

To the knowledge of the genus *Celebia* Thomson, 1857 (Coleoptera: Curculionidae: Eupholini) of the Philippines

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An annotated key for ten species of the genus *Celebia* Thomson, 1857 known to be distributed on the Philippine Islands is presented. Brief comments for each of the species together with new and additional distribution records are provided.

Key words: Coleoptera, Curculionidae, Eupholini, *Celebia*, Philippines, taxonomy, key

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INTRODUCTION

The Philippine fauna of the genus *Celebia* Thomson, 1857 (Entiminae: Eupholini) currently contains 10 species: *C. barsevskisi* Leitāne & Rukmane, 2019 (Mindanao), *C. iligana* Schultzze, 1922 (Mindanao), *C. lactospretata* Heller, 1924 (Negros), *C. leytensis* Leitāne & Rukmane-Bārbale, 2020 (Leyte), *C. merrilli* Schultzze, 1919 (Mindanao), *C. mindanaoensis* Leitāne & Rukmane, 2019 (Mindanao), *C. mundocostata* Heller, 1929 (Samar), *C. negrosensis* Leitāne & Rukmane, 2019 (Negros), *C. philippinica* Heller, 1921 (Mindanao) (Schultzze, 1919; Schultzze, 1922; Heller, 1921; Heller, 1924; Heller, 1929; Leitāne & Rukmane, 2019; Leitāne & Rukmane, 2020).

The current study contains a summary of the Philippine species, including both literature and present data of species diversity and distribution. Study of 231 (163 males and 68 females) specimens of various Philippine species from DUBC (Daugavpils University Beetle Collection) revealed wider species distribution range as was previously known. All of the known species show high level of endemism, as only one of the species were recorded on more than one island, with the note, that at different literature Dinagat Island also is a part of Mindanao Island. This is rather predominant for Island-distributed, flightless beetles, with some exclusions within the subfamily entiminae.

Morphological analyses of the Philippine *Celebia* Thomson, 1857 revealed crucial characters for species delimitation. For some species groups, the most reliable method for species distinguishing is usage of shape of everted endophallus. Most revealing characters are summarised in key for Philippine species.

Natural History Collections (MTD, Dresden, Germany; curator: O. Jager).

The laboratory research and measurements have been carried out using Nikon SMZ 745T and NIS-Elements 6D software. The illustrations were made using digital camera Canon EOS 6D with Canon MP-E 65mm macro lens, using stack shot system and Helicon Focus auto montage, subsequently edited using Photoshop.

MATERIAL AND METHODS

The study was based on specimens deposited at the Daugavpils University Beetle Collection (DUBC, Daugavpils, Latvia) and Senckenberg

Label data are cited verbatim. Number of specimens examined is written in brackets after citation of the label. Abbreviation system follows Leitāne & Rukmane, 2019.

RESULTS

Key to Philippine *Celebia* Thomson, 1857

General colour black. Body size from 15 to 28mm (excluding rostrum). Strongly expressed sexual dimorphism, where males are smaller, with slender elytra, ventrite V strongly rounded to apex. Female larger, elytra strongly rounded, ventrite V sharpened to apex. Prothorax dorsally with medial longitudinal line without scales, sometimes with slightly impressed groove along apical ½. Antennal scrobe not reaching edge of the eye. Antennal scape to distal margin of the eye of slightly after it.....
.....*Celebia*

- (1) Apex of the antennal scape to just after the distal edge of the eye (7)
- (2) Elytra with deep longitudinal grooves and furrows in all length (11)
- (3) Intervals between furrows with finely expressed puncture rows. Body mingled with pink to perlambur scales. Distribution Negros Island (4)*negrosensis*
- (4) Intervals between furrows with weak punctuation. Body mingled with green, yellow to golden scales. Distribution Mindanao Island (3)
- (5) Elytra strongly rugose, with five black longitudinal elevations widened along subbasal part, and four shorter longitudinal elevations between each of the five longer elevations (6)*barsevskisi*
- (6) Elytra without strong rugosity, longitudinal elevations between elevation I and II, II and III lack of indistant (5)*iligana*
- (7) Apex of the antennal scape to just before the distal edge of the eye (1)
- (8) Dorsal margin of elytra curved, apical edge of hind tarsite I straight, basal antennomer subequal in length with II, III-V subequal, but shorter than VI-VII. Distribution Leyte Island (9)

