

# A NEW SPECIES OF *PACHYRHYNCHUS* GERMAR, 1824 (COLEOPTERA: CURCULIONIDAE: ENTIMINAE)

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*Pachyrhynchus miltoni* sp.n. from Mindanao Island (Marilog District), Philippines described, illustrated, and bionomics data are provided. The new species belongs to the speciosus group. It is closely related to *P. speciosus samarensis* Schultze, 1923 and *P. kraslavae* Rukmane, Barševskis 2016, but differs on the shape of aedeagus and features of the coloration of the body.

Key words: Curculionidae, *Pachyrhynchus*, Mindanao, endemic, Philippines, taxonomy, new species .

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## INTRODUCTION

The genus *Pachyrhynchus* Germar, 1824 (Curculionidae: Pachyrhynchini) was erected for *P. moliferus* described from Luzon Island, Philippines. Currently there is over a hundred species of *Pachyrhynchus* with roughly 90% of endemism in the country. The distribution of *Pachyrhynchus* which is highly related to oceanic islands draws interest not only to taxonomist but also to biogeographers. The genus remain a poorly studied taxon together with most insect groups in the Philippines. For almost a century after Schultze (1917, 1922, 1923, 1934), the study of this taxon remained dormant until new species were described by Yoshitake (2013), Bolino & Sandel (2015) and recently by Rukmane & Barševskis (2016). Additional faunistic and ecological data were published by Cabras et al.

(2016), Cabras & Yoshitake (2016), Tseng et al. (2013) and Ballentes et al. (2006).

The genus *Pachyrhynchus* whose preferred habitats are shrubs near a riverine ecosystem along ridges or mountains with rich tropical vegetation is highly associated with forest habitats. Thus, the current rate of habitat loss in the country due to deforestation among others is a major threat to this beetle group's survival in the wild. . The city which has already transformed into an urban area has remaining forest due to the presence of ancestral domains which serves as the home to tribes such as Matigsalug, Jangan, and Obo Manobo. Marilog District with relatively intact secondary forest serves as the suitable habitat to different species of plants such as *Cyathea* sp., *Medinilla* sp., *Melastoma* sp. *Aeschynanthus* s sp., *Nepenthes truncata*

among others which are possible host plants for *Pachyrhynchus* species. In the course of exploring the forested habitats in Marilog District, a new species of *Pachyrhynchus* was found. The paper aims to describe this species and present brief notes of its ecology.

## MATERIAL AND METHODS

The specimens were collected through beating sheet and handpicking and killed in vials with ethyl acetate. The type material is deposited at Central Mindanao Zoological Museum (CMUZM). External structures were observed under Luxeo 4D stereoscopic microscope. Photographs of the holotype male were taken with a Nikon D5300 digital camera. In examining male terminalia, specimens were dissected under the stereoscopic microscope. The abdominal segments III to V was first removed from the body and then cleaned in hot 10% KOH solution for 10 to 30 minutes. Male terminalia extracted from the abdominal segments were mounted on slides and studied with a Leitz Orthoplan optical microscope and photographed through an attached camera lucida.

Measurements mentioned in this paper are abbreviated as follows: LB – length of body; LE - length of elytra; WE – maximal width of elytra; LP - length of pronotum; WP - maximal width of pronotum; LR - length of rostrum; WR - maximal width of rostrum. All measurements are given in millimeters and follows the measurement methodology of Yoshitake (2013).

## RESULTS

### *Pachyrhynchus miltoni* sp.n.

(Fig. 1, 4, 5)

**Type Material.** Holotype, male: Marilog District, Davao City, Philippines. 08.19.16. local collector leg. Deposited in CMUZM.(...).

Paratype, male: Marilog District, Davao City,

Philippines. 09.29.16.Cabras leg. Deposited in CMUZM.(...).

