

New records of water beetles (Coleoptera: Haliplidae, Dytiscidae, Helophoridae, Hydrochidae, Spercheidae, Hydrophilidae, Dryopidae) from the Palearctic region

Новые указания водных жесткокрылых (Coleoptera: Haliplidae, Dytiscidae, Helophoridae, Hydrochidae, Spercheidae, Hydrophilidae, Dryopidae) из Палеарктики

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КЛЮЧЕВЫЕ СЛОВА. фауна, Армения, Казахстан, Кыргызстан, Россия, Таджикистан, Украина, Синьцзян.

ABSTRACT. New faunistic data are presented for six families of water beetles from the Palearctic region. Two species are recorded for the first time from Armenia and the Caucasus: *Coelostoma transcasicum* Reitter, 1906 and *Enochrus salomonis* (J. Sahlberg, 1900). Six species are recorded for the first time from Kyrgyzstan: *Haliplus furcatus* Seidlitz, 1887, *Hydaticus ponticus* Sharp, 1882, *Oreodytes mongolicus* (Brinck, 1943), *Enochrus coarctatus* (Gredler, 1863), *Laccobius quaesitus* Gentili, 1988 and *Dryops renateae* Greñ et Przewoźny, 2016. Other countries records are: *Enochrus coarctatus*, *Laccobius hindukuschi* Chiesa, 1966, *Laccobius quaesitus* and *Dryops renateae* (Kazakhstan), *Dryops similis* Bollow, 1936 (Tajikistan). First provincial records are listed for *Hydroporus marginatus* (Duftschmid, 1805) (Turkestan Region of Kazakhstan), *Helophorus mongoliensis* Angus, 1970 (Xinjiang Uygur Autonomous Region of China), *Hydrochus megaphallus* Berge Henegouwen, 1988 (Mykolaiv Oblast of the Ukraine), *Spercheus emarginatus* (Schaller, 1783) (Jalal-Abad Region of Kyrgyzstan), *Berosus fischeri* Schödl, 1993 (Xinjiang Uygur Autonomous Region of China) and *Laccobius obscuratus* Rottenberg, 1874 (Krasnodar Krai, Russia). Rare and little-known species confirmed from Kazakhstan (*Deronectes vestitus* (Gebler, 1848), *Hydroporus crinitisternus* Shaverdo et Fery, 2001, *Helophorus salinus* Angus et Litovkin, 2018, *Coelosto-*

ma transcasicum) and Kyrgyzstan (*Agabus turcmenus* Guignot, 1957) from the new localities with the data of their habitat preferences. The coordinates of the type locality and deposition of the type material are clarified for *Helophorus salinus*. Most species records are illustrated with original photographs of the habitus and male genitalia.

РЕЗЮМЕ. Приводятся новые фаунистические данные о представителях шести семейств водных жуков в Палеарктике. Два вида впервые указаны для Армении и Кавказа в целом: *Coelostoma transcasicum* Reitter, 1906 и *Enochrus salomonis* (J. Sahlberg, 1900). Шесть видов впервые указаны из Кыргызстана: *Haliplus furcatus* Seidlitz, 1887, *Hydaticus ponticus* Sharp, 1882, *Oreodytes mongolicus* (Brinck, 1943), *Enochrus coarctatus* (Gredler, 1863), *Laccobius quaesitus* Gentili, 1988 и *Dryops renateae* Greñ et Przewoźny, 2016. Впервые для стран указаны: *Enochrus coarctatus*, *Laccobius hindukuschi* Chiesa, 1966, *Laccobius quaesitus* и *Dryops renateae* (Казахстан), *Dryops similis* Bollow, 1936 (Таджикистан). Приводятся первые находки в административных регионах для *Hydroporus marginatus* (Duftschmid, 1805) (Туркестанская область, Казахстан), *Helophorus mongoliensis* Angus, 1970 (Синьцзян-Уйгурский автономный район, Ки-

тай), *Hydrochus megaphallus* Berge Henegouwen, 1988 (Николаевская область, Украина), *Spercheus emarginatus* (Schaller, 1783) (Джалал-Абадская область, Кыргызстан), *Berosus fischeri* Schödl, 1993 (Синьцзян-Уйгурский автономный район, Китай) и *Laccobius obscuratus* Rottenberg, 1874 (Краснодарский край, Россия). Редкие и малоизвестные виды приводятся из новых пунктов сбора в Казахстане (*Deronectes vestitus* (Gebler, 1848), *Hydroporus crinitisternus* Shaverdo et Fery, 2001, *Helophorus salinus* Angus et Litovkin, 2018, *Coelostoma transcasicum*) и Кыргызстане (*Agabus turcmenus* Guignot, 1957) с приведением сведений о предпочитаемых биотопах. Большинство указаний проиллюстрировано оригинальными фотографиями габитуса и гениталий самцов.

Introduction

This paper is devoted to the water beetle fauna of the Palearctic, with emphasis on the understudied regions of Central Asia and the Caucasus. These predominantly mountainous regions are rarely visited by water beetle specialists, modern collections are lacking, and many old descriptions are not supported by surviving material, no photographs are available for many species. Another problem is that there is very little information on the biology of the species, their habitats preferences and life cycles.

Modern Catalogues of Palaearctic Coleoptera (see, for example: Fikáček *et al.* [2015a,b]; Kodada, Jäch [2016]; Przewoźny [2022]; Nilsson, Hájek [2024]; etc.) only provide information on the occurrence of species in the country as a whole, which is not sufficient to understand the peculiarities of species ranges in mountainous regions. Sometimes the information published in the local literature is not known and therefore not cited in the Catalogues [Ovchinnikov, 1996; Temreshev, 2012, 2015, 2016; etc.] or is based on misidentifications [Red Data..., 2006; etc.].

The information presented herein will be useful to clarify the ranges of species, and it will provide the base for their protection at a regional level.

Material and methods

The photographs were made by A.S. Sazhnev using a Leica MC170 HD digital camera mounted on a Leica M165C stereomicroscope (general beetle views), and an Olympus DP23 6Mpx digital camera mounted on an Olympus CX43 compound microscope (aedeagi). The pictures were processed in Helicon Focus 7.7.4 and Sketchbook programs.

The photographs of general beetle views by S.V. Litovkin were made using a Nikon D3300 digital camera with LOMO 3.7×0.11 microscope objective. Photographs of the genitalia in slides were taken with the same camera with a LOMO 8×0.20 microscope objective in mixed (reflected and transmitted) light, or with a Nikon D3200 camera mounted on a LOMO Micmed-6 version 7 compound microscope in bright field. Some of the genital samples were pre-cleaned in a 5% KOH solution for 24 hours at room temperature, then washed with water, cleared in glycerin when heated, and after cleaning with dissecting needles from the remains of soft tissues and membranes, they

were transferred to a clean portion of glycerin for photography. Another part of the genital samples was clarified in lactic acid for several days and, after removing excess membranes and tissues with dissecting needles, they were transferred to a clean portion of lactic acid for photography. Photos were captured and processed using digiCamControl 2.1.2.0, Nikon Capture NX-D, Zerene Stacker 1.04 and Adobe Photoshop CS3. The altitude values above sea level were updated using Google Earth Pro.

