

## Two new species of *Metapocyrtus* Heller, 1912 (Coleoptera, Curculionidae, Entiminae) from Lanao and Panay, Philippines

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Two new species of *Metapocyrtus* Heller, 1912 (Coleoptera, Curculionidae, Entiminae, Pachyrhynchini), subgenus *Orthocyrtus* Heller, 1912 and *Metapocyrtus* Heller, 1912 from Mindanao and Panay islands are described. A distribution map is also provided.

Key word: biodiversity, beetles, Mindanao, Panay, taxonomy, weevils.

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### INTRODUCTION

*Metapocyrtus* Heller, 1912 (Pachyrhynchini: Entiminae) is a genus of flightless weevils with a narrow geographical range and high endemism in the tropical forests of the Philippines. The

majority of the species distribution appears to be restricted to remote islands and mountain ecosystems due to their incapability of flight (Cabras et al., 2021a). The general diagnostic characteristic of this genus includes “rostrum apically not swollen, basally with a more or less

strongly pronounced transverse groove; scape of antenna reaching at least to or beyond hind margin of eye.” (Schultze 1925, p. 135).

Coleopterological expeditions led to the description of weevil species new to science. More than 250 species have been identified, including the recent discoveries in the Philippines by local and international coleopterists (Cabras et al., 2021b; Cabras et al., 2022; Bollino & Bordoni, 2021; Bollino & Guerlach, 2021). However, many remains understudied and undocumented, especially in the remote forest ecosystems where species extinction pace faster than taxonomic surveys.

The Philippines is of particular interest to global scholars as it is one of the megadiverse countries (Mittermeier et al., 1998). Despite numerous conservation efforts, the dramatic decline in forest health has consequently threatened many weevil species (Forest Management Bureau, 2017; Department of Environment and Natural Resources, 2019). This underscores an urgent need to conduct intensive taxonomic studies while advancing conservation works.

Both Lanao and Panay host many species known and unknown to science (Aspacio et al., 2013; Martinez, 2018; Alcalá et al., 2010). Although numerous studies revealed its rich biodiversity, there is insufficient knowledge on weevils in these areas. During the authors’ examination of materials in Ilgas, two new species from Panay and Lanao del Sur were identified to be new to science. In this paper, the two new species of *Metapocyrtus* from two Philippine islands: Lanao del Sur in Mindanao, and Panay in the Visayas are described. A map showing their distribution is also provided.

## MATERIALS AND METHODS

Morphological characters were observed under Luxeo 4D and Nikon SMZ745T stereomicroscopes. The treatment of the genitals follows

Yoshitake (2011). Anatomical parts of the female genitalia are not illustrated as very little of the chitinous structures are used to identify and characterize different species of Pachyrhynchini (Cabras et al., 2021). Images of the habitus were taken using a Nikon D5300 digital camera with a Sigma 18–250 macro lens. Images were stacked and processed using a licensed version of Helicon Focus 6.7.0, then contrast adjusted in Photoshop CS6 Portable software. Label data are indicated verbatim.

Abbreviations and symbols mentioned in this paper are abbreviated as follows:

/ different lines;

// different labels;

**LB** body length, from the apical margin of pronotum to the apex of elytra;

**LR** length of rostrum;

**LP** pronotal length, from the base to apex along the midline;

**LE** elytral length, from the level of the basal margins to the apex of elytra;

**WR** maximum width across the rostrum;

**WP** maximum width across the pronotum;

**WE** maximum width across the elytra.

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

DUBC – Beetles Collection of Coleopterological Research Center, Institute of Life Sciences and Technology, Daugavpils University (Ilgas, Daugavpils Distr., Latvia);

PNM – Philippine National Museum of Natural History, Manila, Philippines;

SMTD – Senckenberg Natural History Collections, Dresden, Germany;

UMCRC – University of Mindanao Coleoptera Research Center, Davao City Philippines.

## TAXONOMY

*Metapocyrtus (Orthocyrtus) quadratus* Cabras and Medina, sp. nov.

