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in an unusual Philippine genus of Eupariini
(Coleoptera: Scarabaeidae: Aphodiinae)

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Saprovisca sarangay, new species, a second species in an unusual
Philippine genus of Eupariini (Coleoptera: Scarabaeidae: Aphodiinae)

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Abstract. A new species of *Saprovisca* Stebnicka (Coleoptera: Scarabaeidae) is described from the Philippines. This new species possesses sexual dimorphism in the form of clypeal horns in males which also show major and minor allometry, both are conditions rare in the Aphodiinae.

Introduction

In the fall of 2014, specimens of a strange eupariine Aphodiinae (Scarabaeidae) were sent to the author for identification by Albert Allen. These specimens were members of *Saprovisca* Stebnicka (1993), a genus described and known only from a single male specimen from the island of Leyte in the Philippines. These specimens represent a new species with prominent sexual dimorphism in their clypeal armature, as well as allometric variation in the degree of armature among males. The purpose of this paper is to describe the new species and bring to light this dimorphism that until now has not been known in the tribe Eupariini.

Materials and Methods

Materials studied are deposited in the following collections: **AAC** – Albert Allen collection, Boise, ID, USA; **FSCA** – Florida State Collection of Arthropods, Gainesville, FL, USA; **SMNS** – Staatliches Museum für Naturkunde, Stuttgart, Germany.

For comparative purposes, the description of the new species is based on that of *S. leytensis* from Stebnicka (1993), and modified as needed to be accurate and comparative. Important differences between the species are noted in the diagnoses. Photographs of the holotype of *Saprosites leytensis* Stebnicka, were provided by W. Schawaller and C. König (SMNS). Photographs of the new species were taken with a Synchronscopy Automontage system at the FSCA.

Saprovisca Stebnicka, 1993

Type species. *Saprovisca leytensis* Stebnicka, 1993, by original designation.

Diagnosis. *Saprovisca* is most similar to the genus *Saprosites* Redtenbacher, differing most notably in the presence of clypeal teeth. Both genera share a large and tumid head, parallel-sided and robust body, relatively short front legs, notably curved sutures between the abdominal sternites, and an almost V-shaped subapical suture.

Remarks. Stebnicka (1993) briefly discusses some character similarities between *Saprovisca* and *Cnematoplatys* Schmidt, and considers *Saprovisca* to be an intermediate genus between *Cnematoplatys* and *Saprosites*. The rarity of both *Cnematoplatys* and *Saprovisca* in collections may be a factor of the brachypterous state of some included species, or unusual and unknown life histories.

