

## New species of *Antecessorirhyparus* Minkina, 2020 (Coleoptera: Scarabaeidae: Aphodiinae) from Indonesia

Łukasz MINKINA<sup>1</sup>, Stanislav JÁKL<sup>2</sup>

<sup>1</sup>os. Polana Szaflarska 4/39, 34-400 Nowy Targ, Poland  
e-mail: klekel@interia.eu  
<sup>2</sup>Geologická 1218/2C, CZ-152 00 Praha 5, Czech Republic  
e-mail: stanley.jakl@seznam.cz

**Taxonomy, description, new species, Coleoptera, Scarabaeidae, Aphodiinae, Rhyparini, Papua New Guinea**

**Abstract.** A new species of *Antecessorirhyparus* Minkina, 2020 from Indonesian part of Papua New Guinea is described and illustrated. *A. papuanus* sp. nov. is second known species of the genus, so far known only from *A. octovirgatus* (Schmidt, 1916) from Fiji.

### INTRODUCTION

*Antecessorirhyparus* Minkina, 2020 was described for *A. octovirgatus* (Schmidt, 1916) from Fiji and it was the only known species of the genus. In the new species, the shape of the pronotum, with very weakly developed lateral lobes and very low costae, and of the elytra where defining intervals and striae are more appropriate than costae and furrows, agree with the description of the genus. It makes *A. papuanus* sp. nov. very distinctive within the Rhyparini. Comparing the range and distribution of the other Rhyparini in the region, it can be inferred that the genus *Antecessorirhyparus* is more widely distributed, and between the two known species, further, still undescribed, endemic species can be expected.

### MATERIAL AND METHODS

The specimen was observed with a Nikon SMZ-U stereoscopic microscope. The photos published here were taken by the use of the Canon EOS 5D Mark III connected with Canon MP-E 65mm macro lens. Photos were edited in the Helicon Focus 7 and Adobe Photoshop Elements 2018 programs.

For morphological terms used in the description of specimens I follow Dellacasa et. al. (2010) and Krikken & Huijbregts (1987).

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

The holotype is a part of private collection of second author and it is deposited in his collection (Praha, Czech Republic).

### TAXONOMY

*Antecessorirhyparus papuanus* sp. nov.

(Figs. 1-7)

**Type locality.** Indonesia, West Papua province, Arfak Mountains.

**Type material.** Holotype (♂): Indonesia, i. 2018 | West Papua prov., Arfak Mts. | Maibri env., 1570 m alt. | local collector leg ||.

**Description of the holotype.** Dorsum (Fig. 1). Length: 6.0 mm; maximum width: 1.75 mm. Body elongate, flattened; moderately shiny; apparently almost glabrous, though partly clothed with very small yellowish macrosetae on head and all longitudinal costae on pronotum and elytra. Brownish to dark brown; antennae, tarsomeres and mouth parts pale brown.

Head (Fig. 4) weakly shiny, transversely sub-hexagonal; clypeus trapezoidal in outline, anteriorly truncate, on sides very weakly upturned as an obtuse tooth (indistinct when viewed from above, more clearly visible from ventral side) and behind this sinuous on either side; genae distinctly more excavate than eyes; clypeal disc moderately convex, ringed by a deep groove; convexity with a pair of very indistinct, very low ridges; on nearly the whole surface with distinct, moderately coarse punctures bearing small macrosetae. Frons with four indistinct, very low longitudinal ridges with similar structure to the ridges on clypeal convexity. Head covered by quite regularly spaced, quite dense, moderately coarse punctures bearing small macrosetae.

