa River [7], mixed forest, litter, 1150 m a.s.l., 42.801464°N, 44.938506°E, 1.VI.2023; 6 ex., Sunzha Distr., between Alkun and Egikal, valley of Assa River [6], *Fagus & Carpinus* forest, litter, 930 m a.s.l., 42.908745°N, 44.968930°E, 31.V.2023; 14 ex., same locality [6], *Fagus & Carpinus* forest, under logs and stones, 950 m a.s.l., 42.909450°N, 44.967178°E, 2.V.2023, all A. Evsyukov and T. Petrova leg.

REMARKS. This species is widespread, ranging from Central Europe to the Near East. In the Caucasus, it ranges from the Krasnodar Province and Abkhazia in the west to Dagestan and Azerbaijan in the east [Golovatch, 1990, 2008; Antić *et al.*, 2021; Evsyukov *et al.*, 2022; Golovatch *et al.*, 2024, 2025]. As regards the Republic of Ingushetia, this species has previously been recorded from near Muzhichi [5], Assa River Valley [Golovatch, 1990].

Trachysphaera minuta Golovatch, 1976

Fig. 2.

MATERIAL. 10 ex., Republic of Ingushetia, “Erzi” Nature Reserve, Dzheirakh Distr., Targim Basin, Targim, valley of Assa River [7], mixed forest, litter, 1150 m a.s.l., 42.801464°N, 44.938506°E, 1.VI.2023; 25 ex., Sunzha Distr., between Alkun and Egikal, valley of Assa River [6], *Fagus & Carpinus* forest, litter, 930 m a.s.l., 42.908745°N, 44.968930°E, 31.V.2023; 68 ex., same locality [6], *Fagus & Carpinus* forest, under logs and stones, 950 m a.s.l., 42.909450°N, 44.967178°E, 2.V.2023, all A. Evsyukov and T. Petrova leg.

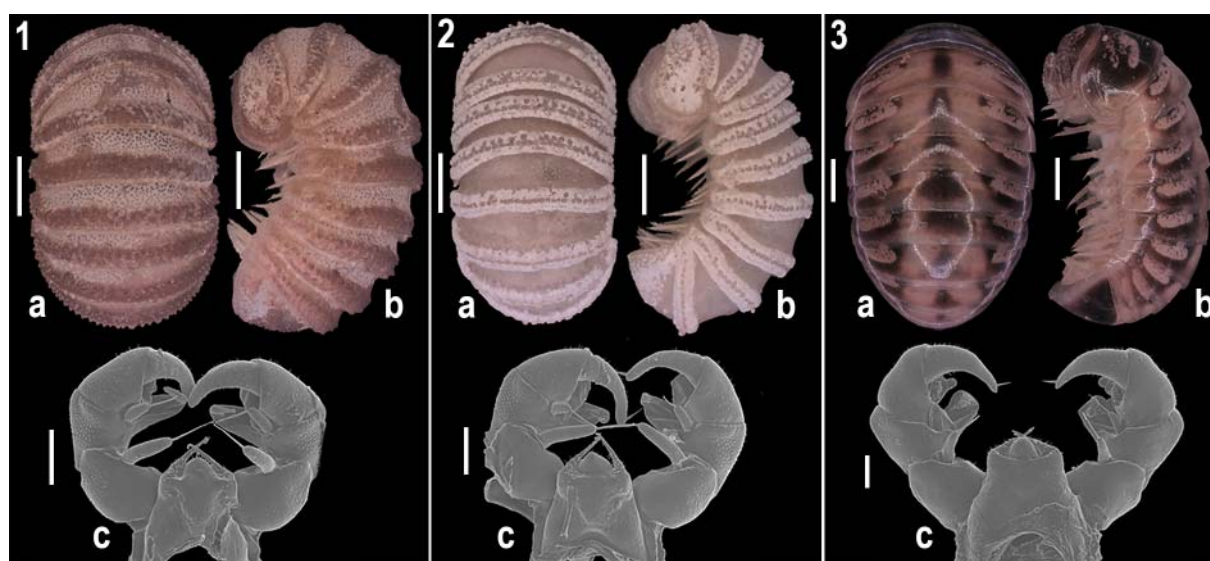
REMARKS. This troglophilic species was described from caves in the Krasnodar Province, Russia [Golovatch, 1976]. Later found in forest litter in the Krasnodar Province, the Republic of Ingushetia, northwestern Azerbaijan and western Georgia, as well as in the Nikortsminda Cave in Racha, Georgia [Golovatch, 1981, 1985, 1990; Golovatch *et al.*, 2025]. As regards the Republic of Ingushetia, this species has previously been recorded from near Muzhichi [5], Assa River Valley [Golovatch, 1990].

Hyleoglomeris specialis Golovatch, 1989

Fig. 3.

