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# Catalog of the genus *Cylindrepomus* Blanchard (Coleoptera, Cerambycidae, Dorcashematini) in the Philippines with descriptions of new species from northern Mindanao

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## Abstract

A catalog of the genus *Cylindrepomus* Blanchard, 1853 in the Philippines with description of a new species from northern Mindanao is presented. Notes on the ecology, threats, and conservation of the new species is also provided.

## Keyword

Beetle, Conservation, Davao City, Dorcashematini, Philippines

## Introduction

*Cylindrepomus* Blanchard, 1853 is a tropical member of long-horn beetles (Cerambycidae) (type species *Cylindrepomus nigrofasciatus* Blanchard, 1853) distributed within South China, Southeast Asia, and Oceania. They are easily recognized from other members of Dorcashematini for having a highly punctate, tomentose elytra covered with recumbent hairs, a bulbous and coarsely granulated scape, and 3<sup>rd</sup> antennomere twice longer than scape.

There are 14 species and one subspecies of *Cylindrepomus* in the Philippines; all are endemic in the country with the majority distributed in a specific island or mountain range. There are four species described from Mindanao Island: *Cylindrepomus bivitticollis* Breuning, 1947, *Cylindrepomus elisabethae* Hüdepohl, 1987, *Cylindrepomus peregrinus samarensis* Dillon & Dillon, 1948, and *Cylindrepomus sexlineatus* Schultze, 1934. The most recent addition to Philippine fauna is *Cylindrepomus nigerrimus* Vives, 2017 from northern Luzon. The 2022 Coleopterological Expedition conducted by Daugavpils University Beetle Research Team and the University of Mindanao Coleoptera Research Center harbors a diverse collection of beetles from different mountain ranges in Mindanao. Included in the collection is the new species of *Cylindrepomus* from northern Mindanao, the fifth species for Mindanao Island. An updated catalog of *Cylindrepomus* in the Philippines is included with this paper.

## Materials and methods

The Philippine catalog was obtained from various databases, i.e., Cerambycoidea.com (<https://www.cerambycoidea.com>), Lamiines of World ([www.lamiinae.org](http://www.lamiinae.org)), Coleoptera (www.<https://www.zin.ru>), the photographic catalogue of the Cerambycidae of the world (www.<http://bezbycids.com>), TITAN: Titan Database on Cerambycidae or Longhorn Beetles (version 30 May 2021, available at <http://titan.gbif.fr/index.html>) (misspelled as *Cylinderpomus* in Titan database), and Global Biodiversity Information facility ([www.gbif.org](http://www.gbif.org)).

The new *Cylindrepomus* material was obtained during the 2022 Philippine Coleopterological Expedition through Erasmus+ Mobility Programme of Daugavpils University in Latvia and the University of Mindanao Coleoptera Research Center Philippines. The project aimed to document the coleopteran fauna in various mountain ranges in Mindanao, Philippines. The specimen under study was collected through beating sheets along riparian fields at an elevation of approximately 600-700 m a.s.l., and specimens were killed with ethyl acetate. The habitat is composed of an old-growth secondary forest, with relatively high moisture and semi-open daylight.

Morphological characters were observed under Luxeo 4D and Nikon SMZ745T stereomicroscopes. Habitus images were taken with Canon EOS 6D digital camera equipped with MP-E macro lens. All images were then stacked using Helicon Focus and processed using a licensed version of Photoshop CS6 Portable software.

Measurements of various body parts follow Yoshitake and Yamasako (2016) with slight modifications of the body length: **LB** = length of the body, from the antennal support to the apices of clothed elytra; **WH** = maximum width across the head, from the outer margin of a gena to that of another; **LG** = length of the gena, from the upper margin to the lower margin; **LL** = length of the lower eye lobe, from the upper margin to the lower margin; **WL** = maximum width across the width of the lower eye lobe; **LP** = length of the pronotum, from the base to apex along the midline; **WP** = maximum width across the pronotum; **LE** = length of the elytra, from the level of the basal margins to the apices of the clothed elytra; **WEH** = width of the elytra at humeri; / different lines of a label; // different labels. All measurements are given in millimeters.

