

## New and additional notes on the distribution of *Pachyrhynchus möllendorffi* Heller, 1899 (Coleoptera, Curculionidae), with description of a new subspecies from the Marinduque Island (Philippines)

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A new data on the distribution of *Pachyrhynchus möllendorffi* Heller, 1899, originally described from "Philippines" (type locality) are given. A new subspecies, *P. möllendorffi marinduquanus* subsp.nov. (Marinduque Island, Philippines) is described. The diagnosis, photographs of habitus and aedeagi, and faunistic notes both for *P. möllendorffi möllendorffi* Heller, 1899 and *P. möllendorffi marinduquanus* subsp.nov. are provided.

Key words: Coleoptera, Curculionidae, *Pachyrhynchus*, fauna, distribution, Philippines

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### INTRODUCTION

The genus *Pachyrhynchus* has been extensively studied in the past years after a dormancy of nearly a century after the last publication of Schultze (1934). The new wave of enthusiasm on this genus paved way for the discovery of several new species, especially from unexplored islands and mountain ecosystems (Bollino & Sandel 2015; Barševskis 2016; Cabras & Rukmane 2016; Rukmane & Barševskis 2016; Bollino et al., 2017), together with many new species from different tribes and families of Coleoptera (Barševskis 2013, 2014, 2017a, 2017b;

Barševskis & Jager 2014). The Philippines is an archipelago with complex geological history dating back during the Mesozoic era (Siler et al., 2010) and comprises of 7641 islands. In the nearest future, a lot number of new species are expected to be discovered on these isolated islands, especially for flightless taxa such as *Pachyrhynchus*.

Heller (1899) described *Pachyrhynchus möllendorffi* with the type locality labeled as "Philippines" with no exact geographic data. Schultze (1923) doubtedly labeled *P. möllendorffi* from South Luzon. This assumption could be

based on the close elytral marking of this species to *P. moniliferous* whose range of distribution at that time is in Luzon. Recent collections from Panay Island provided specimens which are similar to the type specimen of *P. möllendorffi* deposited in SNTD (Dresden). In this paper, new distribution data for *P. möllendorffi* are provided, as well as the description of a new subspecies from Marinduque Island is given.

## MATERIAL AND METHODS

The studied material is deposited in the following collections:

DUBC – the beetles collection of Daugavpils University, Institute of Life Sciences and Technology, Coleopterological Research Centre, Ilgas, Daugavpils District, Latvia (A. Barševskis);

SNTD – Senckenberg Naturhistorische Sammlungen Dresden, Germany, Dresden, Germany (K. Klass).

The laboratory research and measurements follows previous works of the senior author (Rukmane & Barševskis, 2016; Rukmane, 2016).

## RESULTS

### *Pachyrhynchus möllendorffi möllendorffi* Heller, 1899

(Fig. 1A, 1B, 2, 3B, 4B, 5)

*Pachyrhynchus möllendorffi* Heller, 1899 (type locality: ‘‘Philippines’’; type depository: SNTD).

**Type material studied:** Holotype by monotype (‘‘Type in SNTD’’) ‘Typus’ <red rectangular label with black margin>, ‘Phillipinen’ <white rectangular printed label with black margin>

**Specimens examined:** Philippines, Panay Island, Antique, Madajas, XII. 2017 (7 males, 6 females), I. 2018 (1 male, 1 female); Culasi, IV. 2018 (1 male, 2 females). All deposited in DUBC.

**Diagnosis.** See Heller (1899).

**Distribution.** According to the original work of Heller (1899), author pointed out species distribution as ‘‘Philippines’’. After examination and comparison of the type specimen located in SMTD (Fig. 2) and new material from Panay Island (Fig. 1A, 1B) we found no morphological differences in specimens and assume, that original distribution of current species is Panay Island.

### *Pachyrhynchus möllendorffi marinduquanus* subsp. nov.

(Fig. 1E, 1F, 3A, 4A)

**Type material. Holotype, male:** ‘‘PHILIPPINES, Marinduque Island, Buenavista, III. 2013, local collector leg.’’ (white rectangular card, printed); ‘‘HOLOTYPE, Male, *Pachyrhynchus möllendorffi marinduquanus*, Rukmane & Cabras 2018, det. Anita Rukmane, 2018’’ (red rectangular card, printed) (DUBC).