MATERIAL. 6 ex., Republic of Ingushetia, “Erzi” Nature Reserve, Sunzha Distr., between Alkun and Egikal, valley of Assa River [6], *Fagus & Carpinus* forest, litter, 930 m a.s.l., 42.908745°N, 44.968930°E, 31.V.2023; 4 ex., same locality [6], *Fagus & Carpinus* forest, under logs and stones, 950 m a.s.l., 42.909450°N, 44.967178°E, 2.V.2023, all A. Evsyukov and T. Petrova leg.

REMARKS. Endemic to the central and eastern parts of the Caucasus Major within Georgia, Azerbaijan and Russia: the Dagestan, Ingushetia and Chechen republics [Golovatch,



Figs 1–3. Habitus, dorsal (a) and lateral views (b), and telopods, anterior view (c) of the millipede family Glomeridae: 1 — *Trachysphaera costata* (Waga, 1857); 2 — *Trachysphaera minuta* Golovatch, 1976; 3 — *Hyleoglomeris specialis* Golovatch, 1989. Scale bars: 0.5 mm (a, b); 0.1 mm (c).
Рис. 1–3. Внешний вид, сверху (a), сбоку (b) и телоподы, спереди (c) диплопод семейства Glomeridae: 1 — *Trachysphaera costata* (Waga, 1857); 2 — *Trachysphaera minuta* Golovatch, 1976; 3 — *Hyleoglomeris specialis* Golovatch, 1989. Масштаб: 0,5 мм (a, b); 0,1 мм (c).

1989; Golovatch *et al.*, 2021, 2025; Evsyukov *et al.*, 2022]. As regards the Republic of Ingushetia, this species has previously been recorded from near Muzhichi [5], Assa River Valley [Golovatch, 1989].

Order Polyzoniida Cook, 1895
Family Hirudisomatidae Silvestri, 1896
Hirudisoma roseum (Victor, 1839)

Fig. 4.

MATERIAL. 1 ♂, Republic of Ingushetia, “Erzi” Nature Reserve, Dzheirakh Distr., Targim Basin, Leimi, valley of Tetrtskali River [4], mixed forest, under logs, 1360 m a.s.l., 42.829850°N, 44.905767°E, 1.VI.2023; 2 ♂♂, 4 ♀♀, same place, Targim, valley of Assa River [7], mixed forest, litter, 1150 m a.s.l., 42.801464°N, 44.938506°E, 1.VI.2023, all A. Evsyukov and T. Petrova leg.

REMARKS. This species is subendemic to the Caucasus, widespread in Turkey, Georgia, Azerbaijan, and Russia: the Krasnodar Province and the Adygea, Karachay-Cherkessia, Kabardino-Balkaria, North Ossetia – Alania and Chechen republics [Golovatch *et al.*, 2015, 2024; Evsyukov *et al.*, 2022; Golovatch, Antipova, 2023; Zuev *et al.*, 2023]. Formally new to the fauna of the Republic of Ingushetia.

Order Julida Brandt, 1833
Family Julidae Leach, 1814
Byzantorhopalum rossicum (Timotheew, 1897)

MATERIAL. 1 ♂, 6 ♀♀, Republic of Ingushetia, “Erzi” Nature Reserve, Dzheirakh Distr., Targim Basin, Leimi, valley of Tetrtskali River [4], steppe, under stones, 1350 m a.s.l., 42.832624°N, 44.903681°E, 30.V.2023; 4 ♀♀, Sunzha Distr., between Alkun and Egikal, valley of Assa River [6], *Fagus* & *Carpinus* forest, litter, 930 m a.s.l., 42.908745°N, 44.968930°E, 31.V.2023; 1 ♂, 4 ♀♀, same locality [6], *Fagus* & *Carpinus* forest, under logs and stones, 950 m a.s.l., 42.909450°N, 44.967178°E, 2.V.2023, all A. Evsyukov and T. Petrova leg.; 2 ♀♀, Sunzha Distr., near Muzhichi [5], 10.VI.2023, M. Nabozhenko leg.; 2 ♀♀, Dzheirakh Distr., Furtog [1], 42.845556°N, 44.651389°E, 970 m, 24.07.2024; 2 ♂♂, 5 ♀♀, Dzheirakh Distr., base of “Erzi” Nature Reserve, Tsori towers [9], 42.808333°N, 45.095000°E, meadows, 1800 m a.s.l., 20–22.07.2024, all M. and S. Nabozhenko, E. Terskov, K. Klimovich leg.

REMARKS. An Eastern Euro-Mediterranean species widespread nearly throughout the Caucasus [Vagalinski, Golovatch, 2021; Golovatch, Antipova, 2023; Golovatch *et al.*, 2025]. Formally new to the fauna of the Republic of Ingushetia.