Comparative materials and specimens used in the study are deposited in the following institutional collections:

<b>ANSP</b>	Academy of Natural Sciences of Philadelphia, USA
<b>NHMUK</b>	Natural History Museum, London, United Kingdom
<b>DUBC</b>	Daugavpils University Biological Collections, Coleopterological Research Center, Latvia
<b>FVC</b>	Francesco Vitali Collection, Luxembourg, Grand-Duchy of Luxembourg
<b>MMCP</b>	Milton Medina Collections, Mindanao, Philippines
<b>MNHNP</b>	Muséum National d'Histoire Naturelle, Paris, France
<b>NMFIS</b>	Natur-Museum und Forschungs-Institut Senckenberg, Frankfurt am Main.
<b>NMNH</b>	National Museum of Natural History (Smithsonian).
<b>NRM</b>	Naturhistoriska Riksmuseet, Stockholm, Sweden
<b>SNSD</b>	Senckenberg Naturhistorische Sammlungen Dresden, Germany
<b>UMCRC</b>	University of Mindanao Coleoptera Research Center, Mindanao, Philippines
<b>ZSM</b>	Zoologische Staatssammlung des Bayerischen Staates München, Germany

## Catalog

***Cylindrepomus albomaculatus* Breuning, 1947**

Arkiv för Zoologi, Uppsala, 39, A, 6: 1-68.

Distribution: Philippines.

Type deposition: Holotype male, NRM.

***Cylindrepomus albosignatus* Breuning, 1974**

Reichenbachia, Dresden, 15, 5: 37-42.

Distribution: Philippines (Luzon: Panay, Gulasi, Zambales; Visayas: Mt. Macosolon in Capiz Western Visayas; Mindanao: Zamboanga).

Type deposition: Holotype, SNSD.

***Cylindrepomus astyochus* Dillon & Dillon, 1948**

Transactions of the American Entomological Society, Philadelphia, 73: 173-298, 6 pl.

Distribution: Philippines (Palawan; Visayas, Negros).

Type deposition: Holotype male, ANSP.

***Cylindrepomus atropos* Dillon & Dillon, 1948**

Transactions of the American Entomological Society, Philadelphia, 73: 173-298, 6 pl.

Distribution: Philippines (Luzon: Apayao; Visayas: Mt. Halcon in Mindoro, Samar).

Type deposition: Holotype female, NMNH.

***Cylindrepomus bayanii* Hüdepohl, 1987**

Entomologische Arbeiten aus dem Museum G. Frey, Tutzing bei München 35/36: 73-79, 3 figs.

Distribution: Philippines (Romblon).

Type deposition: Holotype male, ZSM.

***Cylindrepomus bivitticollis* Breuning, 1947**

Arkiv för Zoologi, Uppsala, 39, A, 6: 1-68.

Distribution: Philippines (Mindanao: Mt. Kitanglad in Bukidnon).

Type deposition: Holotype male, NRM.

***Cylindrepomus cicindeloides* Schwarzer, 1926**

Senckenbergiana, Frankfurt am Main, 8: 279-291, 2 pl.

Distribution: Philippines (Luzon: Mt. Banahao).

Type deposition: Holotype, NMFIS.

***Cylindrepomus elisabethae* Hüdepohl, 1987**

Entomologische Arbeiten aus dem Museum G. Frey, Tutzing bei München 35/36: 73-79, 3 figs.

Distribution: Philippines (Mindanao: Tandag Surigao del Sur).

Type deposition: Holotype female, ZSM.

***Cylindrepomus flavicollis* Breuning, 1947**

Reichenbachia, Dresden, 15, 5: 37-42.

Distribution: Philippines.

Type deposition: Holotype male, NRM.

