

TWO NEW SPECIES OF THE GENUS *PLOCIA* NEWMAN, 1842 (CERAMBYCIDAE: LAMIINAE: APOMECCYNINI) FROM DAVAO DE ORO, MINDANAO ISLAND, PHILIPPINES

Eleuterio Jr. C. Avergonzando*, Milton Norman D. Medina

Avergonzando E.Jr.C., Medina M.N.D. 2024. Two new species of the genus *Plocia* Newman, 1842 (Cerambycidae: Lamiinae: Apomeccynini) from Davao de Oro, Mindanao Island, Philippines. *Acta Biol. Univ. Daugavp.*, 2024(2): 265-272.

Abstract

The genus *Plocia* Newman, 1842 is one of the genera under the tribe Apomeccynini which includes four species and four subspecies worldwide. An additional two new species are added, *P. barsevskisi* Medina & Avergonzando sp. nov. and *P. vivesi* Medina & Avergonzando sp. nov. from Mt. Candala Range in Maragusan, Davao de Oro province. With the addition of these species, the Philippines now has six species and four subspecies with 90% endemism.

Keywords: Coleoptera, description, Mt. Candalaga, Maragusan, taxonomy, Philippines.

*Corresponding author: *Eleuterio Jr. C. Avergonzando. Biology Program, Faculty of Agriculture and Life Sciences, Davao Oriental State University, Mati City, Philippines. E-mail: eleuteriojr.avergonzando@dorsu.edu.ph. ORCID: <https://orcid.org/0009-0009-2692-6331>*

Milton Norman D. Medina. Faculty of Agriculture and Life Sciences and University Research Complex (URESCOM), Davao Oriental State University, Mati City, Philippines. Philippine National Museum, Ermita, Manila, Philippines. ORCID: <https://orcid.org/0000-0001-6858-8048>

INTRODUCTION

Apomeccynini Thomson, 1860 consists of almost 1900 species distributed in 246 genera in America, Africa, Asia, and Oceania (Tavakilian & Chevillotte 2024). In the Philippines, 293 species plus 5 subspecies combined into 38 genera (6 subgenera) ranked in the tribe (Roguet 2024). This tribe can be identified by several features: smooth, sturdy scapes, mesotibiae

with a furrow often marked by a tooth, a normal clypeus, and closed mesocoxal cavities that do not connect to the epimera (Vitali 2013). Although closely related to the Pteropliini Thomson, 1860, Apomeccynini differs due to its unique mesotibiae and closed mesocoxal cavities.

The genus *Plocia* Newman, 1842 is one of

the genera within the tribe Apomecynini. It includes four species and four subspecies, majority are endemic in the Philippines: *P. diverseguttata diverseguttata* Heller, 1924; *P. diverseguttata albopunctata* (Breuning, 1982); *P. diverseguttata bohollensis* (Breuning, 1982); *P. diverseguttata mindanaonis* (Breuning, 1982); *P. puncticollis* Breuning, 1965; *P. splendens* Hudepohl 1995; *P. maglanai* Medina, 2023; and one species, *P. notata* Newman, 1842 occur both in Taiwan and the Philippines (Tavakilian & Chevillotte 2024). The genus can be easily distinguished from related genera of Apomecynini having a “conspicuous white tomentation of the 7th antennal joint” (Weigel & Skale 2021), sub-navicular elytra, apex obliquely truncated and spiny (Thomson, 1864).

There are three *Plocia* species recorded in Mindanao Island, e.i *P. diverseguttata* sensu stricto Heller, 1924 which known to occur in Surigao, Bukidnon, Lindabon Gingoog, Cateel [Davao Oriental], *P. diverseguttata mindanaonis* occurs in Mt. Apo, Lake Agko, Baclayon Mainit Hot Spring, and *P. maglanai* Medina, 2023 which was recently introduced to science from Pantukan, Davao de Oro.

This paper describes two new species of *Plocia* Newman, 1842 from Davao De Oro, Mindanao Island, Philippines. As of this writing, the Philippines now has six species and four sub-species of *Plocia* with 90% endemism.

MATERIALS AND METHODS

Hand net, handpicking and beating sheet were employed during the sampling. The specimens were killed using 70% ethyl alcohol and temporarily stored in vials. The collected specimens were deposited at MMCP. Morphological characters were observed under the Leica MZ 12.5 stereomicroscope. Habitus images were taken using a Canon EOS 3000D 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 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 the 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 (mm).