Key to species of *Saprovisca*

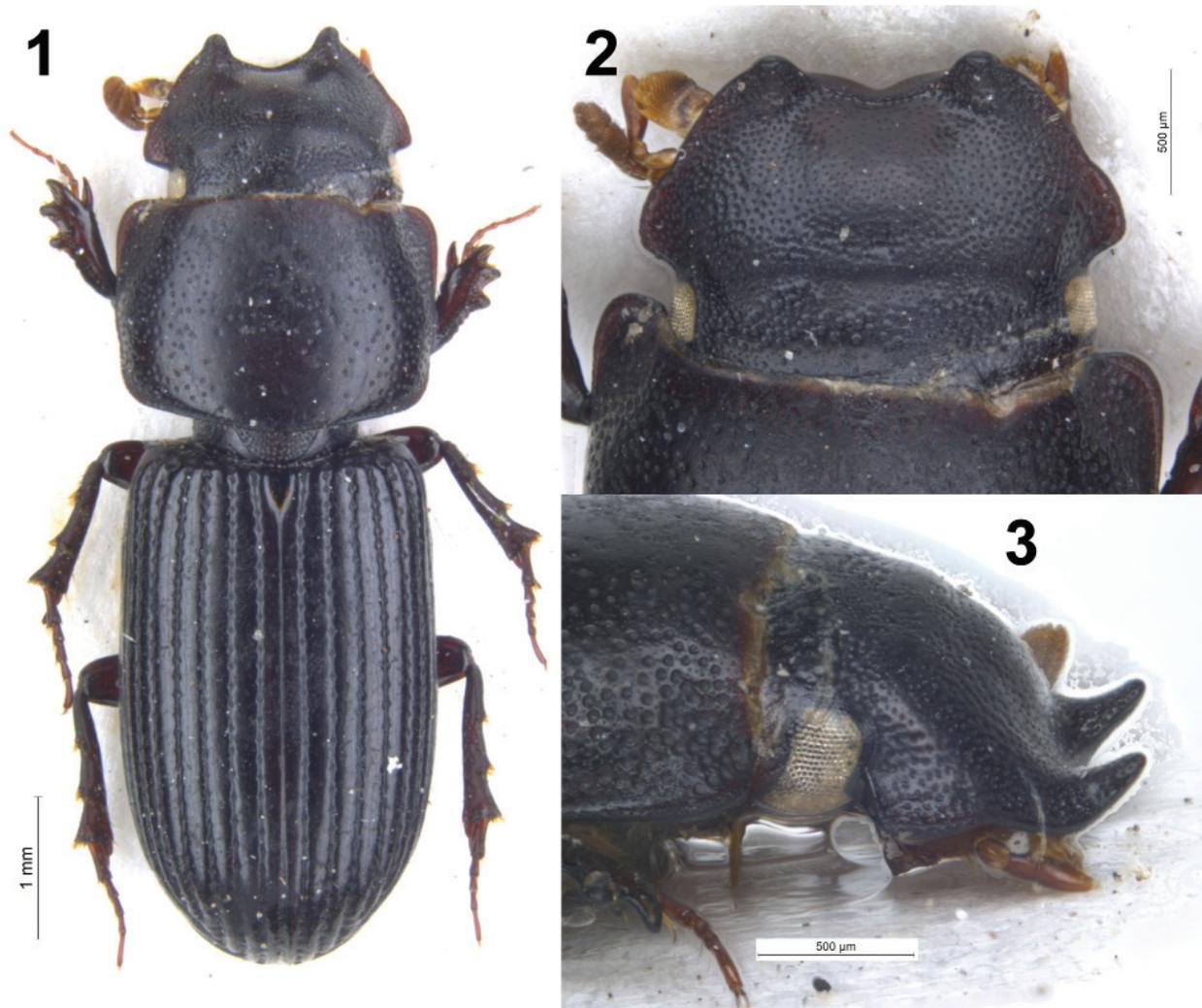
1. Lateral margin of head sharply, narrowly indented at clypeal-genal suture; flight wings present; Mindanao and South Luzon, Philippines. *S. sarangay*, new species
 — Lateral margin of head weakly concave at clypeal-genal suture; flight wings vestigial; Leyte, Philippines. *S. leytenis* Stebnicka

Saprovisca leytenis Stebnicka

Figures 1–3

Saprovisca leytenis Stebnicka, 1993: 29–30, 35 fig. 1–3.

Diagnosis. Length 6.9 mm. Compared with the new species, *S. leytenis* is easily recognized by having the clypeal lateral margin not indented at juncture with clypeal-genal suture in dorsal view, pronotal disc with scattered moderate punctures and lacking large impunctate areas, humeral denticle small, abdominal sternites with sutures deep and finely fluted, and flight wings vestigial. *Saprovisca leytenis* occurs on Leyte, Philippines.



Figures 1–3. *Saprovisca leytenis*, holotype. **1)** Dorsal habitus. **2)** Head, dorsal view. **3)** Head, lateral view. Photographs by Christian König, SMNS.

Materials examined. Photos of *S. leytensis* (Fig. 1–3) were studied. Holotype label data (from Stebnicka 1993): “Leyte, VISCA N Baybay, in cultivated land, 3.III.1991, leg. W. Schawaller & al.” Deposited in the SMNS.

Remarks. Assuming *S. leytensis* possesses similar horn dimorphisms as found in *S. sarangay*, the holotype is a minor male. The holotype was collected in cultivated area with no large mammals that was near primary forest (*in litt.*, W. Schawaller).

Saprovisca sarangay, new species

Figures 4–19

Diagnosis. Compared with the type species, *S. sarangay* is easily recognized by having the clypeal lateral margin indented at juncture with clypeal-genal suture in dorsal view, pronotal disc with few scattered moderate punctures and bearing large impunctate areas, humeral denticle prominent, abdominal sternites with sutures deep and coarsely fluted, and flight wings fully developed. *Saprovisca sarangay* occurs on Mindanao and South Luzon, Philippines.

