https://doi.org/10.59893/bjc.23(1).009
Baltic J. Coleopterol. 23(1) 2023
ISSN 1407 – 8619

New species of the genus *Paraskeletodes* Aurivillius 1972 (Coleoptera: Cerambycinae: Phoracanthini) from Mt. Hamiguitan Range Wildlife Sanctuary, a UNESCO World Heritage Site in Davao Oriental, Philippines

Milton Norman D. Medina, Roy G. Ponce, Jhonnel P. Villegas

Medina M.N.D., Ponce R.G. Villegas Jh.P. 2023. New species of the genus *Paraskeletodes* Aurivillius 1972 (Coleoptera: Cerambycinae: Phoracanthini) from Mt. Hamiguitan Range Wildlife Sanctuary, a UNESCO World Heritage Site in Davao Oriental, Philippines. Baltic J. Coleopterol., *23(1): 85 - 91.*

This paper describes *Paraskeletodes hamiguitanensis* sp. nov., the second species of the genus *Paraskeletodes* Aurivillius 1972 (Coleoptera: Cerambycinae: Phoracanthini) in the world. This rare species was found in Mt. Hamiguitan Range Wildlife Sanctuary (MHRWS), a UNESCO World Heritage Site in the Province of Davao Oriental, Mindanao Island, Philippines. Thediscovery of this species emphasizes the need to strengthen and expand wildlife conservation efforts in Davao Oriental, Philippines.

Key words: Conservation, Mt. Hamiguitan, New Species, Phoracanthini

Milton Norman D. Medina. Faculty of Agriculture and Life Sciences and URESCOM, Tropical Genomics Laboratory, Davao Oriental State University, Guang-guang, City of Mati, Davao Oriental, 8200 Philippines;
Entomology Section, National Museum of Natural History, Philippines, Ermita, Manila, Philippines.
https://orcid.org/0000-0001-6858-8048

Roy G. Ponce. Center for Futures Thinking and Regenerative Development, Davao Oriental State University, Guang-guang, City of Mati, Davao Oriental, 8200 Philippines.
https://orcid.org/0000-0002-9740-3273

Jhonnel P. Villegas. Faculty of Teacher Education, Davao Oriental State University, Guang-guang, City of Mati, Davao Oriental, 8200 Philippines.
https://orcid.org/0000-0001-6387-2381
**Corresponding author:miltonnormanmedina@gmail.com*

INTRODUCTION

Mt. Hamiguitan Range Wildlife Sanctuary (MHRWS) is the only World Heritage Site in Mindanao Island, Philippines, inscribed by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) in 2014. It is characterized by

rich species diversity and high endemism due to its unique biogeographical condition (Medina et al., 2020; Mendoza et al., 2020).The mountain's ultramafic soil and vast pygmy field demonstrate an outstanding universal value, serving as a biological frontier within the Eastern Mindanao Biodiversity Corridor (EMBC).

However, despite different layers of protection at the domestic and international levels, threats to wildlife remain a serious concern in the country. Habitat degradationand poaching continue to threaten wild flora and fauna (Brooks et al., 2002; Fischer, 2021). Threats affecting the Coleoptera fauna are even more prevalent with limited efforts to document and conserve them (Department of Environment and Natural Resources, 2019; Bohm et al., 2022). Protected landscapes are vital to providing safe ecozones for threatened species.

In an effort to mainstream MHRWS as a conservation and tourism site, the Provincial Government of Davao Oriental led a scientific expedition with the aim of updating the contents of the Mt. Hamiguitan Natural Science Museum. A research team from the Davao Oriental State University (DOrSU) was commissioned to document charismatic and unique species to be showcased in the museum. On June 10, 2023, the authors collected the type specimen as it was attracted to a light source in Camping Site No. 3, Municipality of San Isidro.