(Fig. 1 A–D)

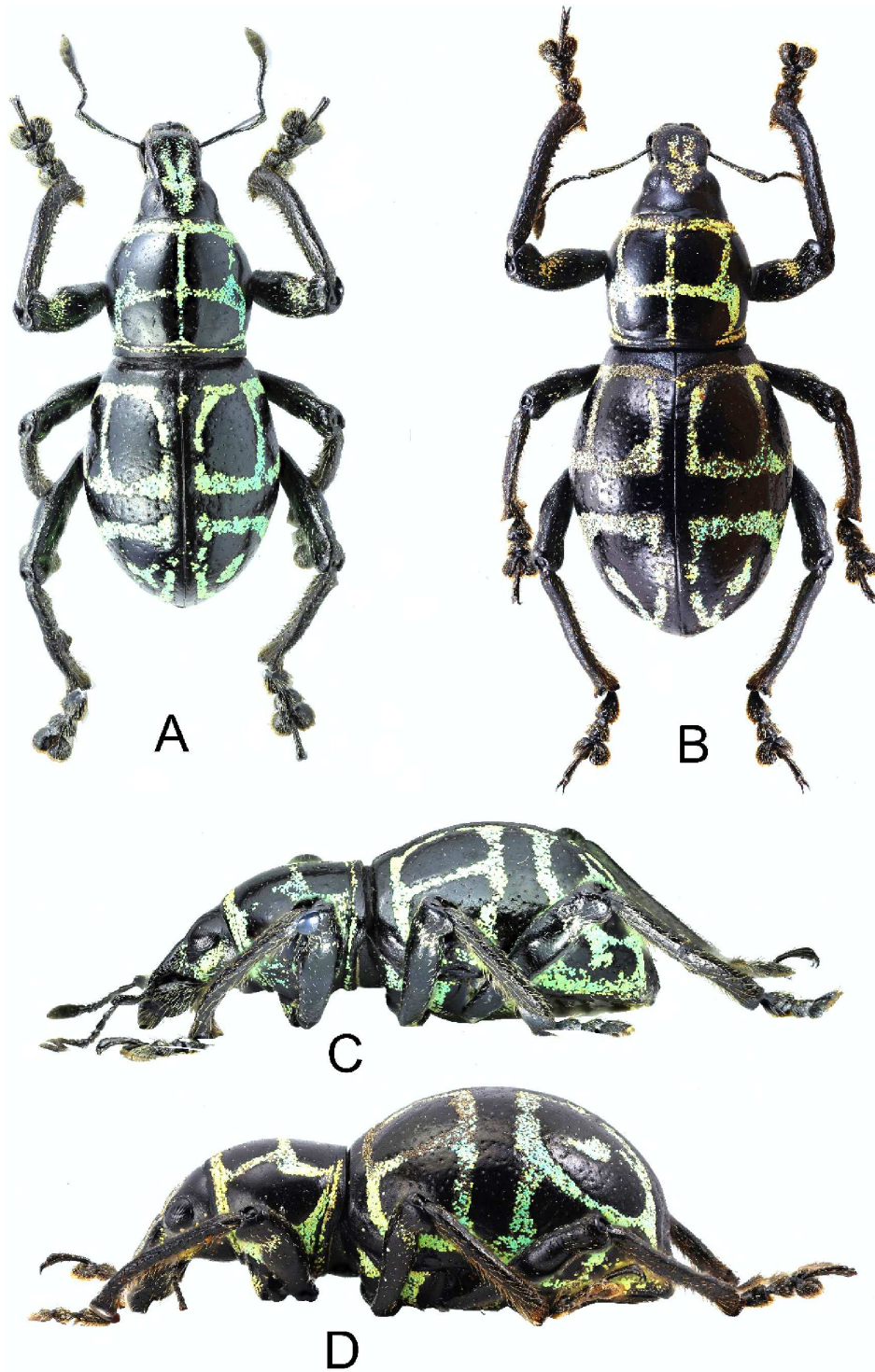


Figure 1. *Metapocyrtus* (*Orthocyrtus*) *quadratus* sp. nov. – A, C, Holotype male; A. dorsal view, C. lateral view. B, D, Paratype female; B. dorsal view, D. lateral view

**Holotype** (Figs 1 A, C), male: Philippines-Mindanao / Wao / Lanao del Sur / February, 2018 / coll. LC (typed on white card) // HOLOTYPE male / *Metapocyrtus (Orthocyrtus) quadratus* / CABRAS & MEDINA, 2022 (typed on red card). Presently in DUBC.

