



## Two new species of the genus *Metapocyrtus* Heller, 1912 from the islands of Homonhon and Mindanao, Philippines, with taxonomic notes (Coleoptera: Curculionidae, Entiminae, Pachyrynchini)

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### Abstract

Two new species of the genus *Metapocyrtus* Heller, 1912 from the islands of Homonhon and Mindanao: *Metapocyrtus (Sclerocyrtus) rolandmuelleri* Cabras and Mainda **sp. nov.** and *Metapocyrtus (Sclerocyrtus) dabaw* Cabras and Mainda **sp. nov.** are described and illustrated in this paper. It is also proposed to transfer a species from the subgenus *Artapocyrtus* Heller, 1912 to *Sclerocyrtus* Heller, 1912: *Metapocyrtus (Sclerocyrtus) latinasus* Heller, 1925.

**Key words:** biodiversity, Coleoptera, endemic, Oriental region, beetles, weevils

### Introduction

The subgenus *Sclerocyrtus* Heller, 1912 is one among the seven subgenera of the speciose genus *Metapocyrtus* Heller, 1912 which is currently represented by 260 species (Schultze 1925, Cabras *et al.* 2022). *Sclerocyrtus* has the lowest species richness represented only by four species distributed in Samar and Mindanao Islands. Three species, namely *Metapocyrtus (Sclerocyrtus) celestenoi* Schultze, 1925, *Metapocyrtus (Sclerocyrtus) herrei* Schultze, 1934, and *Metapocyrtus (Sclerocyrtus) chamissoi* Schultze, 1925 are known from Samar Island while one species, *Metapocyrtus (Sclerocyrtus) asper* Heller, 1912 is reported from Mindanao. Schultze (1925) described the subgenus in detail with the following characteristics: “Rostrum relatively short, slightly longer than broad, the sides set off at right angles from dorsal surface, the latter longitudinally more or less strongly arched and separated from front by a very prominent transverse groove. Prothorax subcylindrical, slightly more narrowly truncate apically than basally, coarsely, and irregularly granulate or subrugose. Anterior margin ventrally with or without emargination. Elytra short and stout subovate, relatively coarsely subgranulate in longitudinal rows”. The last species described from this subgenus, *M. herrei*, was roughly nine decades ago (Schultze 1934).

Entomological expeditions in various islands in the Philippines remain scant. One of the avid naturalists who carried out several expeditions in the Philippines was Roland A. Müller †, an outstanding Swiss entomologist who contributed greatly to the science of odonatology in the Philippines. His large collection has greatly increased knowledge not only of the rich diversity of Philippine Odonata, with its high proportion of endemic species (Hämäläinen & van Tol 2017), but also of other groups of animals, such as Coleoptera, leading, among other things, to the description of the rove beetle *Megalopinus rolandmuelleri* Mainda, 2022 (Mainda 2022).

The second author succeeded in finding material of Coleoptera in the remains of Müller's estate. The first author then succeeded in identifying a new species in this material. In this paper, two new species, *Metapocyrtus (Sclerocyrtus) rolandmuelleri* (Homonhon Island) and *Metapocyrtus (Sclerocyrtus) dabaw* (Mindanao Island, Davao de Oro and Davao Oriental) are described and illustrated. In addition, notes on the taxonomy of *Metapocyrtus (Sclerocyrtus) latinasus* Heller, 1925 are added.

## Material and methods

It was not trivial to identify the origin of Müller's material, which was stored in a metal box labeled "Käfer, Sibuyan" (= Beetles, Sibuyan) with Müller's handwriting (Jorma Müller in litt.). Inside were numerous beetles and an empty butterfly container with the inscription "15" on it. At first, we assumed that these beetles were from Sibuyan Island. Especially since a congruence between the collection number "15" and "Käfer, Sibuyan" was found during the research in Müller's original travel diaries.