***Cylindrepomus mucronatus* Schwarzer, 1926**

Senckenbergiana, Frankfurt am Main, 8: 279-291, 2 pls.

Distribution: Philippines (Luzon: Imugan).

Type deposition: Holotype male, NMFIS.

***Cylindrepomus nigerrimus* Vives, 2017**

Les Cahiers Magellanes, 25: 46-65, 23 fig.

Distribution: Philippines, Luzon, Nueva Vizcaya, Dupax del Sur.

Type deposition: Holotype male, Collection E. Vives, Terrassa.

***Cylindrepomus peregrinus samarensis* Dillon & Dillon, 1948**

Transactions of the American Entomological Society, Philadelphia, 73: 173-298, 6 pls.

Distribution: Philippines (Visayas: Samar; Mindanao).

Type deposition: Holotype male, NMNH.

***Cylindrepomus rufofemoratus* Breuning, 1947**

Arkiv för Zoologi, Uppsala, 39, A, 6: 1-68.

Distribution: Philippines.

Type deposition: Holotype male, NRM.

***Cylindrepomus sexlineatus* Schultze, 1934**

The Philippine Journal of Science 53 (3): 311-337, 2 pls.

Distribution: Philippines (Mindanao: Lanao Province).

Type deposition: Holotype female, SNSD.

Synonyms: *Cylindrepomus sexlineatus* m. *ininterruptus* Breuning, 1950; *Cylindrepomus sexlineatus* m. *reductevittatus* Breuning, 1947.

***Cylindrepomus ysmaeli* Hüdepohl, 1987**

Entomologische Arbeiten aus dem Museum G. Frey, Tutzing bei München 35/36: 73-79, 3 figs.

Distribution: Philippines (Luzon: Mountain Province).

Type deposition: Holotype female, ZSM.

**Taxonomy**

***Cylindrepomus ansihagani* Medina & Cabras, sp. nov.**

Figure 1A–D

**Holotype** (Fig. 1), male: PHILIPPINES – Mindanao / Northern Mindanao / Misamis Oriental III.2022 / local collector (MMCP), to be deposited at the PNM.

**Other materials examined.** *Cylindrepomus bivitticollis*, holotype male, NRM; *C. sexlineatus*, holotype female, SNSD;

**Diagnosis.** *Cylindrepomus ansihagani* sp. nov. is distinct from its Mindanao endemic congeners (*C. bivitti collis* and *C. sexlineatus*) in having a pronotum with two small bands of white recumbent pubescence, one at the base shaped like an elongated diamond, the other one is a triangular band of white recumbent pubescence near the margin, while *C. bivitticollis* has a pronotum with a complete, pale yellow, longitudinal band on each side of the disc and *C. sexlineatus* has a pronotum with a yellowish spot on each side at the base.

**Description. Male.** Dimensions: Male ( $n = 1$ ), LB: 14.0 mm. WH: 2.0 mm. LG: 1.5 mm. LL: 1.0 mm. WL: 1.0 mm. LP: 3.0 mm. WP: 2.0 mm. LE: 8.5 mm. WEH: 3.0 mm.

*Teguments* generally matte black, pro- and mesotibia reddish brown near the base; metatibia reddish brown up to apical third; middle legs tarsus pale brown; hind legs tibia, tarsus, and claw light brown. Ventral side tomentose, covered with white recumbent pubescence at prosternum, prothorax, and abdomen.

*Head and gena* tomentose, covered with black recumbent pubescence; genae with few erect black hairs at the side; vertex with two small bands of white recumbent pubescence. Eyes bulging, matte black, as long as wide. Antennae long and slender (except the scape), more than twice longer than body length, matte black; scape bulbous, coarsely granulated, with white recumbent white hairs near the base,  $2 \times$  longer than wide; 2<sup>nd</sup> antennomere wider than long; 3<sup>rd</sup> antennomere coarsely granulated,  $2 \times$  longer than antennomeres 4-11; 5<sup>th</sup> antennomere slightly granulated; antennomeres 6-11 finely granulated.