The Cerambycidae fauna in the Philippines is still greatly understudied (Barševskis et al., 2020; Barševskis & Medina, 2021; Barševskis et al., 2022a, b; Medina et al., 2020, 2021a,b, 2022, 2023) particularly those taxa that are rarely collected in the field. Hence, it is expected that when more field expeditions are conducted, more species will be introduced as new to science for Philippine fauna. *Paraskeletodes* Aurivillius 1972 (Coleoptera: Cerambycinae: Phoracanthini) is a genus of longhorn beetles, represented by only two species in the world. The first species, *Paraskeletodes gracilis* Aurivillius, 1927, was described from Sulawesi and had not been rediscovered on the island since its introduction to science (Aurivillus, 1927; Vives, 2009). It is distributed in both Sulawesi and the Philippines. This paper describes the second species of the genus *Paraskeletodes* Aurivillius 1972, representing another similar Cerambycid fauna between the two archipelagos. The rarity of this species is another reason to strengthen conservation efforts in MHRWS.

MATERIALS AND METHODS

Morphological characters were observed under Leica MZ 12.5 stereomicroscope. Habitus images were taken using Canon EOS 6D digital camera equipped with an MP-E 65mm macro lens mounted in StackShot macro rail automated with Helicon Remote version 4.3.0.w. All images were stacked using Helicon Focus version 8.1.1 and processed using a licensed Photoshop CS6 Portable software version.

Measurements of the various body parts are as follows: LB = length of body from antennal support to apices of clothed elytra; WH = maximum width across head from the outer margin of a gena to that of another; LG = length of gena from upper margin to lower margin; LL = length of lower eye lobe from upper margin to lower margin; WL = maximum width across lower eye lobe; LP = length of pronotum from base to apex along midline; WP = maximum width across pronotum; LE = length of elytra from level of basal margins to apices of clothed elytra; WEH = width of elytra at humeri; / separates different lines on a

label; // separates different labels. All measurements are given in millimeters.

Comparative material and specimens used in this study are deposited in the following collections:
EVC Stan Cabigas Collection, Cebu City Philippines.
DOrSU Davao Oriental State University Beetle Collections.
PNM Philippine National Museum, Ermita, Manila, 1000 Philippines.