However, doubts about the origin of materials from Sibuyan Island began to arise for the first author when she received additional material of *M. rolandmuelleri* collected by Stan Cabigas in the year 2000 from Homonhon Island. Furthermore, some of the remaining material from the box of Müller matches with the specimens collected by Stan Cabigas in Homonhon Island, while others appear to have their closest relatives in "Greater Mindanao" and represent additional undescribed species. Greater Mindanao includes the Visayan islands of Samar and Leyte, Dinagat and Basilan Islands, and mainland Mindanao which was connected during the Pleistocene epoch (Vallejo 2019). Thus, the origin of materials from Sibuyan seems questionable. Sibuyan and the surrounding islands Romblon and Tablas which form part of the Romblon Group of islands were not connected to neighboring islands of the Philippine archipelago during the last Pleistocene epoch; however, unlike Romblon and Tablas which joined during the last glaciation, Sibuyan was never connected to these two islands (Dimalanta *et al.* 2009, Hall 2002, Yumul *et al.* 2003). Thus, Sibuyan Island sharing species with Greater Mindanao seems odd especially since all known species of the subgenus *Sclerocyrtus* occur only on "Greater Mindanao".

The second author again studied Müller's travel diaries with Jorma Müller, Roland's son. In 1988, Jorma Müller traveled to Homonhon Island with his father. In the diary of this trip the number "15" is found, but it does not mention any collected beetles. But there are also notes in the diary that are not Roland Müller's handwriting and correspond to the handwriting of the number "15" in the box. For all other expeditions, no information on the collection number "15" could be found in the corresponding diaries. Due to the fact that paratypes of *M. rolandmuelleri* from Homonhon Island are available, which were not collected by Müller, and that also the remaining weevil materials are flightless and have closest relatives only on "Greater Mindanao", we have to assume here that the actual origin of the material is Homonhon Island, where Müller collected during his visit in May 1988.

Homonhon is a 7,400 ha island in Leyte Gulf with a maximum elevation of 271 m. As the island is rich in mineral resources, its rainforest is threatened by deforestation for mining exploration (Romeroso *et al.* 2021). As Hämäläinen & Müller (1997) reported, in Müller's collecting area near Magellanes Point, shortly before his arrival, all but 2-3 km<sup>2</sup> of primary forest had been destroyed by slash and burn.

Morphological characters were observed under Luxeo 4D and Nikon SMZ745T stereomicroscopes. The treatment of the genitalia 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 and then contrast adjusted in Photoshop CS6 Portable. 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:

NBC Naturalis Biodiversity Center, Leiden, The Netherlands (coll. Roland A. Müller);

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

SCC Stan Cabigas Collection, Cebu City, Philippines;

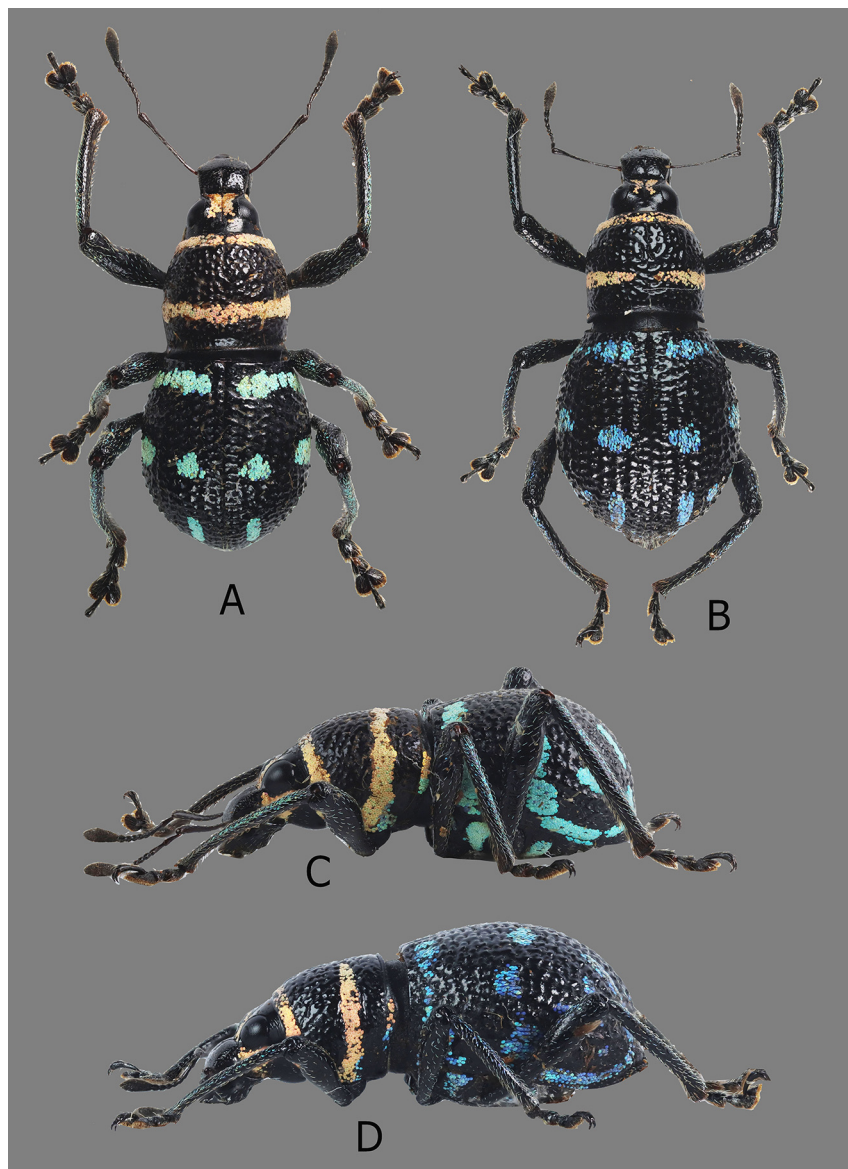
SMTD Senckenberg Natural History Collections, Dresden, Germany;