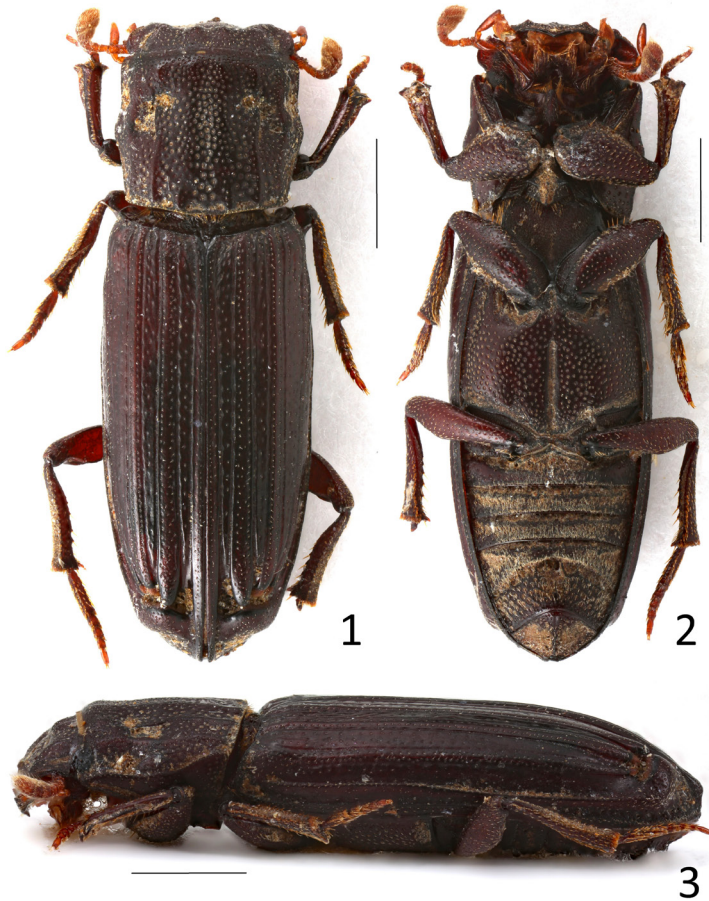
Epipharynx (Fig. 7) distinctly transverse, with sides broadly rounded, anterior margin of pedia concavely arcuate, coryphe absent, epitorma protruding, broadly sinuate anteriorly, with tuft of celtes laterally, and few celtes between; mesoepitorma with regularly distributed setae, located mainly on sides. Acanthopariae lower and more dense than acropariae. Chaetopariae long and dense, forming a distinct belt. Tormae very long.

Pronotum quite weakly shiny; with only a trace of eight costae, somewhat better visible basally, with two very widely rounded, very weakly developed lateral lobes on each side. Anterior lobes very weakly lower than posterior, distinctly narrower than posterior, on the top are the widest part of pronotum. Pronotum with dense, variable in size, quite regularly spaced punctures, which are quite distinctly concentrated around median part.

Scutellum very small, but very clearly perceptible.

Elytra shiny, with ten striae and ten intervals. Odd intervals quite distinctly convex, evens flat. Third pairs of intervals at apex modified into weak postdiscal bulbs; fifth pairs at apex somewhat more convex and widened; ninth pairs of intervals basally evenly and distinctly convex, at apex modified into weak, rounded caudal bulb with no protrusion there. Caudal trichome discernible, but weakly developed. Odd intervals impairs with two rows of moderately coarse, dense punctures bearing short macrosetae; even intervals with one row of similar punctures. Striae with dense punctures somewhat larger than on intervals unevenly indenting margins of intervals - on initial intervals punctures distinctly indenting margins of intervals, on latter intervals punctures sometimes do not indenting margins of intervals.

Pygidium (Fig. 2) with very dense, variably fused punctuation, with very weak longitudinal rib in the middle and not so deep excision on its sides; with widely rounded apex.