Description. Male major holotype (Fig. 4–10): length from elytral apex to middle of clypeus 7.3 mm; length including clypeal teeth 8.0 mm, greatest width of pronotum 2.7 mm, of elytra 2.7 mm. Body elongate, shiny, glabrous, color carbon black, antennae and palpi brown.

Head very large, moderately convex at middle, approximately 1/3 wider than long (not including clypeal tooth) and as wide as base of elytra; clypeus with strong, horn-like, upturned teeth on each side of arcuate median emargination, length of tooth approximately equal to the distance between teeth; clypeus with anterior face abruptly slanted downward; lateral margin straight, distinctly indented at juncture with clypeal-genal suture in dorsal view; genae right-angled, subdepressed, strongly protruding; frontal suture slightly convex almost entire distance between eyes; clypeal surface punctures fine, close, separated by about their own diameters, those of occipital area a little larger and denser.

Pronotum rectangular, widest at anterior margin; anterior angles prominent, rounded and reflexed; sides finely margined; basal marginal line widely broken at middle, distinctly crenulate with close punctures; surface punctures moderate, almost lacking on disc which has large impunctate areas, denser laterally, closest in anterior angles.

Scutellum small, elongate triangular, impunctate.

Elytra parallel-sided, base without border; humeral denticle prominent, closely punctate laterally; striae impressed with moderate, distinct punctures crenating margins of intervals; intervals nearly flat on disc, convex on apical declivity, surface punctures very minute, scattered. Flight wings entire, not vestigial. Pygidium with transverse ridge at middle, with distinct eroded area posterior of ridge (as in Fig. 15–16).

Ventral sclerites nearly glabrous, impunctate; metasternum convex, midline slightly impressed, mesosternal carina narrow. Abdominal sternites eroded and coarsely fluted on either side of abdominal sutures, giving the deep sutures a doubly punctate appearance; terminal sternite narrowed with concave apex.

Femora nearly impunctate; protibia short, inner apical margin sharply angular behind protarsus, terminal spur lanceolate; meso- and metatibiae moderate in length, subcylindrical, widened toward apex and carinate; tarsi about 1/3 shorter than tibia with cylindrical segments; basal tarsomere of metatarsus slightly shorter than upper tibial spur and longer than following two tarsomeres combined.

Aedeagus in lateral view with parameres gradually narrowed to rounded apex, in dorsal view apex abruptly widened.

Variation. Length from apex of elytra to middle of clypeus (not including clypeal teeth) of allotype and paratypes 6.5–7.1 mm, width 2.4–2.6 mm. Epipharynx illustrated (Fig. 19) is from a paratype male from Mindanao.

Male minor paratype (Fig. 11–12). Similar to holotype except clypeal tooth length about 1/2 distance between teeth, and pronotal anterior angles not as prominent.

Female allotype (Fig. 13–14, 17–18). Similar to male in most characters except: clypeal teeth much smaller, tooth length less than 1/4 distance between teeth; clypeal lateral margin strongly curved between teeth and clypeal-genal suture; pronotal angles not as prominent, weakly reflexed; terminal abdominal sternite widened with convex apex; pygidium lacking eroded area caudal of the transverse ridge.

Materials examined. Major male holotype label data: 1) [white paper with black print] PHILIPPINES: Mindanao, N. Mindanao Region, Bukidnon: Kalatungan Mts.; 1–31.VIII-2014, I.Lumawig. 2) [red paper with black print] HOLOTYPE *Saprovisca sarangay* P. E. Skelley. Deposited in the FSCA.

Allotype female and two paratype males (FSCA): Same data as holotype except, VI-2014. One paratype male (AAC): PHILIPPINES: South Luzon, Camarines Sur, Ocampo, Jan-2015.

Etymology. The ‘Sarangay’ is a horned mythical Philippine creature, half bull, half man. Name applied as a noun in apposition.

Remarks. The paratype male from South Luzon is similar to specimens from Mindanao, possessing similar diagnostic characters and all other characters studied. It is the smallest specimen studied and its horn development is intermediate between the major and minor males described.



Figures 4–8. *Saprovisca sarangay*, holotype, male major. 4) Dorsal habitus. 5) Ventral habitus. 6) Genitalia, lateral and dorsal. 7) Lateral habitus. 8) Head, anterior view.