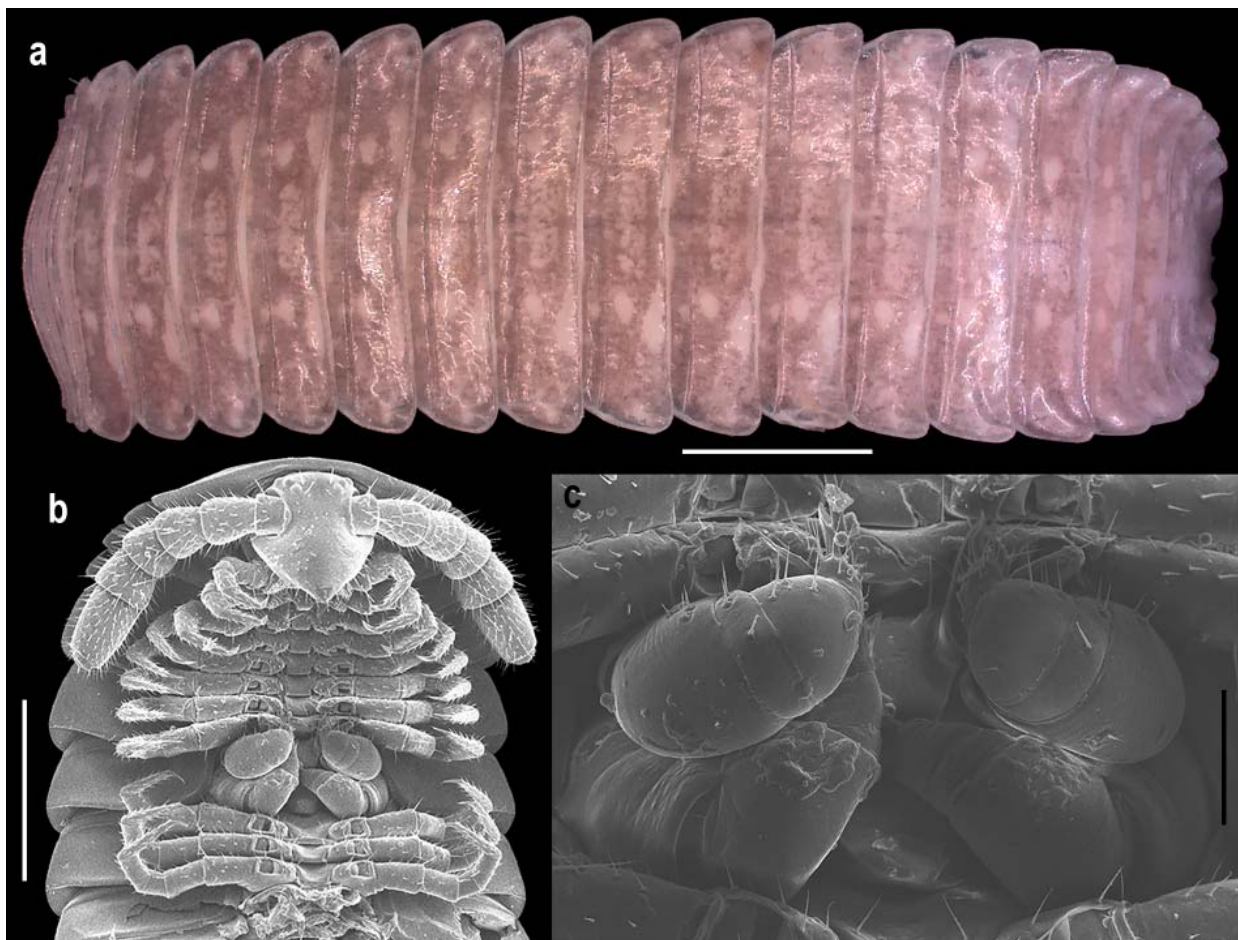


Fig. 4. Habitus, dorsal view (a), anterior part of body, ventral view (b), and gonopods, ventral view (c) of *Hirudisoma roseum* (Victor, 1839). Scale bars: 0.5 mm (a, b), 0.1 mm (c).

Рис. 4. Внешний вид, сверху (a), передняя часть тела, снизу (b), и гоноподы, снизу (c) *Hirudisoma roseum* (Victor, 1839). Масштаб: 0,5 мм (a, b), 0,1 мм (c).

Colchiobrachiylus montanus Vagalinski, 2021
Fig. 5.

MATERIAL. 1 ♂, “Erzi” Nature Reserve, Sunzha Distr., between Alkun and Egikal, valley of Assa River [6], *Fagus & Carpinus* forest, litter, 930 m a.s.l., 42.908745°N, 44.968930°E, 31.V.2023, A. Evsyukov and T. Petrova leg.

REMARKS. Endemic to the northwestern parts of the Caucasus Major, previously recorded only from the Teberda Nature Reserve, Republic of Karachaevo-Cherkessia [Vagalinski, Golovatch, 2021]. The above record is formally new to the Republic of Ingushetia, apparently representing the species' easternmost locality.

Cylindroiulus pterophylacum Read, 1992

MATERIAL. 10 ♀♀, 11 juv., Republic of Ingushetia, Nature Reserve “Erzi”, Sunzha Distr., between Alkun and Egikal, valley of Assa river [6], *Fagus & Carpinus* forest, litter, 930 m a.s.l., 42.908745°N, 44.968930°E, 31.V.2023; 6 ♂♂,

7 ♀♀, numerous juv., same locality [6], *Fagus & Carpinus* forest, under logs and stones, 950 m a.s.l., 42.909450°N, 44.967178°E, 2.V.2023, all A. Evsyukov and T. Petrova leg.

