Водная флора и фауна

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NEW DATA ON DYTISCIDAE, HYDROPHILIDAE, HYDRAENIDAE, DRYOPIDAE AND HETEROCERIDAE (COLEOPTERA) OF NORTH OSSETIA

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The species *Ochthebius anatolicus* Janssens, 1963 (Hydraenidae) is recorded in Russia for the first time. A new record of *Laccobius hindukuschi* Chiesa, 1966 (Hydrophilidae) confirms the presence of the species in the fauna of Russia and is the first for North Caucasus and the Republic of North Ossetia. Six species are recorded from North Ossetia for the first time: *Agabus dilatatus* (Brullé, 1832) (Dytiscidae), *Laccobius alternus* Motschulsky, 1855, *Cercyon lateralis* (Marsham, 1802) (Hydrophilidae), *Ochthebius anatolicus* (Hydraenidae), *Praehelichus asiaticus* (Motschulsky, 1845) and *Pomatinus substriatus* (P.W.J. Müller, 1806) (Dryopidae). The records of *Hydroporus transgrediens* Gschwendtner, 1923 (Dytiscidae) and two species of Heteroceridae (*Augyles maritimus* (Guérin-Méneville, 1844) and *Heterocerus fenestratus* (Thunberg, 1784)) are confirmed by new examined material. *Laccobius alternus* is additionally recorded from Kabardino-Balkaria Republic for the first time. Original photographs of the habitus, male genitalia and macrohabitats are provided for some species; such photographs for *Agabus dilatatus* have never been published before.

Keywords: beetles, North Caucasus, distribution, new records

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INTRODUCTION

The Republic of North Ossetia is located in the North Caucasus, a region with insufficiently studied fauna of aquatic Coleoptera. The available data on the fauna of aquatic beetles of North Ossetia were recently summarized in an article by M.I. Shapovalov and his co-authors [Shapovalov et al., 2018]. Some new records of some aquatic beetles for North Caucasus, including North Ossetia, have been published in our recent paper [Prokin, Sazhnev, 2019].

The newly collected material in two districts of North Ossetia and the collections of Zoological Museum and Moscow State Pedagogical University (Moscow) include species not previously recorded from the North Ossetia. One species of Dytiscidae and two species of Heteroceridae were recorded from North Ossetia [Tarnogradsky, Popov, 1932–1933; Sazhnev, 2017] without label data. The present paper continues our previous research on the water beetle fauna of North Ossetia and aims to provide new records and clarify published data.

MATERIALS AND METHODS

The material was collected mainly by sweeping with an aquatic net and splashing of the banks of waterbodies [Golub et al., 2021]. Taxonomy follows the published catalogues [Catalogue…, 2015, 2016, 2017]. Most part of the photographs were made using a Canon EOS 4000D digital camera with a Laowa 2.5 mm F 2.8 Ultra-Macro lens and a Leica MC170 HD digital camera mounted on a Leica M165C stereomicroscope; photographs of the aedeagi of *Laccobius alternus* and *Ochthebius anatolicus* were made using a Nikon Eclipse 80i light microscope equipped with Nomarski DIC accessories, a Nikon DS-Fi1 digital camera and a PC with NIS-Elements D 3.2 software for imaging. The pictures were processed in Helicon Focus 7.7.4. and Sketchbook. Male aedeagus anatomical position (dorsal, ventral, lateral aspects) for Dytiscidae used according to Miller and Nilsson [2003]. Coordinates were obtained using the application Maps.Me.

The material examined is deposited in the following collections: Papanin Institute for Biology of Inland Waters, Russian Academy of Sciences (Borok, Russia) – IBIW, Zoological Museum of Lomonosov Moscow State University (Moscow, Russia) – ZMMU, and Moscow State Pedagogical University (Moscow, Russia) – MPU.

