

New Record of a Genus in Subfamily Melolonthinae from Thailand

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The May beetle or Cockchafer, subfamily Melolonthinae MacLeay, 1819, comprises a large group of Coleoptera which potentially includes over 700 genera and 10,000 species globally (HOUSTON & WIER, 1992). Among them, approximately 42 genera have been reported so far in Thailand (BURMEISTER, 1855; NONFRIED, 1891; MINET, 1987; ITOH, 1994; MIYAKE, 1994; ITOH, 1995, 1996; LI & YANG, 1999; AHRENS, 2000; KEITH, 2002; MIYAKE *ET AL.*, 2002; AHRENS, 2003; 2005; KEITH, 2007, 2008; AHRENS & FABRIZI, 2009; MATSUMOTO, 2010; KEITH, 2012; LI *ET AL.*, 2012; BEZDĚK, 2013; MATSUMOTO, 2014; KOBAYASHI & FUJIOKA, 2015; PROKOFIEV, 2015; AHRENS & FABRIZI, 2016; BEZDĚK, 2016a, 2016b; MATSUMOTO, 2016; AHRENS, 2022). In Thailand these beetles comprise various agricultural pests and also provide seasonal food for human community, especially in Southern Thailand, where a massive gregarious cockchafer is one of the major economic edible insects which flies in immense numbers during April–May (LEKSAWASDI, 2010; CHAROENJIT, 2017).

In this study, individuals of the genus *Carlschoenherria* BezdĚk, 2016 were rather surprisingly sampled using artificial light in Betong District, Yala Province, Southern Thailand (situated near the Thai / Malaysia border) during 2020–2024. Originally, the genus was erected as *Schoenherria* by BURMEISTER (1855). However, the genus was later found to be a primary junior homonym of Blanchard's Curculionidae, due to the priority of publication (BLANCHARD, 1853; BEZDĚK, 2016a). Therefore, its name was replaced as *Carlschoenherria* by BEZDĚK (2016a). Fifteen species belonging to this genus have been documented in the Sundaic region (ITOH, 1992, 1993; CALCETAS, 2019), while a doubtful species, *Carlschoenherria brenskei* (Nonfried, 1906), was reported to occur in the Indochinese region (BEZDĚK, 2016b; CALCETAS, 2019). KEITH *ET AL.* (2023) noted that the status of *C. brenskei* was currently unknown; its type could not be traced, but it certainly did not belong to the genus *Carlschoenherria* based on its characteristics and distributional region. Consequently, individuals of this beetle have never been recorded beyond Malaysia before. Therefore, the aim of this study is to report the first record of this genus in Thailand.

The specimens used in this study were stored in a 70% ethanol solution and transferred to my private collection in Bangkok, Thailand (CTH) and the private collection of Wuttiapon Pathomwattananurak in Chiang Rai, Thailand (CWP). The specimens were pinned, and the male aedeagi were dissected and soaked in a 10% potassium hydroxide solution (KOH) for 8 hours. Subsequently, they were mounted on triangular papers using acid-free adhesive, with the same pin as the corresponding specimens, and then dried in a drying box. Examinations were performed with a ST6 stereomicroscope. The multi-focused images were photographed by Fuji XA5 with a 60 mm macro lens, then modified in Adobe Photoshop. Additionally, the individual records documented on the iNaturalist website were also referenced as additional materials for expanding the distributional area in this study.

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Received 7 May 2024; accepted 22 June 2024.

NEW RECORD

Subfamily Melolonthinae MacLeay, 1819**Tribe Melolonthini MacLeay, 1819****Genus *Carlschoenherria* Bezděk, 2016*****Carlschoenherria argus* (Burmeister, 1855)**

Figs. 1–3, 7–8

Melolontha argus Burmeister, 1855: 419 (original description). Type locality: Java, Indonesia.

Schönherria argus: BRENSKE, 1894: 27 (generic combination; recorded in Malacca, Malaysia);

BRENSKE, 1900: 155 (recorded in Sumatra, Indonesia).

Schoenherria argus: ITOH, 1992: 9; ITOH, 1993: 14–15 (re-description, widely recorded in Malaysian mainland).

