

**A new species of the genus *Rhyparus* Westwood, 1843
(Scarabaeidae: Aphodiinae, Rhyparini) from Laos**

Łukasz MINKINA

os. Polana Szaflarska 4/39, 34-400 Nowy Targ, Poland
e-mail: klekel@interia.eu

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Abstract. A new species of the genus *Rhyparus* Westwood, 1843 - *Rhyparus myslenickorum* sp. nov. from Laos is described and illustrated. *Rhyparus burckhardti* Paulian, 1989 is reported from Thailand and continental Asia for the first time. A key to the species of *Rhyparus* from Laos and its surrounding areas provided by Ochi, Kon & Kawahara (2018) is modified.

INTRODUCTION

In 2015 Choi et al. recorded *Rhyparus azumai* Nakane, 1956 from the Korean Peninsula. This was the first record of a *Rhyparus* species described outside of continental Asia. In 2018 Masumoto & Ochi described *R. thailandicus*, additionally Ochi, Kusai & Pham (2018) described *R. vietnamicus*, and Ochi, Kon & Kawachara (2018) described next four following species: *R. laosensis*, *R. schoolmeestersi*, *R. paraloebli*, and *R. semikitanoi*. Thanks to them we now know 13 species from continental Asia. During examination of specimens from my collection I found one specimen of a still undescribed species from Laos, additionally I found one specimen of *R. burckhardti* Paulian, 1989 collected in Thailand. *R. burckhardti* Paulian, 1989 was described from Borneo - it is the second record of a species described outside of continental Asia.

MATERIAL AND METHODS

The specimens were observed with a Nikon SMZ-U stereoscopic microscope. The photos published here were taken with a Canon EOS 5D Mark III connected to a Canon MP-E 65mm macro lens. Photos were edited in the Helicon Focus programme.

The holotype of the new species is indicated by a red, printed label added to the same pin and bearing the status of the specimen, sex, its name, name of the author, month and year of the designation.

The holotype is deposited in private collection of Łukasz Minkina deposited in Institute of Systematics and Evolution of Animals in Kraków (Poland).

Addenda and remarks are found in brackets, separate label lines are indicated by slash (/), separate labels are indicated by double slash (//).

DESCRIPTION OF THE NEW SPECIES

Rhyparus myslenickorum sp. nov.

(Figs. 1-3, 7)

Type material. Holotype (♀): *Rhyparus / myslenickorum* sp. nov. / HOLOTYPE (♀) / det. L. Minkina (07.2018) // Laos / Vang Vieng env. / xii.2013 //.

Description. Dorsum (Fig. 1). Relatively large (body length 7.0 mm), elongate, mat (only tops of ridges, costae and apex of intervals shiny), glabrous (except elements pointed below), nearly blackish.

Head (Fig. 7). Clypeus anteriorly quite distinctly sinuate, with upturned, rather distinct angles on sides of it, considerable lateral emargination and next widely rounded angle separated by rather small emargination from distinctly protruding, rounded genae. Clypeal disc distinctly convex, ringed by a deep groove; convexity with a pair of quite distinct, short, convergent ridges, on sides with distinct, fine punctures bearing small setae. Frons with four distinct, longitudinal ridges with similar structure as ridges on clypeal convexity. Head covered by rather irregularly spaced, rather dense (only nearby base, and on genae dense), fine punctures bearing small setae.

Pronotum matt, with shining tops of ridges; with eight distinct ridges and seven longitudinal furrows, with two lateral flanges on each side. Anterior flanges much larger than posterior, on the top they are the widest part of pronotum. Ridges of median pair faintly interrupted in basal part of apical half, gently convergent; ridges of second pair distinctly interrupted in apical part of median third; ridges of third continuous, but deeply depressed in apical part of median third; pair ridges of fourth pair continuous; ridges on each side with very small punctures bearing very small setae. Longitudinal furrows in anterior part without any additional ridges. Middle furrow with irregularly spaced, medium-sized, rather dense punctures on whole surface, other furrows with similar punctuation on basal part.

Elytra with exception of shining tops of costae and apex of intervals, mat. Each elytron with six elevated costae, and five flat intervals. Costae on sides with very small punctures bearing very small setae. Preapical glandular area relatively large. All costae with two distinct rows of punctures; in basal part of fourth costae there are three very short rows of very small punctures. External caudal bulb more or less excavate, medio-internal caudal bulb transverse, internally stretched.