RESEARCH RESULTS AND DISCUSSION

Dytiscidae

Agabus (*Gaurodytes*) *dilatatus* (Brullé, 1832) (Figs 1, 2, 5)

Material examined. North Ossetia: Prigorodny Distr., 0.5 km N of Dargavs, pools in Gizeldon River floodplain, 42°50′59.02″N 44°26′45.17″E, 21.V.2021 (1 ex.) A.S. Sazhnev

leg. (IBIW); Alagirsky Distr., Zgil vill., waterfall, 42°39′23.27″N 43°49′33.51″E, 22.V.2021 (4 exs.) A.A. Prokin leg. (IBIW).

Note. This species differs from similar *Agabus glacialis* Hochhuth, 1846 and *A. guttatus* (Paykull, 1798 morphologically at least in epipleuron coloration and penis shape (Figs 1, 2).

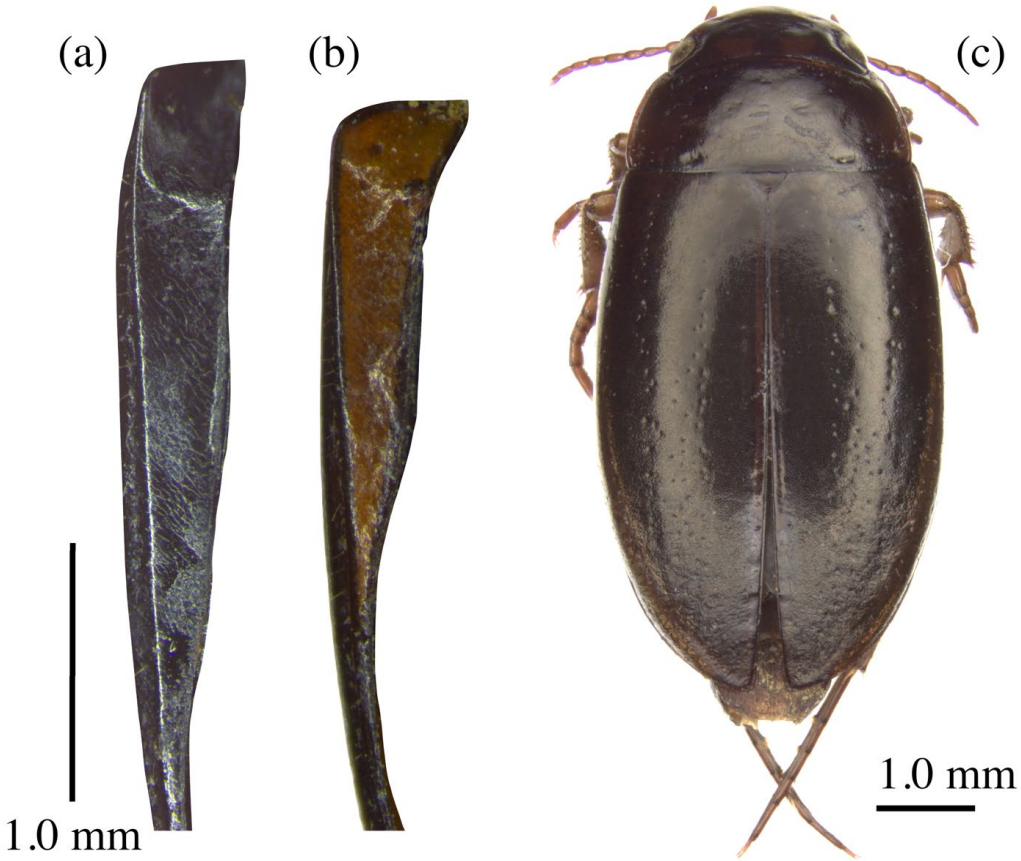

Fig. 1. *Agabus* spp.: (a) epipleuron of *Agabus glacialis* Hochhuth, 1846, lateral view; (b) epipleuron of *Agabus dilatatus* (Brullé, 1832), lateral view; (c) habitus of *Agabus dilatatus*, dorsal view (photographs by A.S. Sazhnev).

