CALLIMETOPUS DAGTUMANUS SP. NOV., A NEW SPECIES OF PTEROPLIINI THOMSON, 1860 (COLEOPTERA: CERAMBYCIDAE: LAMIINAE) FROM MT. CANDALAGA MOUNTAIN RANGE IN MARAGUSAN DAVAO DE ORO PHILIPPINES

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Abstract

A new species of *Callimetopus* Blanchard, 1853, *C. dagtumanus* sp. nov. is described and illustrated. This is the first species of *Callimetopus* in Mt. Candalaga range in Maragusan, Davao de Oro Province, and the first for Eastern Mindanao Biodiversity Corridor, Philippines. A short note on the species ecology and images of known *Callimetopus* species in Mindanao is also presented.

Keywords: Cerambycidae, New Species, Description, Habitat, Mindanao, Philippines.

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INTRODUCTION

The taxonomy of Philippine Cerambycidae (or long-horned beetles) has recently gained momentum through the works of both foreign and Philippine taxonomists. Within the last decade, several species of cerambycids have been added to Philippine fauna with the majority of the species from the sub-family Lamiinae (flat-faced long-horned beetles) (Barševskis 2015. Barševskis 2016a. Barševskis 2018, Barševskis et al. 2020a, Barševskis et al 2020b, Barševskis et al 2022, Barševskis & Medina 2021, Barševskis & Medina 2023, Medina et al., 2021a, Medina et al 2021b, Medina et al 2022a, Vitali 2019, Vitali & Medina 2023, Vives 2009, Vives 2012a, Vives 2012b, Vives 2013, Vives 2015). The sub-family Lamiinae constitutes at least 70-75% of Philippine cerambycids (Roguet 2024, Tavakilian & Chevillotte 2023), comprising roughly 1500 described species in Philippines, and this number continuously rising as more new species and/or new genera are being added each year. One of the most speciose groups of Lamiinae in the Philippines is the tribe Pteropliini with 42 genera and roughly 226 species (Roguet 2024, Tavavilian & Chevillotte 2023). The genus Callimetopus is one of the biggest genera of the tribe in the Philippines with 44 species and 95% of the species are endemic to the country. There are eight species listed for Mindanao fauna, C. antonkozlovi Barsevskis, 2015, C. bilineatus Vives, 2015 both recorded in Mt. Apo Range, C. cabrasae Barsevskis, 2018 recorded in Agusan del Sur, C. irroratus (Newman, 1842) recently recorded in Davao Oriental and Davao de Oro, C. lumawigi Breuning, 1980 recorded in Mt. Apo Range, C. siargaonus (Schultze, 1919) recently collected in Mt. Balatukan, Gingoog City, C. stanleyi Dela Cruz & Adorada, 2012 recorded in Bukidnon, and C. tagalus (Heller, 1899) recorded in Zamboanga, Surigao, and Davao region (Roguet 2024, Tavakilian

Chevillotte 2023) (Fig. 3A-H). Characters of the genus and key to some species are provided by Breuning (1962). Recent works on the genus include a species of *Callimetopus* endemic to Central Mindanao biogeographic subregion, *C. lumawigi* Breuning, 1980 being assessed by the IUCN as an endangered species (Bowers et al., 2023, IUCN 2023-1) as well as ecologic notes of the same species being documented (Medina et al. 2022b). Moreover, several catalogs of the genus *Callimetopus* have been provided (Breuning 1962, Barsevskis 2016b, 2018).

