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Two new *Anomala* species from China and Laos (Coleoptera: Scarabaeidae: Rutelinae)

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Abstract. Based on the examination of previously collected material of the genus *Anomala* Samouelle, 1819 collected in China and Laos, two new species are described: *A. medogensis* sp. nov. from Xizang, China and *A. dongi* sp. nov. from Xiang Khouang, Laos.

INTRODUCTION

Anomala Samouelle, 1819 is the most numerous genus within the tribe Rutelinae in Asia (Zorn & Bezděk 2016). Several individuals of the genus were recently found in China and Laos. Among them, two species are described as new to science: *Anomala medogensis* sp. nov. collected by Hao Xu and Jian-Yue Qiu from north Xizang, China, and *Anomala dongi* sp. nov. collected in Xiang Khouang from North Laos by native collector employed by Zhi-Wei Dong. Detailed diagnoses, descriptions, and identifying illustrations are provided for each species.

MATERIAL AND METHODS

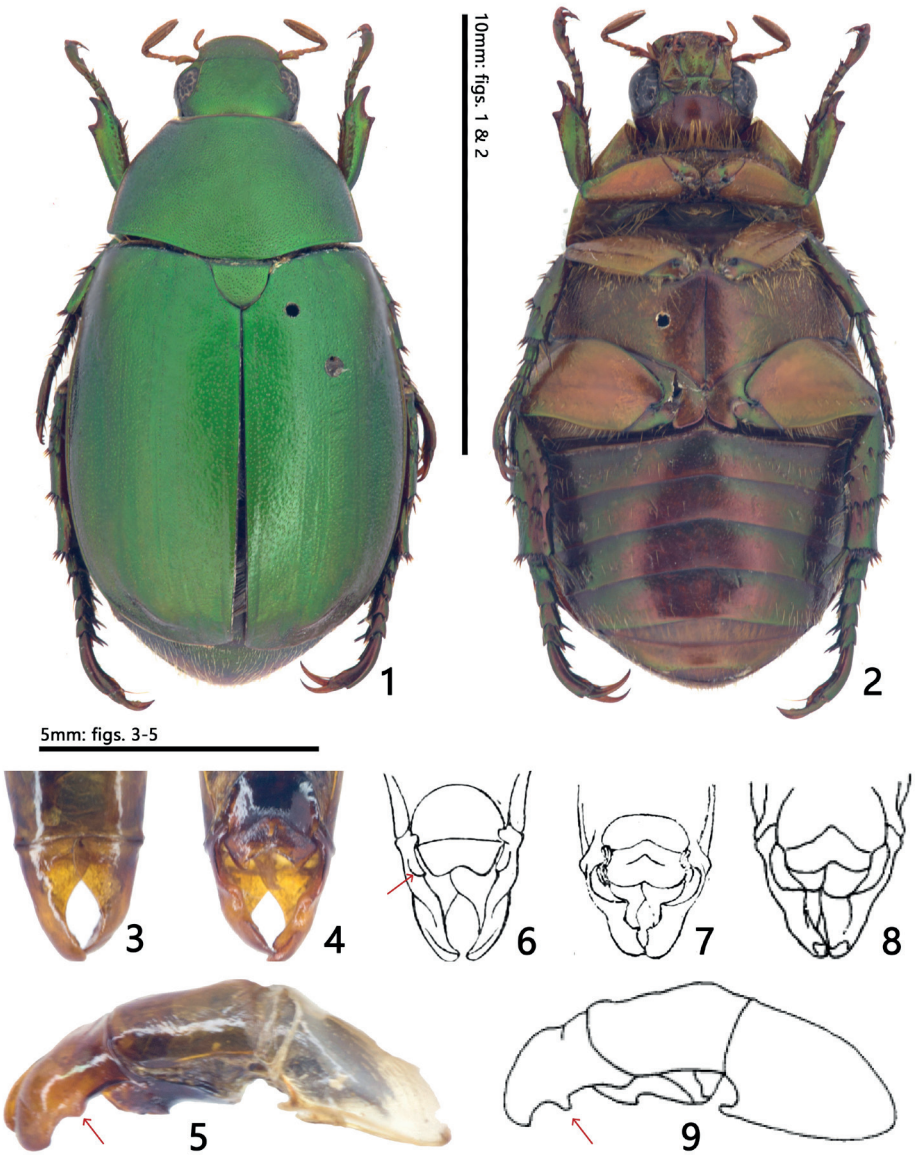
Morphological terminology used in this study was introduced by Ahrens et al. (2007). Type specimens of the species described in this paper bear the following three labels: 1 (red print label). "HOLOTYPE or PARATYPE"; 2 (white print label). "*Anomala* [species name], FL- Wang det. 2021"; 3 (white print label). Collecting data. Separate label lines are indicated by a slash (/), and separate labels by a double slash (//). The materials examined are housed in the following collections: Fa-Lei Wang Private Collection, Chongqing, China (CFLW) and Mianyang Normal University, Mianyang, China (MYNU).