Fig. 2. *Agabus* spp.: (a) penis of *Agabus dilatatus* (Brullé, 1832), lateral and ventral views; (b) penis of *A. guttatus* (Paykull, 1798) from Lipetsk Oblast, lateral and ventral views (photographs by A.S. Sazhnev).

Hydroporus transgrediens Gschwendtner, 1923 (Figs 3–5)

Material examined. North Ossetia: Prigorodny Distr., 0.5 km N of Dargavs, pools in Gizeldon River floodplain, 42°50′59.02″N 44°26′45.17″E, 21.V.2021 (8 exs.) A.S. Sazhnev leg. (IBIW).

Note. This species was recorded earlier from North Ossetia as *Hydroporus discretus ponticus* Zaitzev, 1927, without providing label data [Tarnogradsky, Popov, 1932–1933: cited from Shapovalov et al., 2018].

Hydrophilidae

Laccobius (*Dimorpholaccobius*) *hindukuschi* Chiesa, 1966 (Figs 6, 8)

Material examined. North Ossetia: Alagirsky Distr., Zgil vill., narzan (sulfate-hydrocarbonate sodium-magnesium-calcium water) spring №1, 42°39′13.2″N 43°49′13.45″E, 22.V.2021 (2 exs.) A.A. Prokin leg. (IBIW); same place, narzan spring №2, 42°39′17.7″N 43°49′25.15″E, 22.V.2021 (3 exs.) A.A. Prokin leg. (IBIW).

Note. The species was recorded earlier from Russia (RU) without any more details on its distribution [Catalogue…, 2015]. According to data published herein, in the next edition of the Catalogue of Palaearctic Coleoptera “ST” (South European Territory of Russia) must be added for this species distribution.