- Elytra with circular impressions along medial part, club three times as long as wide (10)
*leytensis*
- (9) Dorsal margin of elytra straight, apical edge of hind tarsite I folded, basal antennomer shorter than II, III-IV subequal, but shorter than VII. Distribution Mindanao Island (8)*merrilli*
- (10) Elytra with circular impressions in all length. Club two times as long as wide. Distribution Samar Island (8)*mundocostata*
- (11) Elytra nearly smooth or with weak irregular punctuation (14)
- (12) Elytra and prothorax smooth, with markings of metallic green to blue scales. Distribution Samar Island (13)*samarana*
- (13) Elytra and prothorax with weak, irregular punctuation, with markings of brown scales. Distribution Mindanao Island (12)*philippinica*
- (14) Elytra with strong punctuation, sometimes reaching deep dot-like impressions irregularly dispersed on elytra in all length (2)
- (15) Elytra with deep dot-like impressions, closely arranged, filled with orange to brown scales. Prothorax nearly straight in dorsal contour. Distribution Mindanao Island (16)*mindanaoensis*
- (16) Elytra with firm dot-like impressions, arranged with distance from each other. Scales dispersed spot like, light brown to yellowish colour. Prothorax strongly widened along apical half. Distribution Negros Island (15)*lactospretata*

Review of the Philippine *Celebia* Thomson, 1857 species

1. *Celebia merrilli* Schultzze, 1919
 = *Rhinoscapa merrilli* Schultzze, 1919
 (Fig. 1 – 1)

Type locality: Mindanao, Surigao, Iron Deposit
 (Type in MTD, examined).

Type category: Holotype (female).

Distribution: Species is widely distributed from North – East to Central part of Mindanao Island, including: Surigao del Sur, Agusan del Sur, Compostella and Davao region.

Material examined: PHILIPPINES / Mindanao, Surigao del Sur / Marihatag / XII. 2018 / local collector leg. (1 male) // I. 2019 (1 male, 3 female) // PHILIPPINES / Mindanao, Agusan del Sur,

Rosario / IX. 2018 / local collector leg. (1 male, 1 female) // X. 2018 (1 female) // PHILIPPINES / Mindanao, Agusan del Sur, Luagon / III. 2019 / local collector leg. (1 male) // PHILIPPINES / Mindanao, Agusan del Sur, San Francisco / XII. 2018 / local collector leg. (1 male, 1 female) // PHILIPPINES / Mindanao, Compostella, Monkayo, Filomena / XII. 2018 / local collector leg. (1 male) // I. 2019 (1 female) // PHILIPPINES / Mindanao, Davao, Kapatagan / IV. 2019 / local collector leg. (2 males) // PHILIPPINES / Mindanao, Davao, Mt. Apo / XI. 2016 / local collector leg. (2 males). Total: 17 ex. (10 males, 7 females).

Remarks: Schultzze in his early work reported, that several specimens of the species have been found of Biliran Island near Leyte. After exami-

nation of species material from Leyte Island available at MTD we concluded, that upper mentioned individuals belong to other species: *C. leytensis* Leitāne & Rukmane-Bārbale, 2020. Species is closely related to *C. leytensis* distributed at Leyte island and *C. mundocostata* from Samar Island. Most uncertain method to distinguish species is compare shape of everted *aedeagus*, that is species specific.

2. *Celebia philippinica* Heller, 1921

(Fig. 1 – 2)

Type locality: Mindanao, Davao (Type in MTD, examined).

Type category: Holotype (female).

Distribution: A single specimen is known to be distributed at relatively wide Davao with no exact locality. No newer distribution records have been reported.