**Paratypes** (1♀): Philippines-Mindanao / Wao / Lanao del Sur / October, 2021/ coll. LC., presently in UMCRC. All paratypes with additional red label: PARATYPE / *Metapocyrtus (Orthocyrtus) quadratus* / CABRAS & MEDINA, 2022; (1♂, 2♀): Philippines-Mindanao / Wao / Lanao / March, 2017/ Coll. DUBC; (6♂, 4♀): Philippines-Mindanao / Wao / Lanao del Sur / January, 2017 / Coll. DUBC; (3♂, 2♀) Philippines-Mindanao / Wao / Lanao del Sur / February, 2017 / Coll. DUBC.

**Diagnosis.** *Metapocyrtus (Orthocyrtus) quadratus* sp. nov. can easily be distinguished from other *Orthocyrtus* species for its square-shaped scaly markings on its pronotum, and elytra.

**Description. Male.** Dimensions: LB: 12.0mm. LR: 2.0mm. WR: 1.9mm. LP: 4.0mm. WP: 4.5mm. LE: 8.0mm. WE: 6.0mm. N=1.

Integument black. Body surface, rostrum, head, and underside moderately shiny.

**Head** finely punctured with very minute pubescence, dorsal surface with a patch of metallic yellow ochre and turquoise round scales from the vertex towards transverse groove extending towards rostrum; lateroventral sides below the eye with elliptical scaly patch of metallic yellow ochre and turquoise overlapping round and subelliptical scales interspersed with adpressed metallic yellow piliform scales; forehead between eyes slightly depressed; eyes small-sized, feebly convex, and barely protruding from the outline of the head.

**Rostrum** moderately punctured on basal 2/3<sup>rd</sup> and finely punctured on apical third, nearly as long as wide (LR/WR:2/1.9mm), dorsum covered with adpressed brownish setae, with a shallow lachrymiform concavity on basal half, dorsal contour nearly flattish all throughout except towards the end which is slightly raised and gradually declines towards apex; longitudinal groove along

midline on basal half faint, transverse groove dividing head and rostrum fairly distinct; lateral sides with moderately widened apicad; dorsum with two streaks of scaly patch of metallic yellow ochre and turquoise round scales on basal half continuous with the large scaly patch on the head; lateral sides with sparse metallic yellow ochre and turquoise scales above the antennal scrobe. Antennal scape and funicle nearly the same length, scape reaching the hind margin of eyes and covered with adpressed moderately long light-colored hairs on each side, and funicle covered with suberect brownish hairs. Funicular segments I slightly longer than II, nearly three times longer than wide; segments III–VI nearly as long as wide, segment VII slightly longer than segment III–VI; club subellipsoidal, nearly 3 times longer than wide. **Prothorax** subglobular, wider than long (LP/WP: 4.0/4.5mm), finely punctured with minute pubescence, widest at middle, weakly convex on dorsal surface, dorsal contour highest before the middle. Prothorax with the following scaly markings of metallic yellow ochre and turquoise, round scales: a) thick stripe at the anterior margin, b) faint stripe at posterior margin, c) faint stripe along midline from base to apex, d) faint longitudinal stripes on each side of disc, e) a faint transverse stripe in the middle intersecting with the two longitudinal stripes on each side of disc, and midline stripe, and f) thick band on lateroventral sides before the coxa confluent with the anterior and posterior marginal stripes. **Elytra** ovate (LE/WE: 8.0/6.0mm), moderately wider and twice longer than prothorax (WE/WP: 6.0/4.5mm, LE/LP: 8.0/4.0mm), with coarser punctures compared to the pronotum and minute pubescence, dorsum moderately convex, dorsal contour highest before the middle, lateral contour evenly arcuate, widest at middle, apex with few sparse, white, fine hairs. Each elytron with the following scaly markings of pale yellow-ochre, turquoise, and bluish round scales: a) a thin subbasal transverse stripe from stria II towards lateral margin, b) one premedian transverse stripe from stria II towards lateral margin, c) two short longitudinal stripe on dorsal and dorsolateral surface, confluent with the subbasal and premedian stripes forming squarish scaly markings, d) one medial transverse stripe from