TIRL Terrestrial Invertebrate Research Laboratory, City of Mati, Philippines.

## Results

*Metapocyrtus (Sclerocyrtus) rolandmuelleri* Cabras and Mainda **sp. nov.** (Figs 1 A–D)

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**FIGURE 1.** A–D. *Metapocyrtus (Sclerocyrtus) rolandmuelleri* **sp. nov.** A—♂ holotype, dorsal view; B—♀ paratype, dorsal view; C—♂ holotype, lateral view; D—♀ paratype, lateral view.

**Type locality.** Philippines, Homonhon Island, Pagbabangnan.

**Type specimens.** Holotype ♂ (Figs 1 A & C), labeled: “Philippines: Homonhon Island (Eastern Samar): Magellanes Point (Pagbabangnan), 5–100 m, 13.-31.v.1988, leg. Roland A. Müller (typed on white card) // HOLOTYPE male / *Metapocyrtus* (*Sclerocyrtus*) *rolandmuelleri* / CABRAS & MAINDA, 2023 (typed on red card)” (NBC). Paratypes 1 ♂, 2 ♀♀: same data as the holotype (NBC, PNM); 1 ♀: “Philippines: Homonhon Island (Eastern Samar), 30.iv.2000, leg. Stan Cabigas” (Presently at SCC, to be deposited at PNM).

**Description. Male holotype.** Dimensions. LB: 8.0mm, LR: 1.6 mm, WR: 1.3 mm, LP: 3.0 mm, WP: 3.2 mm, LE: 4.8 mm, WE: 4.2 mm.

**Coloration.** Integument black; body surface, rostrum, head moderately shiny and underside matte.

**Head** dorsal surface between eyes mostly covered with metallic pale-yellow orange with sparse reddish round adpressed scales; lateroventral side below eyes mostly covered with metallic pale-yellow orange round adpressed scales and sparse bluish piliform scales; forehead between eyes moderately depressed with distinct median furrow; eyes medium-sized and moderately convex.

**Rostrum** finely punctate, most punctures with recumbent whitish setae, slightly longer than wide (LR/WR: 1.6mm / 1.3mm); transverse basal groove deep, dorsum with a distinct median furrow reaching middle; dorsum strongly convex dorsally and lateral sides with moderately widened apicad. Antennal scape slightly longer than funicle, scape reaching beyond hind margin of eyes, sparsely covered with adpressed whitish setae, funicle with suberect brownish setae. Funicular segments I nearly as long as II, segments III–VII as long as wide; club sub-ellipsoidal.

**Prothorax** subglobular, slightly wider than long (LP/WP: 3.0 mm / 3.2 mm), coarsely rugose with sparse minute white adpressed setae, widest at middle, weakly convex on dorsal surface, dorsal contour highest point on basal ¼. Prothorax with following scaly markings: a) stripe of metallic, pale yellow orange overlapping adpressed round scales at anterior margin, b) stripe of metallic, pale-yellow orange with few turquoise overlapping adpressed round scales near midline, with lateral sides having more turquoise round scales, and c) thin stripe of metallic, pale yellow-orange and turquoise overlapping adpressed round scales on lateral sides of posterior margin.