The Eastern Mindanao Biodiversity Corridor (EMBC) is an interesting group of mountain ranges that covers the mountain areas of Governor Generoso including the Hamiguitan Wildlife Range Sanctuary (MHRWS), the Mt. Mayo in Mati-Tarragona, Mt. Candalaga-Kampalili Complex in Davao de Oro and Davao Oriental, and the mountain areas in Agusan del Sur, Agusan del Norte, Surigao del Sur, Surigao del Norte, and Dinagat Island. The EMBC is a group of mountain ranges that line the eastern seaboard of Mindanao and is one of the most biologically rich areas in the country. Several species of cerambycids and other beetle groups have been discovered in this area (Medina 2023, Medina et al., 2023a,b,c, 2024). Recently, new species a Callimetopus has been collected at the high elevation range of Mt. Candalaga Maragusan, Davao de Oro. This new species is the first Callimetopus described in the said mountain range and a new species addition to the fauna of EMBC.

MATERIAL AND METHODS

The specimens were collected using a beating sheet method at an elevation of 1600 m.a.s.l at the Northern slope of Mt. Candalaga Range in Maragusan Davao de Oro. All specimens were stored in 70% ethanol, labeled, and later

examined at Davao Oriental State University (DOrSU) Invertebrate Research Center, City of Mati, Philippines. A gratuitous permit from the Department of Environment and Natural Ressources (DENR) XI was also secured before collection.

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 as follows: LB = length of body from head to apices of clothed elytra; WH = maximum width across head from the outer margin of a gena to that of another; 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 (mm).

Comparative material and specimens used in this study are deposited in the following collections:

MMCP Milton Medina Collections, Tagum City Philippines.

PNM Philippine National Museum, Ermita, Philippines.

Taxonomy

Callimetopus dagtumanus Medina sp. nov. (Fig. 1, Fig. 2)

HOLOTYPE male: PHILIPPINES – Mindanao, Davao de Oro / Maragusan / Mt. Candalaga iii.2023, 1500 m.a.s.l, G. Obrial, D. Agbas leg. / MMCP, printed on red card. PARATYPE female: same label as holotype,

MMCP. PARATYPE female: Philippines – Mindanao, Davao de Oro / Maragusan / Mt. Candalaga 6-12.vi.2024, 1600 m.a.s.l, M.Medina leg. / MMCP, printed on red card. Holotype will be deposited at the PNM.

Other materials examined: Callimetorus

Other materials examined: *Callimetopus irroratus* (Newman, 1842) 2 males, 1 female: Philippines – Mindanao, Davao Oriental, Cateel, Aliwagwag Falls, i.2023, M.Medina leg, MMCP.

Description. Dimensions Holotype: LB: 14.5 mm. WH: 3.5 mm. LP: 3.0 mm. WP: 4.0 mm. LE: 10.0 mm. WEH: 5.0 mm. Paratype: LB: 19.0 mm. WH: 4.0 mm. 3.5 LP: mm. WP: 5.0 mm. LE: 13.0 mm. WEH: 6.5 mm.

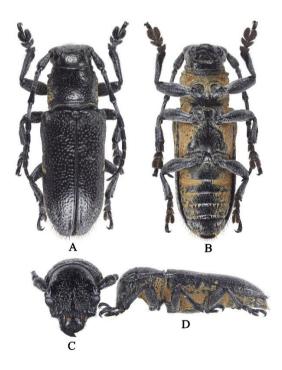


Figure 1. Callimetopus dagtumanus sp. nov. holotype male, habitus: A. Dorsal view, B. Ventral view, C. Frons, D. Lateral view. Scale = 3 mm. Photo: Milton Norman D. Medina.

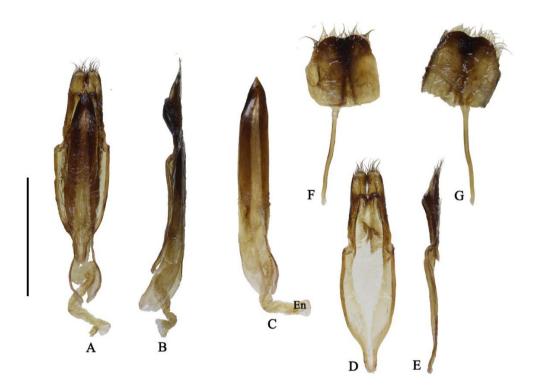


Figure 2. Genitalia, holotype male: A-B: whole system, A. ventral view, B. lateral view, C. aedeagus, ventral view, D-E: tegmen, D. ventral view, E. Lateral view, F-G: VIII-X Tergites: F. Dorsal view, G. Ventral view. Scale = 2 mm. Photo: Milton Norman D. Medina.