Comparative material and type specimens are deposited in the following collections:

MMCP Milton Medina Collections, Tagum City, Philippines.

MNLIEBSBG Museum für Naturkunde–Leibniz Institute for Evolution and Biodiversity Science, Berlin, Germany.

PNM Philippine National Museum, Ermita, Philippines.

SNSDG Senckenberg Naturhistorische Sammlungen Dresden, Germany.

ZSMDBSM Zoologische Staatssammlung Des Bayerischen Staates München, Germany.

Taxonomy

Plocia barsevskisi Medina & Avergonzado sp. nov. (Fig. 1)

HOLOTYPE male: PHILIPPINES – Mindanao, Davao de Oro / Maragusan/ New Albay/ Mt. Candalaga / 9.VI.2024 / 1800-2100 masl. E.Avergonzado; J.Japitan leg. / MMCP, printed on red card. Type specimen will be deposited at the Philippine National Museum (PNM). **PARATYPES**: 2 males & 1 female same label as holotype, MMCP. Mindanao, /

Compostela Valley, / Maragusan, / New Albay / Mt. Candalaga, 03.2017. / local collector leg./ DUBC.

Description. Dimensions: LB: 14.0-15.0 mm. WH: 3.0 mm. LL: 0.5 mm. WL: 0.5 mm. LP: 2.5 mm. WP: 2.0-3.0 mm. LE: 11 mm. WEH: 4.5-5.0 mm.

Adult male. Teguments in the head, pronotum, elytra, and legs lustrous brown; antennae matte brown; frons and coxae light brown; eyes matte black. **Head** wider than long with few shallow punctures arranged randomly and two deep punctures at frons. Frons lustrous, densely covered with yellowish recumbent pubescence, with longitudinal groove from vertex to apical margin, deep punctures uniformly arranged at each half (magnified using yellow dots) (Fig. 1D), apical side with 2-3 elongated erect white setae. Genae wider than long, lustrous, densely covered with recumbent yellowish pubescence, with micro-punctures almost unnoticeable arranged randomly towards ventral side. Eyes wider than long, matte dark brown, margin covered with recumbent and semi-erect yellowish pubescence, upper lobe with two black erect supraorbital setae. Clypeus rectangular, lustrous, light brown, glabrous. Labrum wider than long, two-toned, dark brown at the base and black towards apex, densely covered with yellowish semi-recumbent pubescence, few long erect hairs at each side with scattered punctations, Mandible lustrous, robust at base, with short yellowish semi-recumbent pubescence at each side. **Antennae** long, reaching apex of elytra in male, underside of antennae lined with semi-erect pubescence, upper side sparsely covered with semi-erect short pubescence; scape robust, longer than the head reaching almost apical third of pronotum, densely covered with very fine setae; pedicel short about 0.3 mm, wider than long, semi-clubbed shape, apex truncated; antennomere III slightly longer than IV; antennomere IV slightly curved, longer than antennomere V and VI; antennomere VII fully covered with whitish recumbent pubescence; antennomere VIII and IX of equal

length; antennomere X slightly shorter than IX; antennomere XI shorter than X.

Prothorax. Pronotum bell shape, longer than wide, disc densely covered with shallow punctures, deep punctures concentrated at lateral side, lateral margins lined with thin yellowish recumbent pubescence, propleuron covered with short yellowish pubescence.

Elytra twice longer than wide, translucent with visible isodiametric reticulations, humeral angle raised, base with shallow punctations arranged in rows along striae except near scutellum, apical half devoid of punctations; margins slightly raised, light brown, with highly pointed apical suture (Fig. 1A). Elytral pubescence arranged as follows: One short longitudinal band at base, two small bands near basal third, very thick slanting band at basal third not reaching suture, small band at middle near suture, another thick slanting band near after the middle not reaching suture, four small circular bands at apical third (Fig. 1A-B).

Legs. Procoxae raised, mesocoxae slightly raised, metacoxae not raised. Femora lustrous, robust, with small very fine white and yellowish recumbent setae, punctations very sparse and shallow; base of tibiae with very fine recumbent setae, apex with semi-erect yellowish and black setae. Tarsi dorsal aspect lined with recumbent yellowish-whitish pubescence with long black semi-erect setae, underside covered with whitish pubescence. Claws simple, brown, glabrous.