REMARKS. Endemic to the Caucasus within Abkhazia, Georgia and Russia: the Krasnodar and Stavropol provinces, and the Adygea, Karachay-Cherkessia and Chechen republics [Read, 1992; Chumachenko, 2016; Evsyukov *et al.*, 2022, 2025a; Zuev, 2014, 2021; Golovatch, 2021; Zuev *et al.*, 2023; Golovatch *et al.*, 2025]. Previously considered endemic to the western Caucasus, but the records in the Chechen and Ingushetia republics expand the species' range to the east.

Julus kubanus Verhoeff, 1921

MATERIAL. 1 ♂, 2 ♀♀, Republic of Ingushetia, Dzheirakh Distr., base of “Erzi” Nature Reserve, Tsori towers [9], 42.80833°N, 45.09500°E, meadows, 1800 m, 20–22.07.2024, M. & S. Nabozhenko, E. Terskov, K. Klimovich leg.

REMARKS. Endemic to the Caucasus: the Krasnodar Province, and the Adygea, Karachay-Cherkessia, North Os-



Fig. 5. Habitus, lateral view (a) and gonopods, posterior view (b) of *Colchiobrachiylus montanus* Vagalinski, 2021. Scale bars: 1 mm (a), 0.2 mm (b).

Рис. 5. Внешний вид, сбоку (a) и гоноподы, сзади (b) *Colchiobrachiylus montanus* Vagalinski, 2021. Масштаб: 1 мм (a), 0,2 мм (b).

setia – Alania and Chechen republics, as well as Abkhazia [Evsyukov *et al.*, 2018; Zuev *et al.*, 2023; Golovatch, 2023; Golovatch *et al.*, 2025]. A species formally new to the fauna of the Republic of Ingushetia.

Julus subalpinus Lohmander, 1936

MATERIAL. 1 ♂, 1 ♀, Republic of Ingushetia, Dzheirakh Distr., valley of Guloikhi River [8], phryganoid steppe, 1500 m a.s.l., 13–14.VI.2023, M. Nabozhenko leg.

REMARKS. This Caucasian endemic species has previously been recorded from the Krasnodar Province and the North Ossetia – Alania and Kabardino-Balkaria republics [Evsyukov *et al.*, 2018, 2025; Golovatch *et al.*, 2025]. Above is the easternmost record of this species which has hitherto been unknown from the Republic of Ingushetia.

Omobrachiulus geniculatus (Lohmander, 1928)

REMARKS. Endemic to the Caucasus Major, this species has been recorded from Georgia, as well as the Caucasian republics of Russia: Karachay-Cherkessia, Kabardino-Balkaria and Ingushetia. In the Republic of Ingushetia, this species has been recorded from near Muzhichi [5] (erroneously listed in the Chechen Republic) [Vagalinski, Golovatch, 2021].

Family Blaniulidae C.L. Koch, 1847
Nopoiulus kochii (Gervais, 1847)

MATERIAL. 1 ♀, Republic of Ingushetia, “Erzi” Nature Reserve, Dzheirakh Distr., Targim Basin, Targim, valley of Assa River [7], mixed forest, litter, 1150 m a.s.l., 42.801464°N, 44.938506°E, 1.VI.2023, A. Evsyukov and T. Petrova leg.

REMARKS. This subcosmopolitan species, probably of Caucasian origin, is widespread across the entire Caucasus [Enghoff, 1984; Golovatch, Enghoff, 1990; Evsyukov *et al.*, 2022; Golovatch, 2023; Zuev *et al.*, 2023; Golovatch *et al.*, 2025]. A species formally new to the fauna of the Republic of Ingushetia.

Family Nemasomatidae
Nemasoma caucasicum (Lohmander, 1932)

MATERIAL. 1 ♂, 5 ♀♀, 1 juv., Republic of Ingushetia, “Erzi” Nature Reserve, Sunzha Distr., between Alkun and Egikal, valley of Assa River [6], *Fagus & Carpinus* forest, litter, 930 m a.s.l., 42.908745°N, 44.968930°E, 31.V.2023, A. Evsyukov, T. Petrova leg.

REMARKS. Subendemic to the Caucasus, widespread in Turkey, Georgia, Azerbaijan, Armenia and Russia: the Stavropol and Krasnodar provinces, the Dagestan, Chechen and North Ossetia – Alania republics [Enghoff, 1985; Korobushkin *et al.*, 2016; Zuev, 2021; Golovatch, Antipova, 2022; Zuev *et al.*, 2023; Golovatch *et al.*, 2025]. A species formally new to the fauna of the Republic of Ingushetia.

Order Chordeumatida
Family Anthroleucosomatidae
Acanthophorella irystoni Antić et Makarov, 2016
Fig. 6.