Remarks: Species is known from a single female, and can be morphologically related to *C. mindanaoensis* Leitāne & Rukmane. Species can be easily distinguished by very weak, irregular punctuation on elytra.

3. *Celebia iligana* Schultze, 1922 = *Rhinoscapa iligana* Schultze, 1922

(Fig. 1 – 3)

Type locality: Mindanao, Lanao Prov., Iligan (Type in MTD, examined).

Type category: Holotype (female).

Distribution: Species is distributed from North – East to Central part of Mindanao Island, including: Agusan del Sur, Davao, Cotabato, Surigao, Sarrangani provinces.

Material examined: PHILIPPINES / Mindanao, Agusan, Borbon / X. 2018 / local collector leg. (3 males) // XI. 2018 (2 males) // I. 2019 (1 male) //

PHILIPPINES / Mindanao, Davao, Kapatagan / VII. 2011 / local collector leg. (1 male) // III. 2017 (1 female) // IV. 2017 (1 male) // I. 2018 (1 male) // II. 2018 (3 males) // X. 2018 (1 male) // IV. 2019 (1 male) // IX. 2019 (2 males) // PHILIPPINES / Mindanao, Cotabato, Magpet / X. 2017 / local collector leg. (1 male) // VII. 2020 (1 male, 1 female) // PHILIPPINES / Mindanao, Davao, Tamayong / IX. 2018 / local collector leg. (1 male) // X. 2018 (2 females) // PHILIPPINES / Mindanao, Agusan, San Luis / XI. 2018 / local collector leg. (2 males) // PHILIPPINES / Mindanao, Davao, Mt. Apo / IX. 2015 / local collector leg. (1 female) // XI. 2016 (1 male) // II. 2018 (1 male) // PHILIPPINES / Mindanao, Surigao, Luagon / XI. 2018 / local collector leg. (1 male) // II. 2019 (1 male) // PHILIPPINES / Mindanao, Sarrangani, Kiamba / V. 2019 / local collector leg. (1B&) // PHILIPPINES / Mindanao, Davao, Mati / XII. 2017 / local collector leg. (1 female) // PHILIPPINES / Mindanao, Surigao, Marihatag / XI. 2018 / local collector leg. (1 female) // PHILIPPINES / Mindanao, Agusan. San Francisco / X. 2017 / local collector leg. (1 male) // PHILIPPINES / Mindanao, Sarrangani, Maitum / IX. 2017 / local collector leg. / IX. 2017 (1 male). Total: 35 ex. (28 males, 7 females).

Remarks: While Schultze in original species description pointed on species similarity to *C. merrilli*, we conclude that species is more similar to *C. barsevskisi* Leitāne & Rukmane, but can be easily distinguished by less rugose elytra and lack of black, longitudinal elevations between intervals of elytra

Celebia lactospreta Heller, 1924

(Fig. 1 – 4)

Type locality: Negros Island, Mt. Cuernos (Type in MTD, examined).

Type category: Holotype (female).

Distribution: Negros Island. Species is known from a single specimen from Mt. Cuernos at the Southern part of Negros Island.

Remarks: One of the two species known to be distributed at Negros Island. Species can be easily distinguished from *C. negrosensis* Leitāne & Rukmane by its unique white scally spots on elytra.

5. *Celebia mundosocata* Heller, 1929

(Fig. 1 – 5)

Type locality: Samar Island (Type in MTD, examined).

Type category: Holotype (female).

Distribution: From the original description it was known that species is distributed at Samar Island, new data presents species exact distribution which is Northern part of the Island: Lope De Vega province.

Material examined: PHILIPPINES / Samar, Lope De Vega / II. 2017 / local collector leg. (1 female) / IV. 2017 (3 males, 3 females) // V. 2017 (1 female) / VI. 2017 (1 male) // VII. 2017 (1 male) // IX. 2017 (1 female) // X. 2017 (1 female) // XII. 2017 (1 female) // II. 2018 (1 female) // X. 2018 (1 female) // XI. 2018 (2 females) // IV. 2019 (1 female). Total: 18 ex. (6 males, 12 females).