**Elytra** strongly ovate (LE/WE: 4.8 mm / 4.2 mm), slightly longer than wide and moderately longer and wider than prothorax (WE/WP: 4.2 mm / 3.2 mm, LE/LP: 4.8 mm / 3.0 mm), coarsely rugose with very minute adpressed pubescence, dorsum strongly convex, dorsal contour highest at middle, lateral contour evenly arcuate, widest at apical third, apex quite rounded with white setae. Each elytron with following scaly markings of mostly metallic turquoise adpressed round scales with sparse pale yellow green, and bluish round scales: a) a basal stripe from stria I towards lateral margin, b) a medial spot near suture, c) a medial stripe from middle towards lateral margin, d) a longitudinal stripe on apical third near suture briefly interrupted at middle, e) an elongated spot at the lateral side of apical third, and f) one post-median stripe along lateral margin extending towards apex, confluent with medial stripe and sutural longitudinal stripe on apical third.

**Legs** with moderately clavate femora. Femora black covered with bluish piliform scales which tend to get longer towards apex. Middle and hind femora still covered in bluish piliform scales but with some sparse turquoise round scales. Front tibiae covered with subadpressed brownish setae, weakly serrate along inner edge with few protruding teeth, outer margin covered with dense turquoise round to lanceolate adpressed scales with sparse pale-yellow green and bluish similarly shaped scales. Middle and hind tibiae covered with whitish setae with outer margin densely covered in turquoise round to lanceolate adpressed scales. Front and middle tibiae with mucro at apex. Tarsomeres pubescent. Coxae covered with setae. Mesoventrite covered with turquoise and sparse pale yellow round scales. Metaventrite and ventrite I covered with turquoise and sparse pale yellow round scales mostly towards distal ends. Ventrite II to V with sparse setae towards distal ends. Ventrite V flattened with minute setae.

**Female.** Dimensions. LB: 8.0–8.5 mm, LR: 1.5–1.6 mm, WR: 1.3–1.4 mm, LP: 2.5–2.6 mm, WP: 3.0–3.5 mm, LE: 5.0–5.9 mm, WE: 4.5–5.4 mm, N = 4.

Females differ from males in the following: a) elytra longer and moderately wider, b) elytra only slightly wider than pronotum, c) color of elytra has deeper hue of blue; and c) ventrite I slightly convex on disc. Otherwise, female is similar to the male (Figs 1 B and D).

**Differential diagnosis.** *Metapocyrtus* (*Sclerocyrtus*) *rolandmuelleri* can be distinguished from its congeners by its unique elytral markings consisting of thick transverse pale yellow orange stripes in pronotum, and defined and thick basal and subapical turquoise stripes and medial spots near suture. Among the species of the subgenus *Sclerocyrtus*, only *M. chamissoi* from Samar Island has defined scaly marks but is distinguished from the new species for having thin stripes in pronotum, and thin basal, medial and subapical stripes. *M. chamissoi* has thin



medial stripe instead of medial spot near suture and thick dorsolateral stripe in *M. rolandmuelleri*. *Metapocyrtus rolandmuelleri* has also a rounder pronotum and body as compared to *M. chamissoi*.

**Etymology.** With the choice of the epithet “*rolandmuelleri*” the species is dedicated to Roland A. Müller † (1936–2016, Sankt Gallen, Switzerland), who collected the type material during one of his trips to the Philippines as part of the “Roland Müller Zoological Expeditions to the Philippines”, with which he especially made an invaluable contribution to the study of odonates in the Philippines (Hämäläinen & van Tol 2017). In addition, Müller supported the second author in his early years of entomology and, through his very pictorial descriptions of travels to the Philippines, inspired him to follow in his footsteps and contribute to the study of Philippine biodiversity himself, for which the latter would hereby like to express his gratitude.

**Distribution.** *Metapocyrtus (Sclerocyrtus) rolandmuelleri* is known only by the type material from Homonhon Island.

***Metapocyrtus (Sclerocyrtus) dabaw* Cabras and Mainda sp. nov. (Figs 2 A–B)**

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**Type locality.** Philippines, Mindanao Island, Prov. Davao de Oro, Maragusan and Davao Oriental, Lamiawan, Caraga.