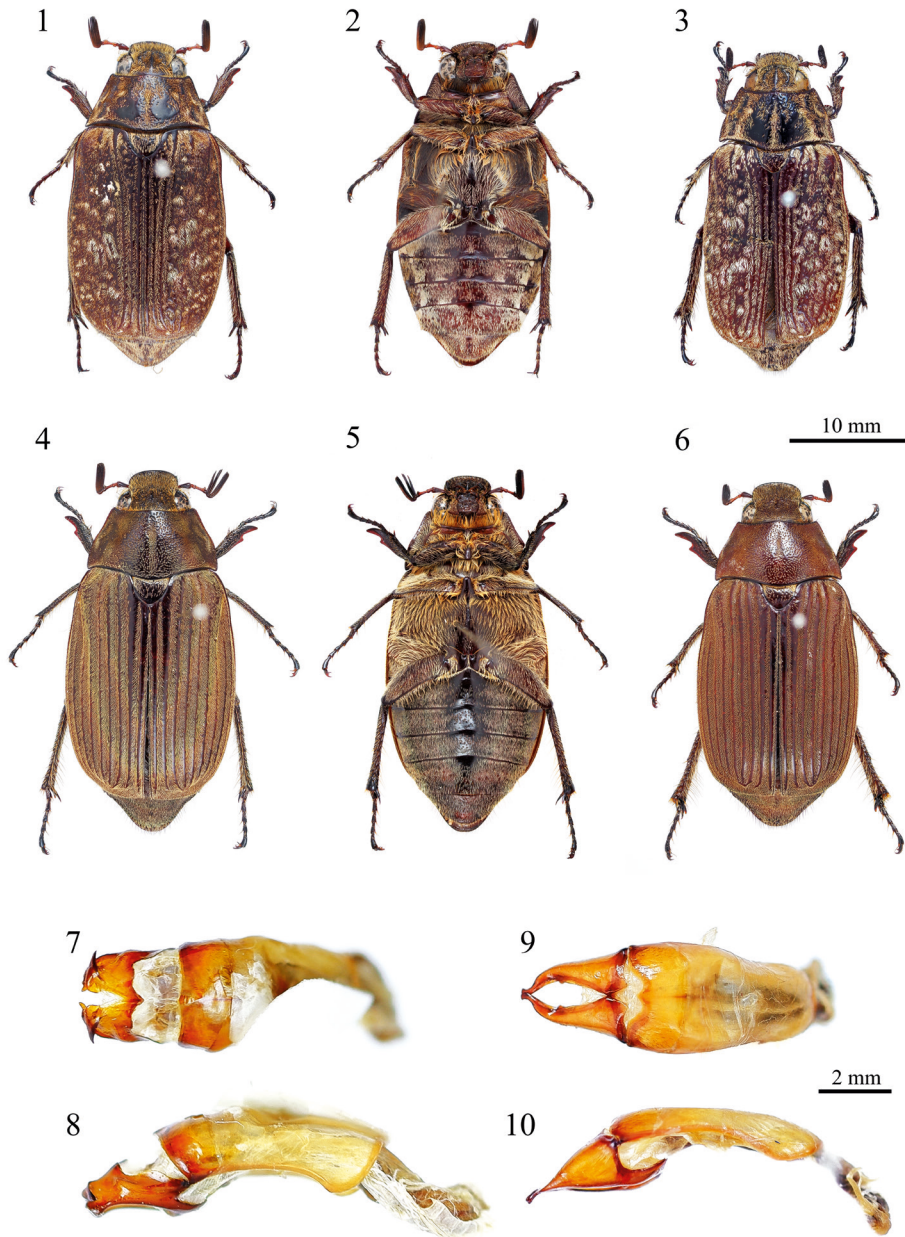
Carlschoenherria argus: CALCETAS, 2019: 341, figs. 29–31 (generic combination).

Material examined: Thailand: Yala Province, Betong District, 5°53'07.5"N, 101°01'17.6"E, 800 m a. s. l., 1.XII.2020, 1 ♀ (CTH), S. Sae-Liang leg.; Yala Province, Betong District, 11.IV.2022, 1 ♂ (CTH), S. Sae-Liang leg.; Yala Province, Betong District, 11.IV.2022, 1 ♂ (CTH), S. Sae-Liang leg.; Yala Province, Betong District, 23.I.2023 (image available in iNATURALIST ID BENJAMYNWEIL, 2023) Narathiwat Province, Waeng District, Hala-Bala Wildlife Sanctuary, 30.III.2022 (image available in iNATURALIST ID VATCHARAVEE, 2022).

Diagnosis.—Total length 21–23 mm, maximum elytral width 10–12 mm; body surface dark brown except reddish brown antennae, elytron, and legs, almost entire body covering with yellowish setae, elytron with irregularly clusters of whitish acicular-liked setae, abdominal ventrites 2–5 with a cluster of acicular-liked setae upon each lateral sides; median of head remarkably with three longitudinal ridges, surface rugose; only elytral costae 1–3 visible, surface superficially rugose; apex of parameres carinate outward in dorsum; dorsal outline of parameres separated from phallobase with superficially tridentate apex, ventral outline bisinuate with a sharp backward carina at base in lateral view.