Mesepimeron, metepisternum with deep punctures and yellowish recumbent setae; metasternum with deep punctures at each side, devoid of punctures at middle. Ventrites covered with very short pubescence, lateral side with lump of recumbent setae, ventrite I longer than ventrite II-V, II slightly longer than ventrite III and IV, ventrite III and IV of the same length, ventrite V longer than ventrite IV, III and II. Pygidium light brown at base, darker at apex, densely covered with long erect yellowish setae.

Aedeagus slightly shorter than endophallus,

recurved, lanceolate, and highly cuspidate apex, tegmen long, paramere longer than wide, closed, apex lined with long, soft, and erect yellowish setae (Fig. 2).

Adult female. There is no sexual dimorphism between males and females except that the antennae of females are shorter than males. The body of females is more robust than males.

Differential diagnosis. The new species closely resemble *P. diverseguttata albopunctata* (Breuning, 1982) but differs in the following characteristics: *Plocia barsevskisi* Medina & Avergonzado sp. nov. have a pronotum covered with very shallow punctures (vs. deep punctures in *P. diverseguttata albopunctata*), elytra are translucent with visible reticulations (vs. absent in *P. diverseguttata albopunctata*), differences in elytral maculations (Fig. 1A-B), deep

uniformly arranged puncturations at frons (vs. scattered shallow punctures in *P. diverseguttata albopunctata*). Lateral margin lined with thin yellowish recumbent pubescence (vs. thick band in *P. diverseguttata albopunctata*). Parameres closed (vs. parameres open in *P. diverseguttata albopunctata*); apex of aedeagus cuspidate (vs. acute in *P. diverseguttata albopunctata*) (Fig. 2). The new species also differs from other *P. diverseguttata* species group based on the arrangement of bands of whitish pubescence at elytra.

Etymology. The new species is named after Dr. Arvids Barsevskis of Daugavpils University, Latvia, a good friend and colleague working on the taxonomy of Philippine Cerambycidae.

Distribution. Philippines: Mindanao (Mt. Candalaga, Maragusan, Davao de Oro).

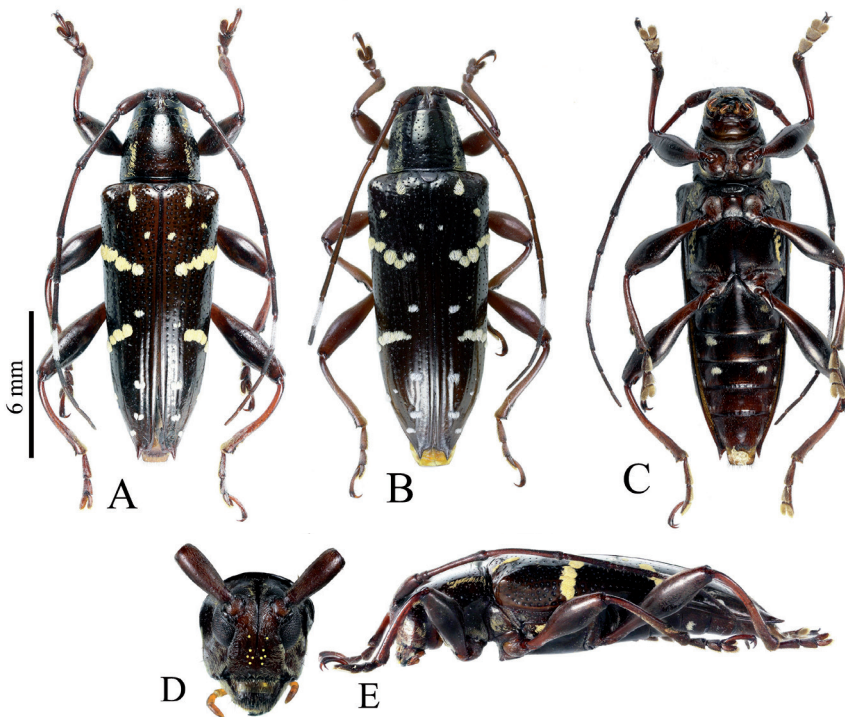


Figure 1. Habitus of *Plocia barsevskisi* Medina & Avergonzado sp. nov. A: dorsal male, holotype, B: dorsal female, paratype, C: ventral male, holotype, D: frons male, holotype, uniform puncturations in yellow dots, E: lateral male, holotype. Images courtesy E.Jr.C. Avergonzado.