stria II towards lateral margin, e) long longitudinal stripe along interval II extending from medial stripe towards apex, confluent with the marginal stripe, f) an arc shape stripe on the dorsolateral sides extending from medial stripe towards the apex, confluent with the long stripe on interval II, g) a short transverse stripe confluent with the marginal stripe on the lateral margin, h) a fork-shaped scaly marking on apical third, and i) long thin stripe extending from base to apex in the lateral margin. **Legs** with moderately clavate femora. Femora black covered with adpressed piliform scales and with metallic yellow-ochre, and turquoise round and ovate scales towards apical margin. Tibiae covered with adpressed piliform scales, and suberect setae, moderately serrate along inner edge with few protruding teeth. Fore and midtibiae bear a mucro at apex. Tarsomeres pubescent. Forecoxae covered with colored piliform scales and with pale yellow-ochre to turquoise round scales; mesocoxae and metacoxae covered with hairs. Mesoventrite covered with light-colored hairs and with light yellow and turquoise round scales on distal ends. Metaventrite is densely covered with white hairs and with light yellow ochre and turquoise elliptical scales on distal ends. Ventrite I slightly depressed on disc, densely covered with white hairs and with light yellow to turquoise elliptical scales towards lateral margin. Ventrite II to V sparsely covered with whitish hairs. Ventrite V flattened, apical half finely densely punctured, with minute hairs.

Male aedeagus as shown in Figures 3 A–B.

**Female.** Dimensions: LB: 13.3mm. LR: 2.4mm. WR: 2.2mm. LP: 3.8mm. WP: 5.0mm. LE: 9.7mm. WE: 7.5mm. N=1.

Habitus as shown in Figures 1 B–D.

Females differ from males in the following: a) pronotum slightly wider, but shorter than in male; b) base of pronotum slightly widened on sides, c) pronotum's lateral contour less arcuate, and d) elytra longer and moderately wider, lateral contour widest before the middle; d) Ventrite I slightly convex on disc. Otherwise, the female is similar to the male.

**Etymology.** The name of the new species is from the Latin word 'quadratus' referring to its prominent square scaly markings in the pronotum and the elytra.

**Distribution.** *Metapocyrtus (Orthocyrtus) quadratus* sp. nov. is known so far from its type locality in Wao, Lanao del Sur.

***Metapocyrtus (Metapocyrtus) ilgas* Cabras and Medina, sp. nov.**

(Fig. 2 A–D)

**Holotype** (Figs 2 A,C), male: Philippines- / Panay / Antique / December, 2020 / coll. LC (typed on white card) // HOLOTYPE male / *Metapocyrtus (Metapocyrtus) ilgas* / CABRAS & MEDINA, 2021 (typed on red card). Presently in UMCRC, will be deposited in National Museum of Natural History (PNMNH) under the National Museum of the Philippines.

**Paratypes** (13♂, 6♀): Philippines-Panay / Antique / January, 2018 / coll. LC. Presently in DUBC. Paratypes has additional red label: PARATYPE / *Metapocyrtus (Metapocyrtus)* / CABRAS & MEDINA, 2022

**Diagnosis.** *Metapocyrtus (Metapocyrtus) ilgas* sp. nov. is distinguished from any other *Metapocyrtus* species in Panay Island based on its unique pronotal and elytral markings.