**Paratypes:** one female: Marinduque Island, Buenavista, IV. 2017; two females: Marinduque Island, Mt. Malinding, IX. 2017. (DUBC).

**Distribution:** Marinduque Island.

**Description.** Male. Measurements (n=1): LB: 11.80; LR: 1.70; WR: 1.55; LP: 3.40; WP: 4.05; LE: 6.80; WE: 4.75. Dorsal habitus as in Fig. 1E.

Integument black, body surface very shiny except elytra and underside with weaker lustre.

Body with metallic pale orange, yellow or pink markings of recumbent round scales. Head subglabrous. Rostrum in dorsal contour straight, narrowing in apical side and weakly bulging in base; slightly longer than wide, LR/WR: 1.1; finely punctured, with short light hairs on apical ½; triangular shape impression on median part of rostrum from medial line to subbasal part of rostrum; lateroventral parts thickly covered with general scales and long golden hairs from

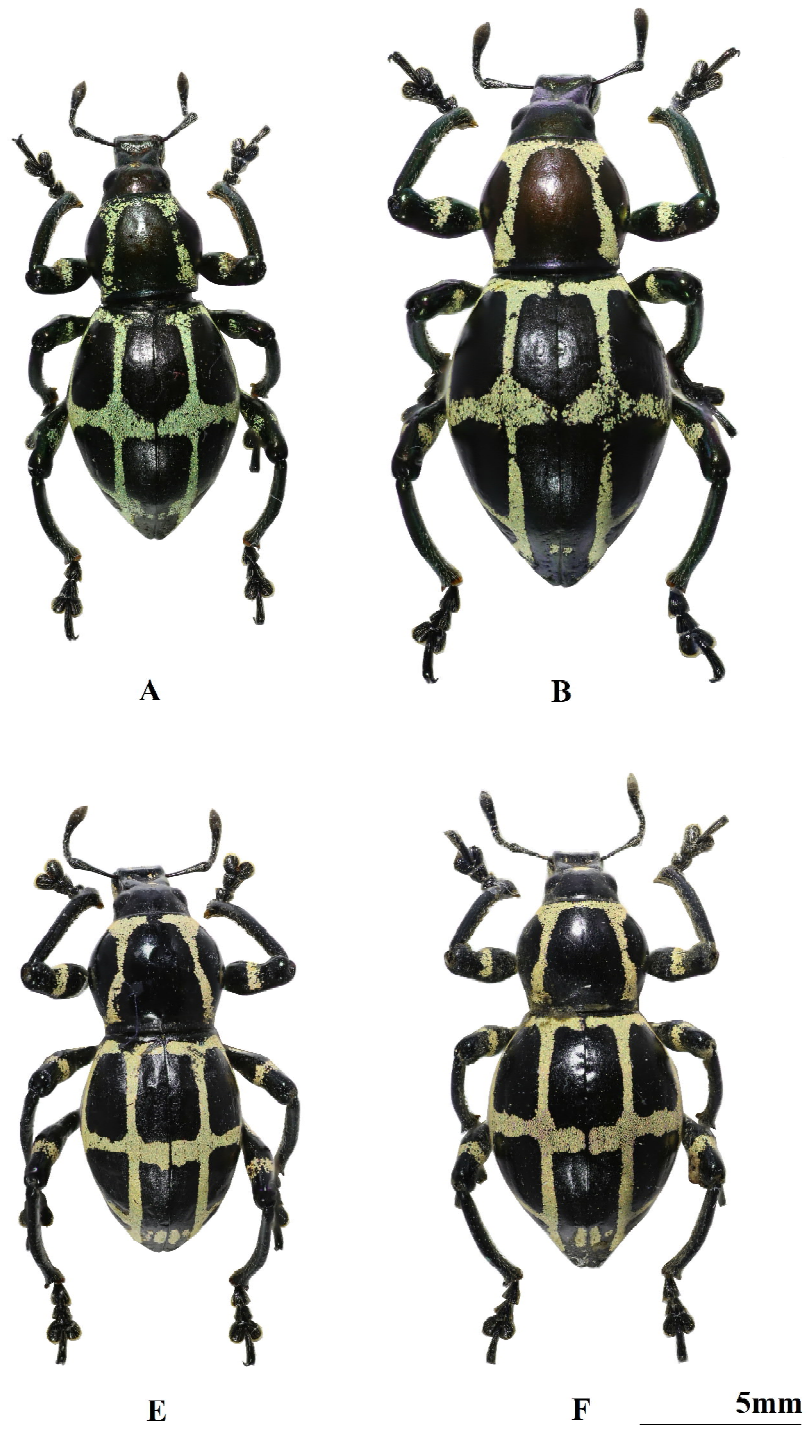


Fig. 1: Dorsal habitus of A – *P. möllendorffi* (male); B - *P. möllendorffi* (female); C – *P. möllendorffi marinduquanus* (male); D - *P. möllendorffi marinduquanus* (female).