Remarks: Species can be easily distinguished from closely related *C. leytensis* and *C. merrilli* by circular impressions on elytra, that are present on all length.

6. *Celebia samarana* Schultze, 1934

(Fig. 1 – 6)

Type locality: Samar, Borongan (Type in MTD, examined).

Type category: Holotype (female).

Distribution: Eastern Samar, Borongan.

Remarks: Only known female of the current species is known from Eastern part of Samar Island. Species id unique in its appearance and can be

distinguished from other species of the genus by glossy lazure green scale spots on elytra.

7. *Celebia barsevskisi* Leitāne & Rukmane, 2019

(Fig. 1 – 7)

Type locality: Mindanao, Cotabato, Kidapawan (Type in DUBC, examined).

Type category: Holotype (male).

Distribution: New data on species distribution shows that species is present not only at the central part of Mindanao Island (Kidapawan) but also at the Southern part of Mindanao (Kiamba).

Material examined: PHILIPPINES / Mindanao, Cotabato, Kidapawan / XI. 2015 / local collector leg. (1 male) // PHILIPPINES / Mindanao, Sarrangani, Kiamba / XI. 2015 / local collector leg. (1 male). Total: 2 ex. (2 males).

8. *Celebia mindanaoensis* Leitāne & Rukmane, 2019

(Fig. 1 – 8)

Type locality: Mindanao, Mt. Apo (Type in DUBC, examined).

Type category: Holotype (male).

Distribution: Central to Northern part of Mindanao: Bukidnon, Cotabato, Davao del Sur, Wao provinces and North Eastern part of Mindanao: Agusan del Sur, as well as Dinagat Island at the far North.

Material examined: PHILIPPINES / Mindanao, Lanao, Wao / X. 2016 / local collector leg. (3 males, 2 females) // II. 2017 (10 males, 2 females) // IV. 2017 (8 males, 5 females) // V. 2017 (4 males) // IX. 2017 (8 males) // X. 2017 (5 males) // X. 2018 (4 males, 2 females) // XI. 2018 (5 males, 2 males) // I. 2019 (1 male) // III. 2019 (1 male) // PHILIPPINES / Mindanao, Cotabato, Alamada / X. 2018 / local collector leg. (2 males) // XI. 2018 (1 male) // XII.



Fig. 1. 1 – *C. merrilli* Schultze, 1919 (Holotype female, MTD), 2 – *C. philippinica* Heller, 1921 (Holotype female, MTD), 3 – *C. iligana* Schultze, 1922 (Holotype female, MTD), 4 – *C. lactospreta* Heller, 1924 (Holotype female, MTD), 5 – *C. mundocostata* Heller, 1929 (male, female), 6 – *C. samarana* Schultze, 1934 (Holotype female, MTD), 7 – *C. barsevskisi* Leitāne & Rukmane, 2019 (Holotype male), 8 – *C. mindanaoensis* Leitāne & Rukmane, 2019 (Holotype male, Paratype female), 9 – *C. negrosensis* Leitāne & Rukmane, 2019 (Holotype male, Paratype female), 10 – *C. leytenis* Leitāne & Rukmane-Bārbale, 2020 (Holotype male, Paratype female).

2018 (4 males, 3 females) // I. 2019 (1 male, 1 female) // II. 2019 (5 males, 1 females) // PHILIPPINES / Mindanao, Agusan, Borbon / XI. 2015 / local collector leg. (2 females) / X. 2018 (3 males, 1 female) / XI. 2018 (2 males) // PHILIPPINES / Mindanao, Bukidnon, Bulacao / VII. 2014 / local collector leg. (4 males) // PHILIPPINES / Mindanao, Bukidnon, Dominorog, Mt. Kalatungan / IV. 2014 / local collector leg. (1 female) // V. 2014 (1 male) // XII. 2018 (2 males, 2 females) // PHILIPPINES / Mindanao, Bukidnon, Cabanglasan / XI. 2015 / local collector leg. (1 females) // X. 2016 (1 male) // I. 2019 (1 male, 1 female) // PHILIPPINES / Mindanao, Davao, Marilog, Gumitan / V. 2018 / local collector leg. (1 male) // II. 2019 (2 males) // PHILIPPINES / Mindanao, Bukidnon, Mt. Kitanglad / II. 2014 / local collector leg. (1 female) // PHILIPPINES / Mindanao, Mt. Apo / V. 2015 / local collector leg. (1 male) // PHILIPPINES / Mindanao, Dinagat / II. 2019 / local collector leg. (1 male). Total: 108 ex. (81 males, 27 females).