TAXONOMY

***Paraskeletodes hamiguitanensis*sp. nov.**
Fig. 1

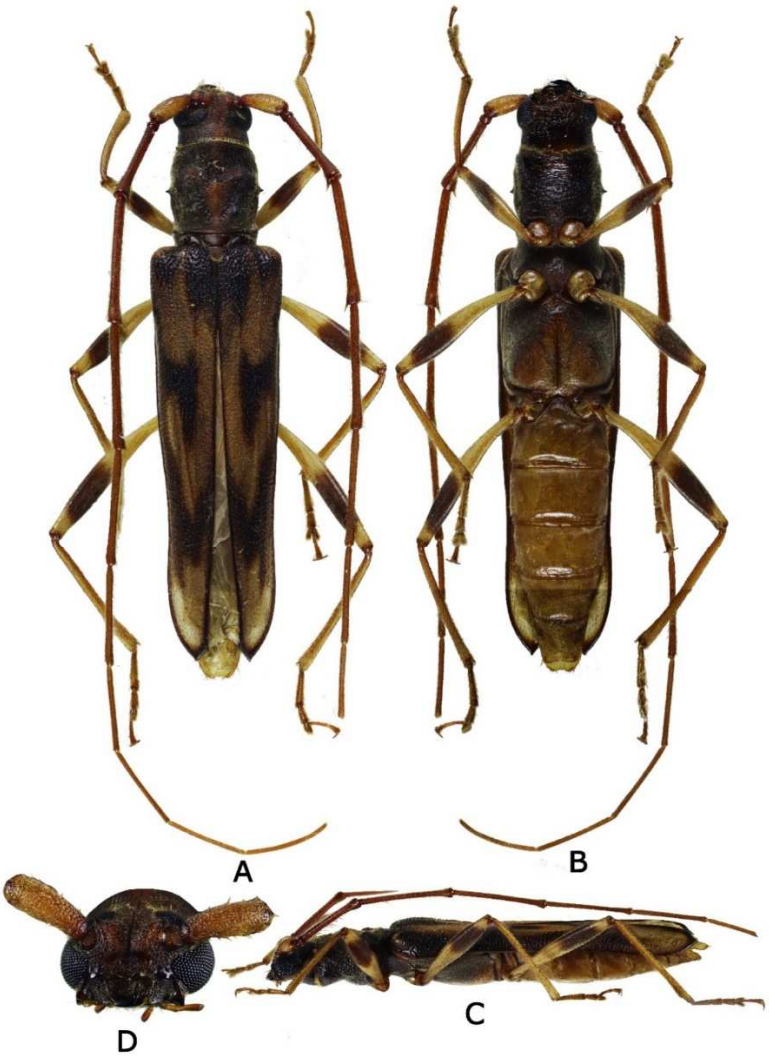

Figure 1. Habitus of *Paraskeletodes hamiguitanensis* sp. nov.: A. Dorsal aspect, B. Ventral aspect, C. Lateral aspect, D. Frons.

HOLOTYPE female: PHILIPPINES – Mindanao, Davao Oriental / San Isidro, Mt. Hamiguitan Range Wildlife Sanctuary//1-5.vii.2023, 1400 masl, I.Apiag leg. / DOr-SU, printed on red card. Type specimen will be deposited at the Philippine National Museum (PNM). PARATYPE female: PHILIPPINES – Mindanao, Davao Oriental / Governor Generoso / Cabuaya // 23.viii.2023, 1000 masl, K.Sitjar leg. / DOrSU, printed on red card.
Comparative material examined. *Paraskeletodes gracilis* Aurivillius, 1927, holotype male, NRM, Lompa Battau, South Sulawesi, Indonesia. *Paraskeletodes gracilis* Aurivillius, 1927, male, Gingoog City, Misamis Oriental, EVC.

Description. Dimensions: LB: 17.0 mm. WH: 2.5 mm. LL: 0.5 mm. WL: 1.0 mm. LP: 3.0 mm. WP: 3.0 mm. LE: 12.5 mm. WEH: 4.0 mm.

Adult female. Teguments in the Head, pronotum, metasternum dark brown; elytra, legs, and antennae light brown.

Head dorsally as long as wide; frons and epicranium covered with goldish recumbent pubescence; vertex relatively wide and deep; frons depressed. Eyes matt black, prominent, lower lobes twice wider than long.

Antennae light brown, twice longer than elytra; scape robust, light yellowish, coarsely punctate, covered with long goldish setae. Pedicle short. Antennomere III shorter than IV; Antennomeres III to V with apical spine; Antennomeres III to VII lined with goldish setae, less prominent on the upper side and more pronounced in the underside and each apex; less prominent and finer goldish setaeonboth sides of antennomeres VIII to XI.

Prothorax. Pronotum, dark brown at each side, lighter towards the middle; as long as wide, highly punctate, covered with very fine goldish recumbent pubescence, with five discal bulges: one at the center, two at apical third, and another two near the base; with a prominent spine at each lateral side. Propleuron highly punctate, fully covered with fine recumbent goldish pubescence. Prosternum punctate, densely covered with recumbent goldish pubescence; goldish setae lined the apex; depressed at the middle, with microsculptures near apical third.

Elytra. Elyra three times longer than wide; light brown, margins dark brown, densely covered with very fine recumbent goldish pubescence; highly punctate from the base up to apical third, very fine punctations from the apical towards the apex. Elytral base flat, humeri smooth, disc flat. Elytra is composed of three bands of black maculation when viewed dorsally, all connected laterally. One oblong band at the base, covering half of the elytra base up to elytral suture. Second band at the middle with small base and elongated at the middle, but not reaching elytral suture. Third band at apical third with broad base tapering towards apical suture. Apex of elytra is somewhat lanceolate with a pointed apical suture (Figure 1A).