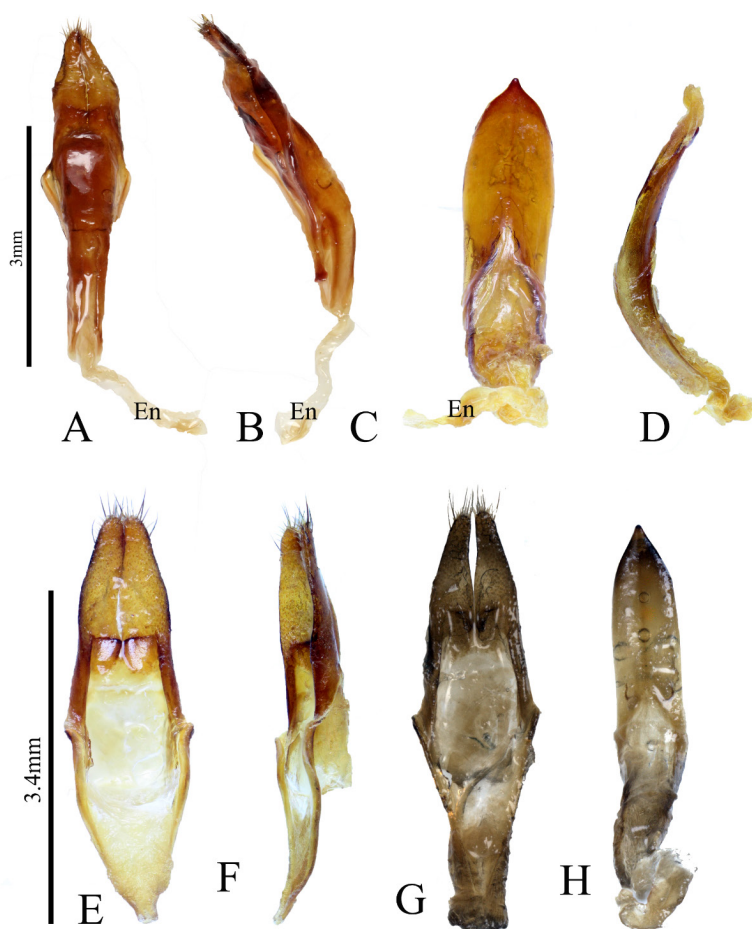


Figure 2. Genitalia of *Plocia barsevskisi* Medina & Avergonzado sp. nov. (A-F) and *P. diverseguttata albopunctata* (G-H). *Plocia barsevskisi* A: whole system, ventral aspect, whole system, B: lateral aspect, C: aedeagus, ventral side, D: aedeagus, lateral side, E: tegmen, ventral side, F: tegmen, lateral side. *P. diverseguttata albopunctata* G: tegmen and H: aedeagus. Images courtesy M.N.D. Medina.

***Plocia vivesi* Medina & Avergonzado sp. nov.**
(Fig. 2).

HOLOTYPE male: PHILIPPINES – Mindanao, Davao de Oro / Mt. Candalaga / Camp 2 / 27.I.2024 / 1400 masl. E.Avergonzado, M.Macosang, J.Japitan, J.Panangcad leg. / MMCP, printed on red card. Type specimen will be deposited at the Philippine National Museum

(PNM). **PARATYPES**: 2 males, same label as holotype, MMCP.

Description. Dimensions: LB: 11-14.0 mm. WH: 1-1.5 mm. LL: 0.8 mm. WL: 1.0 mm. LP: 2-.0 mm. WP: 2.5 mm. LE: 8.5 mm. WEH: 4.0 mm.

Adult male. Teguments in the Head, pronotum, elytra, frons and femur lustrous black; antennae, tibiae, tarsi, coxae, eyes matte black.

Head wider than long, highly punctate randomly arranged. Frons densely covered with very fine yellowish recumbent setae, densely covered with relatively deep punctures arranged randomly apical side with 2-4 elongated black erect setae (Fig. 3C). Genae longer than wide, lustrous, sparsely covered with recumbent yellowish pubescence, with few deep punctures. Eyes wider than long, matte dark brown, margin with slight traces of deep punctures; upper eye lobe with two black erect supra orbital setae. Clypeus elongated rectangular, lustrous golden yellow, glabrous. Labrum wider than long, highly punctate, black, densely covered with short yellowish semi-recumbent pubescence with few erect hairs. Mandible lustrous, robust at the base, with yellowish pubescence at each side. **Antennae** long, reaching apex of elytra, underside of antennae lined with semi-erect setae, dorsal side sparsely covered with semi-erect short setae; scape robust and normal, densely covered with very fine setae, longer than the head reaching basal quarter of pronotum; pedicel short about 0.5 mm, longer than wide, semi-clubbed shape most in lateral view, apex of pedicel truncated; antennomere III slightly longer than IV; antennomere IV slightly curved, twice longer than antennomere V and VI; antennomere VII fully covered with whitish recumbent pubescence; antennomere VIII-XI almost the same length.