The material examined is deposited in the Papanin Institute for Biology of Inland Waters of the Russian Academy of Sciences (Borok, Russia) — IBIW, Institute of Biology, National Academy of Sciences of Kyrgyz Republic (Bishkek, Kyrgyzstan) — IB, Natural History Museum, London, England) — BMNH, personal collections of S.V. Litovkin (Samara, Russia) — SVL, and A.G. Koval (Pushkin, Russia) — AGK, Zoological Institute of the Russian Academy of Sciences (St. Petersburg, Russia) — ZIN.

Results

List of species

Family Haliplidae Aubé, 1836

Haliplus (Haliplus) furcatus Seidlitz, 1887

MATERIAL. Kyrgyzstan: Issyk-Kul Region, Tüp Distr., 1.5 km S Lugovoe vill., Issyk-Kul Lake, 42°44'46.3"N 78°18'22.0"E, 24.VI.2016 (1 ex.) B.A. Levin leg.

NOTE. The first record from Kyrgyzstan. Western and north-eastern Palaearctic species previously recorded eastward to Kazakhstan, West Siberia and China (Heilongjiang, Inner Mongolia) [Vondel *et al.*, 2006; Jia, Vondel, 2011].

Family Dytiscidae Leach, 1815

Agabus (Acatodes) turcmenus Guignot, 1957

Figs 1–3.

MATERIAL. Kyrgyzstan: Batken Region, Kadamjay Distr., Alai Range, river under KoiJuly mountain pass, 39°41'21"N 72°09'22"E, 3400 m alt., pools and slow streams along grassy river shore, 30.VI.2018 (5♂♂, 5♀♀) S.V. Litovkin leg. (SVL).

NOTE. Previously was known from 8 specimens from Kyrgyzstan and the China (Xinjiang) [Nilsson, 1995; Fery, 2011; Nilsson, Hájek, 2024]. It was accepted, that the type locality situated in Kyrgyzstan, but really the country is unknown — “Turkestan: Naryn kol.” [Guignot, 1957; Fery, 2011].

Hydaticus (Prodaticus) ponticus Sharp, 1882

MATERIAL. Kyrgyzstan: Jalal-Abad Region, Ala-Buka Distr., near Shekaftar vill., 41°13'03"N 71°17'38"E, ~1140 m alt., at light, 2–3.VI.2018 (1♀) S.V. Litovkin leg. (SVL).

NOTE. The first record from Kyrgyzstan, near the border with Uzbekistan. The species was reliably recorded from Western and Central Asia (including southern Kazakhstan), Pakistan and India, other records require verification [Temreshev, 2018; Wewalka, 2023; Nilsson, Hájek, 2024].

Deronectes vestitus (Gebler, 1848)

Figs 4–7.

MATERIAL. Kazakhstan: Turkestan Region, Kentau, Karatau Mts., Bayaldyr River valley, 43°37'31"N 68°31'58"E, ~600 m alt., pools and streams in floodplain, 2–5.V.2013



Figs 1–3. *Agabus turcmenus*, male from Kyrgyzstan: 1 — dorsal habitus; 2 — penis, lateral view with the apex is broken off; 3 — left paramere. Photographs by S.V. Litovkin.

Рис. 1–3. *Agabus turcmenus* самец из Кыргызстана: 1 — внешний вид, дорсально; 2 — пенис, сбоку, вершина обломана; 3 — левая парамера. Фотографии С.В. Литовкина.

(12 ex.) S.V. Litovkin leg. (SVL); Turkestan Region, Kentau, Karatau Mts., Khantagi River valley, 43°33'50"N 68°41'00"E, 585 m alt., along river, 2–6.VI.2016 (11 ex.) S.V. Litovkin leg. (SVL); Turkestan Region, Kentau, Karatau Mts., Khantagi River valley, 43°32'58"N 68°41'05"E, ~600 m alt., stream flowing into Khantagi River, 4.VI.2016 (3 ex.) S.V. Litovkin leg. (SVL); same locality but 43°32'56"N 68°40'18"E, ~560 m alt., stream, 16.VI.2016 (3 ex.) S.V. Litovkin leg. (SVL); same locality but 43°33'15"N 68°40'23"E, ~560 m alt., dam on river, 16.VI.2016 (1 ex.) S.V. Litovkin leg. (SVL); Turkestan Region, Kentau, Karatau Mts., NE slopes, 43°40'31"N 68°52'06"E, ~920 m alt., residual pool in streambed, 4.VI.2023 (6 ex.) S.V. Litovkin leg. (SVL); Zhambyl Region, Talas Distr., Karatau Mts., env. of Bayzhansay vill., 43°12'52"N 70°03'49"E, ~935 m alt., stream, 29–30.V.2015 (2 ex.) S.V. Litovkin leg. (SVL); same locality but 43°12'47"N 70°04'05"E, ~930 m alt., slow stream, 29–30.V.2015 (3 ex.) S.V. Litovkin leg. (SVL); same locality but 43°12'45"N 70°04'01"E, ~935 m alt., slow stream, 19.VI.2016 (8 ex.) S.V. Litovkin leg. (SVL).

NOTE. *Deronectes vestitus* (Gebler, 1848) was known from rarely collected specimens (18 ex.) from Western Siberia, Kazakhstan, Uzbekistan, Tajikistan and Afghanistan [Fery, Hosseinie, 1998; Hájek, Fery, 2004; Hendrich, Hendrich, 2005]. A large series of specimens were collected only in watercourses in the Karatau ridge [Temreshev, Kolov, 2013]. Our data confirm the wide distribution of *D. vestitus* in Karatau ridge, where this species is more abundant than *D. abnormicollis* Semenov, 1900, with which it occurs together.

Oreodytes mongolicus (Brinck, 1943)

Fig. 17.