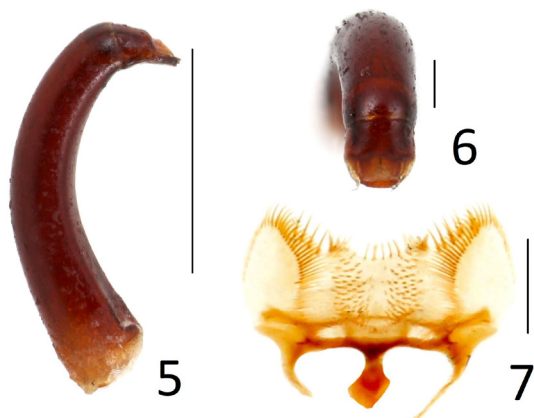
Figs. 1-3. *A. papuanus* sp. nov., ♂, holotype: 1- dorsal view; 2- ventral view; 3- lateral view. Figs. 1-3: scale lines: 1.0 mm.

Venter (Fig. 2) matt. Meso-metaventral plate flattened in the middle, with distinct, narrow, quite deep longitudinal furrow; punctation of meso-metaventral plate dense, quite regularly spaced, medium sized; all punctures bearing short macrosetae. Abdominal ventrites matt, with very dense punctation, additionally punctures bearing quite long very thin macrosetae; ventrites with an additional punctured furrow in basal part. Last abdominal ventrite with dense punctures, which are about one and half time larger than on last but one ventrite; in basal half in the middle part with very deep, irregular cavity. All femora shiny, with regular, very distinct, fine, moderately dense punctation; all punctures bearing small macrosetae. Meso- and metatibiae narrow at base, next regularly widened, widest before middle of length, and next sinuate to apex, with large, flattened, inwardly bent apical spine there.

Aedeagus (Figs. 5-6) with parameres much shorter than phallobase, which is widely, but quite regularly rounded when visible in lateral view.



Figs. 4-7. *A. papuanus* sp. nov., ♂, holotype: 4- head; 5- aedeagus, lateral view; 6- apex of aedeagus; 7- epipharynx. Figs. 4-5: scale lines: 1.0 mm; figs. 6-7: scale lines: 0.2 mm.



**Sexual dimorphism.** Unknown. Probably characteristic as in the genus *Rhyparus* Westwood, 1845 or *Termitodiellus* Nakane, 1961: with meso- and metatibiae with large, flattened, inwardly bent apical spine at apex. In any case, bent apical spines slightly more weakly developed than in all known members of the genus *Rhyparus* Westwood, 1845.

**Variability.** Unknown.

**Etymology.** Toponymic; an adjective derived from the name of Papua, where the new species was collected.

**Affinity.** There is only yet one other known species of *Antecessorirhyparus* - *A. octovirgatus* (Schmidt, 1916), known only from Fiji. *A. octovirgatus* is easily distinguished from newly

described species by: somewhat smaller size of body (body length of holotype: 5.0 mm), more shiny body, pronotal costae much more distinctly developed, lateral lobes of pronotum somewhat less distinctly developed, much finer and sparser punctation of whole body, caudal bulbs of elytra somewhat more plump, pygidium much more widely rounded, last abdominal ventrite with differently arranged cavities. For comparison see: Minkina, 2020: figs: 1-6.

## DISCUSSION

Careful analysis of body shape helped to establish that sexual dimorphism may be similar to that observed in the genus *Rhyparus* Westwood, 1845. Although interestingly the bent apical spines are less pronounced than in any known male in the genus *Rhyparus*. Also of interest: elongated body proportions, very weakly developed lateral lobes of pronotum make *Antecessorirhyparus* somewhat similar to members of the genus *Rhyparus* which have modified pygidium in females. It should also be noted that the shape of epipharynx as well as shape of aedeagus (which was examined for the first time in this genus) looks exactly as in *Rhyparus* species - which may further indicate a very close relationship between the two genera.

Despite the many similarities in the genera *Rhyparus* and *Antecessorirhyparus*, however, one should note the uniqueness of the structure and shape of the elytra - which allows the representatives of the genus *Antecessorirhyparus* to be easily and quickly distinguished. Caudal bulbs are very weakly developed and when we look at them it is quite easy to understand how that structures evolve from normal striae and intervals.

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