Prothorax. Pronotum slightly elongated, bell-shaped dorsally, dorsal to lateral sides of disc densely covered with random deep punctures, base at lateral side with very slight traces of very fine recumbent setae, apical half to apex covered with yellowish recumbent setae, each lateral margin and propleuron lined with thin yellowish recumbent pubescence.

Elytra twice longer than wide, basal half-covered with deep punctations arranged in rows, apical half devoid of punctations; margins slightly raise, with highly pointed apical suture. Elytral band of whitish pubescence arranged as follows: one horizontal band near margin lining the apical half towards apex, transverse semi

acute band at the middle, relatively thick band of soft whitish setae at apex (Fig. 3A).

Legs. Procoxae raised, mesocoxae slightly raised, metacoxae not raised. Femora robust in apical half, with small white very fine yellowish recumbent setae; tibiae with very fine recumbent pubescence at base, semi-erect yellowish setae at apex. Tarsi dorsal aspect with long black semi-erect setae and recumbent yellowish-whitish pubescence, underside was covered with whitish pubescence. Claws simple, brown, glabrous.

Mesepimeron, metepisternum with deep punctures arranged sparsely and yellowish recumbent setae; metasternum with deep punctures at each side, devoid of punctures at the middle, middle with very fine recumbent setae. Ventrites lustrous black, covered with very short pubescence, lateral side with small lump of whitish recumbent setae, ventrite I longer than ventrite II-V, II of the same length of ventrite III and IV, ventrite V longer than ventrite IV, III and II (Fig. 3B). Aedeagus longer than endophallus, recurved, lanceolate, and rounded at apex; tegmen as long as aedeagus; paramere wider than long, closed, covered with erect long soft yellowish setae; endophallus longer than tegmen (Fig. 4).

Adult female. Unknown.

Differential diagnosis. The new species closely resembles *P. splendens* Hüdepohl, 1995 but differs in many ways: *P. vivesi* Medina & Avergonzado sp. nov. dorsally, have deep punctures arranged randomly, particularly in the head, pronotum, and basal half of elytra (vs. fine and relatively shallow punctures in *P. splendens*); both species differ in elytral band of whitish pubescence. This species also resembles *P. maglanai* Medina, 2023 but has no transverse bands of yellowish pubescence at elytra. **Etymology.** This new species is named after Dr. Eduard Vives, a good friend and colleague working on the taxonomy of Philippine Cerambycidae.

Distribution. Philippines: Mindanao (Mt. Candalaga, Maragusan, Davao de Oro).

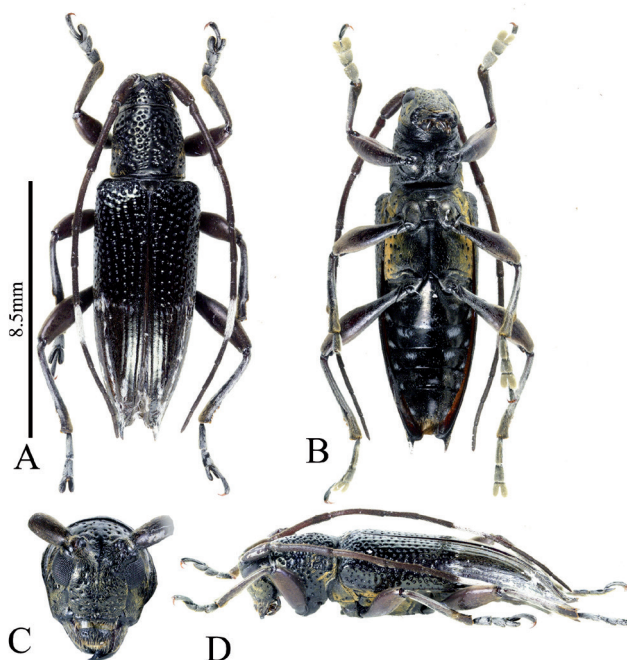


Figure 3. Habitus of *Plocia vivesi* Medina & Avergonzado sp. nov. male, holotype. A: dorsal aspect, B: ventral aspect, C: frons, D: lateral aspect. Images courtesy E.Jr.C. Avergonzado.