Legs. Trochanters, Profemura, mesofemora, and metafemora two-toned, light yellow translucent with black tegument from the middle reaching near each apex. Procoxa and mesocoxa light brown, raised, metacoxa not raised. Tibia and tarsi light brown, translucent, densely covered with semi-erect goldish setae. Claw simple, light brown.

Mesosternum pentagonal, densely covered with very fine recumbent whitish pubescence.

Mesepimeron, mesepisternum, metepisternum**,** and metasternum bark brown, weakly punctate, densely covered with very fine

recumbent goldish pubescence. Abdominal ventrites I-IV light brown, almost translucent, densely covered with very fine recumbent goldish pubescence, with few erect goldish setae scattered throughout. Ventrites I-III much broader than ventrites IV and V. Ventrite V little darker, densely covered with semi-erect goldish pubescence, margin lined with erect goldish setae. Each ventrite is connected with a flat translucent inter-ventrite margin.

Genitalia. Genital pocket to ovipositor = 3mm. Ovipositor slender, twice longer asthe genital pocket. Eight abdominal segments the same length as ovipositor. Spiculum gastrale long, straight, slender, longer than genital pocket and ovipositor combined.

Adult male. Unknown.

Differential diagnosis. *Paraskeletodes hamiguitanensis* sp. nov. is unique compared to *P. gracilis* in terms of the following: the presence of lateral spines in the pronotum (absent in *P. gracilis*); the presence of five discal bulges at the pronotum (almost smooth in *P. gracilis*); pronounced black tegument at the forelegs (almost invisible in *P. gracilis*); middle of elytra with more elongate elytral maculation (shorter in *P. gracilis*).

Etymology. This species is named after its type locality, the Mt. Hamiguitan Range Wildlife Sanctuary, a UNESCO World Heritage Site in Mindanao Island, Philippines. The specific epithet *"hamiguitanensis"* is a toponym to recognize the bio-ecological significance of the said mountain range.

Distribution. Philippines: Mindanao (Davao Oriental: Mt. Hamiguitan Range Wildlife Sanctuary, San Isidro).

ACKNOWLEDGMENTS

We thank Mr. Stan Cabigas for the comparative material; Dr. Mattias Forshage for the warm assistance during the first author's visit at Naturhistorika Riksmuseet Stockholm Sweden; Governor Corazon N. Malanyaon for supporting the field surveys leading to the discovery of the new species; Ms. Amy G. Ponce, Mr. Jan Rey R. Ilajas, and Ms. Berryl Mae de Erio for the assistance during fieldwork; Mr. Ildefonso T. Apiag, Jr. for collecting the specimen; To Kianu Sitjar for the paratype material from Cabuaya, Davao Oriental; To our good friendsFrancesco Vitali (National Museum of Natural History, Grand-Duchy of Luxembourg), and Eduard Vives (Terrasa, Barcelona, Spain) for the valuable comments and suggestions.To the anonymous reviewers for the comments and suggestions.

REFERENCES

Aurivillius C. 1927. Neue oderwenigbekannte Coleoptera Longicornia. 22.*Arkiv för Zoologi, Uppsala 19A (17): 525-547.*

Barševskis A., Cabras A. A., Medina M. N. 2020. Falseunidiaalbosignata Breuning, 1943 (Coleoptera: Cerambycidae) – a new species for the fauna of the Philippines. *Acta Biologica Universitatis Daugavpiliensis, 20 (1): 61 – 64.*

Barševskis A., Medina M. N. 2021. Two new species of Merionoeda Pascoe, 1869 (Coleoptera: Cerambycidae) from Palawan Island, Philippines. *Baltic Journal of Coleopterology*, *21(1): 59 - 63.*

Barševskis A., Medina M.N., Cabras A.A. 2022a. A new species of *Callimetopus* Blanchard, 1853 (Coleoptera: Ceram-

bycidae) from Panay Island, Philippines. *Baltic Journal of Coleopterology*, *22(1): 133–138.*