**Description. Male.** Dimensions: LB: 9.3mm. LR: 1.8mm. WR: 1.8mm. LP: 3.5mm. WP: 3.5mm. LE: 5.8mm. WE: 4.3mm. N=1.

Integument black. Body surface, rostrum, head, and underside with weak luster.

**Head** finely punctured on dorsum with few sparse pubescence, frons with sparse pink, round scales, lateroventral parts below the eye with sparse pink elliptical scales with very few piliform scales, forehead between eyes nearly flattish, midline groove distinct extending from the vertex towards the transverse groove. Eyes small-sized and feebly convex, barely protruding from the outline of

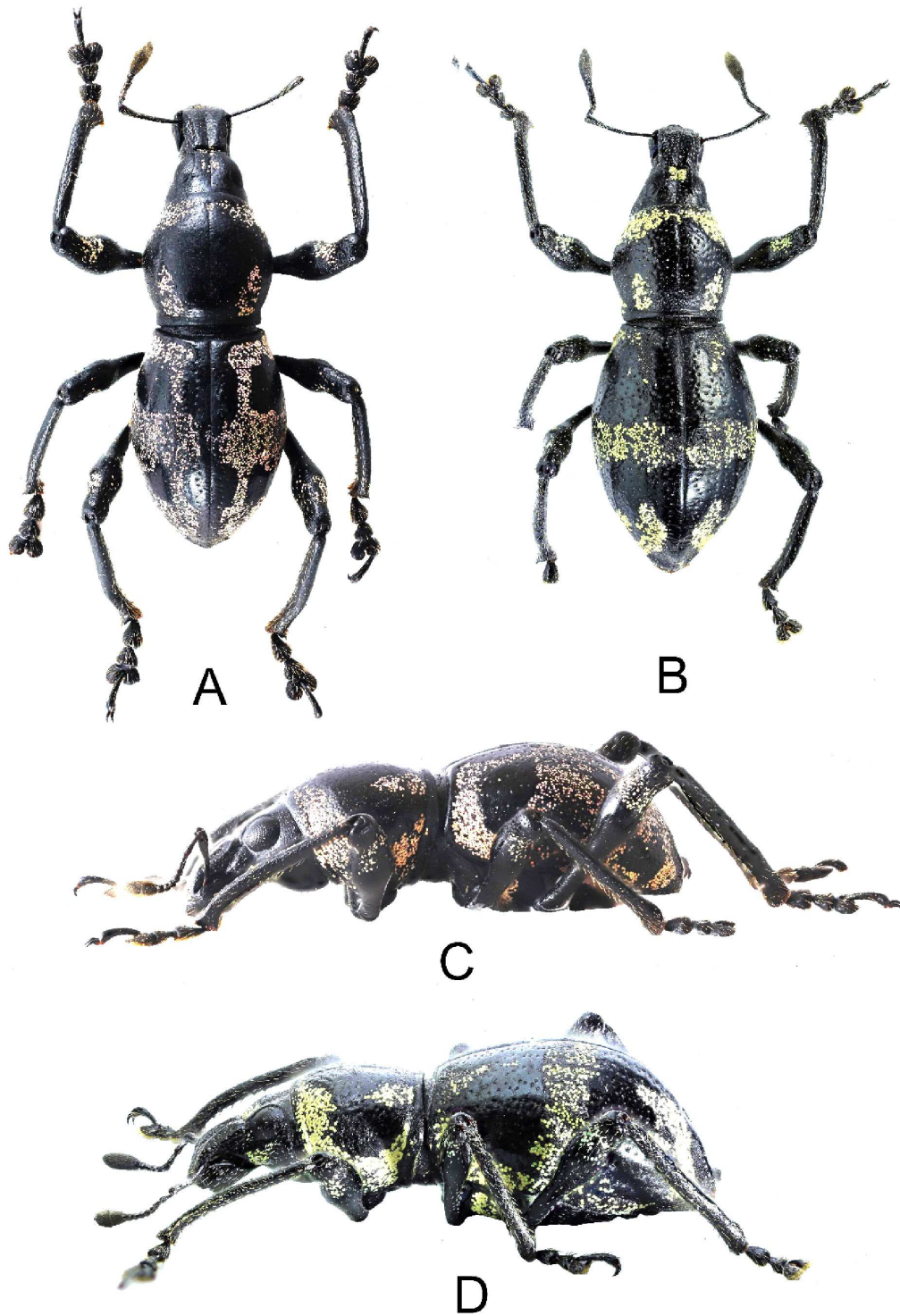


Figure 2. *Metapocyrtus (Metapocyrtus) ilgus* sp. nov. – A, C, Holotype male; A. dorsal view, C. lateral view. B, D, Paratype female; B. dorsal view, D. lateral view

head. **Rostrum** weakly rugose with coarse punctures on basal 2/3<sup>rd</sup> and finely punctured on apical third, as long as wide (LR/WR:1.8mm/1.8mm), dorsum with sparse and adpressed brownish setae, lateral surface before antennal scrobe with sparse peach elliptical scales interspersed with minute adpressed piliform scales and below antennal scrobe are long white adpressed, piliform scales, anterolateral margin with whitish, long suberect setae, ventral surface with long suberect whitish setae; transverse basal groove deep and highly distinct; longitudinal groove along midline distinct extending up to basal half; dorsum with two oblique subparallel ridges which gradually declines towards dorsolateral margins; lateral sides with weakly expanded apicad. Antennal scape slightly longer than funicle, scape reaching a little beyond the hind margin of eye, covered with subadpressed fine light-colored hairs, and funicle with suberect yellowish hairs. Funicular segments I and II almost of the same length, three times longer than wide; segments III–VII nearly as long as wide; club sub-ellipsoidal, nearly 3 times longer than wide. **Prothorax** globose, as long as wide (LP/WP: 3.5/3.5mm), finely punctured especially towards the anterior margin, widest at middle, moderately convex on dorsal surface, dorsal contour highest point at the middle. Prothorax with the