MATERIAL. 1 ♂, Republic of Ingushetia, Nature Reserve “Erzi”, Dzheirakh Distr., Targim Basin, Targim, valley of Assa River [7], mixed forest, litter, 1150 m a.s.l., 42.801464°N, 44.938506°E, 1.VI.2023, A. Evsyukov and T. Petrova leg.

REMARKS. Endemic to the eastern part of the Caucasus Major, it has previously been recorded from the North Ossetia – Alania Republic [Antić, Makarov, 2016]. A species formally new to the fauna of the Republic of Ingushetia.

Order Polydesmida Leach, 1815
Family Paradoxosomatidae Daday, 1889
Strongylosoma kordylamythrurum Attems, 1898
Fig. 7.

MATERIAL. 1 ♂, 4 ♀♀, 1 juv., Republic of Ingushetia, “Erzi” Nature Reserve, Sunzha Distr., between Alkun and Egikal, valley of Assa River [6], *Fagus & Carpinus* forest, under logs and stones, 950 m a.s.l., 42.909450°N, 44.967178°E, 2.V.2023, A. Evsyukov and T. Petrova leg.; 2 ♀♀, Sunzha Distr., near Muzhichi [5], 10.VI.2023, M. Nabozhenko leg.

REMARKS. This species is very common and widespread across the Caucasus region, being its subendemic [Evsyukov *et al.*, 2018]. In the Republic of Ingushetia, it has been recorded from Barsuki near Nazran [2] and in the valley of Assa River near Muzhichi [5] [Evsyukov *et al.*, 2018].

Family Polydesmidae Leach, 1815
Brachydesmus assimilis Lohmander, 1936
Fig. 8.

MATERIAL. 3 ♂♂, 3 ♀♀, Republic of Ingushetia, Nature Reserve “Erzi”, Sunzha Distr., between Alkun and Egikal, valley of Assa River [6], *Fagus & Carpinus* forest, litter, 930 m a.s.l., 42.908745°N, 44.968930°E, 31.V.2023; 5 ♂♂, 4 ♀♀, same locality [6], *Fagus & Carpinus* forest, under logs and stones, 950 m a.s.l., 42.909450°N, 44.967178°E, 2.V.2023; 3 ♀♀, numerous juv., Dzheirakh Distr., Targim Basin, Leimi, valley of Tetrtskali River [4], mixed forest, under logs, 1360 m a.s.l., 42.829850°N, 44.905767°E, 1.VI.2023, all A. Evsyukov and T. Petrova leg.

REMARKS. This species is common and widespread across the Caucasus, being its endemic: Azerbaijan, Armenia, Georgia and Russia: the Adygea, Kabardino-Balkaria, North Ossetia – Alania, Ingushetia, Chechen and Dagestan republics [Golovatch *et al.*, 2016; Golovatch, Antipova, 2023]. In the Republic of Ingushetia, it has been recorded from Barsuki near Nazran [2] [Golovatch *et al.*, 2016].

Brachydesmus kalischewskyi Lignau, 1915
Fig. 9.

MATERIAL. 2 ♂♂, 2 ♀♀, Republic of Ingushetia, “Erzi” Nature Reserve, Sunzha Distr., between Alkun and Egikal, valley of Assa River [6], *Fagus & Carpinus* forest, litter, 930 m a.s.l., 42.908745°N, 44.968930°E, 31.V.2023; numerous ♀♀ and juv., same locality [6], *Fagus & Carpinus* forest, under logs and stones, 950 m a.s.l., 42.909450°N, 44.967178°E, 2.V.2023; numerous ♀♀ and juv., Dzheirakh Distr., Targim Basin, Targim, valley of Assa River [7], mixed forest, litter, 1150 m a.s.l., 42.801464°N, 44.938506°E, 1.VI.2023, all A. Evsyukov and T. Petrova leg.; 1 subadult ♂, 3 ♀♀ Russia, Ingushetia, Dzheirakh Distr., base of “Erzi” Nature Reserve, Tsori towers [9], 42.808333°N, 45.095000°E, meadows, 1800 m a.s.l., 20–22.07.2024; 1 subadult ♂, 1 ♀, *Betula* forest above Guli [3], 42.821111°N, 44.821944°E, 1970 m, 23.07.2024, all M. and S. Nabozhenko, E. Terskov, K. Klimovich leg.