Adult male. Teguments head, prothorax, elytra, abdomen, legs dull black. Eyes, mandible, clypeus dark brownish to matte black. Antennae scape and pedicel matte black, antennomeres III to XI matte black with a shade of metallic blue.

Head wider than long; frons, genae, and clypeus densely covered with whitish recumbent pubescence; apical margin undulate towards the middle. Frons coarsely punctate, finer towards vertex. Genae slightly convex densely covered with recumbent pubescence. Lower eyelobe wider than long, upper eyelobe semi elliptic, with supra-orbital erect whitish setae near antennal support. Base of clypeus lined with long erect whitish setae; labrum with coarse punctures towards apex covered with whitish and yellowish recumbent setae.

Antennae: Antennae reaching apical third or abdominal ventrite III. Scape, pedicel, antennomere I, and basal half of antennomere II are densely covered with long whitish recumbent pubescence, and the rest of the antennomeres are covered with finer whitish pubescence, with few long semi-erect setae mainly on the underside. Scape robust reaching apical margin of pronotum, covered with deep punctures; pedicel short, bellshaped, with few punctures. Antennomere III longer than antennomere IV, antennomeres III sparsely covered with fine punctures, almost unnoticeable. Antennomeres V and VI are of the same length, antennomeres VII to XI much shorter than antennomere V: base of antennomeres VI to XI glabrous; tip of antennomere XI lined with long erect whitish setae.

Prothorax. Pronotum wider than long; basal margin wavy forming a spine at each lateral end; apical margin semi-concave. Pronotal disc slightly raised and flattened at the middle, densely covered with whitish recumbent pubescence and deep punctures. Propleuron covered with deep punctures, with blunt spine near apical margin, densely convered with brownish recumbent pubescence. Proventral process ovate slightly raised, sparsely covered with brownish recumbent pubescence.

Elytra. Elyra oblong or somewhat shieldshaped, twice longer than wide, widest at humeri. Margin of elytral base undulate, slightly raised at humeri. Surface of elytra covered with deep puncturations, towards suture and near apex. Two-thirds of elytra densely covered with very fine whitish pubescence, apical third covered with longer whitish and yellowish recumbent pubescence. Basal half of elytral margin covered with relatively thick brownish pubescence with apical end slightly protruding towards elytral disc; apical third of elvtral margin densely lined with long erect black setae towards apex. Scutellum matte black, bell-shaped, covered with whitish pubescence.

Legs. Trochanters matte black, densely covered with recumbent whitish pubescence; protrochanter raised, mesotrochanter slightly raised, metatrochanter not raised. Femors densely covered with whitish recumbent pubescence. Tibia matte black with a shade of metallic blue, covered with whitish pubescence, apical half dorsal side densely covered with long semi-erect black setae. Tarsi metallic blue, densely covered with whitish pubescence. Claws matte black, glabrous.

Mesepimeron, metanepisternum, metaventrite, mesepisternum, and lateral sides of abdominal ventrites densely covered with thick brownish recumbent pubescence. Mesosternum, median plane of metaventrite, and abdominal ventrites densely covered with whitish pubescence; abdominal ventrite I broader than ventrites II, III, IV. Pygidium dark brown, thickly covered with long brownish and black setae.

Genitalia. Whole system of genitalia is generally light brownish, flat at dorsal side, slightly recurved when viewed laterally. Aedeagus transparent at base, darker towards apex; apex lanceolate, and slightly recurved. Tegmen base in peculiar mucronate shape, body expanded at middle, parameres long oblong shaped, apex lined with long soft yellowish setae (Fig. 2A-B). Endophalus shorter than the whole system of genitalia (Fig. 2C). Base of paramere slightly raised towards the middle (Fig. 2D-E). Tergites VIII, IX, X (Fig. 2F-G).