9. *Celebia negrosensis* Leitāne & Rukmane, 2019

(Fig. 1 – 9)

Type locality: Negros Island (Type in DUBC, examined).

Type category: Holotype (male).

Distribution: Northern part of Negros Island.

Material examined: PHILIPPINES / Negros Island, Mt. Conlaon 600-900m / IV. 2014 / local collector leg. (1 female) // II. 2017 (1 male) // III. 2017 (1 male) // PHILIPPINES / Negros Island, Don Salvador, Benedicto / IV. 2013 / local collector leg. (2 males) // V. 2013 (1 female) // X. 2015 (1 male) // I. 2016 (1 male) // III. 2016 (3 males) // IV. 2017 (1 male) // IX. 2018 (1 male, 1 female) // X. 2018 (2 males) // XI. 2018 (1 male) // XII. 2018 (1 male) // IV. 2019 (6 males, 2 males) // V. 2019 (4 males, 2 female) // VI. 2019 (2 males) // XII. 2019 (1 male, 3 females). Total: 38 ex. (28 males, 10 females).

10. *Celebia leytenis* Leitāne & Rukmane-Bārbale, 2020

(Fig. 1 – 10)

Type locality: Leyte, Mahaplag (Type in DUBC, examined).

Type category: Holotype (male).

Distribution: Southern part of Leyte Island: Sogod and Mahaplag provinces.

Material examined: PHILIPPINES / Leyte, Sogod / V. 2019 / local collector leg. (1 male) // PHILIPPINES / Leyte, Mahaplag, Mt. Balocave / V. 2017 / local collector leg. (1 male) // VIII. 2017 (1 female) // PHILIPPINES / Leyte, Mahaplag / IV. 2017 / local collector leg. (3 males, 2 females) // VII. 2017 (1 female) // X. 2017 (1 male) // V. 2018 (1 female) // VI. 2019 (2 males). Total: 13 ex. (8 males, 5 females).

Distribution analyses

Distribution analyses of 10 Philippine present *Celebia* species revealed, that all of the known species are distributed at Greater Mindanao (Mindanao, Dinagat, Samar, Leyte, Negros Islands). Only one species was present at more than one island: *C. mindanaoensis* Leitāne & Rukmane (Mindanao and Dinagat Islands). Ene though, at various references Dinagat Island is also considered as a part of Mindanao Island, there are cases for different flightless coleopteran to be distributed both on Mindanao and Dinagat, such is the case, for example, for *Pachyrhynchus speciosus* Waterhouse, 1841. Five species are distributed at Mindanao Island: *C. merrilli*, *C. philippinica*, *C. iligana*, *C. barsevskisi* and *C. mindanaoensis*. Considering lack of exact data for *C. philippinica*, species is considered to be distributed at Southern, Central and Eastern part of Mindanao as it is Davao region. All of the rest four species are present at Central part of Mindanao, three at North – East part: *C. merrilli*, *C. iligana*, *C. mindanaoensis* and only one at the Southern part: *C. barsevskisi*. Two species distributed at Negros Island, one the the Southern part: *C. lactospreta* and one at the Northern

part: *C. negrosensis*. Two species are distributed at Samar Island, one at the Northern part: *C. mundocostata* and one at the Eastern part: *C. samarana*. Only one species is known to be distributed at Leyte Island: *C. leytenensis* at the Southern part of Leyte Island.

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