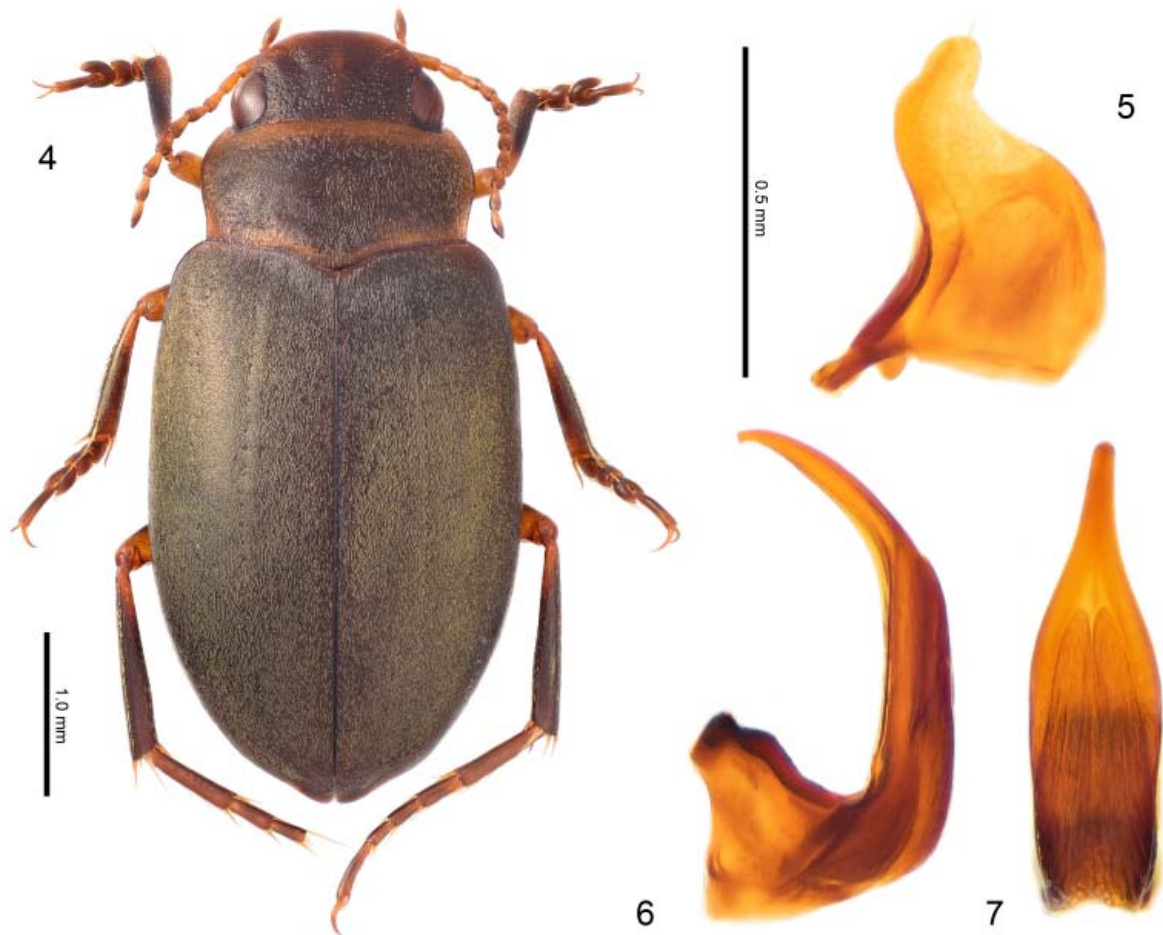
MATERIAL. **Kyrgyzstan:** “Trans-Alai Range, Berksu, 20 km W Daraut-Kurgan”, 15.VII.1997 (1 ex.) S.V. Ovchinnikov leg., *O. alpinus*, S.V. Ovchinnikov det., 2002 (IB); Chüy Region, Panfilov Distr., Suusamyr Valley, 42°12'24"N 73°45'48"E, 2210 m alt., stream, 9–10.VI.2017 (1♂) S.V. Litovkin leg. (SVL).

NOTE. The first record from Kyrgyzstan. This species was recorded from Tuva Republic and Far East of Russia, Mongolia [Brinck, 1943; Kuzhuget, 2017; Prokin *et al.*, 2020; Sazhnev *et al.*, 2021; Nilsson, Hájek, 2024]. Under the name *Oreodytes alpinus* (Paykull, 1798) it was included in the Appendix of the Red Book of Kyrgyzstan as a taxon that requires special attention, additional study and determination of protection measures [Red Data..., 2006].

Hydroporus crinitisternus Shaverdo et Fery, 2001

Figs 8–12.

MATERIAL. **Kazakhstan:** Turkestan Region, Kentau, Karatau Mts., Bayaldyr River valley, 43°37'31"N 68°31'58"E, ~600 m alt., pools and streams in floodplain, 2–5.V.2013 (1 ex.) S.V. Litovkin leg. (SVL); Turkestan Region, Kentau, Karatau Mts., NE slopes, 43°47'01"N 68°46'40"E, ~1020 m alt., stream, 7–8.V.2015 (11 ex.) S.V. Litovkin leg. (SVL); Turkestan Region, Kentau, Karatau Mts., NE slopes, 43°46'20"N



Figs 4–7. *Deronectes vestitus*, male from Kazakhstan: 4 — dorsal habitus, left antenna with 9 segments; 5 — left paramere; 6–7 — penis in lateral (6) and ventral (7) views. Photographs by S.V. Litovkin.

Рис. 4–7. *Deronectes vestitus*, самец из Казахстана: 4 — внешний вид, дорсально, левый усик с 9 члениками; 5 — левая парамера; 6–7 — penis сбоку (6) и вентрально (7). Фотографии С.В. Литовкина.