Barševskis A., Cabras A.A., Medina M.N.D. 2022b. To the knowledge of the genus *Polyphida* Pascoe, 1861 (Coleoptera: Cerambycidae) of the Philippines. *Baltic Journal of Coleopterology, 22(2): 403–411.*

Böhm M., Waldien D.L., Setliff G.P., Abenis K.O., Aguirre L.F., Akite P., AlviolaM.S., Alviola P.A., Aramayo Bejarano J.L., Badon J.A., Barrion-Dupo A.L., Brodie G…Yap S. 2022. Catalyzing red list assessments of underrepresented taxa through partner networks and student engagement. *Diversity*, *14*(9), 723. *https://doi.org/10.3390/d14090723*

Brooks T.M., Mittermeier R.A., Mittermeier C.G., Da Fonseca G.A., Rylands A.B., Konstant W.R., Flick P., Pilgrim J., Oldfield S., Magin G., Hilton-Taylor C. 2002. Habitat loss and extinction in the hotspots of biodiversity. *Conservation Biology*, 16*(4), 909-923. https://doi.org/10.1046/j.1523-1739.2002.00530.x*

[DENR] Department of Environment and Natural Resources. 2019. Updated National List of Threatened Philippine Fauna and their Categories. DENR Administrative Order No. 2019-09.

Fischer C.2021. Illegal Wildlife Trade at the Philippine-Southeast Asian Nexus: An Assessment of Projects combating Illegal Wildlife Trade in Southeast Asia informing the Philippines and guiding Donor Coordination. Manila, Philippines. Asian Development Bank.

Medina M.N.D., Cabras A.A., Van Dam M. 2023. Two new species of the genus *Glenea* Newman, 1842 (Coleoptera: Cerambycidae: Lamiinae: Saperdini) from Mindanao and Luzon Islands Philippines. *Zootaxa, 5284 (1): 177–184. https://doi.org/10.11646/zootaxa.5284.1.8*

Medina M.N.D., Cabras A.A., Torrejos C., Pepito M.J., Barševskis A., Mantilla L.K., Vitali F. 2021. Catalog of the Genus *Glenea* Newman, 1842 (Coleoptera: Cerambycidae: Lamiinae: Saperdini) with Key to the Sub-genera in the Philippines*. Philippine Journal of Science, 150 (6B): 1663-1675.*

Medina M.N.D., Baul M.J.G., Cabras A.A. 2022. Catalog of the genus *Cylindrepomus* Blanchard (Coleoptera, Cerambycidae, Dorcaschematini) in the Philippines, with description of a new species from northern Mindanao. *ZooKeys, 1116: 23-32. https://doi.org/10.3897/zookeys.1116.86906*

Medina M.N.D., Mantilla L.K., Cabras A.A., Vitali F. 2021. Catalogue of the genus *Cereopsius* Pascoe 1857 (Coleoptera: Cerambycidae: Lamiinae) in the Philippines with description of a new species from Mindanao. *Zootaxa, 5061 (2): 383-391. http://doi.org/10.11646/zootaxa.5061.2.11*

Medina M.N.D., Cabras A.A., Ponce R.G. 2020. List of threatened fauna in Mt. Hamiguitan range wildlife sanctuary, Davao Oriental, Mindanao Island, Philippines. *Asian Journal of Biodiversity*, *10(1). https://doi.org/10.7828/ajob.v10i1.1280*

Mendoza E.N., Ponce R.G., Soria S.M., Amoroso V.B. 2020. Protected areas' latent functions and social consequences: A case from Mount

Hamiguitan, Philippines. *Forest and Society*. *https://doi.org/10.24259/fs.v4i2.10485*

Tavakilian G., Chavillotte H. 2021. Base de données Titan sur les Cerambycidés ou Longicornes. *http://titan.gbif.fr [Downloaded: vii.2023]*

Vives E. 2009. Cerambicidosnuevos o interestantes de Filipinas (Part II) (Coleoptera: Cerambycidae). *Les Cashiers Magellanes, 88: 1-125.*

Received: 20.06.2023.
Accepted: 30.11.2023.