Figure 4. Genitalia of *Plocia vivesi* Medina & Avergonzado sp. nov. A: whole system, lateral aspect, B: whole system, ventral aspect, C: aedeagus, ventral aspect, D: aedeagus, lateral aspect, E: tegmen, ventral aspect. Images courtesy M.N.D. Medina.

ACKNOWLEDGEMENTS

Our gratitude to our local guides and colleagues who helped us during the expedition in Mt.

Candalaga: Dexter Patalita, Jessa Patalita, Monsur M. Macosang, Jenie Ann M. Panangcad, Melonie Eve Balwit, Cardiff Van Burgos Jr., Jennylen H. Japitan, Jules Alexes

M. Loguinsa, Lourenz Kate I. Dagpin, Daven Jayson Agbas, Graden Obrial, Nestor “Tatay Bobong” Badilla, John Mark Badilla, Jovil Mamparo, Rinato Concepcion, Neshan Badilla, Erick Pescadero, and Alexander Anichtchenko (Daugavpils University, Latvia). The expedition in Mt. Candalaga is partly funded by the Center for Futures Thinking and Regenerative Development – Davao Oriental State University, Mati City (CFTRD-DORSU). We thank our colleagues Jhonnel Villegas and Analyn Cabras for their support. We also thank the Local Government Unit of Maragusan, BLGU-New Albay and Sumpaw Nang Mangkatikadung sang Maragusan for their assistance during the January 2024 expedition.
In memory of Dr. Analyn Cabras.

REFERENCES

- Breuning S. 1965. Neue Cerambyciden aus den Sammlungen des Zoologischen Museums der Humboldt-Universität zu Berlin (Coleoptera, Cerambycidae) Fünfter Teil. *Mitteilungen aus dem Zoologischen Museum in Berlin* 41 (2): 177–182. (In German).
- Breuning S. 1982. Descriptions of new forms of East Asian Lamiinae. *Special Issue to the Memory of Retirement of Emeritus Professor Michio Chûjô, Nagoya* 139–149.
- Heller K.M. 1924. Neue, vorwiegend philippinische Bockkäfer. *Entomologische Mitteilungen, Berlin* 13 (4/5): 195–214. (In German).
- Hüdepohl K.E. 1995. Über südostasiatische Cerambyciden XIII (Coleoptera, Cerambycidae). *Entomofauna Zeitschrift für Entomologie, Anselden* 16 (14): 281–316. (In German).
- J.T., Macosang M.M., Panangcad J.A.M. 2023. Catalog of the genus *Plocia* Newman, 1842 (Cerambycidae: Lamiinae: Apomecynini) of the Philippines with the description of a new species from Davao De Oro Mindanao Island. *Baltic Journal of Coleopterology* 23(1): 75–83. [https://doi.org/10.59893/bjc.23\(1\).008](https://doi.org/10.59893/bjc.23(1).008)
- Newman M. 1842. *Cerambycitum insularum manillarum* a dom. Cuming captorum enumeratio digesta. *The Entomologist* 18: 288–293. (In Latin).
- Rouget J.P. 2024. Lamiinaires du Monde. Lamiines of the World. <https://lamiinae.org>. [Accessed 29.11.2024].
- Tavakilian G.L., Jiroux E. 2015. New nomenclatural changes for 2015 (Coleoptera, Cerambycidae). *Les Cahiers Magellanes* 20: 8–13.
- Tavakilian G.L., Chevillolette H. 2024. Titan: base de donnees internationales sur les Cerambycidae ou Longicones. Version 4.0. Available from: <http://titan.gbif.fr>. [Accessed in 10.20.2024].
- Vitali F. 2013. Key to the tribe of Lamiinae Worldwide. Cerambycoidea Forum. https://www.cerambycoidea.com/forum/topic.asp?TOPIC_ID=15993. [Accessed in 29.11.2024].
- Weigel A., Skale A. 2021. On the taxonomy, synonymy and faunistics of the Apomecynini of the Asian-Australian region (Coleoptera: Cerambycidae: Lamiinae). Part 8. In: Telnov D., Biodiversity, Biogeography and Nature conservation in Wallacea and New Guinea. The Entomological Society of Latvia 4: 345–362.

Received: 28.10.2024

Accepted: 30.11.2024

Medina M.N.D., Avergonzado E.J.C., Loguinsa