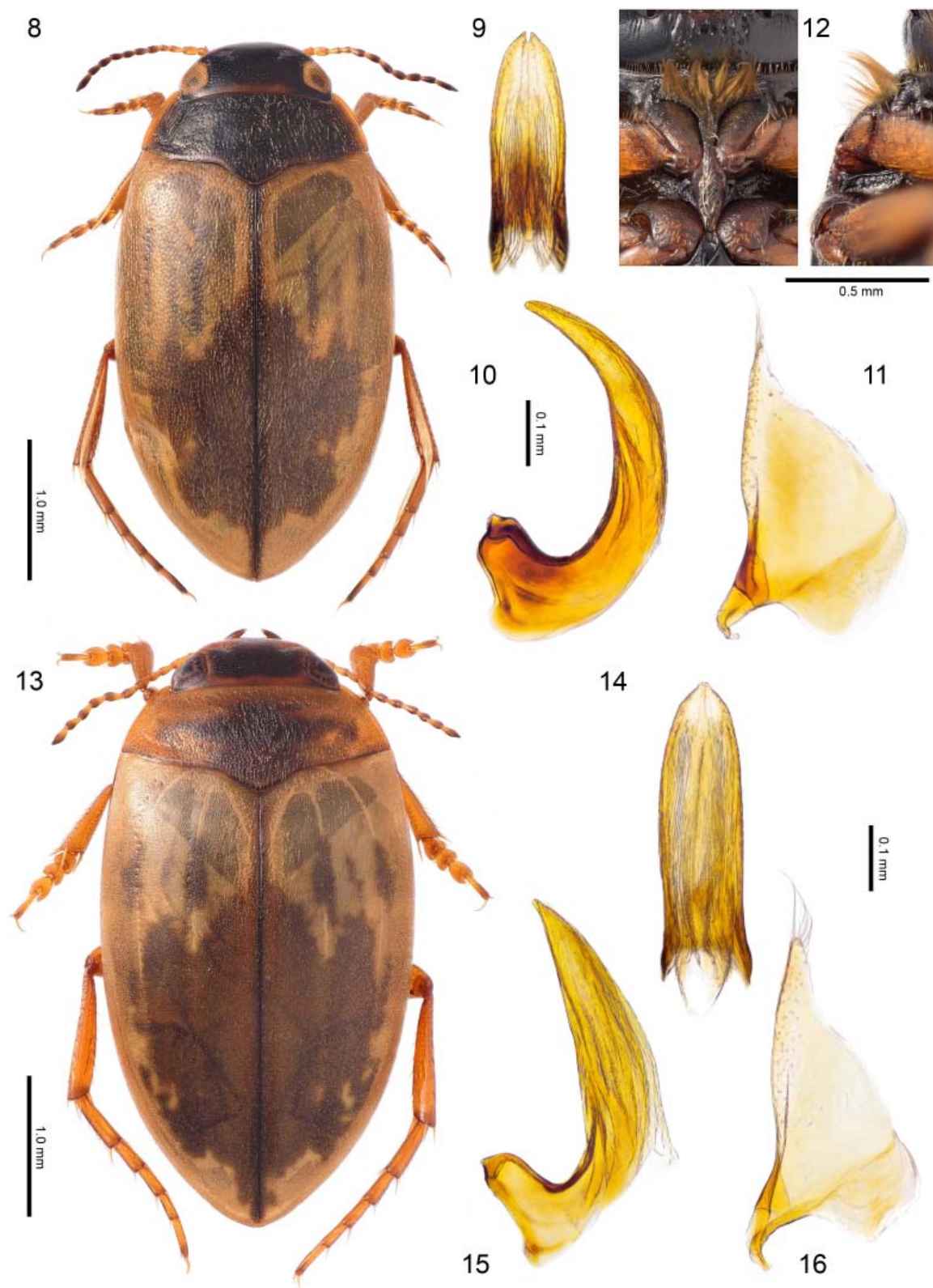
68°48'04"E, ~1030 m alt., stream and residual pools, 7.VI.2015 (2 ex.) S.V. Litovkin leg. (SVL); Turkestan Region, Kentau, Karatau Mts., NE slopes, stream valleys, 43°40'31"N 68°52'02"E, ~915 m alt., residual pools in streambed, 7.V.2023 (4 ex.) S.V. Litovkin leg. (SVL); same locality but 43°41'11"N 68°51'42"E, ~840 m alt., backwater of stream, 19.V.2023 (2 ex.) S.V. Litovkin leg. (SVL); same locality but 43°40'31"N 68°52'06"E, ~920 m alt., residual pool in streambed, 4.VI.2023 (12 ex.) S.V. Litovkin leg. (SVL); Turkestan Region, Sozak Distr., near Kyzylkol' Lake, 43°44'37"N 69°27'30"E, 330 m alt., warm stream flowing into lake, 22.V.2015 (1 ex.) S.V. Litovkin leg. (SVL); Zhambyl Region, Talas Distr., near saline lake Aschykol', 43°29'51"N 70°39'27"E, ~380 m alt., residual brackish pool in streambed, 10.V.2023 (1 ex.) S.V. Litovkin leg. (SVL); Zhambyl Region, Talas Distr., Karatau Mts., env. of Bayzhansay vill., 43°12'52"N 70°03'49"E, ~935 m alt., stream, 29–30.V.2015 (5 ex.) S.V. Litovkin leg. (SVL); same locality but 43°12'47"N 70°04'05"E, ~930 m alt., slow stream, 29–30.V.2015 (8 ex.) S.V. Litovkin leg. (SVL); same locality but 43°11'36"N 70°02'11"E, ~1100 m alt., rain puddle in road track, 30.V.2015 (2 ex.) S.V. Litovkin leg. (SVL); Turkestan Region, Baydibek Distr., Boraldytau Mts.,

Boraldy River valley, 42°52'06"N 69°52'06"E, ~540 m alt., pool in small pit, 26.V.2015 (14 ex.) S.V. Litovkin leg. (SVL).

NOTE. Previously, the species was known from 9 specimens from Kazakhstan (Turkestan, Zhambyl, Zhetysu and Abay Regions) and Mongolia (Khovd Aimag) [Shaverdo, Fery, 2001; Fery, Petrov, 2005]. According to our data, the species is common and abundant in various water bodies of the Karatau ridge. Two findings were made on the foothill plain in habitats, not typical for the species (brackish pool and warm stream).

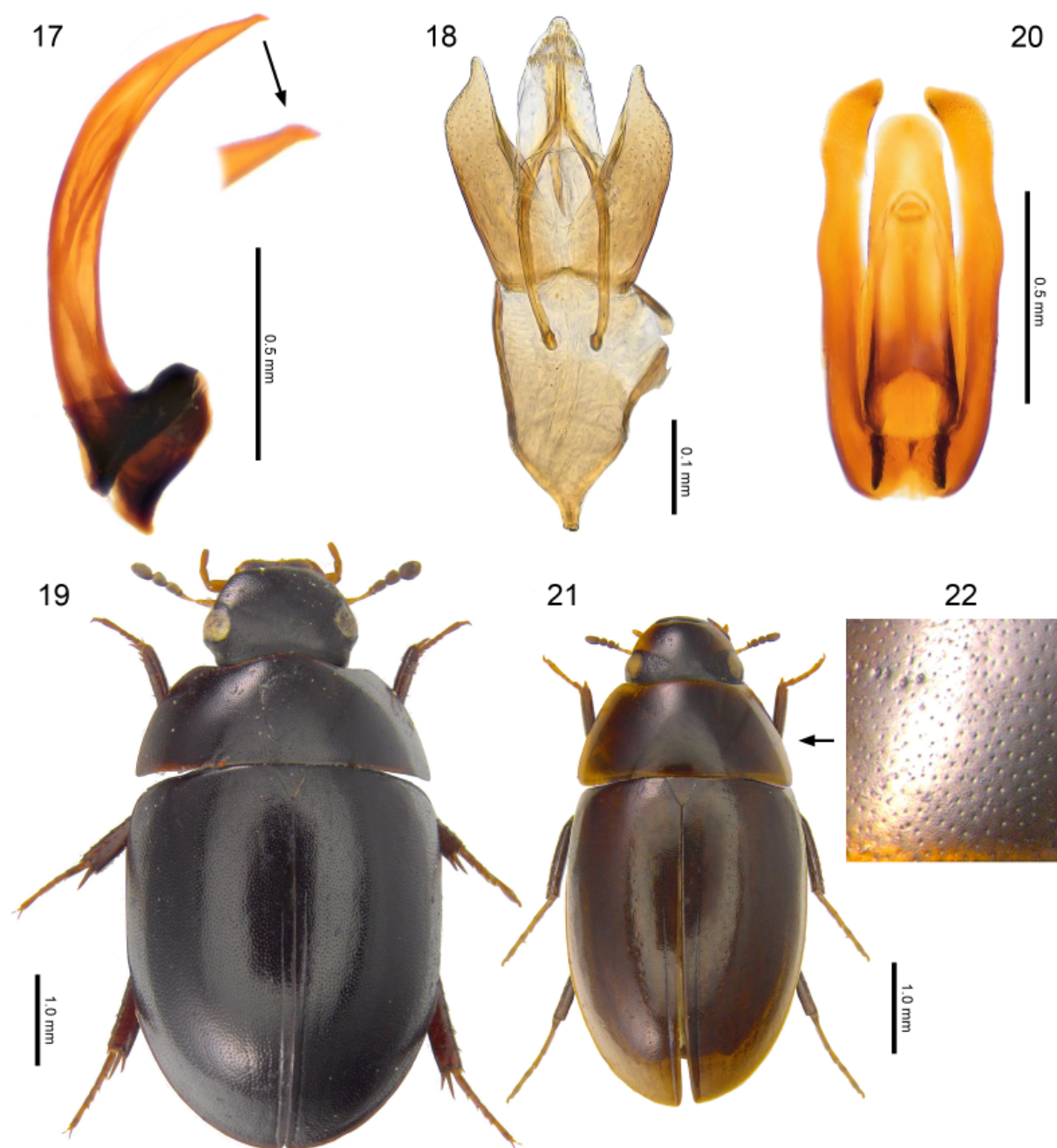
Hydroporus marginatus (Duftschmid, 1805)
Figs 13–16.