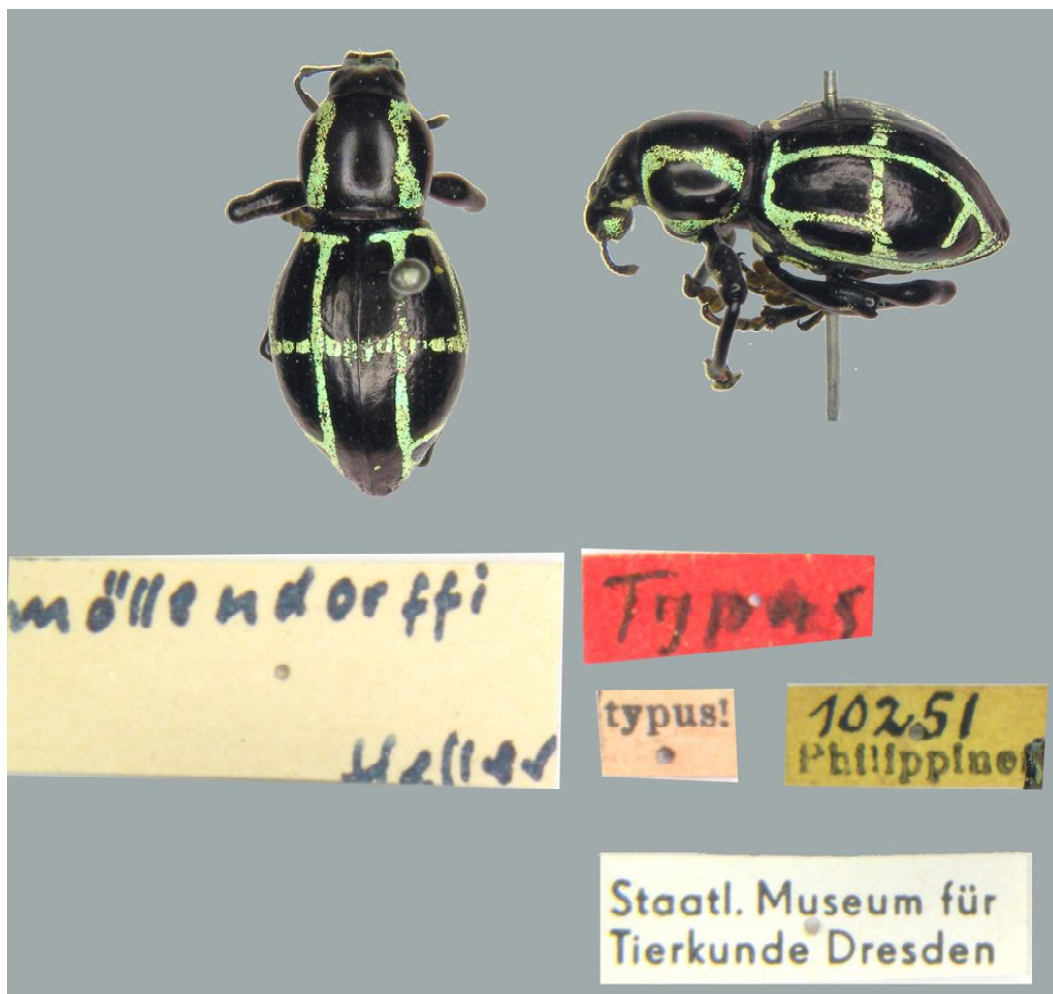


Fig.2. Dorsal and lateral habitus of *P. möllendorffi* type specimen from SMTD

antennal scrobes to apex; large, irregularly shaped patch of metallic pale orange scales on genae. Head with fine punctation; forehead flat, more than two times as wide as width of eye; eyes relatively large, moderately convex from the dorsal contour of head. Prothorax wider than long, WP/LP: 1.19; widest just before middle; with following markings of recumbent scales: 1) two longitudinal lines on disc, from lateral side of basal margin, to middle of apical margin, lines expands in apical part, forming triangle; 2) continuous transverse line along apical, lateroventral and basal margins of pronotum, from middle of apical

