

Additional data on the aquatic and riparian beetle fauna (Coleoptera) of Dagestan with new records for Russia and the North Caucasus

© A.S. Sazhnev^{1, 2}, E.V. Ilyina^{3, 4}

¹Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences, Leninsky av., 33, Moscow 119071 Russia

²Papanin Institute for Biology of Inland Waters of the Russian Academy of Sciences, 101, Borok vill., Nekouzsky District, Yaroslavl Region 152742 Russia. E-mail: sazh@list.ru

³Precaspian Institute of Biological Resources of the Dagestan Federal Research Centre of the Russian Academy of Sciences, M. Gadzhiev str., 45, Makhachkala 367000 Russia. E-mail: carabus@list.ru

⁴Dagestan State Nature Reserve, Gagarin str., 120, Makhachkala 367010 Russia

Abstract. This article is a continuation of the inventory of the fauna of aquatic and water-associated beetles (Coleoptera) in the Republic of Dagestan (the North Caucasus, Russia). Ten species from three water (Halipidae, Helophoridae, Hydrophilidae) and one riparian (Heteroceridae) beetle families are recorded from Dagestan for the first time. *Helophorus mervensis* Semenov, 1900 is recorded for Russia for the first time. *Helophorus kerimi* Ganglbauer, 1901 is recorded for the first time from the European part of Russia and North Caucasus. *Helophorus hammondi* Angus, 1970, *H. syriacus* Kuwert, 1885, and *H. griseus* (Herbst, 1793) are recorded for the first from the North Caucasus.

Key words: Halipidae, Helophoridae, Hydrophilidae, Heteroceridae, new records, North Caucasus, Russia.

Дополнительные данные по фауне водных и околоводных жуков (Coleoptera) Дагестана с новыми находками для России и Северного Кавказа

© А.С. Сажнев^{1, 2}, Е.В. Ильина^{3, 4}

¹Институт проблем экологии и эволюции им. А.Н. Северцова Российской академии наук, Ленинский проспект, 33, Москва 119071 Россия

²Институт биологии внутренних вод им. И.Д. Папанина Российской академии наук, 101, пос. Борок, Некоузский район, Ярославская область 152742 Россия. E-mail: sazh@list.ru

³Прикаспийский институт биологических ресурсов – обособленное подразделение Федерального государственного бюджетного учреждения науки Дагестанского федерального исследовательского центра Российской академии наук, ул. М. Гаджиева, 45, Махачкала 367000 Россия. E-mail: carabus@list.ru

⁴Государственный природный заповедник «Дагестанский», ул. Гагарина, 120, Махачкала 367010 Россия

Резюме. Настоящая статья является продолжением инвентаризации фауны водных и связанных с водной средой жесткокрылых (Coleoptera) Республики Дагестан (Северный Кавказ, Россия). Десять видов из трех водных (Halipidae, Helophoridae, Hydrophilidae) и одного околоводного (Heteroceridae) семейства жуков впервые указаны из Дагестана. *Helophorus mervensis* Semenov, 1900 впервые приводится для территории России, *Helophorus kerimi* Ganglbauer, 1901 – для фауны европейской части России и Северного Кавказа. Виды *Helophorus hammondi* Angus, 1970, *H. syriacus* Kuwert, 1885 и *H. griseus* (Herbst, 1793) впервые указаны для фауны Северного Кавказа.

Ключевые слова: Halipidae, Helophoridae, Hydrophilidae, Heteroceridae, новые указания, Северный Кавказ, Россия.

Data on the aquatic and riparian beetle fauna of Dagestan were basically summarized in some articles [Brekhov, 2006; Ryndevich, 2007; Prokin et al., 2008; Klicheva et al., 2009; Brekhov et al., 2013; Brekhov, Ilyina, 2016; Sazhnev, Ilyina, 2017; Litovkin et al., 2021]. The present paper continues previous research of the aquatic and riparian beetle fauna of Dagestan and aims to report new regional records.