MATERIAL. Kazakhstan: Turkestan Region, Kentau, Karatau Mts., Bayaldyr River valley, 43°37'31"N 68°31'58"E, ~600 m alt., pools and streams in floodplain, 2–5.V.2013 (2 ex.) S.V. Litovkin (SVL); Turkestan Region, Kentau, Karatau Mts., NE slopes, stream valleys, 43°40'31"N 68°52'02"E, ~915 m alt., residual pools in streambed, 7.V.2023 (1 ex.) S.V. Litovkin (SVL); same locality but 43°40'09"N 68°51'06"E, ~930 m alt., residual pools in streambed, 6.V.2023 (1 ex.) S.V. Litovkin (SVL); same locality but 43°40'31"N 68°52'06"E,



Figs 8–16. *Hydroporus* spp., males from Kazakhstan: 8–12 — *H. crinitisternus*; 13–16 — *H. marginatus*; 8, 13 — dorsal habitus; 9–10, 14–15 — penis in ventral (9, 14) and lateral (10, 15) views; 11, 16 — left paramere; 12 — prothorax in lateral and ventral views. Photographs by S.V. Litovkin.

Рис. 8–16. *Hydroporus* spp., самцы из Казахстана: 8–12 — *H. crinitisternus*; 13–16 — *H. marginatus*; 8, 13 — внешний вид, дорсально; 9–10, 14–15 — пенис снизу (9, 14) и сбоку (10, 15); 11, 16 — левая параметра; 12 — переднегрудь сбоку и снизу. Фотографии С.В. Литовкина.



Figs 17–22. Dytiscidae, Helophoridae and Hydrophilidae species: 17 — penis of *Oreodytes mongolicus* from Kyrgyzstan, lateral view (photography by S.V. Litovkin); 18 — aedeagus of *Helophorus mongoliensis* from China, dorsal view (photography by A.S. Sazhnev); 19–20 — *Coelostoma transcasicum*: 19 — dorsal habitus of female from Armenia (photography by A.S. Sazhnev); 20 — aedeagus in dorsal view, Kazakhstan (photography by S.V. Litovkin); 21–22 — *Enochrus salomonis* from Armenia: 21 — female dorsal habitus, 22 — punctation of the pronotum (photographs by A.S. Sazhnev).

Рис. 17–22. Виды Dytiscidae, Helophoridae и Hydrophilidae: 17 — пенис *Oreodytes mongolicus* из Кыргызстана, вид сбоку (фотография С.В. Литовкина); 18 — эдеагус *Helophorus mongoliensis* из Китая, вид сверху (фотография А.С. Сажнева); 19–20 — *Coelostoma transcasicum*: 19 — внешний вид самки дорсально из Армении (фотография А.С. Сажнева); 20 — эдеагус самца из Казахстана (фотография С.В. Литовкина); 21–22 — *Enochrus salomonis* из Армении: 21 — внешний вид самки дорсально; 22 — пунктировка переднеспинки (22) (фотографии А.С. Сажнева).

~920 m alt., residual pool in streambed, 4.VI.2023 (2 ex.) S.V. Litovkin (SVL).

NOTE. The species is widely distributed in south and central Europe. In Asia it is known from Israel, Turkey, Iran and once recorded from East Kazakhstan Region [Fery, Petrov, 2005; Nilsson, Hájek, 2024]. Our records clarify the distribution of the species in the east of the range. The color pattern shown in the photograph (Fig. 13) is characteristic for all specimens collected on the Karatau ridge.

Family Helophoridae Leach, 1815

Helophorus (Rhopalohelophorus) mongoliensis Angus, 1970
Fig. 18.

MATERIAL. **China:** Xinjiang Uygur Autonomous Region, Changji Hui Autonomous Prefecture, Bogda Shan Range, stream – right tributary of Xienzan River, 1920 m alt., 8.07.2017 (3 ex.) D.M. Palatov leg. (IBIW); Dabancheng Distr., Urumchi, 43°41'45.2"N 88°16'57.0"E, stream – right tributary of Sangecha River, 2713 m alt., 13.07.2017 (1 ex.) D.M. Palatov leg. (IBIW); Yizhou Distr., Hami, env. Taxia'er Baiqi'er, right tributary of Ayar-gol River, 43°12'37.7"N 94°06'59.6"E, 2436 m alt., 21.07.2017 (1 ex.) D.M. Palatov leg. (IBIW); same locality but left tributary of Ayar-gol River, 43°14'13.7"N 94°08'12.4"E, 2793 m alt., 22.07.2017 (1 ex.) D.M. Palatov leg. (IBIW); same locality but 43°14'29.0"N 94°08'35.5"E, 2824 m alt., 22.07.2017 (3 ex.) D.M. Palatov leg. (IBIW); Yizhou Distr., Hami, Yiwu (Aratürük) County, nameless river (basin of Tuolekule Lake), 43°17'58.9"N 94°13'02.1"E, 2216 m alt., 23.07.2017 (1 ex.) D.M. Palatov leg. (IBIW); same locality but 43°20'36.7"N 94°15'36.2"E, springs, 1916 m alt., 24.07.2017 (1 ex.) D.M. Palatov leg. (IBIW).

NOTE. The first record from Xinjiang Uygur Autonomous Region of China. The species was previously known from Mongolia, Kazakhstan, Kyrgyzstan and Qinghai Region of China [Angus, 1970; Przewoźny, 2022].

Helophorus (Rhopalohelophorus) salinus
Angus et Litovkin, 2018

MATERIAL. **Kazakhstan:** Zhambyl Region, Talas Distr., near saline lake Aschykol', 43°29'51"N 70°39'27"E, ~380 m alt., residual brackish pool in streambed, 10.V.2023 (1 ex.) S.V. Litovkin (SVL).

TYPE MATERIAL. "Kazakhstan. Zhambyl Oblast' 9 km NE Kumkent, 43.81397°N 69.72424°E 300 m, saline soil, brackish pools, 13.V.2015, leg. S. Litovkin": holotype and 2 paratypes (ZIN), 4 paratypes (BMNH), 16 paratypes (SVL).

NOTE. Previously was known only from the type locality [Angus, Litovkin, 2018]. The new material was collected in a brackish water body inhabited by various Dytiscidae, Noteridae, Hydrophilidae, Hydraenidae and Heteroceridae, but specimen was collected already dead. The arrival of *H. salinus* to light in the vicinity of the sampling site was not observed. Herein we have corrected the coordinates of the type locality, and also clarified the collections, where the type specimens are deposited.

