

First record of the genus *Heterlimnius* Hinton, 1935 (Coleoptera: Elmidae) from West Siberia, Russia

Первая находка рода *Heterlimnius* Hinton, 1935 (Coleoptera: Elmidae) в Западной Сибири

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Key words: Coleoptera, Elmidae, *Heterlimnius ennearthrus*, new record, Novosibirskaya Oblast, Altaiskii Krai, Krasnoyarskii Krai, Republic of Khakassia, Russia.

Ключевые слова: Coleoptera, Elmidae, *Heterlimnius ennearthrus*, новая находка, Новосибирская область, Алтайский край, Красноярский край, Республика Хакасия, Россия.

Abstract. *Heterlimnius ennearthrus* Kamite, 2009 (Coleoptera: Elmidae) is firstly recorded for West Siberia, Russia, from Novosibirskaya Oblast. In East Siberia the westernmost locality of the species is newly registered in Republic of Khakassia, Altaiskii Krai and Krasnoyarskii Krai. A map showing the distribution of species in Russia and Kazakhstan, based on reference data and examined material, is presented. Photographs are provided of the habitus of both sexes, as well as of the aedeagus and ovipositor of the species.

Резюме. В статье *Heterlimnius ennearthrus* Kamite, 2009 (Coleoptera: Elmidae) впервые указан для Западной Сибири из Новосибирской области. Он впервые обнаружен на западе Восточной Сибири в Республике Хакасия, в Алтайском крае и Красноярском крае. Представлена карта распространения вида в России и Казахстане, составленная на основе литературных данных и изученного материала. Приведены фотографии внешнего вида самцов и самок, а также эдегуса и яйцеклада.

Introduction

Kobayashi et al. [2021] synonymized the two genera *Heterlimnius* Hinton, 1935 and *Optioservus* Sanderson, 1953 (Coleoptera: Elmidae). The elmidae genus *Heterlimnius* now includes 43 species, which are distributed across the Holarctic region (17 in the Nearctic region and 26 in the Palearctic region) [Jäch et al., 2016; Kamite, Jäch, 2024]. From Russia this genus is previously known only from East Siberia and the Far East [Kamite, 2009; Jung et al., 2011; Goncharov et al., 2014; Jäch et al., 2016; Kamite, Jäch, 2024]. Four *Heterlimnius* species have currently been recorded in Russia. Three species *Heterlimnius hasegawai* (Nomura,

1958), *H. gapyeongensis* (Jung, Kamite, Bae, 2011) and *H. satoi* Kamite, Jäch, 2024 are known from the Far East [Kamite, 2009; Jäch et al., 2016; Kamite, Jäch, 2024]. One species *Heterlimnius ennearthrus* Kamite, 2009 was previously only known in Russia from Eastern Sayan Mountains (the Kan, Kingash and Kuzyo rivers in Krasnoyarskii Krai) [Goncharov et al., 2014]. In this short communication, we present new records of *Heterlimnius ennearthrus* from two Russian regions in West and East Siberia.

