

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

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Abstract. *Rhyparus annamariae* sp. nov. a new, unusual species of the genus *Rhyparus* Westwood, 1843 from Vietnam is described and illustrated.

INTRODUCTION

This work gives the description of a new species, which through a number of rather rare features, can be easily distinguished from other species of genus *Rhyparus* Westwood, 1843. A short consideration of terms used by Mencl, Rakovič & Král (2013) is given in the discussion.

MATERIAL AND METHODS

The specimens were observed with a Nikon SMZ-U stereoscopic microscope. The photos published here were taken by the use of the Canon EOS 5D Mark III combined with Canon MP-E 65 mm Macro Lens. Photos were edited in the Helicon Focus programme.

For morphological terms used in the description of specimens I follow Krikken & Huijbregts (1987), and Mencl, Rakovič & Král (2013).

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

Both specimens mentioned here are deposited in the author's collection.

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

RESULTS

***Rhyparus annamariae* sp. nov.**
(Figs. 1-3)

Type material. Holotype (♂): VIETNAM: Cao Bang / Prov. Ba Ba Nat. Park / 7-11.V.[19]97. 180 m. / forest FITs / S. Peck, 97 - 2 [white printed label] // HOLOTYPE (♂) / *Rhyparus* / *annamariae* sp. nov. / det. Ł. Minkina (11.2016) [red printed label]. Paratype (♂): VIETNAM: Tuyen Quang / Prov. Na Hang Reserve / 20-24.V.[19]97, 360 m. /

Description of holotype (♂). Dorsum (Fig. 1). Total body length 3.3 mm. Body elongate, moderately convex, rather flattened, castaneous, moderately shiny.

Head dull with shining longitudinal ridges. Clypeus with upturned tooth on each side of anterior emargination, with sides sinuate before rounded, produced genae. Clypeal convexity at base with a quite deep groove, in the middle with a pair of ridges. Frons with four, weakly developed, low, wide ridges. Head with small punctures on disc and near edges, and with moderately large punctures on frons; all punctures equipped with rather small macrosetae.

Pronotum subquadrate, with two rounded teeth on each side, shiny, with six longitudinal ridges; middle and lateral pair of ridges weakly developed, low, wide, slightly higher near base and anterior margin of pronotum, on the whole surface covered by punctures. Deep fossae present in anterior part on each side of second and third furrows, and here interrupting ridges of second pair. Additional fossae present on each side in fourth furrows, in their anterior part. Base of pronotum with deep groove interrupted by ridges. Punctures of pronotum large, densely and rather regularly spaced, only in anterior part are there visible small punctures; all equipped with small macrosetae. A few of the punctures in middle furrow are fused.

Scutellum small, clearly acute triangle.

Elytra elongate, very slightly ovoid, widest near middle of length. Each elytron with five shining, distinctly elevated costae, and five dull, flat intervals. Juxtasutural costae with one row of setigerous punctures, rest of costae with two rows of setigerous punctures. Second costae transformed at apex into large postdiscal bulb. Third costae transformed at apex into small middle bulb. Fifth costae transformed at apex into large, rounded when visible from above, and from side caudal bulb. First, second and fourth intervals with three rows of punctures; middle row with smaller and setigerous punctures. Third intervals with five rows of punctures near base; middle row of punctures disappears near middle of elytra; second and fourth rows with smaller, setigerous punctures. Fifth interval with one row of punctures; punctures here becoming larger towards apex; at apex punctures enormous in comparison with others. Deeply depressed preapical area (caudal trichome *sensu* Krikken & Huijbregts (1997)) is delimited by: apex of costae on the top, first and second costae on sides, and caudal bulb on base.

Protibiae with nearly straight inner margin up to large inner apical tooth, which is bent inward and down; distinctly bidentate on outer margin. Meso- and metatibiae nearly straight at outer margin, with two rows of small macrosetae, on inner margins lightly convex, at apex with inwardly bent tooth, here fimbriate with short, equal in length spinules. Basal metatarsomere slightly longer than next three combined. Claws short, small, arcuate. Femora regularly, densely punctured. Posterior margin of mesofemora without any tooth. Posterior margin of metafemora very slightly birounded, but this very weak convexity cannot be regarded as a tooth.

Macropterous.