DESCRIPTIONS OF NEW SPECIES

Anomala medogensis sp. nov.

(Figs. 1-5)

Type material. Holotype (♂) (MYNU): CHINA: Xizang / Nyingchi City, Mêdog Town / Gelin, 18.VII.2016 / Jian-Yue Qiu & Hao Xu leg. // HOLOTYPE // *Anomala medogensis* / FL-Wang det. 2021. Paratypes (2 ♂♂) (FLWC): CHINA: Xizang / Nyingchi City, Mêdog Town / Gelin, 18.VII.2016 / Jian-Yue Qiu & Hao Xu leg. // PARATYPE // *Anomala medogensis* / FL-Wang det. 2021.



Figs. 1-9. *Anomala* spp.: 1-5- *A. medogensis* sp. nov., holotype, male; 6- *A. indistincta* (after Arrow 1917); 7- *Anomala chloropus chloropus* (after Arrow 1917); 8, 9- *A. dentifera* (after Lin 2002b). 1, 2, habitus; 3-9, male genitalia. 1, 3, dorsal view; 2, 4, 6-8, ventral view; 5, 9, lateral view from left.

Description of holotype. Body length: 14.2 mm, width: 9.5 mm. Body elongate ovoid, rather convex in profile. Head, pronotum (lateral margin with yellow color), scutellum (lateral sides dark brown), and elytra dark green. Ventral surface of body dark brown with green and copper reflections, legs dark brown with strong green reflections, pygidium brown, partly with green reflections.

Head. Clypeus semicircular, width greater than double width, anterior margin reflexed, surface with dense rugosities-punctures; fronto-clypeal suture nearly complete; frons densely punctate, punctures coalescent anteriorly; interocular distance equals to 0.63 times the maximum transverse head width; vertex with punctures denser and smaller than on frons; antennal club shorter than footstalks.

Pronotum wide trapezoid, sides convergent in anterior 2/5, anterior 2/5 slightly straight; anterior marginal line disappearing in middle 1/3, posterior marginal line disappearing between basal corners of scutellum, anterior angles acute, posterior angles obtuse, broad rounded; surface rather densely and largely punctate and partly coalescent, punctures denser and smaller in the middle, and smaller on sides.

Scutellum 1.3 times as long as wide, apex corner rounded; surface with large and spare punctures.

Elytra surface densely punctate, different in size, a row of punctures closing to the suture obvious, other punctate rows identifiable; humeral umbone obvious, with spare punctures; epipleuron start from humeral umbone, ending in the middle.

Pygidium weakly convex in profile, surface densely transversely striae, with long yellow setae.

Abdominal ventrites with spare punctures; ventrites with a row of yellow setae, disappearing in the middle.

Legs. Protibia bidentate, terminal tooth slightly prolonged, another tooth acute; mesotibia and metatibia fusiform, inner surface of metatibia with a row of setae; protarsal and mesotarsal inner claw cleft.

Genitalia as in Figs. 3-5.

Differential diagnosis. The new species is related to *Anomala chloropus chloropus* Arrow, 1917, *A. dentifera* Lin, 2002, and *A. indistincta* Arrow, 1917 in male genitalia (Arrow 1917, Lin 2002b). *Anomala medogensis* sp. nov. can be distinguished from *A. chloropus chloropus* by paramere narrower and distinctly asymmetric in ventral view (compare Figs. 4, 7), from *A. dentifera* by tooth in the middle of paramere blunt in lateral view (compare Figs. 5, 9), and from *A. indistincta* by basal area of paramere without bulge in ventral view (compare Figs. 4, 6).

Etymology. The new species is named after its type locality, Mêdog of Xizang, China.

Distribution. China, Xizang, Mêdog County.

Anomala dongi sp. nov.
(Figs. 10-14)

Type material. Holotype (♂), (MYNU): LAOS: Muang Khoun / Xiang Khoang / alt.1000m, 5-15.V.2019 / local leg. // HOLOTYPE // *Anomala dongi* / FL-Wang det. 2021.

Description of holotype. Body length: 13.1 mm, width: 8.9 mm. Body elongate ovoid, convex in profile. Whole body dark brown with dark green metallic lustre and thinly bronze reflections.

Head. Clypeus subtrapezoidal, width greater than length, anterior corners broad rounded, anterior margin slightly reflexed, surface with dense and reticulate punctures; fronto-clypeal suture slightly arcuate forward; frons densely punctate, punctures mostly coalescent; interocular distance equals to 0.58 times the maximum transverse head width; vertex with dense punctures, sparser beneath eyes; antennal club length nearly equal to footstalks.

Pronotum wide trapezoid, sides convergent after middle; anterior marginal line complete, without posterior marginal, anterior angles and posterior angles sub-rightangular; disc densely and largely punctate, gradually becoming smaller to the side, each puncture bearing one short yellow seta.

Scutellum 1.4 times as long as wide, surface largely and sparely punctate, lateral margin without punctures.

Elytra with regular striae, intervals raised distinctly; surface densely with irregular punctures, denser on the sides, each puncture bearing one short yellow setae; umbone weak; epipleuron narrow.