**Type specimens.** Holotype ♂ (Figs 2 A–B), labeled: “Philippines-Maragusan / Davao de Oro / September, 2019 / leg. A.A.Cabras (typed on white card) // HOLOTYPE male / *Metapocyrtus (Sclerocyrtus) dabaw* / CABRAS & MAINDA, 2023 (typed on red card)” (PNM). Paratypes 2 ♀♀ (PNM): Same data as the holotype; 2 ♂♂: “Philippines, Mindanao Island, Davao Oriental, Lamiawan, Caraga. March, 2023 / leg. M.N.Medina” (Presently at TIRL, to be deposited at PNM).

**Description. Male holotype.** Dimensions. LB: 7.0mm, LR: 1.1mm, WR: 1.1mm, LP: 2.4mm, WP: 2.8mm, LE: 4.6mm, WE: 3.8 mm, N=1.

**Coloration.** Integument black. Body surface, rostrum, and head moderately lustrous, and underside matte.

**Head** with sparse light blue round adpressed scales and white piliform adpressed scales; lateroventral sides below eyes with sparse metallic light blue elliptical adpressed scales and sparse bluish piliform scales; dorsal surface between eyes weakly depressed, weakly rugose and with distinct median furrow; eyes medium-sized and moderately convex.

**Rostrum** weakly rugose near the base, finely punctate with most punctures having recumbent white setae, as long as wide (LR/WR: 1.1mm / 1.1mm); transverse basal groove deep, dorsum with a distinct median furrow extending towards apical third; dorsum strongly convex dorsally and lateral sides with moderately widened apicad. Antennal scape slightly longer than funicle, scape reaching beyond hind margin of eyes, sparsely covered with adpressed whitish setae, and funicle with suberect brownish setae. Funicular segments I nearly as long as II, segments III–VII as long as wide; club sub-ellipsoidal.

**Prothorax** subglobular, wider than long (LP/WP: 2.4 mm / 2.8 mm), coarsely rugose and granulated with scattered pale blue and turquoise round adpressed scales in between creases, and sparse minute white adpressed setae, widest before middle, and nearly flattish on dorsal surface.

**Elytra** strongly short ovate (LE/WE: 4.6 mm / 3.8 mm), moderately longer than wide, wider and nearly twice longer than prothorax (WE/WP: 3.8 mm / 2.8 mm, LE/LP: 4.6 mm / 2.4 mm), coarsely rugose and granulated with very minute adpressed pubescence and scattered pale blue and turquoise round adpressed scales between the creases which are in clump of 2–6 in dorsal surface and gets denser towards lateral sides; dorsum strongly convex, dorsal contour highest before middle, lateral contour evenly arcuate, widest at middle, apex quite rounded with white setae. Legs with moderately clavate femora. Femora and tibiae black and covered with bluish piliform scales. Front tibiae weakly serrate along inner edge with few protruding minute denticules and bears a mucro. Middle tibiae also bear a mucro at apex. Tarsomeres pubescent. Coxae with sparse metallic blue setae. Mesoventrite, metaventrite, Ventrite I and II mostly covered with turquoise and pale yellow green round scales and colored piliform scales. Ventrite III to V with sparse setae. Ventrite V flattened and rugose with minute and colored setae.

**Aedeagus** long and slender with bluntly produced apical and rounded apex; apodemes nearly as long as aedeagal body in profile (Figs 2 C–E).

**Female.** Dimensions. LB: 9.5 mm, LR: 1.4 mm, WR: 1.4 mm, LP: 3.0 mm, WP: 3.6 mm, LE: 6.6 mm, WE: 5.3 mm, N = 1.

Females differ from males in the following: a) elytra longer and moderately wider, b) color of elytra has pale blue; and c) ventrite I slightly convex on disc. Otherwise, the female is similar to the male.