Venter (Fig. 2) matt. Meso-metaventral plate flattened in the middle, with distinct longitudinal furrow; on sides of furrow, and flattened area there are rows of small punctures; punctuation of meso-metaventral plate rather dense, quite regularly spaced, rather irregular in size; all punctures bearing short setae. Abdominal ventrites mat, with two transverse rows of punctures, on each side with an additional small, triangular furrow; last but one abdominal ventrite with rather rounded furrows on sides. Last abdominal ventrite prolonged in the middle, with elevated ridge in the middle, and rather shallow furrows on sides, anteriorly with transverse row of very large and dense punctures; basally with rather dense, rather regularly spaced, medium-sized punctures; all punctures except for that very large in anterior part of last ventrite bearing rather medium-sized setae. Pygidium with a vertical central and



Figs. 1-3. *Rhyparus myslenickorum* sp. nov., ♀, holotype: 1- dorsal view, 2- ventral view, 3- lateral view. Figs. 1-3: scale lines: 1.0 mm.

two lateral impressions. Mesofemora with two distinct teeth on lower border; metafemora with two very indistinct teeth on lower border; all femora matt, with regular, distinct, rather small, rather dense punctation; all punctures bearing small setae.

Sexual dimorphism. Unknown.

Differential diagnosis. Because of similar size of body, matt body surface and similar punctation of pronotum, the newly described species seems to be closely related to *Rhyparus thailandicus* Masumoto & Ochi, 2018. From this species, it can be easily distinguished by: two rows of punctures in third interval of elytra (vs. three rows of punctures), anterior flanges of pronotum much more protruding than posterior (vs. anterior flanges only slightly more protruding than posterior), or pronotum with ridges of median pair faintly interrupted in basal part of apical half (vs. pronotum with ridges of median pair continuous). However, on the other hand, because of similar punctation of elytra, similar caudal bulbs, and slightly similar punctation of pronotum it seems to also be related to *Rhyparus schoolmeestersi* Ochi, Kon & Kawahara, 2018 - distinguishing features from that species are given in discussion.

Etymology. Name of new species is dedicated to all of my co-workers with whom I had the pleasure of meeting in Medical Laboratory of Independent Public Health Care in Myślenice during my medical specialization process.

ADDITIONAL MATERIAL STUDIED

Rhyparus burckhardti Paulian, 1989 (Figs. 4-6, 8)