The paper is mostly based on the specimens collected in the Republic of Dagestan by E.V. Ilyina. The material examined is deposited in the Papanin Institute for Biology of Inland Waters of the Russian Academy of Sciences (Borok, Yaroslavl Region, Russia). The results of the study are provided as a check-list of collected species with faunistic notes on firstly recorded ones, including their general distribution and known records from the North Caucasus. The order of the higher taxa in the list and general distribution are based on catalogues of Palaearctic Coleoptera [Fikáček et al., 2015; Mascagni, 2016; Vondel, 2017; Przewoźny, 2021].

Family Halipidae

Halipus (Liaphlus) variegatus Sturm, 1834

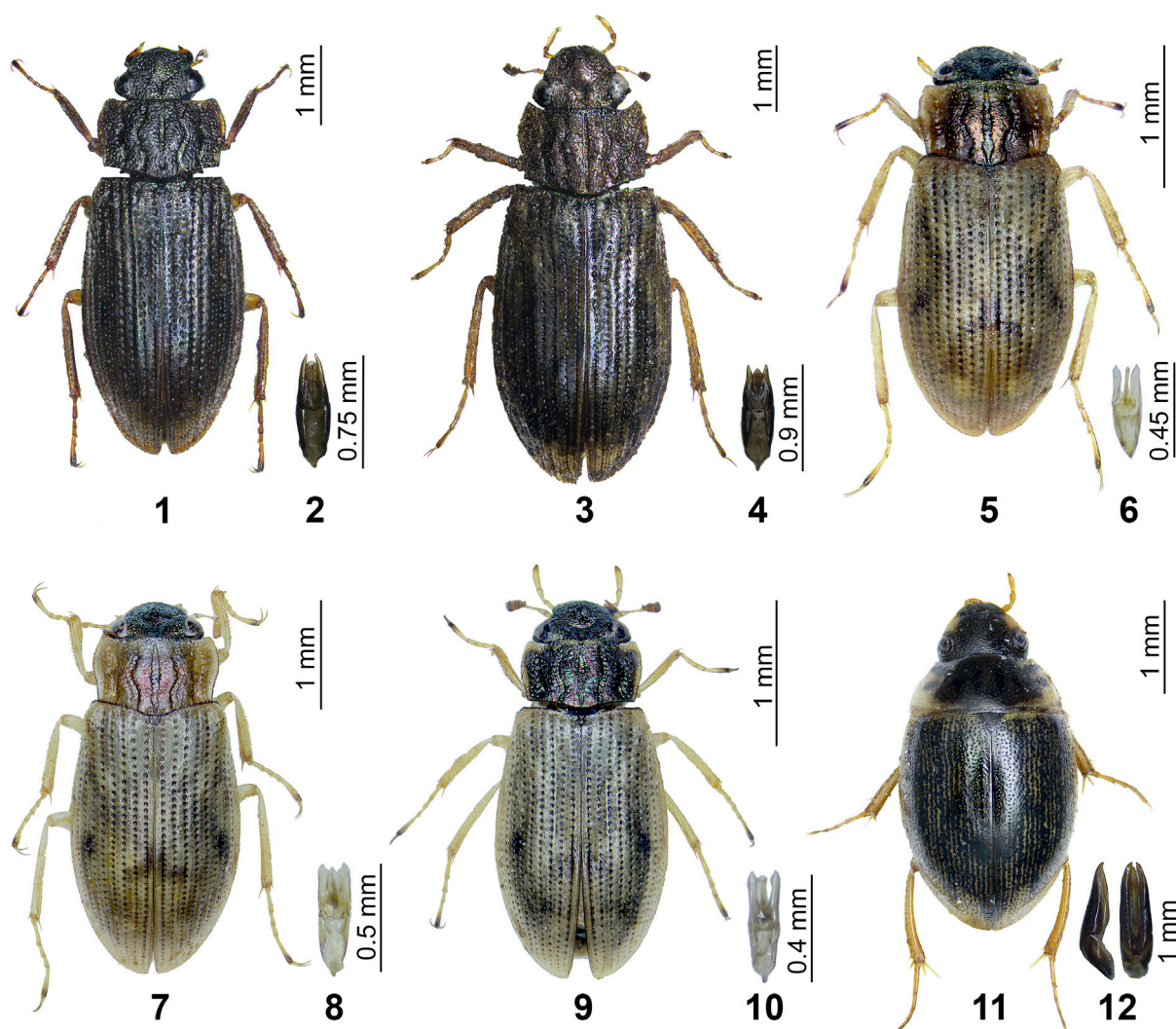
Material. 1♀, Kizilyurt Distr., Novy Chirkey vill. env., Kakayurt (destroyed by an earthquake and uninhabited village), pond, 20.06.2018 (E.V. Ilyina).