Pygidium weakly convex in profile; surface with reticulate vein, partly with yellow setae, longer on apex.

Abdominal ventrites with dense transverse punctures in the middle, gradually becoming smaller to the sides, each puncture bearing one short yellow setae; ventrites with a transverse row of long yellow setae, sparer in the middle.

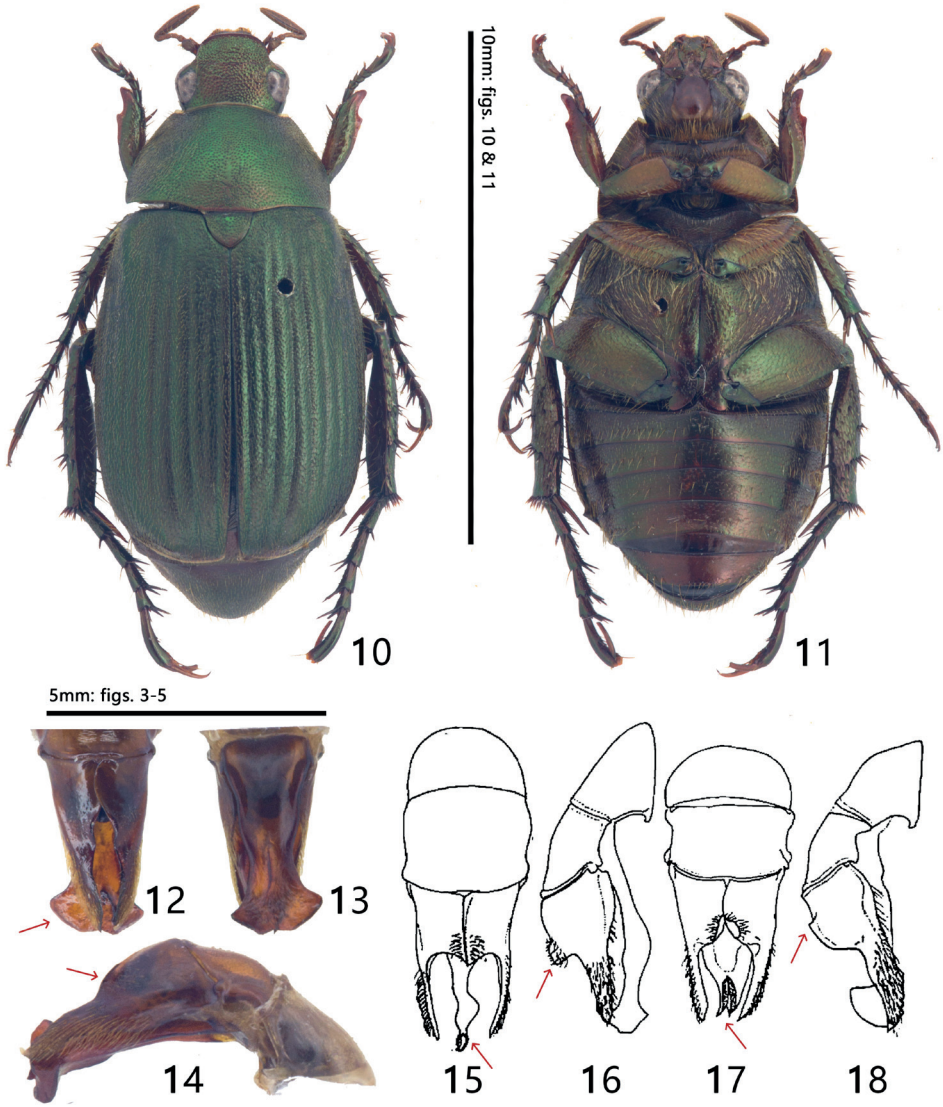
Leg. Protibia bidentate, terminal tooth slightly prolonged, another tooth obtuse; mesotibia and metatibia fusiform, surface with long setae; protarsal and mesotarsal inner claw deeply cleft.

Genitalia as in Figs.12-14.

Differential diagnosis. The new species is related only to *Anomala iwasei* Miyake, 1994 and *A. sapa* Miyake, 1994 in male genitalia (Lin 1996a, Miyake 1994b). *Anomala medogensis* sp. nov. can be distinguished from the two species mentioned above by ventral plate of male genitalia rather broader at apex (compare Figs. 12, 15, 17), and anterior margin of paramere without a special protuberance in lateral view (compare Figs. 14, 16, 18).

Etymology. The new species is named after Zhi-Wei Dong who kindly provided me with the type material.

Distribution. Laos, Xiang Khouang, Muang Khoun.



Figs. 10-18. *Anomala* spp.: 10-14- *A. dongi* sp. nov.; 15, 16- *Anomala iwasei* (after Miyake 1994b); 17- 18- *A. sapa* (after Miyake 1994b). 10, 11, habitus; 12-18, male genitalia. 10, 12, 15, 17, dorsal view; 11, 13, ventral view; 14, 16, 18, lateral view from left.

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