margin to lateral side of basal margin, transverse line connects with longitudinal line on disc; elytra suboval, LE/WE: 1.43, almost same width as prothorax, WE/WP: 1.17, as twice as long as prothorax, LE/LP: 2; intervals very weakly pronounced; scutellum large, extruded; elytra widest just in the middle; each elytron with the following markings: 1) continuous line along basal and lateral margin, from middle of basal margin to interval III on apex; 2) longitudinal line along interval III from base to apex; 3) longitudinal line along interval VII from base to midline of elytron, after which line incurves and connects with line

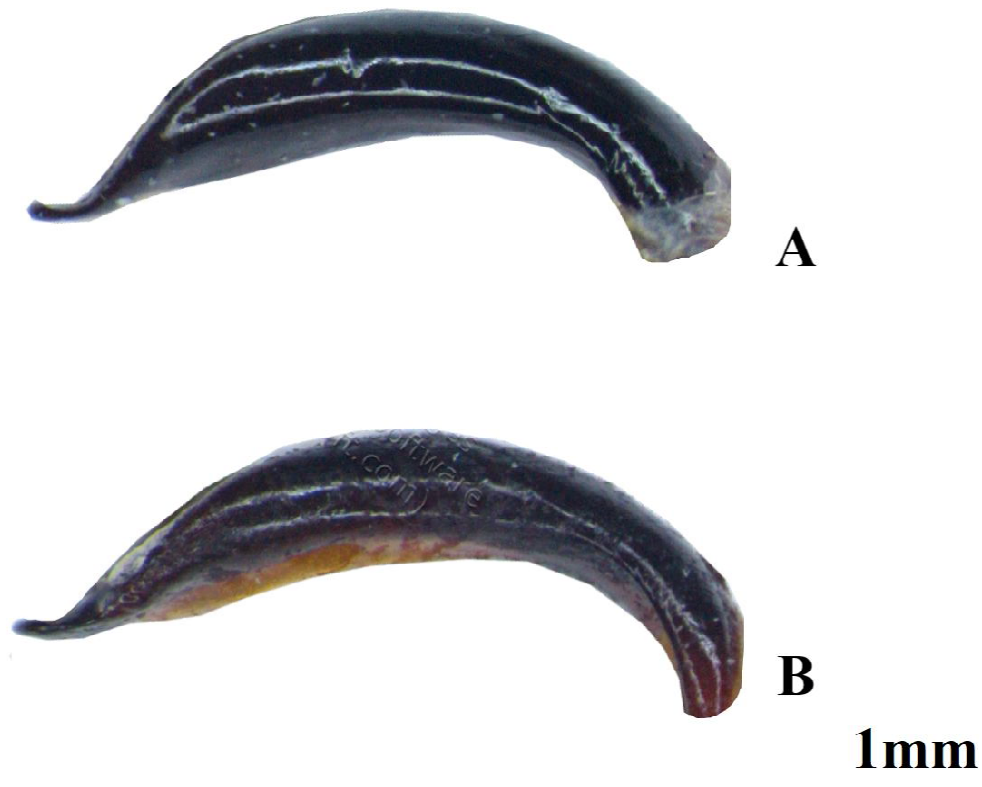


Fig.3. Lateral view of male aedeagal body, A - *P. möllendorffi marinduquanus*; B - *P. möllendorffi möllendorffi*