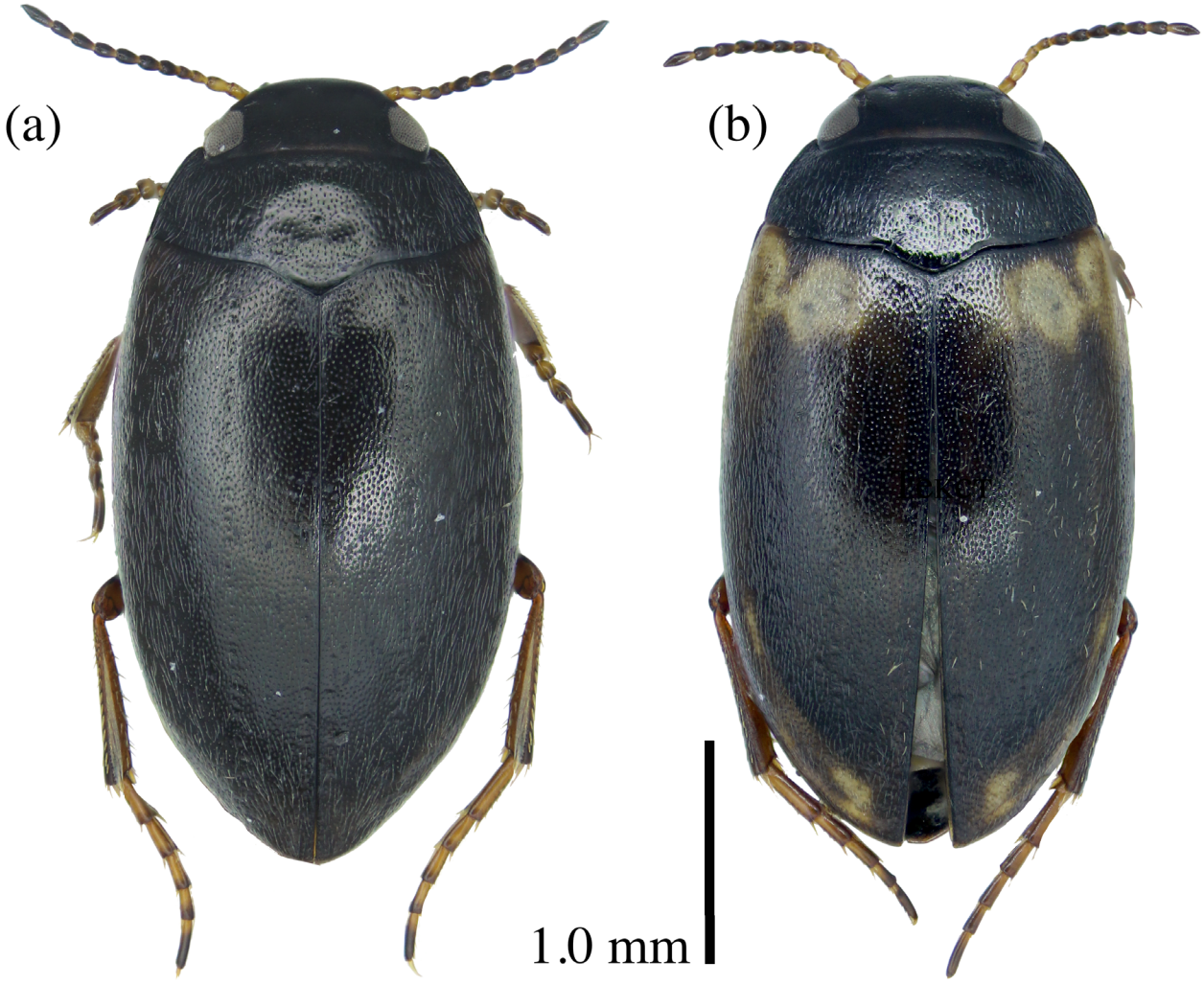

Fig. 3. *Hydroporus transgrediens* Gschwendtner, 1923: males of (a) dark and (b) maculate morphs, habitus, dorsal view (photographs by A.S. Sazhnev).