Family Hydrochidae Thomson, 1859

Hydrochus megaphallus Berge Henegouwen, 1988

MATERIAL. **Ukraine:** Mykolaiv Oblast, Mykolaiv Distr., Kinburn Spit, steppe, reed mire, 1.V.2007 (4 ex.) V.G. Dyadichko leg. (IBIW).

NOTE. The first record from Mykolaiv Oblast of the Ukraine. Previously was recorded for the Ukraine from the Volyn Oblast [Shatrovskiy, Kravchenko, 2016]. This species is widely distributed in Europe, known eastward to Asian Turkey [Przewoźny, 2022].

Family Spercheidae Erichson, 1837
Spercheus emarginatus (Schaller, 1783)

MATERIAL. **Kyrgyzstan:** Jalal-Abad Region, Suzak Distr., env. of Jalal-Abad, Kög-Art River, 40°55'54.8"N 72°56'18.6"E, 715 m alt., 1.VII.2016 (1 ex.) B.A. Levin leg. (IBIW); Osh Region, Uzgen Distr., Uzgen, Kara Darya River, a paddy rice field, 910 m alt., 40°45'44.01"N 73°16'54.81"E, 4.05.2017 (1 ex.) D.M. Palatov leg. (IBIW). Jalal-Abad Region, Aksy Distr., Tash-Kumyr (Tashkömür) environs, 41°20'08"N 72°07'57"E, ~780 m alt., at light, 15–16.VI.2017 (1 ex.) S.V. Litovkin leg. (SVL).

NOTE. The first record from the Fergana Valley (Jalal-Abad Region) of Kyrgyzstan. This widely distributed trans-Paleartic species was previously recorded from the northern Kyrgyzstan and the vicinity of Lake Issykul [Ovchinnikov, 1996].

Family Hydrophilidae Latreille, 1802
Berosus (Enoplurus) fischeri Schödl, 1993

MATERIAL. **China:** Xinjiang Uygur Autonomous Region, Gaochang District, Turpan, Shengjinxiang oasis, source of Heigou River, 42°56'24.5"N 89°37'47.2"E, stream, 202 m alt., 17.07.2017 (1 ex.) D.M. Palatov leg. (IBIW); Bayingolin Mongol Autonomous Prefecture, Bohu (Bagrax) County, Bosten Lake, 41°53'38.3"N 86°58'26.5"E, southern shore, 950 m alt., 27.07.2017 (1 ex.) D.M. Palatov leg. (IBIW).

NOTE. The first record from Xinjiang Uygur Autonomous Region of China. The species was previously known from East Siberia and Far East of Russia, Mongolia; Beijing, Gansu, Heilongjiang, Henan and Tianjin Regions of China [Przewoźny, 2022].

Coelostoma (Lachnocoelostoma) transcaspicum
Reitter, 1906
Figs 19–20.

MATERIAL. **Armenia:** Syunik Province, env. of Meghri vill., 700–750 m alt., 20–21.VII.2003 (1 ex.) A.G. Koval leg. (AGK). **Kazakhstan:** Turkestan Region, Kentau, Karatau Mts., Khantagi River valley, 43°33'50"N 68°41'00"E, ~585 m alt., along river, day and night, 2–6.VI.2016 (23 ex.) S.V. Litovkin leg. (SVL).

NOTE. The first record from Armenia and the Caucasus. This Asian species was previously known from Asian Turkey, Iran, Saudi Arabia, Oman, Tajikistan, Turkmenistan, Uzbekistan, and ? Oriental Region [Fikáček *et al.*, 2015b; Mai *et al.*, 2022; Przewoźny, 2022]. Previously recorded from the Turkestan Region of Kazakhstan [Temreshev, Kolov, 2012, 2013; Temreshev, Esenbekova, 2013]. Our record confirms the presence of the species in Kazakhstan.

Enochrus (Lumetus) salomonis (J. Sahlberg, 1900)
Figs 21–22.

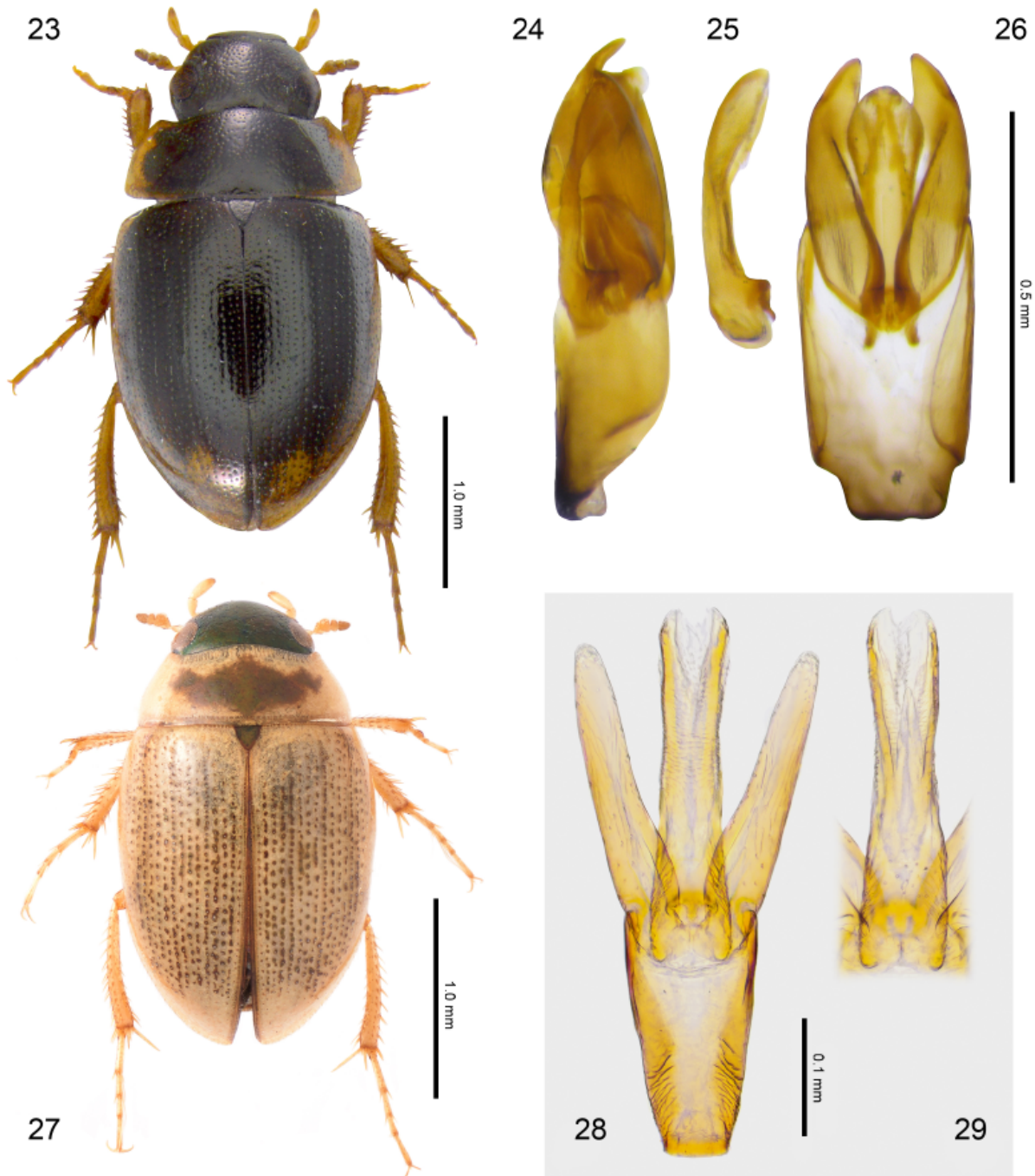
MATERIAL. **Armenia:** Syunik Province, env. of Meghri vill., 700–750 m alt., 20–21.VII.2003 (1 ex.) A.G. Koval leg. (AGK).

