

First record of riffle beetle *Graphelmis shirabatai* (Nomura, 1958) (Coleoptera, Elmidae) for Russia

Graphelmis shirabatai (Nomura, 1958) — вид и род жуков-речников (Coleoptera, Elmidae), новые для фауны России

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Ключевые слова: Elmidae, *Graphelmis*, Россия, Приморский край, фаунистика.

Abstract. The genus *Graphelmis* Delève, 1968, based on the species *G. shirahatai* (Nomura, 1958) from the southern part of Primorsky Krai, is recorded for the first time from Russia. Illustrations of external appearance, male genitalia and shape of metatibial spurs demonstrating sexual dimorphism are provided.

Резюме. Впервые для фауны России с юга Приморского края указан род *Graphelmis* Delève, 1968 с видом *G. shirahatai* (Nomura, 1958). Для этого вида приводятся иллюстрации габитуса, гениталий самца и полового диморфизма в строении шпор задних голеней.

Introduction

Genus *Graphelmis* Delève, 1968 contains 83 described species. Most of the species are distributed in the Oriental Region, but a few species are known from the Palaearctic and Australian Regions. Among them, *Graphelmis shirahatai* (Nomura, 1958) is a species with the northernmost range. So far it was known only from Honshu Island, Japan [Jäch et al., 2016]. However, a large series of *S. shirahatai* was recently collected by the second author and his companion in the Primorsky Krai, Russia.

Material and Methods

All the studied specimens were collected with a light trap. The species identification was carried out by the first author on the external characters [Nomura, 1958; Čiampor, 2004] and confirmed from photographs of the habitus and aedeagus by M. Hayashi.

The genitalia and pregenital segments embedded in lactic acid were photographed in transmitted light. They were first cleared in lactic acid for over three weeks. The movable and membranous aedeagal structures will look

slightly different if the genitalia were prepared by other methods.

Results

Graphelmis shirahatai (Nomura, 1958)

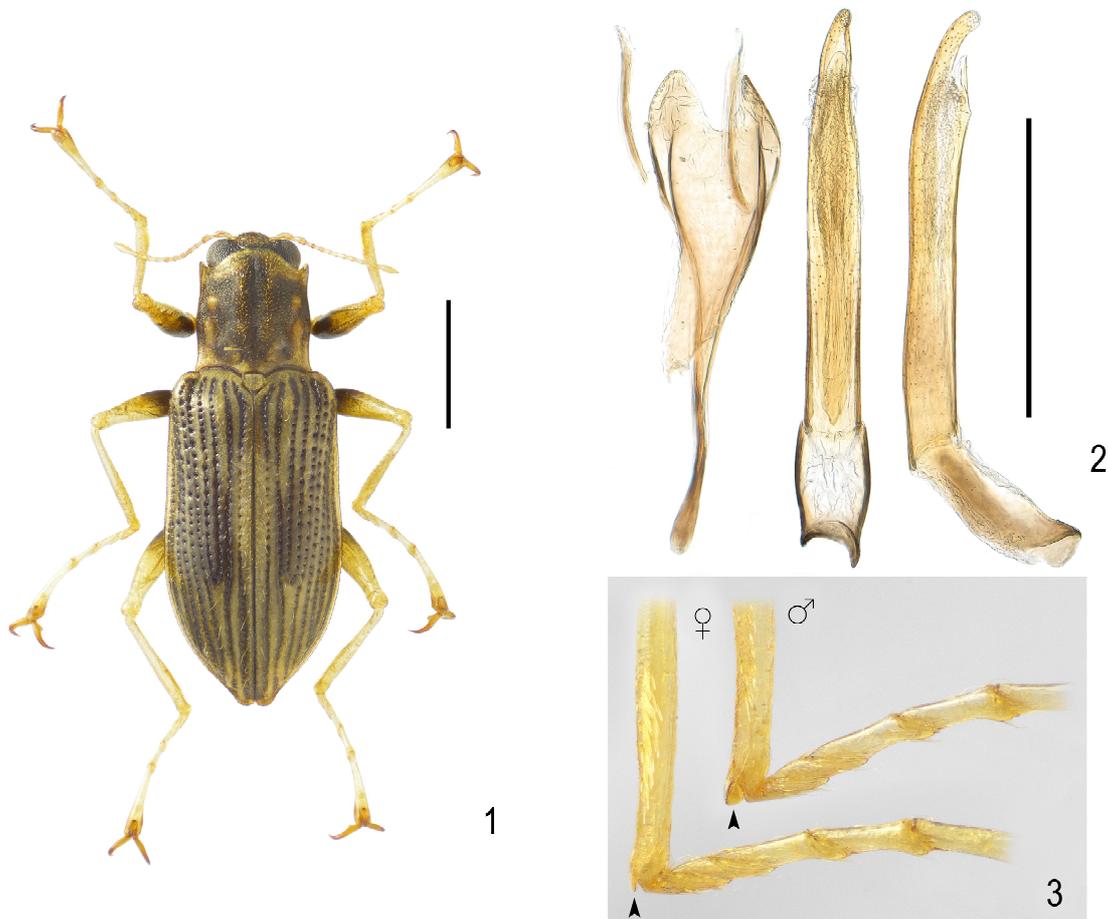
Figs 1–3.

Material. Russia, Primorsky Krai: - 20 km S Spassk-Dalny, 3.5 km E Merkushevka, 44°21'50" N, 132°50'25" E, at light, 4–11.VII.2021, S.N. Ivanov and V.E. Ustinov — 3♂♂, 14♀♀, 23 exs. Studied material is stored in collections of S.V. Litovkin (Samara), S.N. Ivanov (Vladivostok) and V.E. Ustinov (Moscow).

Graphelmis shirahatai as well as the genus *Graphelmis* are recorded from Russia for the first time. The species is also recorded for the first time on the Palaearctic mainland. The new record is the northernmost known for the whole genus *Graphelmis*.

The biotope in which the beetles were collected is represented by a coniferous broad-leaved forest with glades and rare low-water streams. The closest one was about 300 meters along the road from the collection locality.

Graphelmis shirahatai has a distinctive and recognizable appearance (Fig. 1). We are not aware of any images of its genitalia, except those given in the description of endophallus [Hayashi, 2017]. The male genitalia and pregenital segments in the aspects necessary for determination are shown in Fig. 2. We also did not find any descriptions of sexual dimorphism of this species. Like other representatives of *clermonti* species group [Čiampor, 2004], males and females of *G. shirahatai* differ in morphology of the metatibial spurs (Fig. 3): they are expanded and angular in males and simple in females.



Figs. 1–3. *Graphelmis shirahatai*. 1 — general habitus, female; 2 — spiculum gastrale and sternite 9, aedeagus in ventral view, aedeagus in lateral view; 3 — apices of metatibia and tarsi, spurs indicated by arrows. Scale bars 1 mm (1) and 0.5 mm (2).

Рис. 1–3. *Graphelmis shirahatai*. 1 — общий вид, самка; 2 — spiculum gastrale и стернит 9 самца, эдеагус вентрально и эдеагус латерально; 3 — вершины задних голеней и лапки, стрелками указаны шпоры. Масштабные линейки 1 мм (1) и 0,5 мм (2).

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