along interval III in apical 1/3; 4) transverse line medially from middle to lateral margin; 5) two short longitudinal lines in subapical part on interval I and II; profemur covered with general scales near apex, meso and meta femur covered with general scales both near apex and in basal part. Aedeagus as in Fig. 3A, 4A.

Female: Measurements (n=3): LB: 12.3 – 12.8 (mean 12.5). LR: 1.6 – 1.8 (mean 1.7). WR: 1.55 – 1.6 (mean 1.58). LP: 3.15 – 3.25 (mean 3.2). WP: 3.75 – 3.9 (mean 3.82). LE: 7.0 – 7.3 (mean 7.17). WE: 5.35 – 5.7 (mean 5.52). Habitus as in Fig. 1F.

**Differential diagnosis.** *Pachyrhynchus möllendorffi marinduquanus* subsp.n. differs

from *P. möllendorffi möllendorffi* by wider forehead, smaller eyes, shape of rostrum (rostrum of *P. möllendorffi möllendorffi* expands from midline to basal 1/3 in dorsal view, in *P. möllendorffi marinduquanus* it is straight, narrow on apex and expands on base), wider pronotum, with apical margin folded in middle (pronotum of *P. möllendorffi möllendorffi* is more narrow, apical margin straight).

**Etymology.** The subspecific epithet is an adjective from the name of the island (Marinduque), where the subspecies was discovered..

**Discussion.** Marinduque and Panay are two separate islands belonging to two PAICs. While

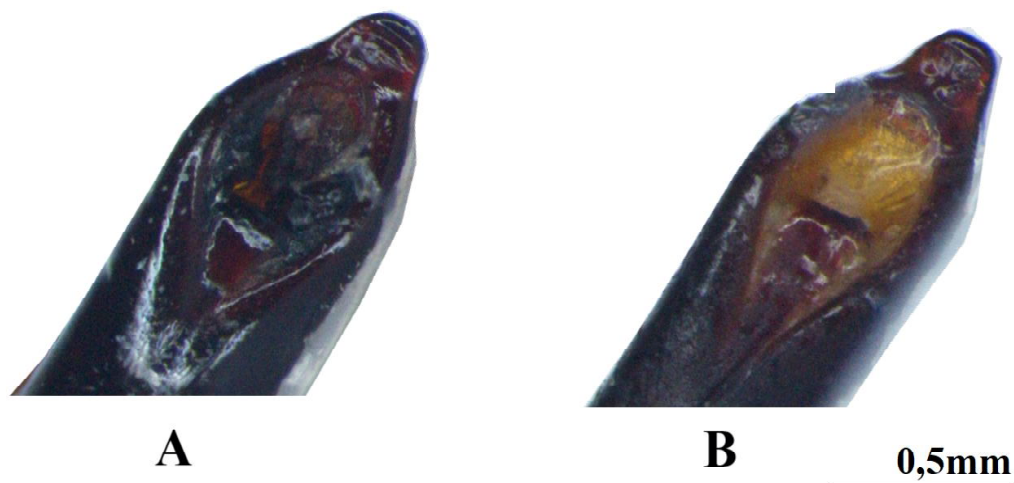


Fig.4. Dorsal view of male aedeagal body, A - *P. möllendorffi marinduquanus*; B - *P. möllendorffi möllendorffi*

Marinduque is a part of the Greater Luzon PAIC, Panay is a part of Greater Negros-Panay PAIC. These two islands were not connected by land bridges during the fluctuations of the seal level (Siler et al., 2010) which could have given rise to the speciation of the *P. möllendorffi* when these two islands became isolated. The isolation of these two islands could have caused biological isolation which led to subtle morphological differences between the population coming from the two islands. The morphological differences together with their geographical isolation as mentioned by Wallin et al. (2017) are valid evidence to consider *P. möllendorffi marinduquanus* as a new subspecies.