Distribution. The first record for the Republic of Dagestan. The species is distributed in North Africa (Algeria), Europe, the North Caucasus and Transcaucasia (Georgia, Azerbaijan), West Asia (Asian part of Turkey, Cyprus, Syria, Israel, Iran), Central Asia (Kyrgyzstan) [Kasymov, 1972; Vondel, 2017]. In the North Caucasus, this species was previously recorded from Krasnodar Region and the Republic of Adygea of Russia [Shapovalov, 2011].

Family Helophoridae

Helophorus (Helophorus) hammondi Angus, 1970
(Figs 1, 2)

Material. 1♂, Nogayskiy Distr., 20 km S Chervlyonnye Buruny vill., “Sosnovka” protected area, at light, 20.06.2019 (E.V. Ilyina).



Figs 1–12. Representatives of the families Helophoridae and Hydrophilidae from Dagestan.

1–2 – *Helophorus hammondi*; 3–4 – *H. syriacus*; 5–6 – *H. mervensis*; 7–8 – *H. kerimi*; 9–10 – *H. griseus*; 11–12 – *Laccobius syriacus*. 1, 3, 5, 7, 9, 11 – imagoes; 2, 4, 6, 8, 10, 12 – aedeagi.

Рис. 1–12. Представители семейств Helophoridae и Hydrophilidae из Дагестана.

1–2 – *Helophorus hammondi*; 3–4 – *H. syriacus*; 5–6 – *H. mervensis*; 7–8 – *H. kerimi*; 9–10 – *H. griseus*; 11–12 – *Laccobius syriacus*. 1, 3, 5, 7, 9, 11 – имаго; 2, 4, 6, 8, 10, 12 – эдеагусы.

Distribution. The first record for the North Caucasus. The species is distributed in south of European Russia (Kalmykia), in Central Asia (Kazakhstan), East Siberia, South and East Asia (India: Ladakh; China: Heilongjiang, Qinghai; Mongolia), and the Russian Far East (Primorskiy Region) [Angus et al., 2019; Przewoźny, 2021].

Helophorus (Helophorus) syriacus Kuwert, 1885
(Figs 3, 4)

Material. 2♂, 3♀, Tarumovka Distr., Kizlyar Bay, at light, 27.06.2020 (E.V. Ilyina).

Distribution. The first record for the North Caucasus. The species is distributed in eastern Europe (Crimea), Transcaucasia (Azerbaijan), West Asia (Asian part of Turkey, Israel, Saudi Arabia, Iran), and Central Asia (Kazakhstan, Uzbekistan, Turkmenistan) [Prokin et al., 2016; Angus et al., 2019; Przewoźny, 2021].

Helophorus (Rhopalohelophorus) mervensis
A.P. Semenov, 1900
(Figs 5, 6)

Material. 1♂, 1♀, Suleyman-Stalskiy Distr., Eminkhyur vill., at light, 13.07.2018 (E.V. Ilyina).

Distribution. The first record for Russia and the North Caucasus. The species is distributed in Transcaucasia (Armenia), West Asia (Asian part of Turkey, Saudi Arabia, Yemen, Iran, Afghanistan), Central Asia (Kazakhstan, Uzbekistan, Turkmenistan, Tajikistan), and South Asia (India: Kashmir) [Przewoźny, 2021].