REMARKS. This highly polymorphous species is very common and highly widespread across the Caucasus region,

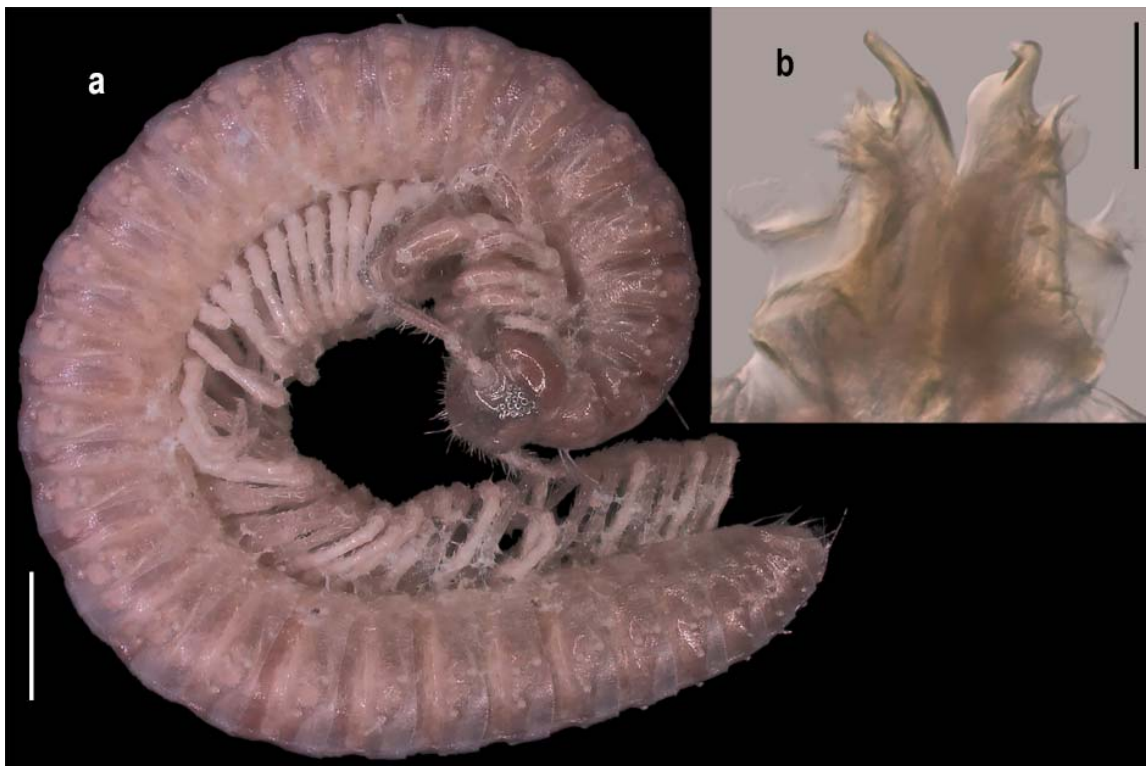
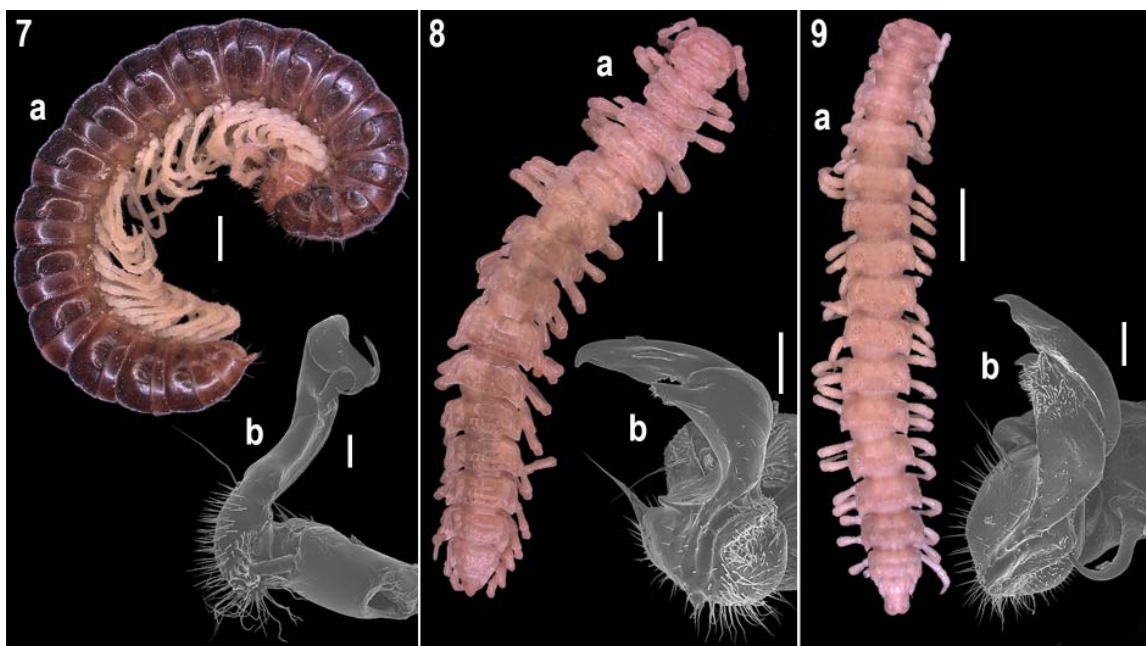


Fig. 6. Habitus, lateral view (a) and gonopods, posterior view (b) of *Acanthophorella irystoni* Antić et Makarov, 2016. Scale bars: 0.5 mm (a), 0.1 mm (b).