The sexual dimorphism exhibited here is unlike anything else seen in eupariine scarabs. In general, such head ornamentation in the Aphodiinae, whether sexually dimorphic or not, is rare. In addition, having major and minor males makes members of this genus even more unusual. Such horn development is common in the Scarabaeinae and Dynastinae, where they have been studied from multiple aspects including taxonomically, behaviorally, physiologically, and developmentally (e.g., Arrow 1951). Why this occurs in *Saprovisca* and so few other aphodiines is open to speculation and further research.

Acknowledgments

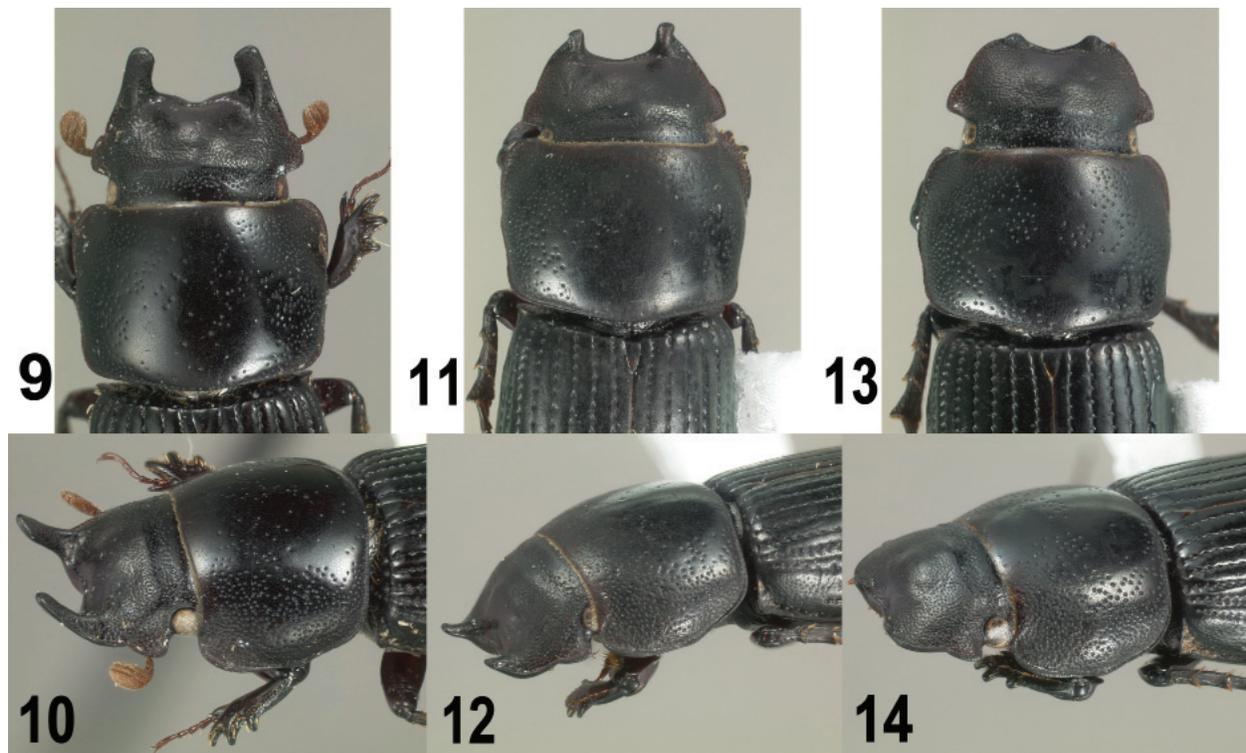
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Literature Cited

Arrow, G. J. 1951. Horned beetles, a study of the fantastic in Nature. W. Junk; The Hague. 154 p.
 Stebnicka, Z. 1993. A new genus and species of Aphodiinae from Leyte, Philippines with notes on other taxa (Coleoptera: Scarabaeoidea). The Philippine Entomologist 9(1): 28–35.

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Figures 9–14. *Saprovisca sarangay*, head and pronotum dorsal and anterolateral views. 9–10) Male major, holotype. 11–12) Male minor, paratype. 13–14) Female, allotype.



Figures 15–19. *Saprovisca sarangay*. 15–16) Abdominal sternites and pygidium, male paratype. 17–18) Abdominal sternites and pygidium, female allotype. 19) Epipharynx, male major paratype.