following scaly markings of pink round scales: a) stripe at the anterior margin widened laterally, b) two subtriangular scaly markings on each side of disc starting at posterior margin tapered towards the middle, and c) broad patch before the coxa confluent with the anterior stripe. **Elytra** subovate, longer than wide (LE/WE: 5.8/4.3mm), slightly wider and moderately longer than prothorax (WE/WP: 4.3/3.5mm, LE/LP: 5.8/3.5mm), distinctly punctured with very minute pubescence, moderately convex, dorsal contour highest at middle, lateral contour evenly arcuate, widest at middle. Each elytron with the following scaly markings of pink and tangerine round scales: a) thick transverse basal stripe from stria II towards lateral margin, b) one longitudinal thick stripe on interval III extending from base to apex, c) thick transverse medial band from suture towards lateral margin broadened laterally, d) one long marginal stripe extending from base

towards apex confluent with the basal, and medial stripe, and the long stripe at interval III, and e) skewed subcircular spot on apical third confluent with the long stripe on interval II. **Legs** with moderately clavate femora. Femora black covered with adpressed setae and light orange elliptical scales near the apical margin. Tibiae covered with subadpressed yellowish setae, weakly serrate along inner edge with few protruding teeth. Fore and mid tibiae bear a mucro at apex. Tarsomeres pubescent. Forecoxae covered with colored piliform scales and with light orange elliptical scales; mesocoxae and metacoxae covered with hairs. Mesoventrite covered with light colored hairs and with light orange round scales on distal ends. Metaventrite sparsely covered with light colored piliform scales and with light orange round scales on distal ends. Ventrite I slightly depressed on disc, covered with light colored piliform scales and with light yellow to orange round scales towards lateral margin. Ventrite II to V sparsely covered with whitish hairs and piliform scales which tends to get denser at distal ends. Ventrite V flattened, apical half finely coarsely rugose, with minute hairs.

Male aedeagus as shown in Figures 3 D–F.