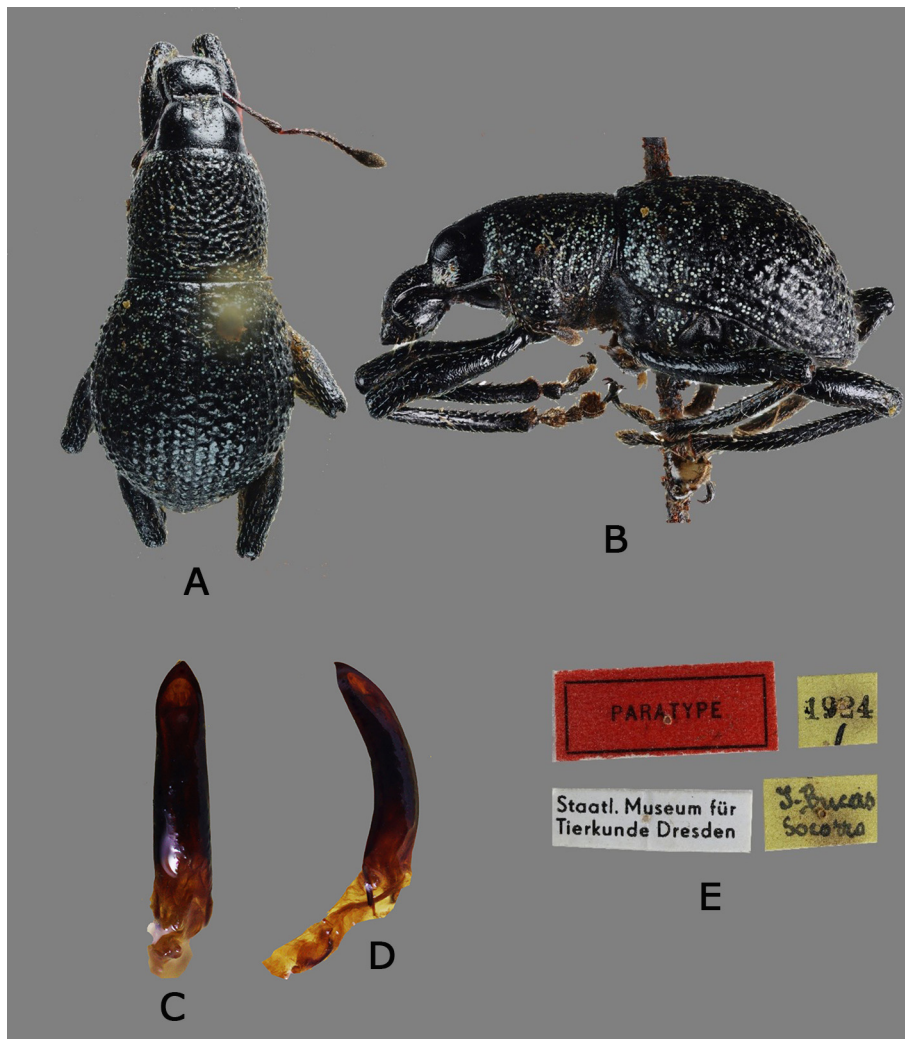
**Differential diagnosis.** *Metapocyrtus dabaw* is closely related to *Metapocyrtus asper* Heller, 1912 from Surigao Province and Siargao and *M. (S.) latinus* from Dapia, Surigao and Socorro, Bucas Grande but differs on the shape and texture of the pronotum, length of the body, more dorsally convex and rounded elytra and shape of the genitalia. *Metapocyrtus dabaw* has a distinct median furrow on the dorsum of the rostrum, less convex rostrum dorsally, coarsely rugose pronotum instead of having coarse granulation, coarser granulations on elytra, has pronotum's dorsal contour with more pronounced arc widest on apical third, has a more convex, rounded and wider elytra, more tapered apex, and aedeagus with bluntly produced apicad and rounded apex.

**Etymology.** The specific epithet “*dabaw*” is a toponym and refers to the local name of Davao, the region which encompasses Davao de Oro and Davao Oriental, Mindanao, Philippines, the type localities of the new species.

**Distribution.** *Metapocyrtus dabaw* is known only from two localities in Davao region—Maragusan, Davao de Oro, and Lamiawan, Caraga, Davao Oriental.



**FIGURE 2.** A–E. *Metapocyrtus (Sclerocyrtus) dabaw* sp. nov. A—♂ holotype, dorsal view; B—idem, lateral view; C— aedeagus, dorsal view; D—idem, lateral view; E—sternite IX in dorsal view.