*Pronotum*  $1.5 \times$  wider than long, tomentose, covered with black recumbent hairs; with two small bands of white recumbent pubescence, one at the base shaped like an elongated diamond, the other one is a triangle-shaped band of white recumbent pubescence near the margin; apical margin lined with golden setae.

*Elytra*  $2.5 \times$  longer than wide, coarsely punctate that is uniformly aligned; humeri slight recurved; suture and margin raised, slightly truncate along suture; apex lanceolate; with two thick bands of white recumbent pubescence: one, at the basal third with vertical band and thin longitudinal pre-median band, and another one near the apex; few tiny white



bands near suture and margin at the apical third. Scutellum globous, tomentose, covered with white recumbent hairs (Fig. 1A).

*Prosternum* tomentose, covered with black recumbent hairs at the middle, white recumbent hairs at the sides. Mesosternum and metasternum tomentose, covered with black and white recumbent hairs. Mesepisternum and metepisternum tomentose covered with white recumbent hairs. 1<sup>st</sup> to 4<sup>th</sup> abdominal ventrites tomentose covered with white and black recumbent hairs with sparse golden hairs at each side; pygidium tomentose, covered with full black recumbent hairs, apex lined with golden hairs (Fig. 1B).

Coxae tomentose covered with whitish recumbent hairs; trochanters reddish brown; tibia armed with two small spines at the base (colored black at protibia and mesotibia, pale brown at metatibia). Profemur slightly recurved near the base.

**Male genitalia** (Fig. 2 A-J): Tegmen ~ 1.5 mm long; lateral lobes slender, ~ 0.1 mm long and 0.6 mm wide; base with a broad central lobe bearing fine setae; apex bearing numerous golden setae, ~ 0.2-0.6 mm long. Aedeagus ~ 2.0 mm long and 0.5 mm wide, slightly recurved and tapering towards the apex. Endophallus ~ 6.0mm long.

**Etymology.** This new species is named after Datu Ramil P. Ansihagan, the tribal chieftain of Higaunon Tribe, for his efforts in protecting and preserving the remaining forests in Barangay Eureka Gingoog City, Philippines.

**Distribution of *Cylindrepomus ansihagani* sp. nov.** Philippines: Mindanao: Northern Mindanao, Gingoog City.

**Notes on ecology, threats, and conservation of *Cylindrepomus ansihagani* sp. nov.**

The species is relatively rare considering that only a single specimen was collected, opportunistically, during the duration of the expedition. The species was collected at an elevation of approximately 1000-1100 m a.s.l. using hand nets along the boundary between an agro-ecosystem and a secondary forest. Most of the trees present are endemic species including but not limited to *Shorea negrosensis* (Red Lauan), *Shorea contorta* (White Lauan), *Quercus subsericea* (Philippine Ulayan Tree), all of which are considered highly valued trees and native in the Philippines.

The current threat to species habitat is the continued conversion of the remaining secondary forests into agricultural lands. Farmers used various chemicals such as pesticides, herbicides, and fungicides that would likely affect the species population. There is a need to conduct more expeditions to cover other habitats to find possible populations. Hence, research on identifying the exact species distribution, Area of Occupancy (AOO), and species Extent of Occurrence (EOO) is important.