**Distribution:** Mindanao Island, Philippines.

**Description.** Measurements: LB: 11.1 LE: 7.1; WE: 6.5; LP: 4.0; WP: 4.0; LR: 1.9; WR: 1.6.

Body coppery brown close to black; pronotum, head and legs coppery brown with weak luster and tinge of metallic red glow; body surface matte with weak luster and with wide spots of pale yellow and light green scales. Eyes, antennae and tarsomeres black. Head with following scales: 1) oblique and elongated stripe under eye on each lateral side of rostrum, 2) elongated median stripe between eyes.

Head with deep groove-shaped impression between eyes and with coarse punctures. Eyes relatively large. Rostrum slightly longer than wide with pale yellow sparse setae laterally from genae to apical part of rostrum with few sparse setae. Dorso- apical part of rostrum flattened. Antennal scape short and stout, strongly clavate; remaining antennomeres small, with sparse pale short pubescence and long setae; apical antennomeres club-shaped, subellipsoidal covered with yellow setae. Funicular segment I longer than wide, slightly longer than II; segments III - VII slightly wider than long; club subellipsoidal, nearly 1.5 times as long as wide, nearly as long as antennal segments V to VII combined.

Pronotum subglobular, widest at middle, with equal length and width, weakly convex and almost flattened dorsally, mostly glabrous, without pubescence and punctures. Pronotum with following spots of pale yellow : 1) median longitudinal band widened medially, extending from basal to apical margin, 2) thick bands on lateral sides of pronotum almost entirely covering lateral sides; with few sparse weak punctures dorsally. Apical part of tinner sides of femori with irregular yellow scaly spots.

Elytra short, ovate, with regular intervals, weakly striate-punctate and strongly convex, with only few sparse short apical pubescence; Each elytron

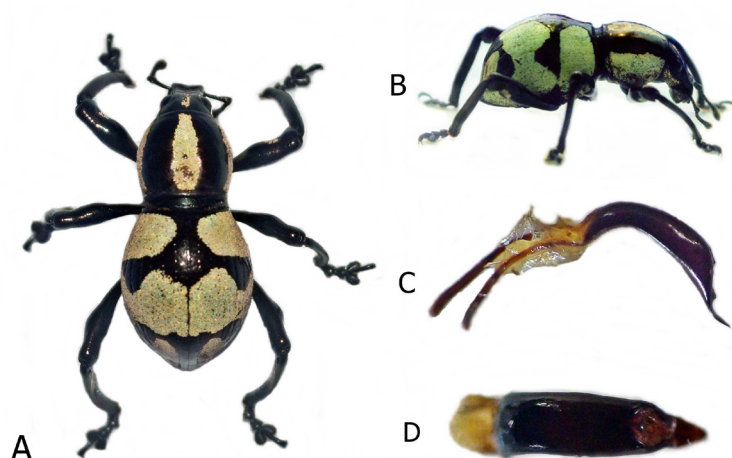


Fig. 1. *Pachyrhynchus miltoni* sp.n. (holotype): A - dorsal view, B - lateral view, C – aedeagus (lateral view), D - aedeagus (dorsal view).

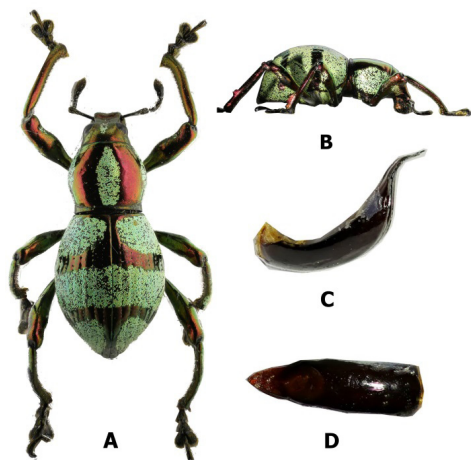


Fig. 2. *Pachyrhynchus speciosus samarensis* Schultze 1923: A - dorsal view, B - lateral view, C – aedeagus (lateral view), D - aedeagus (dorsal view).