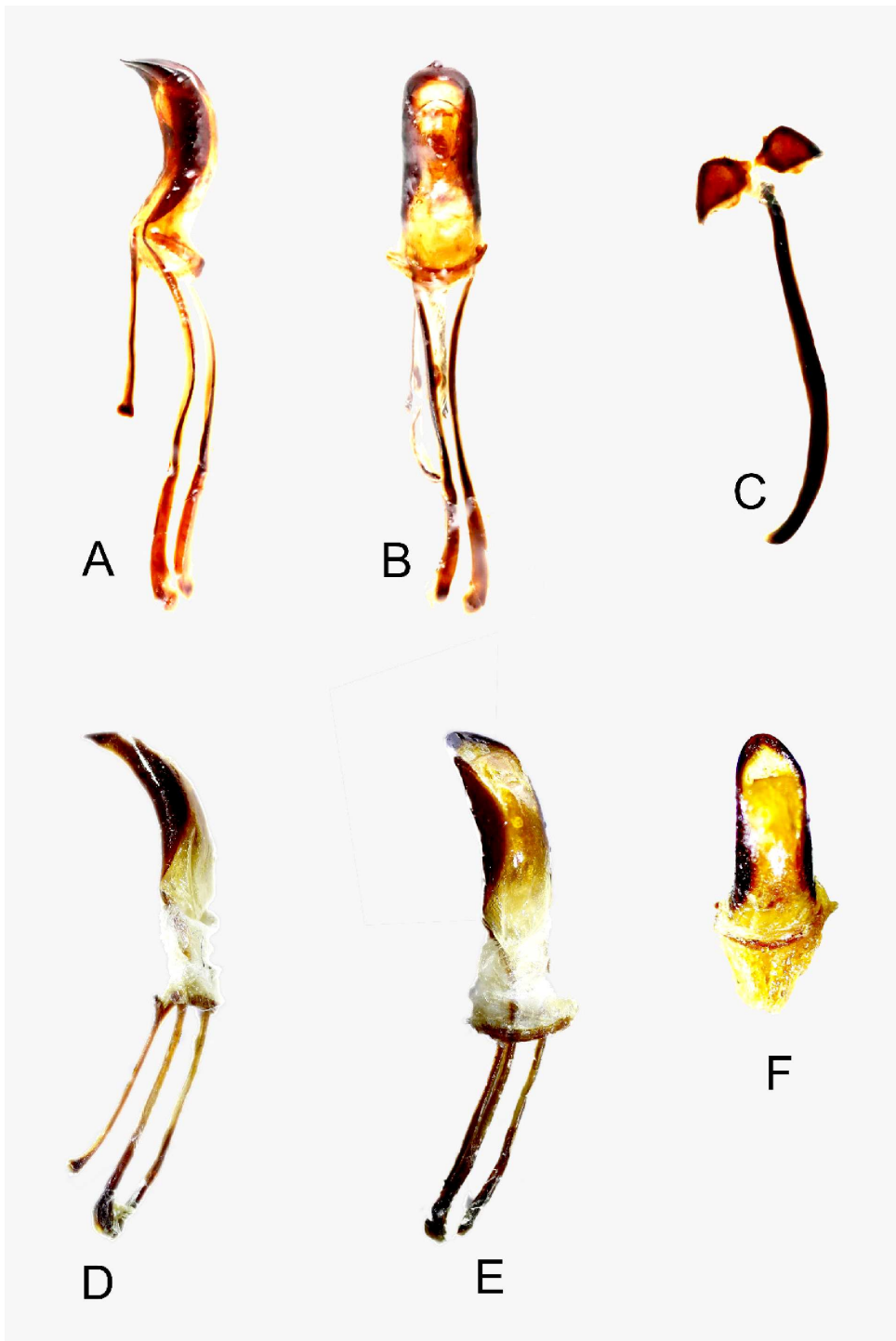
**Female.** Dimensions: LB: 10.0mm: LR: 1.5mm: WR: 1.0mm. LP: 4.0mm. WP: 4.0mm. LE: 6.0mm. WE: 4.0mm. N=1.