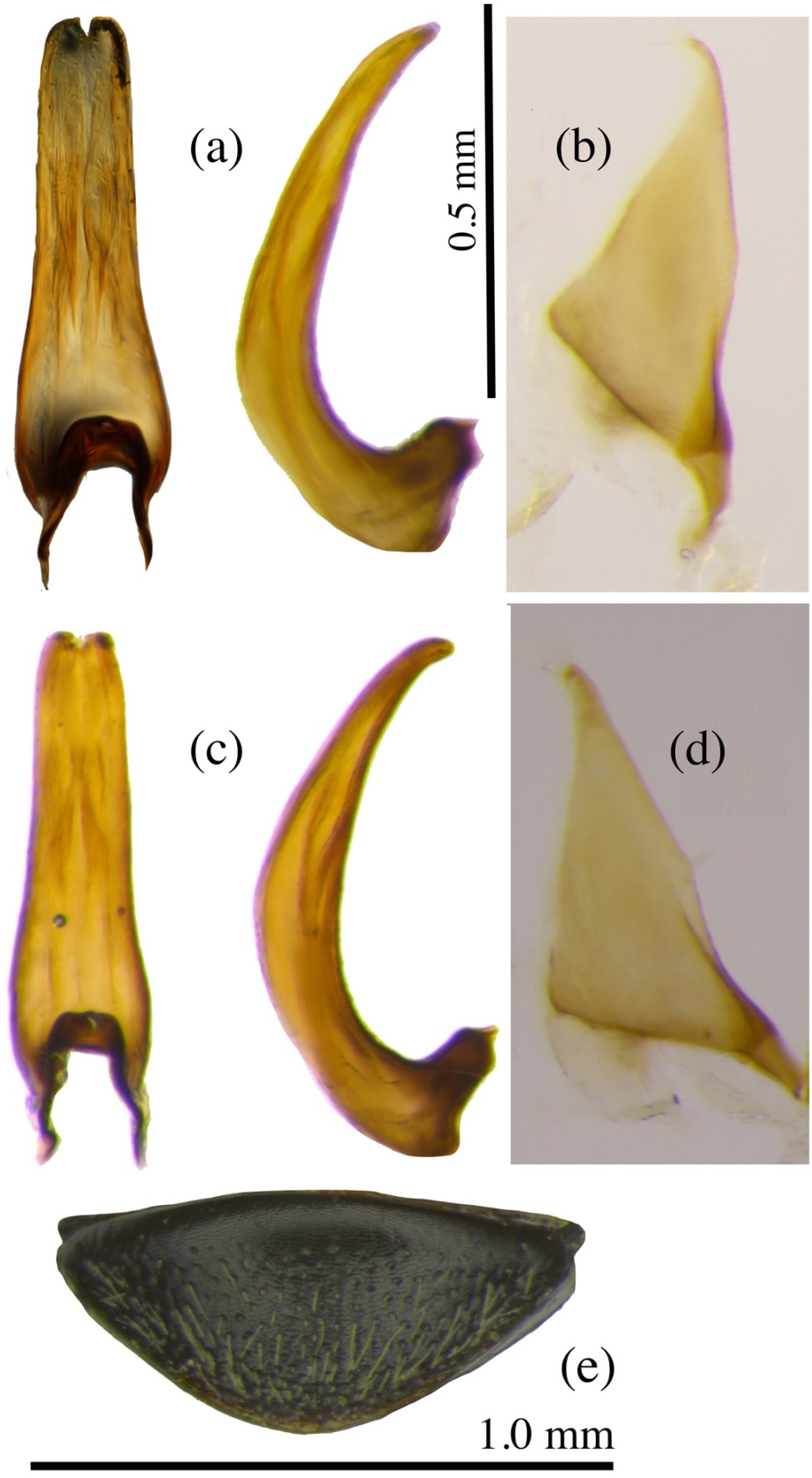

Fig. 4. *Hydroporus transgrediens* Gschwendtner, 1923: (a) penis, lateral and dorsal views, and (b) right paramere of dark morph; (c) penis, lateral and dorsal views, and (b) right paramere of maculate morph; (e) female last abdominal sternum (photographs by (b–e) A.S. Sazhnev and (a) A.A. Prokin).

Fig. 5. Pool in the Gizeldon River floodplain, habitat of *Haliplus lineatocollis* (Marsham, 1802), *H. heydeni* Wehncke, 1875, *Agabus biguttatus* (Olivier, 1795), *A. dilatatus* (Brullé, 1832), *A. glacialis* Hochhuth, 1846, *Hydroporus jacobsoni* Zaitzev, 1927, *H. transgrediens* Gschwendtner, 1923, *H. tessellatus* (Drapiez, 1819), *Anacaena lutescens* (Stephens, 1829) and *Laccobius striatulus* (Fabricius, 1801) (photo by A.S. Sazhnev).