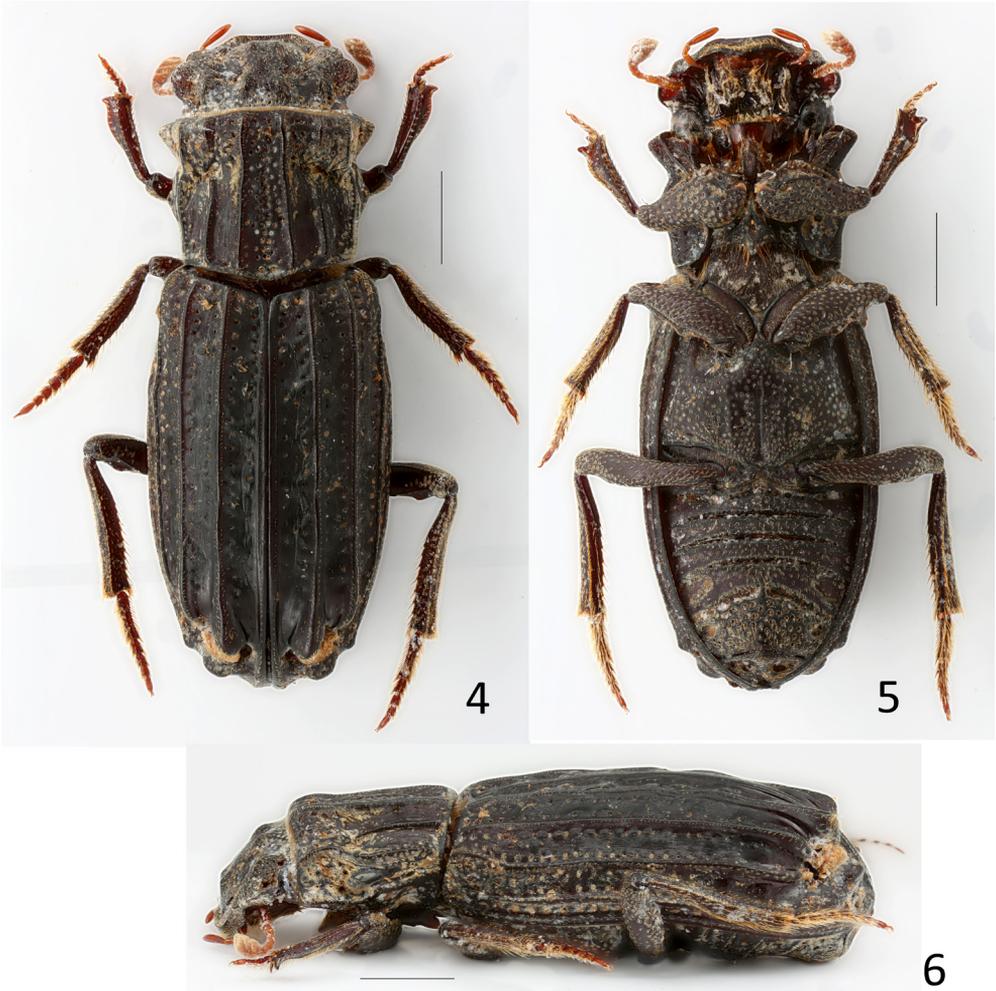
Studied material: 1 spec.: Thailand, Mae Hong / Son prov., Pai env. / h=500m., 21-29.ii.2011 / O. Mosolov leg.

Short comment. *R. burckhardti* Paulian, 1989 was originally described from Borneo, and until today there were no additional records for that species. According to my study, this species seems to be widespread, and this is the first record from Thailand and continental Asia. Photographs of the specimen from Thailand are provided here.

DISCUSSION

Because of the description of a new species, and the new record for *R. burckhardti* Paulian, 1989 the key to the species of *Rhyparus* from Laos and its surrounding areas by Ochi, Kon & Kawahara, 2018 has to be slightly modified. Both species, if we use this key, could be identified as *R. schoolmeestersi* Ochi, Kon & Kawahara, 2018. I propose following changes:

- 11 (12) Elytron with 3rd interval (originally: inter-costa) bearing two longitudinal rows of strong punctures. 15
- 12 (11) Elytron with 3rd interval (originally: inter-costa) bearing three longitudinal rows of strong punctures. 13
- 15 (16) Medio-internal caudal bulb slightly transverse, rounded. Second pair of furrows of pronotum at the base without punctures. Third pair of furrows of pronotum at the base with only a few punctures. Clypeus anteriorly very slightly sinuate, rather rounded on sides. Structure of elytral intervals quite frequently corrugated. *R. burckhardti* Paulian, 1989



Figs. 4-6. *Rhyparus burckhardti* Paulian, 1989, ♀: 4- dorsal view, 5- ventral view, 6- lateral view. Figs. 4-6: scale lines: 1.0 mm.

- 16 (15) Medio-internal caudal bulb transverse, internally stretched. Second pair of furrows of pronotum at the base at least with a few punctures. Third pair of furrows of pronotum at the base with more or less dense irregular punctation. Clypeus anteriorly more distinctly sinuate, with rather distinct angles on sides. Structure of elytral intervals never corrugated. 17
- 17 (18) Body mat. Ridges of median pair faintly interrupted in basal part of apical half. Anterior flanges of pronotum much more protruding than posterior. Second pair of furrows of pronotum at the base more densely punctuate. *R. myslenickorum* sp. nov
- 18 (17) Body shiny. Ridges of median pair continuous. Anterior flanges of pronotum slightly more protruding than posterior, or equal. Second pair of furrows of pronotum at the base less densely punctuate.
 *R. schoolmeestersi* Ochi, Kon & Kawahara, 2018



Figs. 7-8. Heads: 7- *Rhyparus myslenickorum* sp. nov., 8- *Rhyparus burckhardti* Paulian, 1989. Figs. 7-8: scale lines: 1.0 mm.

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