Distribution.—Indonesia (Java and Sumatra: BURMEISTER, 1855; BRENSKE, 1900), Malaysia (Malay Peninsula: ITOH, 1993; CALCETAS, 2019), and Thailand (Yala and Narathiwat: **new records**).

Remarks.—Among the 15 members of *Carlschoenherria*, this particular species stands out from the others due to disc of pronotum surface with large smooth areas, elytral costae partially visible, elytrons with clusters of whitish acicular-liked setae, and male genitalia that superficially resemble *Exolontha* Reitter, 1902. However, this species remains within *Carlschoenherria*, distinguishable from *Exolontha* by the following characteristics: 1) distinct longitudinal ridges on head; 2) a mesosternal process pointed and extended clearly beyond level of the mesocoxae; 3) a cluster of acicular-liked setae upon lateral sides of the abdominal ventrites; 4) generally rounded pygidium apex without a notable depression; and 5) its occurrence in Sundaland.



Figures 1–10. *Carlschoenherria* from Yala Province, Thailand: 1–3, 7–8, *C. argus*. 4–6, 9–10, *C. vervex*. 1–2, 4–5, male habitus. 3, 6, female habitus. 7–10, male aedeagus. 1, 3–4, 6–7, 9, dorsal view. 2, 5, ventral view. 8, 10, lateral view. Photographs by Thitipong Hongsuwong.

Carlschoenherria vervex (Sharp, 1876)

Figs. 4–6, 9–10

Melolontha vervex Sharp, 1876: 89 (original description). Type locality: Penang, Malaysia.
Schoenherria vervex: ITOH, 1992: 10; ITOH, 1993: 13 (generic combination and re-description, widely recorded in Malaysian mainland); ALI *ET AL.*, 2016: 1024, figs. 1–4 (description and widely recorded in Malaysia).
Carlschoenherria vervex: CALCETAS, 2019: 343, fig. 35 (generic combination).

Material examined: Thailand: Yala Province, Betong District, 5°53′07.5″N, 101°01′17.6″E, 800 m a. s. l., 11.IV.2022, 2 ♂♂, 1 ♀ (CTH), S. Sae-Liang leg.; Yala Province, Betong District, 5°53′07.5″N, 101°01′17.6″E, 800 m a. s. l., 1–15.IV.2024, 3 ♂♂, 4 ♀♀ (CWP), S. Sae-Liang leg.

Diagnosis.—Total length 22–25 mm, maximum elytral width 12–14 mm; entire body dark reddish brown, covered with rather dense yellowish setae except elytral costae; abdominal segment 4, sometimes also segments 2–4, with a cluster of acicular-liked setae at lateral sides, a cluster setation rarely absent; median of head distinctly with a small longitudinal ridge, surface rugose; 10 elytral costae and intervals clearly visible; parameres sickle-shaped in dorsum; broad subtriangular, apex strongly compressed, base of ventral outline with a prolong backward carina in lateral view.

Distribution.—Malaysia (Malay Peninsula: ITOH, 1993; ALI *ET AL.*, 2016; CALCETAS, 2019) and Thailand (Yala: **new record**).

Remarks.—This species was originally classified in the *C. sulcipennis* species-group (ITOH, 1992). Later, CALCETAS (2019) combined this species within the *C. hastata* species-group, along with *C. argus* and *C. hastata* (Arrow, 1938), by the sharing characteristics on parameres compressed with apex laterally developed in dorsal view.

CALCETAS (2019) provided the diagnostic characters to distinguish this species from *C. hastata*, however, some of the characters are not usable in our local specimens. The characters which are reliable to use for distinguishing this species from *C. hastata* are unserrated pygidium, metasternal process shorter, and the shape of parameres. Moreover, *C. hastata* tends to occur only at high altitudes, typically above 1,200 meters above sea level, while *C. vervex* normally occurs at various altitudes ranging from 50–1,500 meters above sea level (SHARP, 1876; ARROW, 1938; ITOH, 1992; 1993; ALI *ET AL.*, 2016; CALCETAS, 2019).

Acknowledgements.—I extend my gratitude to Suradet Sae-Liang (Yala, Thailand) for his invaluable assistance in collecting all specimens which greatly contributed to this study. Special thanks are also due to Wuttiapon Pathomwattananurak (Chiang Rai, Thailand) for his generous support in facilitating contact and enabling access to his own collection for this research. Additionally, I express my sincere appreciation to Zhao Ming-Zhi (South China Agricultural University, Guangzhou, China) for his expertise in identifying *C. vervex*, which significantly enhanced the quality and depth of this investigation.

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