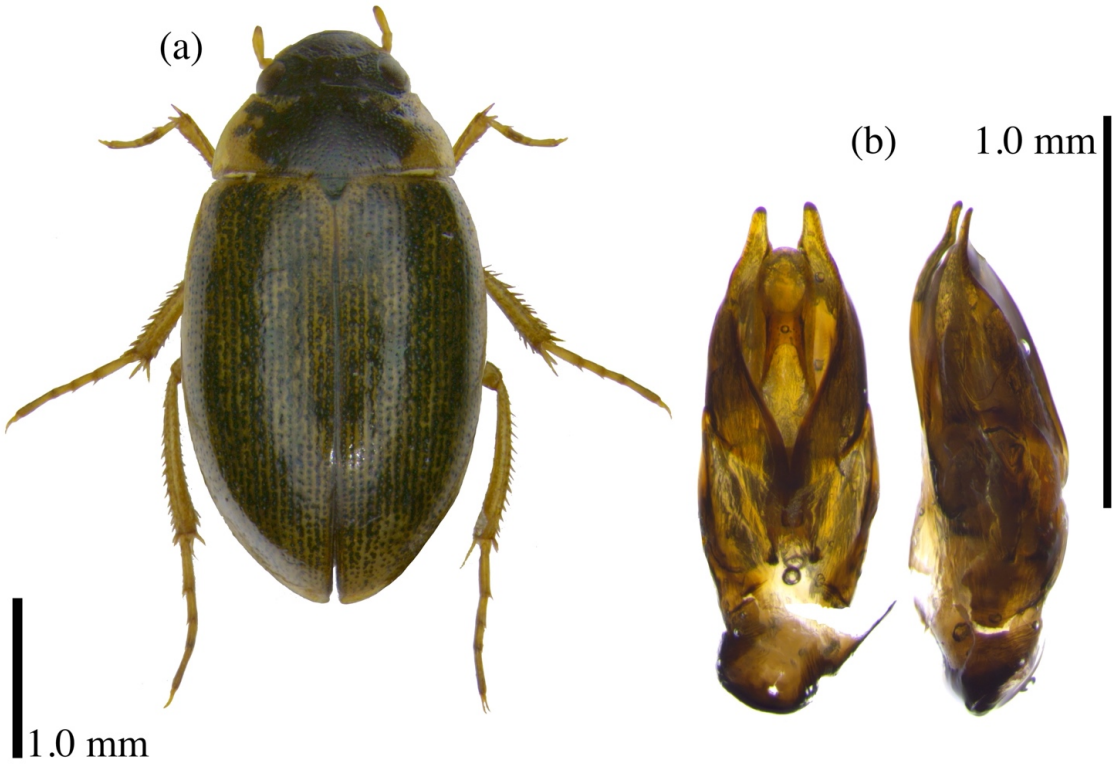

Fig. 6. *Laccobius hindukuschi* Chiesa, 1966: (a) habitus, dorsal view; (b) penis, dorsal and lateral views (photographs by A.S. Sazhnev).

Laccobius (*Microlaccobius*) *alternus* Motschulsky, 1855 (Figs 7–8)

Material examined. North Ossetia: Alagirsky Distr., Zgil vill., narzan spring №2, 42°39′17.7″N 43°49′25.15″E, 22.V.2021 (4 exs.) A.A. Prokin leg. (IBIW). Kabardino-Balkaria Republic, Urupsky Distr., Pregradnaya stanitsa, Urup River, 43°58'29.3"N 41°12'10.4"E, 15.VIII.2016 (1 ex.) A.A. Prokin leg. (IBIW).

Note. This species is recorded for North Ossetia and Kabardino-Balkaria Republics for the first time.

Cercyon (*Cercyon*) *lateralis* (Marsham, 1802)

Material examined. North Ossetia: Alagirsky Distr., Barzikau vill., shore of Fiagdon River, *h*≈1200 m, 42°50'37"N 44°18'44"E, 11.V.2016 (1 ex.) A.S. Sazhnev leg. (IBIW).

Hydraenidae

Ochthebius anatolicus Janssens, 1963 (Fig. 9)

Material examined. North Ossetia: Alagirsky Distr., shore of Tsakhsaddon River, under stones, 19.VII.1987 (12 exs.) N. Kozlov leg. (MPU).

Note. The first record from Russia and North Caucasus; this species has been recorded earlier from Turkey, Armenia and Georgia [Catalogue…, 2015].

Dryopidae

Praehelichus asiaticus (Motschulsky, 1845)

Material examined. North Ossetia: Mozdok, VII.1982 (1 ex.) unknow collector (ZMMU).

Pomatinus substriatus (P.W.J. Müller, 1806)

Material examined. North Ossetia: Alagirsky Distr., Monakh mountain, Skazdon River floodplain, *h*=670 m, 17.VII.1987 (1 ex.) I. Sibanov leg. (ZMMU).

Heteroceridae

Augyles (*Augyles*) *maritimus* (Guérin-Méneville, 1844)

Material examined. North Ossetia: Alagirsky Distr., Barzikau vill., shore of Fiagdon River, *h*≈1200 m, 42°50'37"N 44°18'44"E, 11.V.2016 (1 ex.) A.S. Sazhnev leg. (IBIW).

Note. Previously species was recorded for North Ossetia [Sazhnev, 2017] without labels information.