Adult female. There is no sexual dimorphism between male and female, except for size difference, female is bigger than the male specimen.

Differential diagnosis.

The new species closely resembles C. irroratus but differs in the following characters: frons, genae, and clypeus of C. dagtumanus sp. nov. is densely covered with whitish recumbent pubescence (vs. brownish recumbent pubescence in C. irroratus). Apical margin of the head of the new species is undulated towards the middle (vs. apical margin of the head of C. irroratus flat). Proventral process of C. dagtumanus sp. nov. is ovate, slightly raised, sparsely covered with pubescence brownish recumbent proventral process of *C. irroratus* bell-shaped, slightly concave, densely covered with brownish pubescence). Underside of the body in C. dagtumanus sp. nov. is covered with whitish pubescence (vs. abdominal ventrites of C. irroratus dark brown to light brown, covered entirely with brownish recumbent pubescence) Elytral apex of C. dagtumanus is obtuse or normal (vs. emarginate with pointed suture in *C. irroratus*). The mucronate shape (vs. lanceolate shape in C. irroratus) of the base of tegmen is peculiar amongst its Callimetopus congeners in the Philippines.

Etymology. The new species name 'dagtumanus' is from the Filipino-Bisayan term

'dagtum' meaning pitch black, referring to the general matte black coloration of the species.

Notes on the species habitat

The new species was discovered on the northern edge of Mount Candalaga in the municipality of Maragusan, Davao De Oro, along Langgawisan-Bahi Road at around 1600 m.a.s.l (Fig. 4). The locals referred to this area as Almaciga forest since it is densely covered with towering *Agathis philippinensis* Warb (Araucariaceae), a Philippine native tree species that is a source of resin that the locals used as fuel. Generally, the area is characterized as a high-elevation montane ecosystem composed of old-growth secondary forests with relatively high humidity, and the understorey

is composed of several species of ferns, shrubs, and flowering plants.

At present, the immediate threat to the species' habitat is its conversion to agricultural lands. With this, several fragments of forest clearing are visible allowing the entrance of invasive and exotic species and making the land area to landslide. The newly cemented road from Maragusan to Langawisan-Bahi also promotes the entrance of human habitation which may put pressure on forests for higher demand for food, shelter, and other socio-economic activities. The newly cemented road also poses an easy access amongst poachers which also contributes to the decline of species population in the wild.

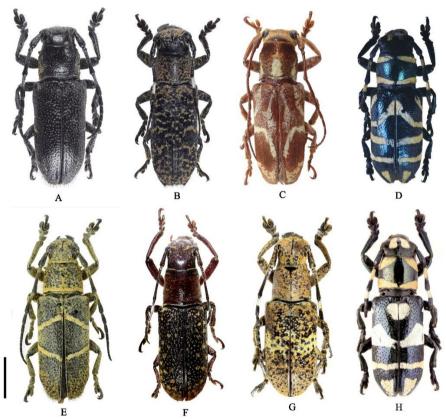


Figure 3. Callimetopus species in Mindanao Island: A. C. dagtumanus sp. nov. holotype male, B. C. irroratus (Newman, 1842), C. C. lumawigi Breuning, 1980, D. C. siargaonus (Schultze, 1919), E. C. bilineatus Vives, 2015, F. C. cabrasae Barsevskis, 2018, G. C. stanleyi Dela Cruz & Adorada, 2012, H. C. tagalus (Heller, 1899). Images D-H credit to A. Barsevskis. Scale = 3 mm.



Figure 4. Species habitat in Mt. Candalaga Range, Maragusan, Davao de Oro, Philippines. Photo: G. Obrial, 2024.

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

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