NOTE. The first record from Armenia and the Caucasus. The species was known from Spain, Asian Turkey, Israel, Jordan, Iran and Afghanistan [Fikáček *et al.*, 2015b; Przewoźny, 2022].

Enochrus (Methydrus) coarctatus (Gredler, 1863)

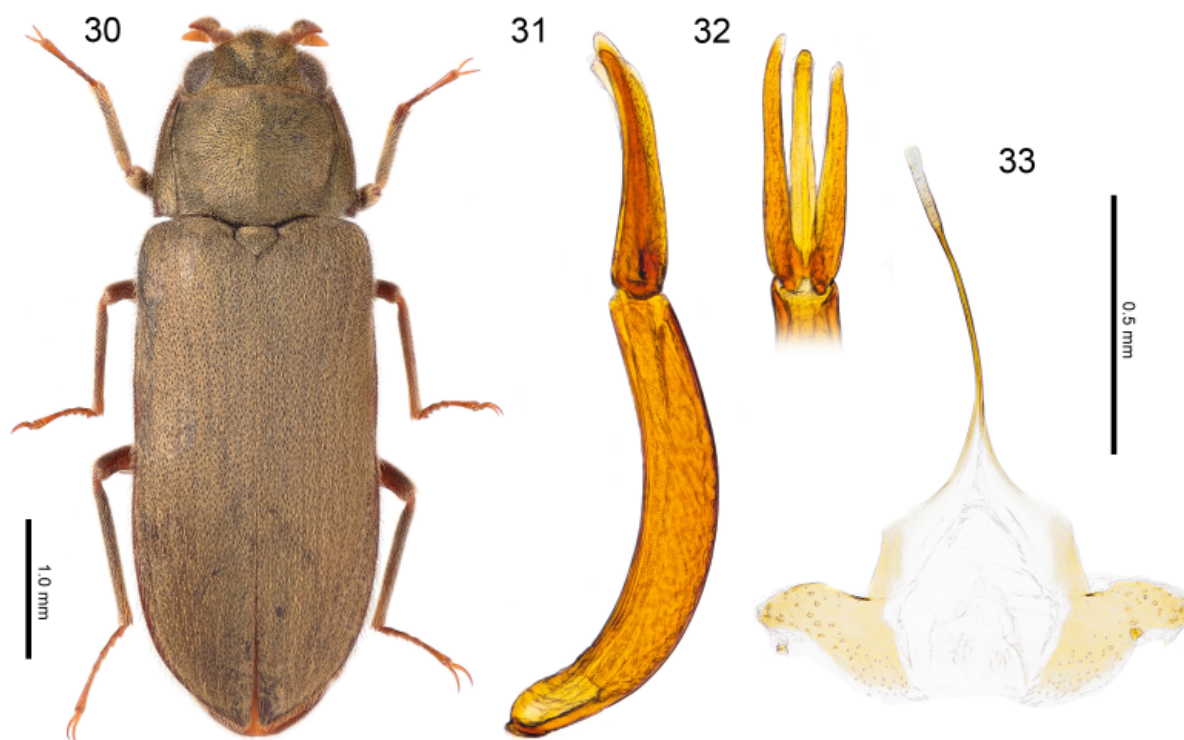
MATERIAL. Kazakhstan: Turkestan Region, Ordabasy Distr., near confluence of Boralday and Arys rivers, 42°36'14"N 69°20'47"E, 300 m alt., at light, 18–19.VI.2023 (1♂) S.V. Litovkin leg. (SVL); Zhambyl Region, Talas Dis-

tr., shore of saline lake Aschykol', 43°32'20"N 70°37'42"E, ~380 m alt., at light, 10–11.V.2023 (2 ex.) S.V. Litovkin leg. (SVL); Jetisu Region, Panfilov Distr., env. of Aydarly vill., 44°00'13"N 79°30'50"E, ~515 m alt., at light, 12–13.VI.2018 (1♂, 1 ex.) S.V. Litovkin leg. (SVL). **Kyrgyzstan:** Jalal-Abad Region, Toktogul Distr., Karasu River valley, 41°40'15"N



Figs 23–29. *Laccobius* spp.: 23–26 — *Laccobius obscuratus* from Russia; 23 — male dorsal habitus; 24, 26 — aedeagus in lateral (24) and dorsal (26) views; 25 — penis (25) in lateral view (photographs by A.S. Sazhnev); 27–29 — *Laccobius quaesitus*; 27 — male dorsal habitus (Kyrgyzstan); 28 — aedeagus (Kazakhstan) in dorsal view; 29 — penis in ventral view (photographs by S.V. Litovkin).

Рис. 23–29. *Laccobius* spp.: 23–26 — *Laccobius obscuratus* из России: 23 — внешний вид самца дорсально; 24, 26 — эдеагус сбоку (24) и сверху (26); 25 — пенис сбоку (фотографии А.С. Сажнева); 27–29 — *Laccobius quaesitus*; 27 — внешний вид самца дорсально (Кыргызстан); 28 — эдеагус (Казахстан) сверху; 29 — пенис снизу (фотографии С.В. Литовкина).



Figs 30–33. *Dryops renateae* from Kazakhstan: 30 — dorsal habitus; 31 — aedeagus in lateral view; 32 — penis and parameres ventral view; 33 — last female sternite. Photographs by S.V. Litovkin.

Рис. 30–33. *Dryops renateae* из Казахстана; 30 — внешний вид дорсально; 31 — эдеагус сбоку; 32 — пенис и парамеры снизу; 33 — последний стернит самки. Фотографии С.В. Литовкина.

73°01'09"E, ~1300 m alt., at light, 30.VI–1.VII.2017 (1♂) S.V. Litovkin leg. (SVL).

NOTE. The first records from Kazakhstan and Kyrgyzstan. Records of *E. affinis* (Thunberg, 1794) and *E. nigrinus* (Sharp, 1873) from Turkestan and Zhambyl Regions of Kazakhstan [Temreshev, 2015, 2016] needs confirmation. This species is widely distributed in Europe, in Asia was previously recorded from Turkey, Iran, West Siberia and Far East of Russia, Mongolia [Przewoźny, 2022].