Heterocerus fenestratus (Thunberg, 1784)

Material examined. North Ossetia: Alagirsky Distr., Barzikau vill., shore of Fiagdon River, *h*≈1200 m, 42°50'37"N 44°18'44"E, 11.V.2016 (1 ex.) A.S. Sazhnev leg. (IBIW).

Note. Previously species was recorded for North Ossetia [Sazhnev, 2017] without labels information.

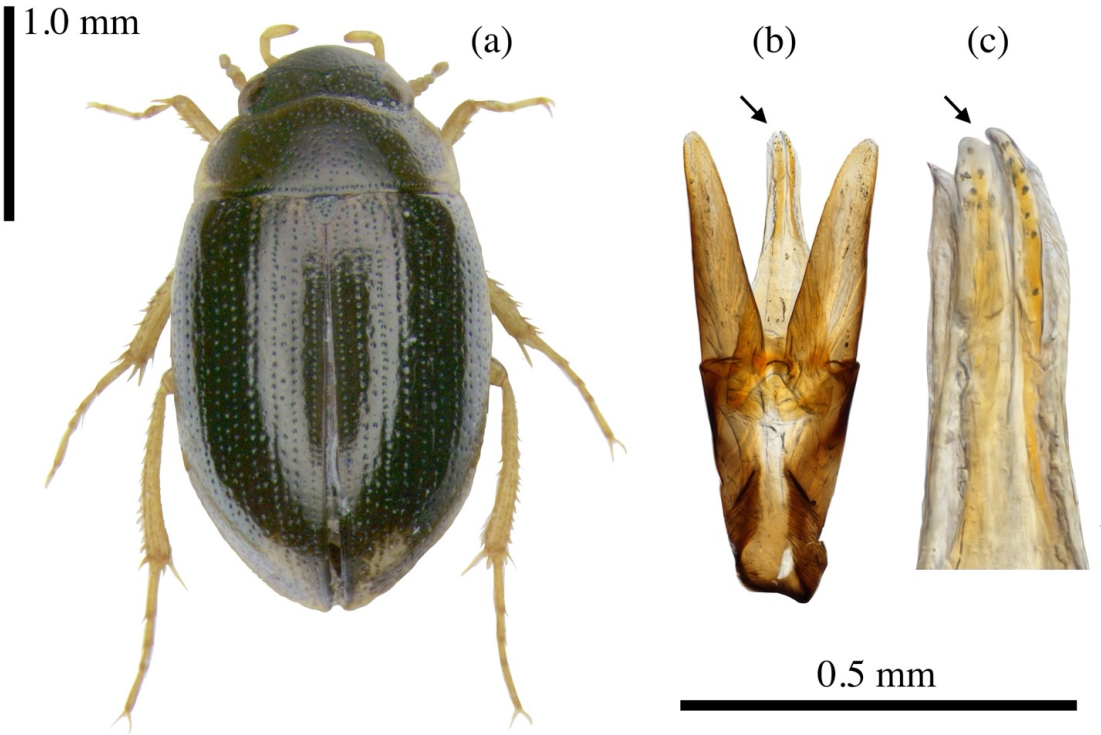

Fig. 7. *Laccobius alternus* Motschulsky, 1855 from North Ossetia: (a) habitus, dorsal view; (b) aedeagus, dorsal view; (c) apex of penis (×3.5) (photographs by (a) A.S. Sazhnev and (b–c) A.A. Prokin).

Fig. 8. Narzan spring in Zemegondon River floodplain, habitat of *Helophorus faustianus* (Sharp, 1916), *H. obscurus* Mulsant, 1844, *Enochrus fuscipennis* (Thomson, 1884), *Laccobius hindukuschi* Chiesa, 1966 and *L. alternus* Motschulsky, 1855 (photo by A.S. Sazhnev).