Helophorus (Rhopalohelophorus) kerimi Ganglbauer, 1901
(Figs 7, 8)

Material. 1♂, Magaramkent Distr., Samur vill., at light, 25.05.2018 (E.V. Ilyina); 1♀, Suleyman-Stalskiy Distr., Eminkhyur vill., at light, 13.07.2018 (E.V. Ilyina).

Distribution. The first record for the European part of Russia and the North Caucasus. The species is distributed in Transcaucasia (Georgia, Azerbaijan), West Asia (Asian part of Turkey, Iran), Central Asia (Kazakhstan, Kyrgyzstan), East and West Siberia, and East Asia (China, Mongolia) [Fikáček et al., 2015; Przewoźny, 2021].

Helophorus (Rhopalohelophorus) griseus (Herbst, 1793)
(Figs 9, 10)

Material. 1♂, Suleyman-Stalskiy Distr., Eminkhyur vill., at light, 13.07.2018 (E.V. Ilyina).

Distribution. The first record for the North Caucasus. The species is distributed in Europe, Transcaucasia (Abkhazia, Armenia), and West Asia (Asian part of Turkey, Iran) [Samin et al., 2015; Przewoźny, 2021].

Family Hydrophilidae

Laccobius (Dimorpholaccobius) syriacus Guillebeau, 1896
(Figs 11, 12)

Material. 2♂, Kumtorkalinskiy Distr., Almalo vill., at light, 25.06.2018 (E.V. Ilyina).

Distribution. The first record for the Republic of Dagestan. The species is distributed in North Africa (Algeria, Egypt), Europe, the North Caucasus and Transcaucasia (Georgia, Armenia, Azerbaijan), West Asia (Asian part of Turkey, Cyprus, Syria, Lebanon, Israel, Jordan, Iraq, Iran), Central Asia (Kazakhstan, Turkmenistan, Kyrgyzstan, Tajikistan, Afghanistan), South and East Asia (India: Meghalaya; Mongolia), and Oriental Region [Fikáček et al., 2015; Przewoźny, 2021]. In the North Caucasus, this species was recorded from Krasnodar Region, the Republic of Adygea and the Republic of North Ossetia–Alania of Russia [Shapovalov et al., 2018].

Cercyon (Cercyon) bifenestratus Küster, 1851

Material. 2♂, 2♀, Babayurt Distr., Alikazgan vill. vicinity, “Terskaya” biostation, Terek River bank, at light, 22.06.2011 (N. Gasanova).

Distribution. The first record for the Republic of Dagestan. The species is distributed in Europe, the North Caucasus and Transcaucasia (Georgia, Armenia), Central Asia (Kazakhstan), West and East Siberia, East Asia (China: Xinjiang; Mongolia) and the Russian Far East [Kasymov, 1972; Fikáček et al., 2015; Przewoźny, 2021]. In the North Caucasus, this species was recorded from the Kabardino-Balkarian Republic of Russia [Kornoukhova, Lvov, 2013].

Cercyon (Cercyon) marinus Thomson, 1853

Material. 1♀, Babayurt Distr., Alikazgan vill. vicinity, “Terskaya” biostation, Terek River bank, at light, 22.06.2011 (N. Gasanova).

Distribution. The first record for the Republic of Dagestan. This record confirms the presence of the species in the Caucasus. Previously, the species was known from this territory only from the published records indicating ‘Caucasus’ without locality information [Przewoźny, 2021]. The species is distributed in Europe, the Caucasus, West Asia (Asian part of Turkey), Central Asia (Kazakhstan, Turkmenistan), West and East Siberia, South and East Asia (Nepal, China, Mongolia), and the Far East (Russia, Japan) [Przewoźny, 2021].

Family Heteroceridae

Heterocerus fuscus fuscus Kiesenwetter, 1843

Material. 1♂, Nogayskiy Distr., 20 km S Chervlyonnye Buruny vill., “Sosnovka” protected area, at light, 20.06.2019 (E.V. Ilyina).