Рис. 6. Внешний вид, сбоку (a) и гонопод, сзади (b) *Acanthophorella irystoni* Antić et Makarov, 2016. Масштаб: 0,5 мм (a), 0,1 мм (b).



Figs 7–9. Habitus, lateral (7) or dorsal views (8–9) (a) and gonopod, lateral views (b) of the millipede family Polydesmidae: 7 — *Strongylosoma kordylamythrum* Attems, 1898; 8 — *Brachydesmus assimilis* Lohmander, 1936; 9 — *Brachydesmus kalischewskyi* Lignau, 1915. Scale bars: 1 mm (a); 0.1 mm (b).

Рис. 7–9. Внешний вид, сбоку (7) или сверху (8–9) (a) и гонопод, сбоку (b) многоножек семейства Polydesmidae: 7 — *Strongylosoma kordylamythrum* Attems, 1898; 8 — *Brachydesmus assimilis* Lohmander, 1936; 9 — *Brachydesmus kalischewskyi* Lignau, 1915. Масштаб: 1 мм (a); 0,1 мм (b).

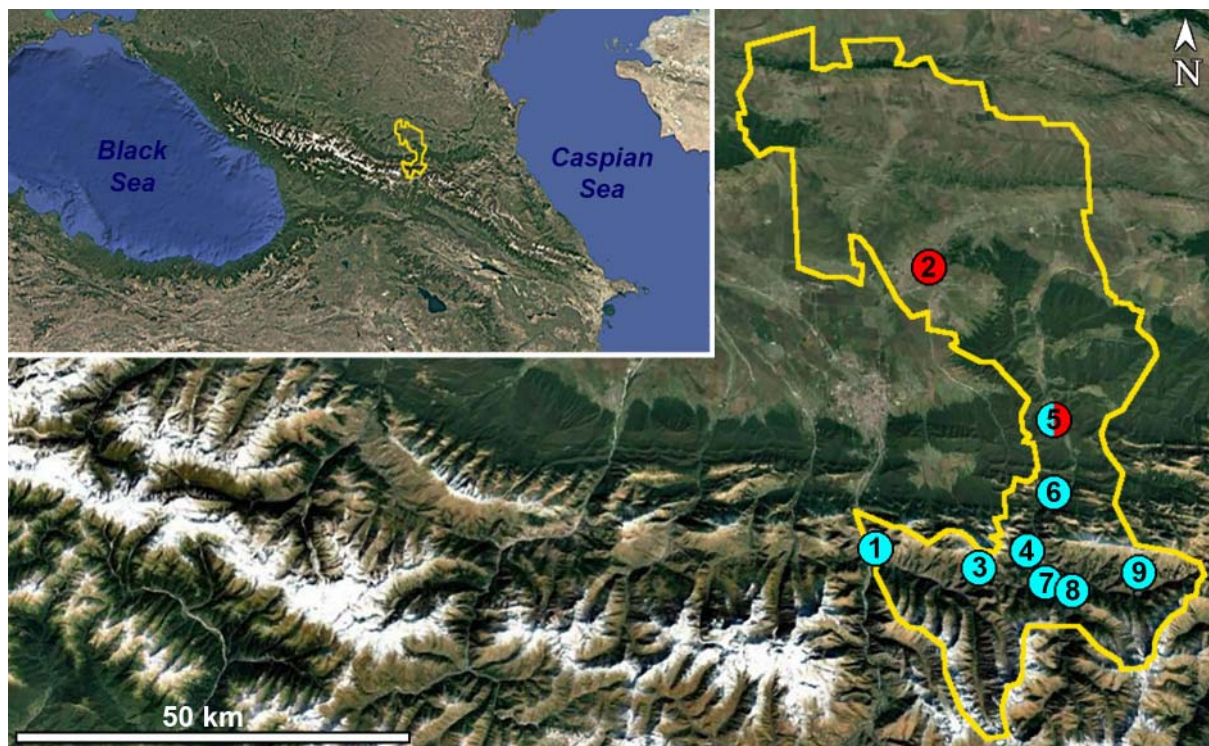


Fig. 10. Relief map of the Republic of Ingushetia, with the collecting localities arranged from west to east (yellow/light circles: the present study, red/dark circles: previous data): 1 — Dzheirakh Distr., Furtog; 2 — Nazran Distr., Barsuki near Nazran; 3 — Dzheirakh Distr., above Guli; 4 — Dzheirakh Distr., Leimi, valley of Tetrtskali river; 5 — Sunzha Distr., near Muzhichi; 6 — Sunzha Distr., between Alkun and Egikal, valley of Assa river; 7 — Dzheirakh Distr., Targim, valley of Assa River; 8 — Dzheirakh Distr., valley of Guloikhi River; 9 — Dzheirakh Distr., base of “Erzi” Nature Reserve, Tsori towers.