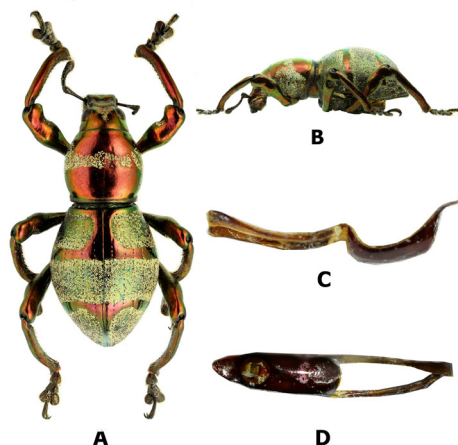


Fig. 3. *Pachyrhynchus kraslavae* Rukmane & Barševskis 2016 (holotype): A - dorsal view, B - lateral view, C – aedeagus (lateral view), D - aedeagus (dorsal view).



Fig. 4. Habitat of *P. miltoni* sp.n. in Davao City.



Fig. 5. Slash and burn farming near the habitat of *P. miltoni* sp.n.

with three bands: 1) broad band on basal part of each elytron transversely extending from interval II to lateral margin; 2) broad transverse band in middle part of elytra constricted medially, hourglass-shaped; 3) apical triangular marking, with pointed ends, extending from apex of each elytron to apical third of elytra and laterally connected with median marking by lateral stripe. Scutellum medium sized, rounded apically.

Underside weakly lustrous covered with metallic red and sparse pale yellow scales.

Legs wide, with strongly clavate femora and irregular punctures. Tibiae serrate along internal margins. Middle and hind femora covered with short hairs and sparse scales along posterior margins. Each tibia fringed with pubescent along internal margin, sparsely mixed with short hairs. Tarsomeres covered by sparse pubescence.

Aedeagus relatively short but not stout, curved in lateral view (Fig. 1C); lamella subtriangular, pointed apically (Fig. 1D)

**Differential diagnosis.** *Pachyrhynchus miltoni* sp. n. is similar in general appearance to *P. speciosus samarensis* Schultz, 1923 and *P. kraslavae* Rukmane & Barsevskis, 2016 which were described from Samar and Mindanao islands respectively. The new species differs from *P. speciosus samarensis* (Samar Island) by: 1) shape of more curved aedeagus (Fig. 2C, D); 2) shorter length of elytra; 3) the hourglass shaped median marking; 4) deeper longitudinal groove on rostrum. *Pachyrhynchus miltoni* sp. n. clearly differs from *P. kraslavae* by shapes of the markings of the pronotum; *P. miltoni* sp. n. has longitudinal band, *P. kraslavae* has transverse band. The shape of aedeagus between the two species are clearly different also (Fig. 3C, D).

**Etymology:** This species is named after Professor Milton Norman Medina, the director of Biodiversity and Qualitative Research of the University of Mindanao for his contribution in the study and conservation of Philippine biodiversity.

He is a respected colleague and mentor who submitted the material described herein.

**Ecology.** Specimens of *P. miltoni* sp. n. were found in the elevation of 1234 m a.s.l. in Barangay. Baganihan, Marilog District, Davao City (7°28'3" N, 125°15'2" E). The beetles were found crawling on the shrubs of *Piper aduncum* which was very abundant along the road going to the forested area of Barangay. Baganihan (Fig. 4). But whether specimens feed on the *Piper aduncum*, it is not certain since they were not found feeding on its leaves and there are adjacent plants which may also be the food plant of this species. As mentioned by Schultz (1923) *Pachyrhynchus* prefers open areas along mountain ridges or mixed forests with dense undergrowth along rivers. A lush secondary forest is still present within the area. However, slash and burn farming is currently done on the area by the local villagers to be planted with certain crops such as *Theobroma cacao*. This can be considered a threat to this species type locality as few meters from the habitat of *P. miltoni* sp. n. slash and burn farming is on-going (Fig. 5).

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