Venter shiny. Pygidium not visible from above, nearly triangular, with deep, rather irregular cavity nearby base; with large, regularly and densely spaced setigerous punctures. Abdominal

ventrites with small very deep, setigerous punctures; punctures become shallower and larger on anal ventrite. Meso-metaventral plate rather flattened, with very deep longitudinal line in the middle, with irregularly sized, dense setigerous punctation. Posterosternal apophysis large, star-like, with slightly elongate lower spike. Preprosternal apophysis large, elongate, rounded on apex, with longitudinal groove in the middle.

Aedeagus (Fig. 3) with parameres much shorter than their basis, distinctly rounded, with apex of paramere acute when observed from side, and rounded when observed from above. Apex of paramere with two distinct, thin macrosetae.

Sexual dimorphism. Female unknown.

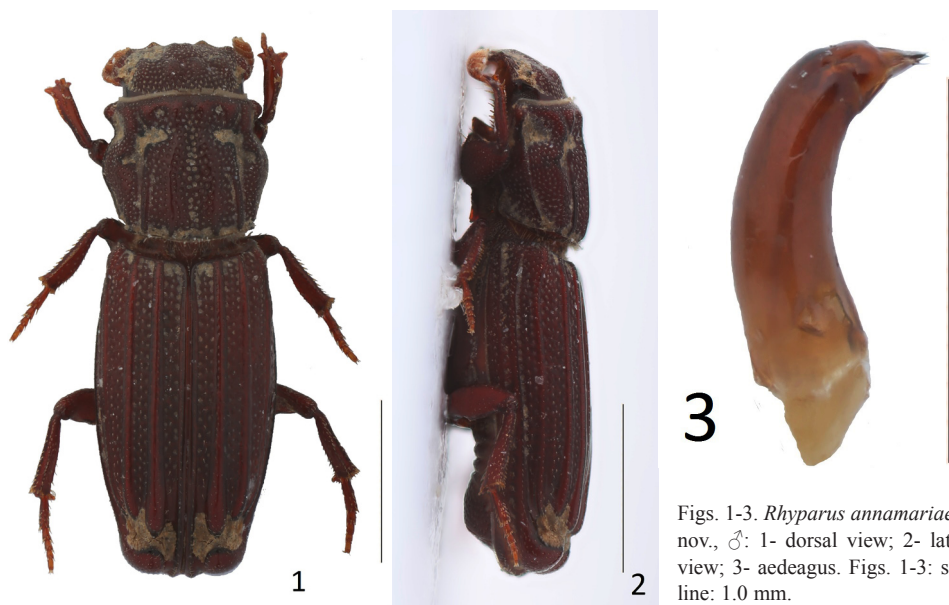
Variability. Total body length 3.3-3.4 mm. Size of punctures of pronotum is slightly variable. Amount of fused punctures in middle furrow of pronotum is variable.

Distribution. Vietnam.

Name derivation. Name of new species is dedicated to daughter of my friend Adam Byk - Anna Maria Bischoff-Byk.

DISCUSSION

The new species presented in the present work can be easily distinguished from all other known *Rhyparus* species by a combination of the following features: total body length less than 4.0 mm (there are few similar species), colour of body castaneous (few similar species), middle and lateral pair of pronotal ridges weakly developed, low, wide, slightly higher near base and anterior margin of pronotum (there are no similar species; all known



Figs. 1-3. *Rhyparus annamariae* sp. nov., ♂: 1- dorsal view; 2- lateral view; 3- aedeagus. Figs. 1-3: scale line: 1.0 mm.

species have all pronotal ridges well developed, even if low - in this case always narrow), first and second intervals with 3 rows of punctures (there are few similar species, but all of them have punctures of similar size in all rows), third interval with five rows of punctures (this feature is unique), and posterior margins of middle and hind femora without any teeth (here only *R. philippinensis* Arrow, 1905 is similar). Additionally, the new species is only one representative of the genus known from Vietnam.

Mencl, Rakovič & Král (2013) avoid using the name „trichome” in relation to the deeply depressed preapical area of elytra. I understand and agree with their explanations, however I think that the use of terms proposed by Krikken & Huijbregts (1987) is easier, and more intuitive - here explanations of Mencl, Rakovič & Král (2013) have onomastics character.

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