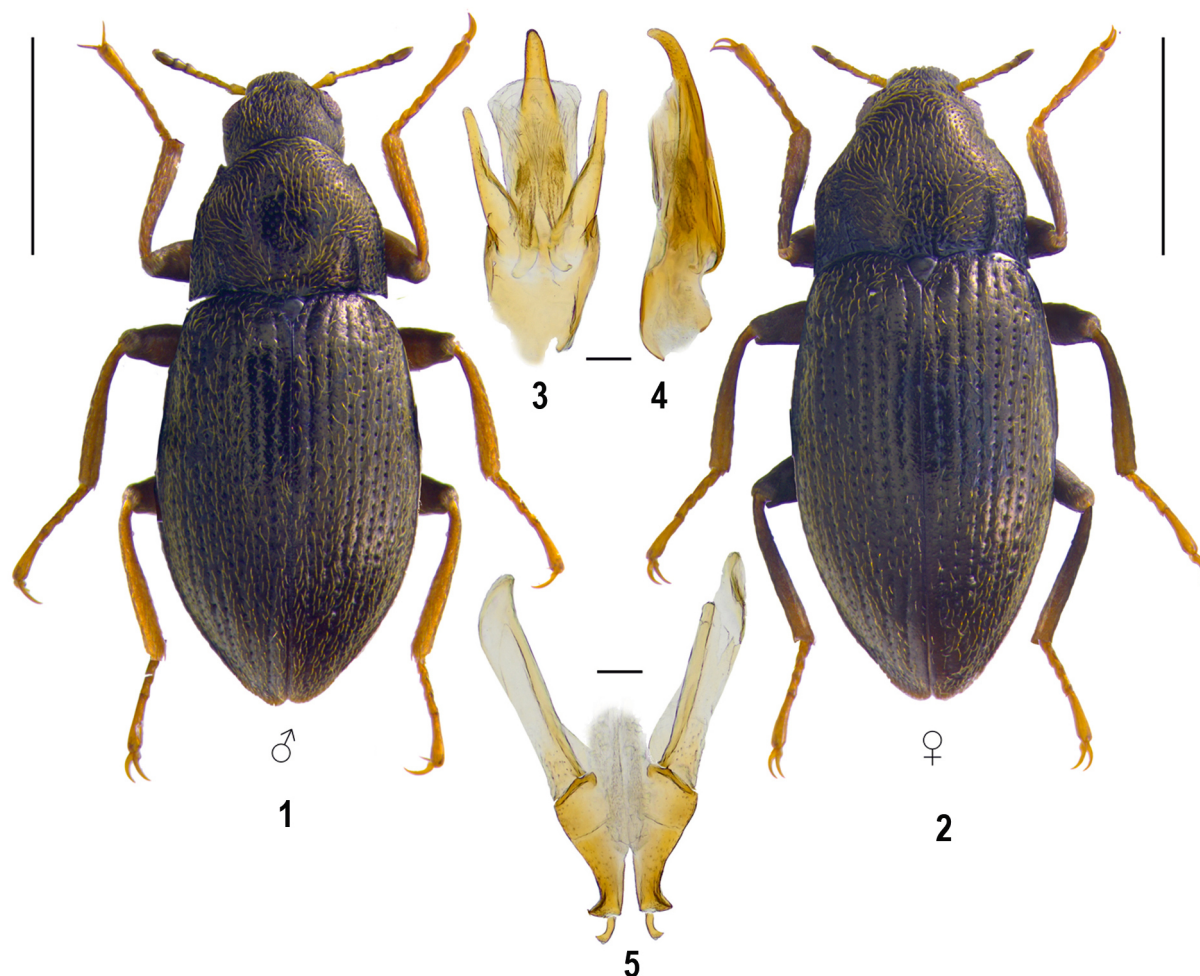
Materials and Methods

The photo was taken with a Leica MC170 HD digital camera mounted on a Leica M165C stereomicroscope and an Olympus DP23 6Mpx digital camera mounted on Olympus CX43 compound microscope. The image was processed and combined in Helicon Focus 7.7.4 and Zerene Stacker 1.04 software.

The genital samples were 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.

The map was created using the online project <https://www.simplemappr.net>. GPS coordinates are taken according to Google Maps.

The specimens are deposited in the collection of the Papanin Institute for Biology of Inland Waters Russian Academy of Sciences, Borok, Yaroslavl'skaya Oblast, Russia (IBIW), and Tuvanian Institute for Exploration of Natural Resources of Siberian Branch, Russian Academy of Sciences Kyzyl, Tuva, Russia (TIENR).



Figs 1–5. Details of morphology of *Heterlimnius ennearthrus* from Khakassia: male (1, 3, 4) and female (2, 5). 1, 2 — external appearance; 3, 4 — aedeagus; 5 — ovipositor; 1–3 — dorsal view, 4 — lateral view. Scale bar: 1, 2 — 1.0 mm, 3–5 — 0.1 mm.

Рис. 1–5. Детали строения жуков *Heterlimnius ennearthrus* из Хакасии: самец (1, 3, 4) и самка (2, 5). 1, 2 — внешний вид; 3, 4 — эдеагус; 5 — яйцеклад; 1–3 — вид сверху, 4 — вид сбоку. Масштаб: 1, 2 — 1,0 мм, 3–5 — 0,1 мм.

The present work is registered in ZooBank (www.zoobank.org) under urn:lsid:zoobank.org:pub:2FA53010-02F8-45ED-98C4-85A22532C55A.

Results

Heterlimnius ennearthrus Kamite, 2009

Figs 1–5.

Material. Russia: *Novosibirskaya Oblast*, Vydrikha River, 54°35'46.6" N, 84°05'30.3" E 280 m a.s.l., 06.VIII.2017, Ya.N. Kovalenko leg. — 3 spm. (IBIW); *Altayskii Krai*, Zmeinogorsky Distr., 4 km NE of Zmeinogorsk, Bolshaya Kamenka River, 51°10'37.5" N, 82°14'31.7" E, 375 m a.s.l., 3.VIII.2025 (9 exs.) A.S. Sazhnev leg. (IBIW); *Republic of Khakassia*, Beiskii Distr., Soyotka River, 52°53'25.0" N, 91°27'08.5" E, 324 m a.s.l., 30.VII.2021, S.V. Dragan leg. — 4 spm. (IBIW); Beiskii Distr., Uy River, 52°59'13.7" N, 91°23'30.9" E, 398 m a.s.l., 30.VII.2021, S.V. Dragan leg. — 1 spm.; *Krasnoyarskii Krai*: Ermakovskii Distr., Bolshaya Oya River, 52°48'34.9" N, 93°08'04.6" E, 3.VII.2015, V.V. Zaika leg. — 1 spm. (TIENR).

Remarks. *Heterlimnius ennearthrus* is recorded for West Siberia from Novosibirskaya Oblast for the first time.

Discussion

The current records of *Heterlimnius ennearthrus* are located in the southern parts of West and East Siberia, within the borders of Russia, as well as in the East Kazakhstan (typical location) (Fig. 6). They all belong to eight mountain rivers: the Smolyanka River in Kazakhstan, the Kan, Kingash, Kuzyo and Bolshaya Oya rivers in Krasnoyarskii Krai, the Uy and Soyotka rivers in Khakassia, Bolshaya Kamenka River in Altayskii Krai, and the Vydrikha River in Novosibirskaya Oblast.

Heterlimnius ennearthrus is likely widespread in southern Siberia, and may be discovered in other regions of the Altai and Sayan territories in future.

Acknowledgements

The authors are grateful to Ya.N. Kovalenko (Moscow), S.V. Dragan (Abakan) and V.V. Zaika (Kyzyl) for collecting and providing material.



Fig. 6. Distribution map of *Heterlimnius ennearthrus*. Designations: red star — type locality in Kazakhstan, grey circles — references data in Krasnoyarsk Krai; white circles — new data, namely: 1 — Novosibirskaya Oblast, 2–3 — Republic of Khakassia, 4 — Krasnoyarsk Krai, 5 — Altai Krai.

Рис. 6. Карта распространения *Heterlimnius ennearthrus*. Обозначения: красная звезда — типовое местонахождение в Казахстане, серые кружки — литературные данные по Красноярскому краю, белые кружки — новые данные, а именно: 1 — Новосибирская область, 2–3 — Республика Хакасия, 4 — Красноярский край, 5 — Алтайский край.

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Поступила в редакцию 23.9.2025