Distribution. The first record for the Republic of Dagestan. The species is distributed in Europe, the North Caucasus and Transcaucasia (Armenia), West Asia (Iran), Central Asia (Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan, Tajikistan), West and East Siberia [Mascagni, 2016; Prokin et al., 2016; Litovkin, Sazhnev, 2018; Sazhnev, 2020]. In the North Caucasus this species was recorded from Krasnodar Region and the Republic of Adygea of Russia [Sazhnev, 2017].

Acknowledgements

We are thankful to Prof. Robert Angus (Natural History Museum, London, UK) for his confirmation of *Helophorus* identifications.

The study of A.S. Sazhnev was funded by the Russian Science Foundation (project No 21-74-20001).

References

- Angus R.B., Litovkin S.V., Jia F. 2019. Notes on *Helophorus* (s. str.) *kozlovi* Zaitzev, 1908, with description of two new species, re-evaluation of *Helophorus* s. str. Fabricius, 1775 and *Trichohelophorus* Kuwert, 1886, and revised keys to the subgenera of *Helophorus* and to the species of *Helophorus* s. str. (Coleoptera: Helophoridae). *Koleopterologische Rundschau*. 89: 127–150.
- Brekhov O.G. 2006. Adepagan water beetles (Adephaga: Noteridae, Dytiscidae, Gyrinidae) from the collection Zoological Museum of Rostov State University. *Caucasian Entomological Bulletin*. 2(1): 21–25 (in Russian). DOI: 10.23885/1814-3326-2006-2-1-21-25
- Brekhov O.G., Ilyina E.V. 2016. Notes on predatory water beetles (Coleoptera: Halipidae, Dytiscidae, Gyrinidae) of Dagestan, Russia. *Euroasian Entomological Journal*. 15(6): 501–504 (in Russian).
- Brekhov O.G., Shaverdo H.V., Ilyina E.V., Shapovalov M.I. 2013. Water beetles of Dagestan, Russia (Coleoptera: Noteridae, Dytiscidae, Halipidae, Gyrinidae, Hydrophilidae, Spercheidae). *Koleopterologische Rundschau*. 83: 35–52.
- Fikáček M., Angus R.B., Gentili E., Jia F., Minoshima Y.N., Prokin A., Przewoźny M., Ryndevich S.K. 2015. Family Hydrophilidae Latreille, 1802. In: *Catalogue of Palaearctic Coleoptera. Volume 2/1. Hydrophiloidea – Staphylinoidea*. Revised and updated edition. Leiden, Boston: Brill: 37–76.
- Kasymov A.G. 1972. Presnovodnaya fauna Kavkaza [Freshwater fauna of the Caucasus]. Baku: ELM, 286 p. (in Russian).
- Klicheva S.M., Karaeva Z.M., Inkovasova R.I., Abdurahmanov G.M. 2009. Coleoptera insects of coastal ecosystems of Russian part of Caspian Sea. *Yug Rossii: ekologiya, razvitie*. 4(2): 121–129 (in Russian). DOI: 10.18470/1992-1098-2009-2-121-129
- Kornoukhova I.I., Lvov V.D. 2013. Aquatic Coleoptera of the Central Caucasus within Kabardino-Balkarian Republic. *Izvestiya Gorskogo gosudarstvennogo agrarnogo universiteta*. 50(3): 302–312 (in Russian).
- Litovkin S.V., Sazhnev A.S. 2018. The variegated mud-loving beetles (Coleoptera: Heteroceridae) of Kyrgyzstan. *Far Eastern Entomologist*. 372: 25–32. DOI: 10.25221/fee.372.2
- Litovkin S.V., Sazhnev A.S., Prokin A.A. 2021. Species of the subgenus *Lumetus* (Coleoptera, Hydrophilidae: *Enochrus*) of the fauna of Russia and adjacent countries. *Entomologicheskoe obozrenie*. 100(2): 390–416 (in Russian). DOI: 10.31857/S036714452102009X
- Mascagni A. 2016. Heteroceridae MacLeay, 1825. In: *Catalogue of Palaearctic Coleoptera. Volume 3. Revised and Updated Edition. Scarabaeoidea, Scirtioidea, Dascilloidea, Buprestioidea and Byrrhoidea*. Leiden, Boston: Brill: 610–616.
- Prokin A.A., Ryndevich S.K., Petrov P.N., Andrejeva T.R. 2008. New data on the distribution of Helophoridae, Hydrochidae and Hydrophilidae