Laccobius (Dimorpholaccobius) hindukuschi Chiesa, 1966

MATERIAL. Kazakhstan: Kyzylorda Region, Janakorgan Distr., Karatau Mts., Akuyik River valley, 43°56'13"N 67°40'49"E, ~390 m alt., at light, 1–2.V.2013 (1 ex.) S.V. Litovkin leg. (SVL); Turkestan Region, Kentau, Karatau Mts., Bayaldyr River valley, 43°37'31"N 68°31'58"E, ~600 m alt., pools and streams in floodplain, 2–5.V.2013 (11 ex.) S.V. Litovkin leg. (SVL); Turkestan Region, Kentau, Karatau Mts., Khantagi River valley, 43°33'25"N 68°40'38"E – 43°33'50"N 68°41'00"E, 570–585 m alt., along river, 3–5.VI.2016 (13 ex.) S.V. Litovkin leg. (SVL); same locality but 43°32'58"N 68°41'05"E, ~600 m alt., stream flowing into Khantagi River, 4.VI.2016 (1 ex.) S.V. Litovkin leg. (SVL); same locality but 43°32'56"N 68°40'18"E, ~560 m alt., stream, 16.VI.2016 (7 ex.) S.V. Litovkin leg. (SVL); Mangystau Region, Mangystau Distr., 9 km E Shetpe vill., 44°09'02.8"N 52°16'07.9"E, at light, 4–6.VI.2017 (1 ex.) D.V. Potanin, A.A. Potanina leg. (IBIW);

16 km NW Shetpe vill., 44°12'56.7"N 51°59'32.9"E, at light, 6–7.VI.2017 (2 ex.) D.V. Potanin, A.A. Potanina leg. (IBIW); 5 km NW Senek vill., 43°23'27.2"N 53°20'05.8"E, at light, 9–11.VI.2017 (1 ex.) D.V. Potanin, A.A. Potanina leg. (IBIW).

NOTE. The first records from Kazakhstan. This species is widely distributed in Caucasus and mountain regions of Asia eastward to Nepal, Pakistan and Uttar Pradesh in India [Przewoźny, 2022].

Laccobius (Laccobius) obscuratus Rottenberg, 1874
Figs 23–26.

MATERIAL. Russia: Krasnodar Krai, Tuapse Distr., Magri vill., Magri River, waterfall, 23.08.2020 (1 ex.) V. Stolbov leg. (IBIW).

NOTE. The first record from the Krasnodar Krai. Previously the species was recorded from Russian Caucasus only from the Kabardino-Balkaria Republic [Prokin, Sazhnev, 2019]. This species is widely distributed in central and especially southern Europe, Asia Minor, with records from Tajikistan, Turkmenistan, and Afrotropical Region [Przewoźny, 2022].

Laccobius (Microlaccobius) quaesitus Gentili, 1988
Figs 27–29.

MATERIAL. Kazakhstan: Turkestan Region, Kentau, Karatau Mts., Khantagi River valley, 43°33'25"N 68°40'38"E – 43°33'50"N 68°41'00"E, 570–585 m alt., along river, 3–5.

VI.2016 (25 ex.) S.V. Litovkin (SVL); same locality but 43°32'49"N 68°39'56"E, ~550 m alt., river, 16.VI.2016 (2 ex.) S.V. Litovkin (SVL); Mangystau Region, Mangystau Distr., 9 km E Shetpe vill., 44°09'02.8"N 52°16'07.9"E, at light, 4–6.VI.2017 (1 ex.) D.V. Potanin, A.A. Potanina leg. (IBIW). **Kyrgyzstan:** Jalal-Abad Region, Ala-Buka Distr., near Shekaftar vill., 41°12'01"N 71°18'26"E, 1055 m alt., stream, 25.VI.2017 (1 ex.) S.V. Litovkin (SVL); Osh Region, Aravan Distr., Nayan Reservoir environs, 40°21'53"N 72°21'39"E, 1250 m alt., small residual pools in streambed, 8.VII.2017 (2 ex.) S.V. Litovkin (LSV); Jalal-Abad Region, Aksy Distr., Tash-Kumyr environs, hills and badlands, 41°24'08"N 72°05'49"E, ~930 m alt., stream, 20.VII.2017 (2 ex.) S.V. Litovkin (SVL).

NOTE. The first records from Kazakhstan and Kyrgyzstan. Previously was recorded from Turkey, Iran, Turkmenistan, Pakistan and Nepal [Przewoźny, 2022].

Family Dryopidae Billberg, 1820
Dryops similaris Bollow, 1936

MATERIAL. **Tajikistan:** Badakhshan Mountainous Autonomous Region, Rushon Distr., Pastkhuf vill., mire, 37°51'45.4"N 71°35'59.8"E, 27.VII.2012 (3 ex.) A.S. Zubov leg. (IBIW).

NOTE. The first record from Tajikistan. This species is widely distributed in Europe, in Asia it was previously recorded from Turkey, Russian Far East and Mongolia [Kodada, Jäch, 2016; Prokin *et al.*, 2022].

Dryops renatae Greñ et Przewoźny, 2016
Figs 30–33.

MATERIAL. **Kazakhstan:** Turkestan Region, Baydibek Distr., Boraldytau Mts., Boraldy River valley, 42°51'50"N 69°52'05"E, ~540 m alt., at light, 23.V.2015 (1 ex.) S.V. Litovkin leg. (SVL); same locality, at light, 9.VI.2015 (21 ex.) S.V. Litovkin leg. (SVL); same locality but 42°51'49"N 69°51'59"E, ~540 m alt., backwater of river, 10.VI.2015 (5 ex.) S.V. Litovkin leg. (SVL); same locality but 42°52'20"N 69°52'57"E, ~550 m alt., at light, 6–7.VI.2023 (85 ex.) S.V. Litovkin leg. (SVL); Turkestan Region, Kentau, Karatau Mts., Khantagi River valley, 43°33'25"N 68°40'38"E – 43°33'50"N 68°41'00"E, 570–585 m alt., along river, 2–6.VI.2016 (34 ex.) S.V. Litovkin leg. (SVL); same locality but 43°32'49"N 68°39'56"E, ~550 m alt., river, 16.VI.2016 (6 ex.) S.V. Litovkin leg. (SVL); Turkestan Region, Ordabasy Distr., near confluence of Boraldy and Arys rivers, 42°36'14"N 69°20'47"E, 300 m alt., at light, 18–20.VI.2023 (28 ex.) S.V. Litovkin leg. (SVL). **Kyrgyzstan:** Jalal-Abad Region, Aksy Distr., env. of Tash-Kumyr (Tashkömür), 41°20'08"N 72°07'57"E, ~780 m alt., at light, 15–16.VI.2017 (4 ex.) S.V. Litovkin leg. (SVL); same locality, at light, 16–17.VII.2017 (5 ex.) S.V. Litovkin leg. (SVL); Jalal-Abad Region, Ala-Buka Distr., env. of Shekaftar vill., 41°13'28"N 71°23'26"E, 1000 m alt., at light, 26–27.VI.2017 (6 ex.) S.V. Litovkin leg. (SVL); Jalal-Abad Region, Ala-Buka Distr., near Shekaftar vill., 41°13'03"N 71°17'38"E, ~1140 m alt., at light, 2–3.VI.2018 (6 ex.) S.V. Litovkin leg. (SVL).

NOTE. The first records from Kazakhstan and Kyrgyzstan. The species was previously known only from the type locality in Tajikistan [Greñ *et al.*, 2016].

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