Habitus as shown in Figures 2 B, D.

Females differ from males in the following: a) the scaly markings in head, rostrum, pronotum, elytra and legs are yellow-green, b) elytra longer and moderately wider, and d) ventrite I slightly convex on disc. Otherwise female similar to the male.

**Etymology.** *Metapocyrtus* (*Metapocyrtus*) *ilgas* sp. nov. is named after the beetle research center of Daugavpils University in appreciation for the successful cooperation which led to the discovery of this new species.

**Distribution.** *Metapocyrtus* (*Metapocyrtus*) *ilgas* sp. nov. is known in its type locality.



Figures 3 A–E. Male genitalia of *Metapocyrtus* spp. A–C *Metapocyrtus (Metapocyrtus) ilgus* sp. nov. D–E *Metapocyrtus (Orthocyrtus) quadratus* sp. nov. A, D aedeagus in lateral view B, F idem in dorsal view C sternite IX in dorsal view E aedeagus in dorsolateral view



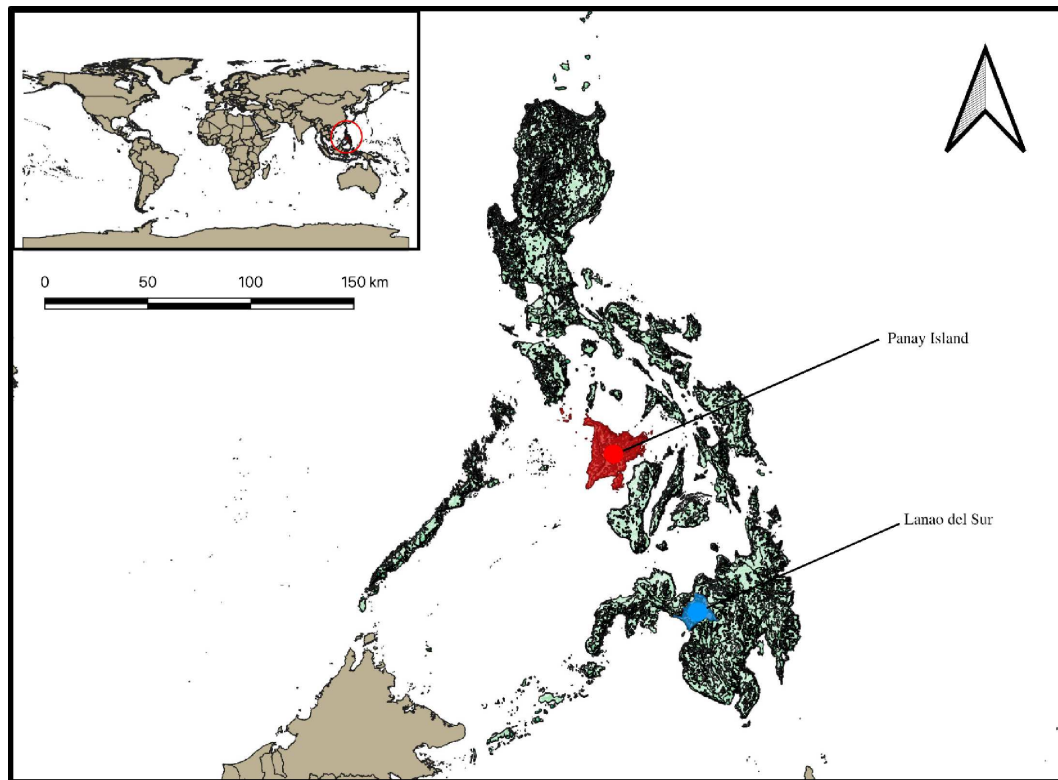


Figure 4. Distribution map of *Metapocyrtus* spp. in the Philippines: *Metapocyrtus* (*Orthocyrtus*) *quadratus* sp. nov. (red), *Metapocyrtus* (*Metapocyrtus*) *ilgas* sp. nov. (blue).

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