- (Coleoptera) in Russia and adjacent lands. *Russian Entomological Journal*. 17(2): 145–148.
- Prokin A.A., Sazhnev A.S., Kovalenko Ya.N. 2016. New records of water beetles from families Helophoridae, Hydrophilidae and Heteroceridae (Coleoptera) from Uzbekistan. *Caucasian Entomological Bulletin*. 12(1): 69–70. DOI: 10.23885/1814-3326-2016-12-1-69-70
- Przewoźny M. 2021. Catalogue of Palearctic Hydrophiloidea (Coleoptera). Version 1.01.2021. Available at: <http://www.waterbeetles.eu> (accessed 13 June 2021).
- Ryndevich S.K. 2007. New records of Palearctic water beetles (Coleoptera: Dytiscidae, Helophoridae and Hydrophilidae). In: Problemy vodnoy entomologii Rossii i sopredelnykh stran: Materialy III Vserossiyskogo simpoziuma po amfibioteskim i vodnym nasekomym [Questions of aquatic entomology of Russia and adjacent lands: Materials of the third All-Russian Symposium on amphibiotic and aquatic insects (Voronezh, Russia, 12–15 September 2006)]. Voronezh: Publishing and Printing Center of Voronezh State University: 281–284 (in Russian).
- Samin N., Jędrzykowski W.B., Chelav S.H. 2015. A faunistic study on the Coleoptera (Insecta) from some aquatic and semi-aquatic ecosystems in northwestern Iran. *Far Eastern Entomologist*. 302: 18–24.
- Sazhnev A.S. 2017. Materials for the distribution of beetles of the family Heteroceridae (Coleoptera) in the North Caucasus. *Eversmannia*. 50: 8–10 (in Russian).
- Sazhnev A.S. 2020. Variegated mud-loving beetles (Heteroceridae) of the Russia and abject countries: Additions and corrections to the Catalogue of Palearctic Coleoptera, Volume 3 (2016). *Zootaxa*. 4810(2): 368–374. DOI: 10.11646/zootaxa.4810.2.10.
- Sazhnev A.S., Ilyina E.V. 2017. The variegated mud-loving beetles (Coleoptera: Heteroceridae) of the Republic of Dagestan, Russia. *Caucasian Entomological Bulletin*. 13(2): 151–154 (in Russian). DOI: 10.23885/1814-3326-2017-13-2-151-154
- Shapovalov M.I. 2011. Fauna of haliplid beetles (Coleoptera: Haliplidae) of the North-Western Caucasus. *Caucasian Entomological Bulletin*. 7(1): 33–34 (in Russian). DOI: 10.23885/1814-3326-2011-7-1-33-34
- Shapovalov M.I., Mamaev V.I., Cherchesova S.K. 2018. The water beetles (Insecta, Coleoptera) of North Ossetia. I. Dytiscidae, Noteridae, Haliplidae, Gyrinidae, Hydrophilidae, Hydrochidae, Spercheidae. *Russian Entomological Journal*. 27(3): 249–254. DOI: 10.15298/rusentj.27.3.03
- Vondel B.J. van 2017. Family Haliplidae Aubé, 1836. In: Catalogue of Palearctic Coleoptera. Volume 1. Revised and updated edition. Archostemata – Myxophaga – Adephaga. Leiden: Brill: 838–843.

Received / Поступила: 16.08.2021

Accepted / Принята: 23.10.2021

Published online / Опубликована онлайн: 8.12.2021