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#### REFERENCES

- Barševskis A., 2013. Contribution to the knowledge of the genus *Doliops* Waterhouse, 1841 (Coleoptera: Cerambycidae)., *Baltic J. Coleopterol.*, 13(2), 73 – 89.
- Barševskis A., 2014. New species and new records of the genus *Doliops* Waterhouse, 1841 (Coleoptera: Cerambycidae). *Baltic J. Coleopterol.*, 14 (1), 113 – 135.
- Barševskis A., Jaeger O., 2014. Type specimens of the genera *Doliops* Waterhouse, 1841 and *Lamprobityle* Heller, 1923 (stat. nov.) (Coleoptera: Cerambycidae) and description of two new species deposited in Senckenberg Natural History collections Dresden, Germany. *Baltic J. Coleopterol.*, 14(1), 7-19.
- Barsevskis, A., 2016. New Species of *Pachyrhynchus* Germar, 1824 and *Macrocyrtus* Heller, 1912 (Coleoptera: Curculionidae) from the Marinduque Island (Philippines) as a new Example of mimetic species pair. *Acta Biol. Univ. Daugavp.*, 16 (1).

- Barševskis, A., 2017a. Four new species of the Genus *Doliops* Waterhouse, 1841 (Coleoptera: Cerambycidae) from Mindanao Island, Philippines, *Baltic. J. Coleopterol.*, 17(1), 69-82.
- Barševskis, A., 2017b. Genus *Doliops* Waterhouse, 1841 (Coleoptera: Cerambycidae) from Luzon Island, Philippines, Available from: <http://cerambycidae.org/taxa/DoliopsWaterhouse-1841> (Accessed on 06.06.2016).
- Bollino, M. and Sandel, F. 2015. Three new species of the genus *Pachyrhynchus* Germar, 1824 from Lubang Island (Philippines) (Curculionidae: Entiminae: Pachyrhynchini). *Munis Entomology & Zoology*, 10 (2), 392-401.
- Bollino, M., Sandel, F. and Rukmane, A., 2017. New Species of the genus *Pachyrhynchus* Germar, 1824 (Coleoptera: Curculionidae) from Mindanao, Philippines. *Baltic. J. Coleopterol.*, 17(2), 189-204.
- Cabras, A. and Rukmane, A., 2016. A New Species of *Pachyrhynchus* Germar, 1824 (Coleoptera: Curculionidae: Entiminae). *Acta Biol. Univ. Daugavp.*, 16(1), 123-127.
- Rukmane, A. and Barševskis, A., 2016. Nine new species of the genus *Pachyrhynchus* Germar, 1824 (Coleoptera: Curculionidae) from the Philippines. *Baltic J. Coleopterol.*, 16 (1), 77 – 96.
- Rukmane, A., 2016. Six new species of the genus *Pachyrhynchus* Germar, 1824 (Coleoptera: Curculionidae) from the Philippines. *Acta Biol. Univ. Daugavp.*, 16(1), 81–92.
- Schultze, W. 1934. Thirteenth contribution to the Coleoptera fauna of the Philippines. *Philippine Journal of Science*, 5, 311–337.
- Schultze, W., 1923. A monograph of the pachyrhynchid group of the Brachyderinae, Curculionidae: Part I. The genus *Pachyrhynchus* Germar. *Philippine Journal of Science*, 23(6), 609-673, 6 pls.
- Siler, C., Oaks, J., Esselstyn, J., Diesmos, A. and Brown, R. 2010. Phylogeny and biogeography of Philippine bent-toed geckoes (Gekkonidae: *Cyrtodactylus*) contradict a prevailing model of Pleistocene diversification. *Molecular Phylogenetics and Evolution*, 55, 699-710.
- Wallin H., Kvamme T., Bergsten J., 2017. To be or not to be a subspecies: description of *Saperda populnea lapponica* ssp. n. (Coleoptera, Cerambycidae) developing in downy willow (*Salix lapponum* L.). *ZooKeys*, 691, 101-148.

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