**FIGURE 3.** A–E. *Metapocyrtus (Sclerocyrtus) latinasus* Heller, 1925; A—♂ paratype, dorsal view; B—idem, lateral view; C—aeedeagus, dorsal view; D—idem, lateral view; E—labels.

***Metapocyrtus (Sclerocyrtus) latinasus* Heller, 1925, new subgeneric placement (Figs 3 A–E)**

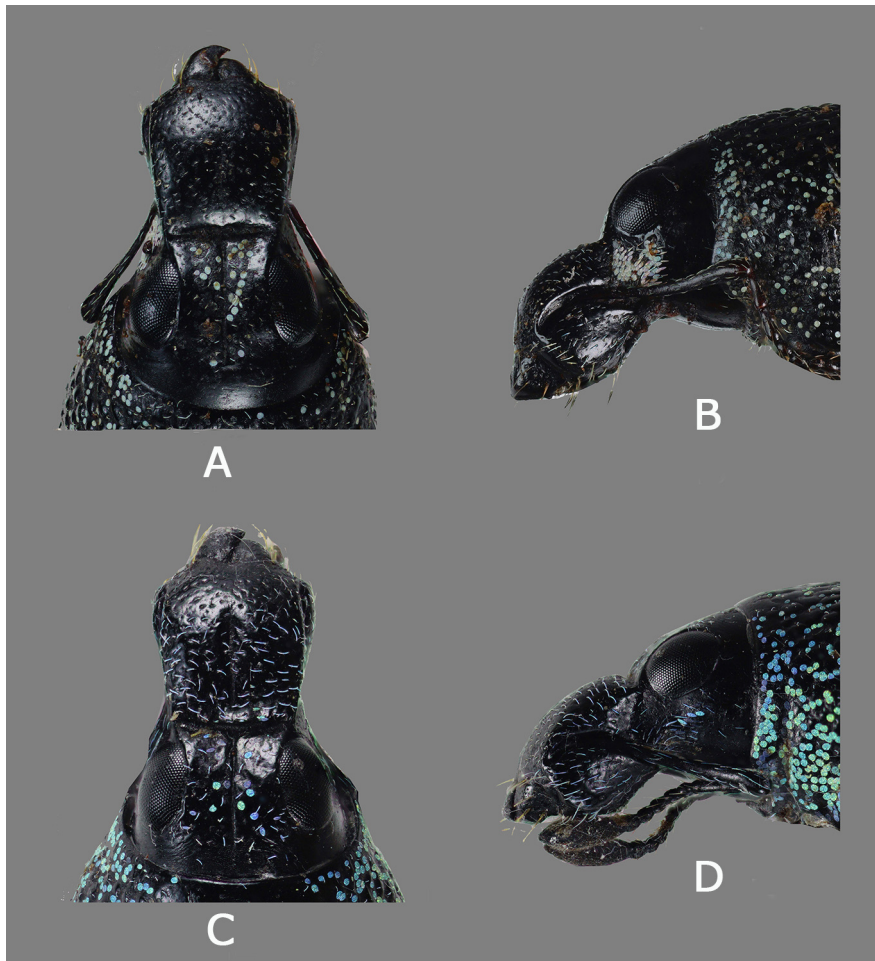
*Metapocyrtus (Artapocyrtus) latinasus* Heller, 1925: 182 f.

**Type locality.** Philippines: Socorro (Bucas Grande Island).

**Type depository.** SMTD.

**Material examined.** Paratype ♂, labeled: “Bucas, Socorro” (hand-written on yellow card); “1924” (typed on yellow card); Paratype (typed on red card); “Staatl. Museum für / Tierkunde Dresden” (typed on white card).

**Remarks.** Heller (1925) mistakenly placed the species under the subgenus *Artapocyrtus*. Upon examination of the type specimens at SMTD, we would like to propose transferring the species to the subgenus *Sclerocyrtus* based on the characters mentioned by Schultze (1925). The male genitalia of the species is presented in Figs 3 C–D.



**FIGURE 4.** A, C. Rostrum, dorsal view; B, D. idem, lateral view; A–B *Metapocyrtus (Sclerocyrtus) latinasus* HELLER, 1925, C–D *Metapocyrtus (Sclerocyrtus) dabaw* sp. nov.

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