Рис. 10. Рельефная карта Республики Ингушетия с основными точками сбора, показанными с запада на восток (желтые круги — наши данные, красные круги — литературные данные): 1 — Джейрахский р-н, Фуртог; 2 — Назранский р-н, Барсуки близ Назрани; 3 — Джейрахский р-н, выше Гюли; 4 — Джейрахский р-н, Лейми, долина реки Тетрицкали; 5 — Сунженский р-н, близ Мужичи; 6 — Сунженский р-н, между Алкун и Эгикал, долина реки Асси; 7 — Джейрахский р-н, Таргим, долина реки Асса; 8 — Джейрахский р-н, долина реки Гулойхи; 9 — Джейрахский р-н, база заповедника «Эрзи», башни Цори.

Table. Fauna and chorology of Diplopoda of the Republic of Ingushetia.
Таблица. Фауна и хорология Diplopoda Республики Ингушетия.

Species	Chorotypes	Main references
<i>Trachysphaera costata</i> (Waga, 1857)	EM	Golovatch, 1990, 2008
<i>Trachysphaera minuta</i> Golovatch, 1976	CE	Golovatch, 1990
<i>Hyleoglomeris specialis</i> Golovatch, 1989	CE	Golovatch, 1989
<i>Hirudisoma roseum</i> (Victor, 1839)	CSe	Golovatch <i>et al.</i> , 2015
<i>Byzantorhopalum rossicum</i> (Timotheew, 1897)	EM	Vagalinski, Golovatch, 2021
<i>Colchiobrachiulus montanus</i> Vagalinski, 2021	CE	Vagalinski, Golovatch, 2021
<i>Cylindroiulus pterophylacum</i> Read, 1992	CE	Read, 1992
<i>Julus kubanus</i> Verhoeff, 1921	CE	Evsyukov <i>et al.</i> , 2018
<i>Julus subalpinus</i> Lohmander, 1936	CE	Evsyukov <i>et al.</i> , 2018
<i>Omobrachiulus geniculatus</i> (Lohmander, 1928)	CE	Vagalinski, Golovatch, 2021
<i>Nopoiulus kochii</i> (Gervais, 1847)	A	Enghoff, 1984; Golovatch, Enghoff, 1990
<i>Nemasoma caucasicum</i> (Lohmander, 1932)	CSe	Enghoff, 1985
<i>Acanthophorella irystoni</i> Antić et Makarov, 2016	CE	Antić, Makarov, 2016
<i>Strongylosoma kordylamythrum</i> Attems, 1898	CSe	Evsyukov <i>et al.</i> , 2016
<i>Brachydesmus assimilis</i> Lohmander, 1936	CE	Golovatch <i>et al.</i> , 2016
<i>Brachydesmus kalischewskyi</i> Lignau, 1915	CSe	Golovatch <i>et al.</i> , 2016

Chorotypes, from wider to increasingly narrower distributions: A — subcosmopolitan anthropochore; EM — Euro-Mediterranean; CSe — sub-endemic to the Caucasus; CE — endemic to the Caucasus.

being its subendemic within Azerbaijan, Georgia, Armenia, eastern Turkey and northwestern Iran, and Russia [Golovatch *et al.*, 2016; Golovatch, Antipova, 2023]. In the Republic of Ingushetia, it has been recorded from the valley of Assa River near Muzhichi [5] [Golovatch *et al.*, 2016].

Only the most widespread morph B has been recorded from the Republic of Ingushetia.

Conclusion

The diplopod fauna of the Republic of Ingushetia is presently known to contain 16 species from 13 genera, 8 families and four orders (Table). As many as nine species are formally new to the Ingushetian list: *Hirudisoma roseum*, *Byzantorhopalum rossicum*, *Colchiobrachiulus montanus*, *Cylindroiulus pterophylacum*, *Julus kubanus*, *Julus subalpinus*, *Nopoiulus kochii*, *Nemasoma caucasicum*, and *Acanthophorella irystoni*.

Despite the relatively small area of the republic, we consider the fauna as being far from completely surveyed. Consequently, the foothills and high-mountain regions of the Main Caucasian Ridge (= Caucasus Major) have remained largely unexplored (see Fig. 10). The absence of data on the order Polyxenida and on cave-dwelling diplopods (which, for example, are recorded in the adjacent Chechen Republic [Golovatch *et al.*, 2024]) is also evidence of insufficient exploration of this area.

Endemism of the diplopods of the Republic of Ingushetia at the species level is profound. Of the 16 known species, 13 (81.2%) are endemic or subendemic to the Caucasus. This roughly corresponds to the endemism of millipedes in the North Ossetian (90%) [Golovatch, Antipova, 2022], Chechen (78.9%) [Golovatch *et al.*, 2024], Karachay-Cherkess (80.6%) [Zuev *et al.*, 2023], and Kabardino-Balkarian republics (86.6%) [Evsyukov, 2024]. One still undescribed species of the tribe Pachyulini has not been included in this contribution, although it may prove to be endemic to the Republic of Ingushetia.

Compliance with ethical standards

CONFLICT OF INTEREST: The authors declare that they have no conflict of interest.

Ethical approval: No ethical issues were raised during our research.

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