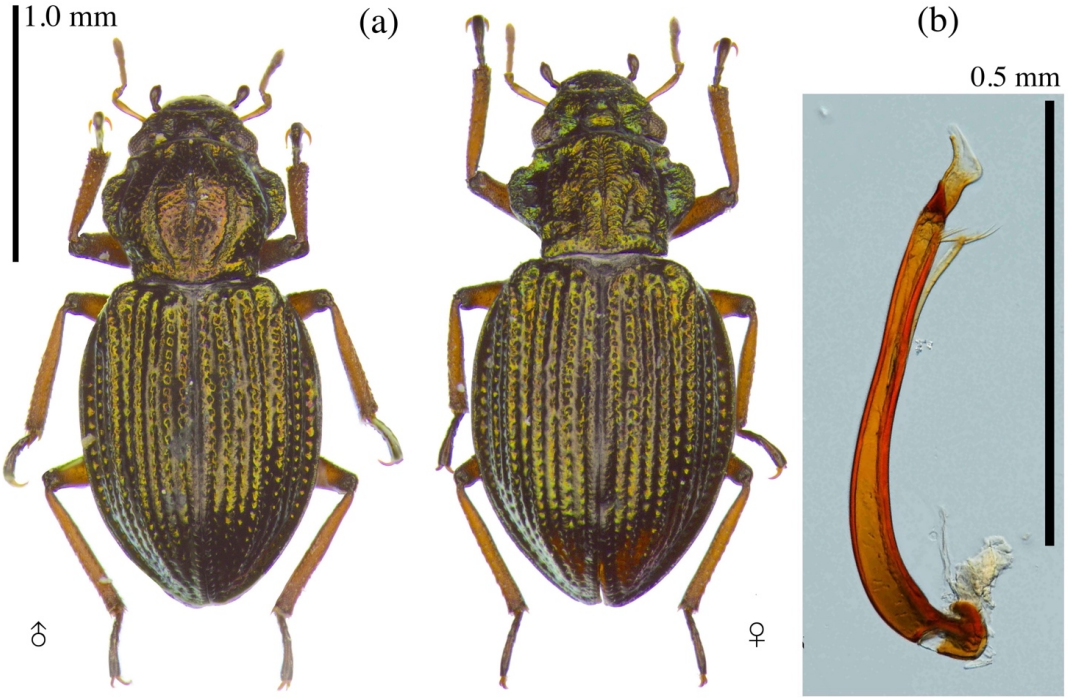

Fig. 9. *Ochthebius anatolicus* Janssens, 1963: (a) male and female habitus, dorsal view (photographs by A.S. Sazhnev); (b) aedeagus, lateral view (photo by A.A. Prokin).

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НОВЫЕ ДАННЫЕ ПО DYTISCIDAE, HYDROPHILIDAE, HYDRAENIDAE, DRYOPIDAE И HETEROCERIDAE (COLEOPTERA) СЕВЕРНОЙ ОСЕТИИ

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Вид *Ochthebius anatolicus* Janssens, 1963 (Hydraenidae) впервые приводится для фауны России. Находка *Laccobius hindukuschi* Chiesa, 1966 (Hydrophilidae) подтверждает присутствие вида в фауне России, он впервые приводится для Северного Кавказа и Республики Северная Осетия. Впервые для фауны Северной Осетии указываются шесть видов: *Agabus dilatatus* (Brullé, 1832) (Dytiscidae), *Laccobius alternus* Motschulsky, 1855, *Cercyon lateralis* (Marsham, 1802) (Hydrophilidae), *Ochthebius anatolicus* (Hydraenidae), *Praehelichus asiaticus* (Motschulsky, 1845) и *Pomatinus substriatus* (P.W.J. Müller, 1806) (Dryopidae). Находки *Hydroporus transgrediens* Gschwendtner, 1923 (Dytiscidae) и двух видов Heteroceridae (*Augyles maritimus* (Guérin-Méneville, 1844) и *Heterocerus fenestratus* (Thunberg, 1784)) подтверждены представленным материалом. *Laccobius alternus* также впервые отмечен из Кабардино-Балкарии. Для некоторых видов приведены оригинальные фотографии габитуса, гениталий самца и биотопов, для *Agabus dilatatus* впервые.

Ключевые слова: жуки, Северный Кавказ, распространение, новые находки.