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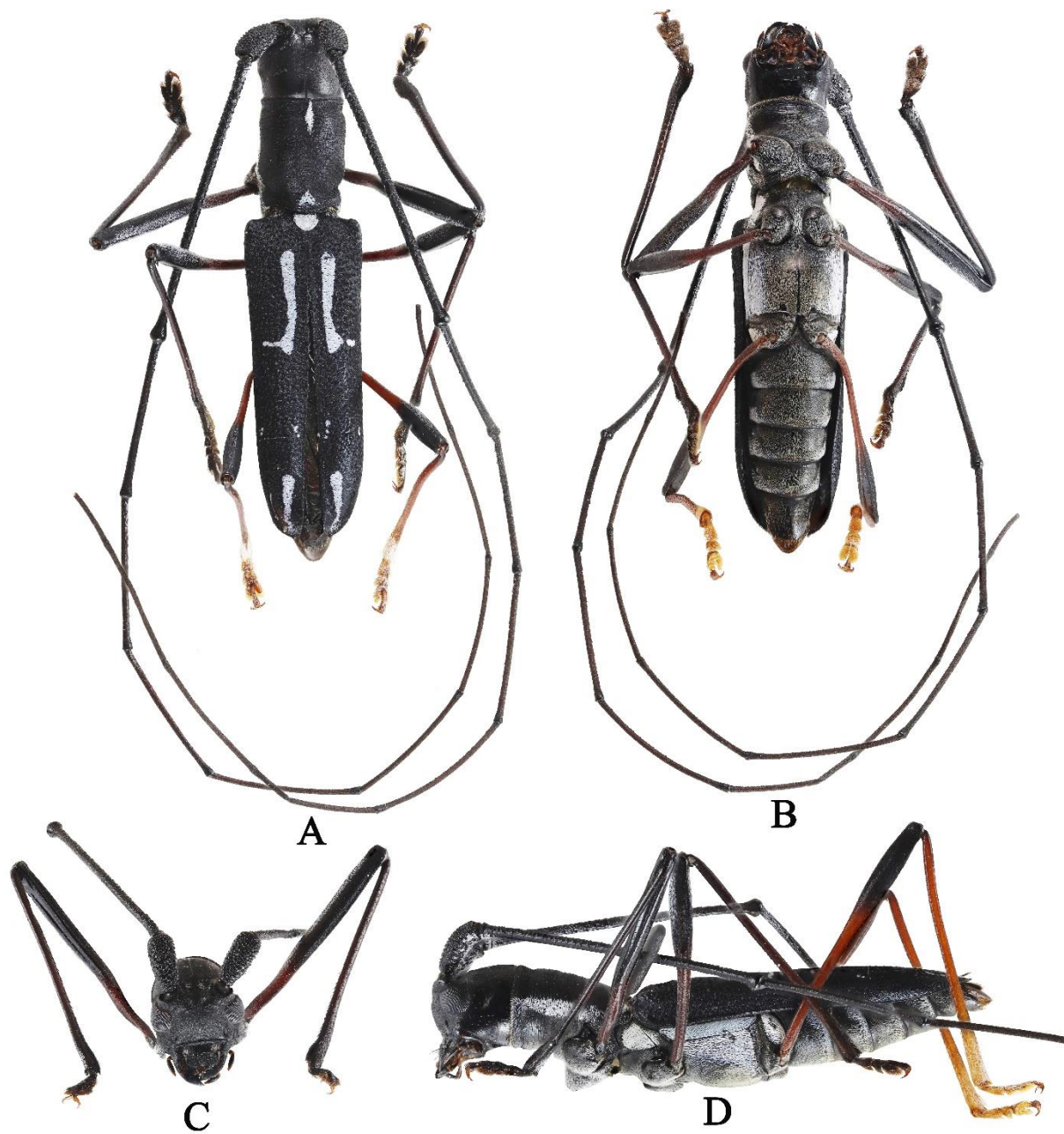
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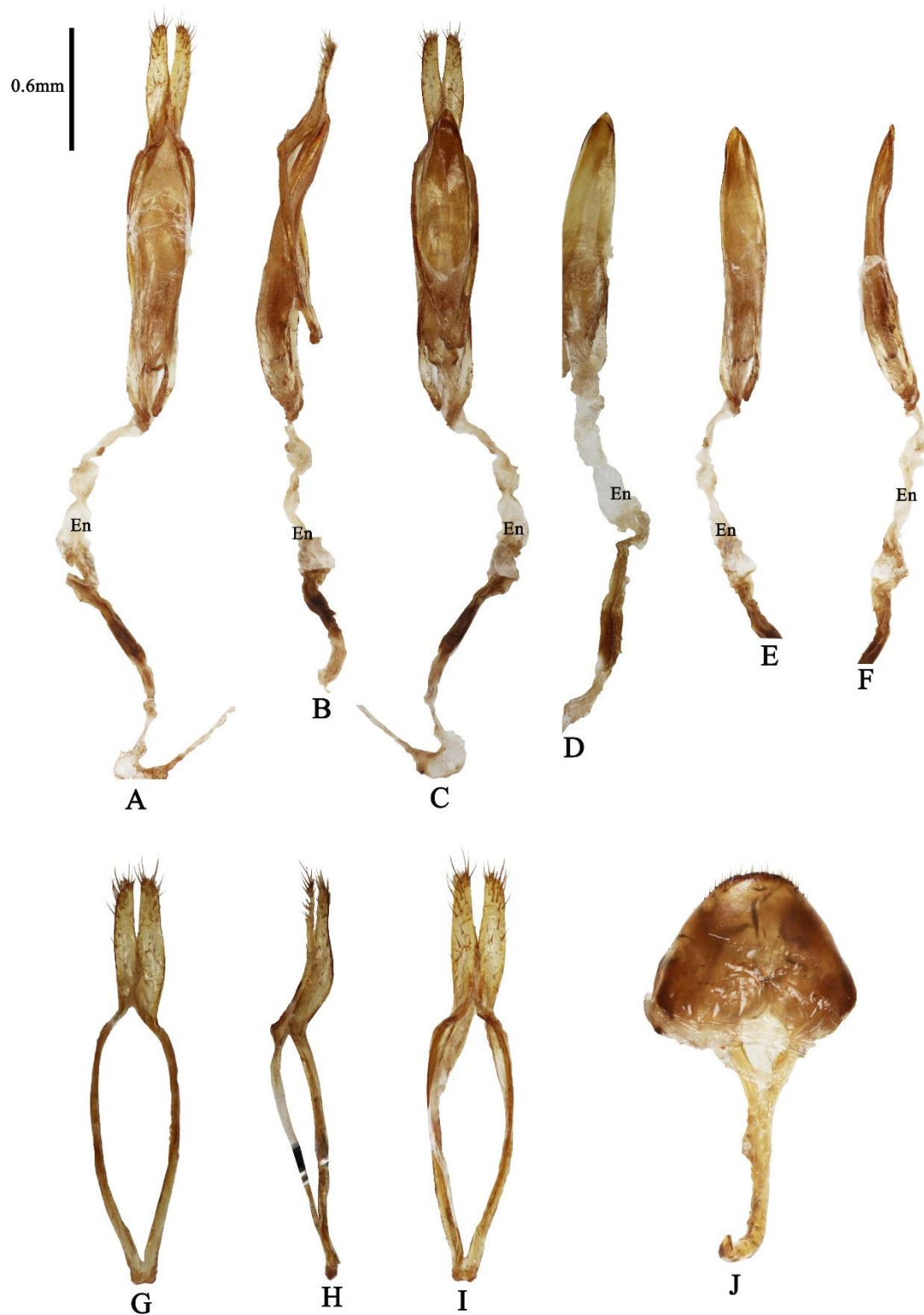
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**Figure 1.** *Cylindrepomus ansihagani* sp. nov. male holotype, habitus. **A** dorsal aspect, **B** ventral aspect, **C** frons, **D** lateral aspect.



**Figure 2.** *Cylindrepomus ansihagani* sp. nov. **A** genitalia, dorsal aspect, **B** genitalia, lateral aspect, **C** genitalia, ventral aspect, **D** aedeagus, ventral aspect, **E** aedeagus, dorsal aspect, **F**

aedeagus, lateral aspect, **G** tegmen, dorsal aspect, **H** tegmen, lateral aspect, **I** tegmen, ventral aspect, **J** tergite VIII. Abbreviation: **En** - Endophallus.