

Scarab beetle *Cyclocephala panthera* (Coleoptera: Scarabaeidae: Dynastinae): redescription and the first record from Colombia

Пластинчатоусый жук *Cyclocephala panthera* (Coleoptera: Scarabaeidae: Dynastinae): переописание и первая находка в Колумбии

H.J. Gasca-Álvarez* & U. Bosia

Г.Дж. Гаска-Альварез* и У. Бозия

Héctor Jaime Gasca-Álvarez , Corporación Sentido Natural, Bogotá, Colombia; Universidad Pedagógica y Tecnológica de Colombia, Tunja, Colombia. E-mails: sentidonaturalorg@gmail.com, hector.gasca@uptc.edu.co

Ugo Bosia, Via Garibaldi 4, 14053 Canelli (AT), Italy. E-mail: bosia@confartigianatoasti.com

Abstract. The scarab beetle *Cyclocephala panthera* Dechambre, 1979, previously known from Brazil, Bolivia and Peru, is recorded from Colombia for the first time and redescribed. The redescription is provided with illustrations of the diagnostic characters and a map of the known distribution of the species.

Резюме. Пластинчатоусый жук *Cyclocephala panthera* Dechambre, 1979, ранее известный из Бразилии, Боливии и Перу, впервые зарегистрирован в Колумбии и переописан. Переописание снабжено иллюстрациями диагностических признаков и картой местонахождений вида.

Key words: scarab beetles, geographic distribution, redescription, Colombia, Scarabaeidae, *Cyclocephala panthera*

Ключевые слова: пластинчатоусые жуки, географическое распространение, переописание, Колумбия, Scarabaeidae, *Cyclocephala panthera*

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Introduction

The genus *Cyclocephala* was established by Dejean (1821). Subsequently, Casey (1915) designated *Melolontha signata* Fabricius, 1781 as the type species of this genus. So far, the genus contains about 355 valid species and subspecies widely distributed through the Nearctic and Neotropical realms, although more taxa are likely to be discovered in the future. Only two species are known from Hawaii and Australia where they were apparently introduced (Moore et al., 2018).

According to Moore et al. (2018), due to the species richness, diversity of colour patterns, and probable non-monophyly, *Cyclocephala* is a “difficult” taxon to diagnose considering the traditional morphological characters used for the species identification.

Cyclocephala can be separated from other Cyclocephalini genera by the following combination of characters: dorsal colouration highly variable, usually with different patterns of pronotum and elytra; clypeal apex variable in shape: evenly rounded, parabolic, acute, emarginate, triemarginate, or nearly straight; frontoclypeal suture complete or incomplete in middle; maxilla armed

*Corresponding author

with distinct teeth; antenna with eight to ten antennomeres; base of pronotum with incomplete or complete marginal bead; males with two or three protibial teeth, females always with three teeth; males with apex of inner protarsal claw enlarged and narrowly cleft or entire (Ratcliffe & Cave, 2017; Moore et al., 2018).

Adult *Cyclocephala* are nocturnal and they are attracted to light at night. Some species are known to feed upon and pollinate the flowers of aroids and certain palms. The larvae are known to feed on the roots of grasses and some species may become crop pests (Ratcliffe & Cave, 2017). The third instar larvae of only 18 species have been described, and for only eight species the pupal descriptions are available (Moore et al., 2018).

Cyclocephala panthera was described by Dechambre (1979) from a single male collected in the state of Pará, Brazil. The holotype is housed at the Muséum national d'Histoire naturelle, Paris, France (Fig. 1). Ratcliffe (1992) described some characters of the previously unknown female, but without including a complete description. *Cyclocephala panthera* is a South American species currently found in Bolivia, Brazil, and Peru (Dechambre, 1979; Ratcliffe, 1992; Abadie et al., 2008; Ratcliffe et al., 2015). Like most of the *Cyclocephala* species, adults are probably attracted to lights at night, but little else is known of their biology and behaviour.

So far 104 species of *Cyclocephala* have been recorded from Colombia (Gasca-Álvarez & Deloya, 2016), although there are likely more to be recorded or discovered in the future. As a part of the ongoing study of *Cyclocephala* in Colombia (Gasca-Álvarez, 2013, 2014; Gasca-Álvarez et al., 2014, 2018; Gasca-Álvarez & Deloya, 2016), *C. panthera* is recorded from Colombia for the first time and redescribed. We believe the redescription based on the additional specimens is necessary because it will incorporate additional diagnostic characters of the species.

Material and methods

The photographs were taken with a stereomicroscope Motic SMZ-168 TLED equipped with a Moticam 5.0 camera (Figs 6–11), and with a Syncroscopy Auto-Montage system with a Leica Z16 APO stereomicroscope equipped a JVC

KY-F75U digital camera at the Florida State Collections of Arthropods (Gainesville, Florida, USA) (Figs 12–13). The measurements were obtained with an ocular micrometre and a 0–150 mm digital calliper.

Distribution map, based on the label and gazetteer data, was made with an ArcGIS 9.3 (ESRI Inc.). The abbreviations of the collections cited in this work are as follows: BCRC – Brett C. Ratcliffe collection, Lincoln, NE, USA; CEMT – Seção de Entomologia da coleção zoológica, Universidade Federal de Mato Grosso, Cuiabá, Brazil; CERPE – Coleção Entomológica da Universidade Federal Rural de Pernambuco, Recife, Pernambuco, Brazil; EPGC – Everardo and Paschoal Grossi private collection, Nova Friburgo, RJ, Brazil; FSCA – Division of Plant Industry, Florida State Collection of Arthropods, Gainesville, Florida, USA; MNHN – Muséum national d'Histoire naturelle, Paris, France; MUSM – Museo de Historia Natural de la Universidad Nacional Mayor de San Marcos, Lima, Peru; UGBC – Ugo G. Bosia collection, Canelli, Italy.

Taxonomic part

Order Coleoptera

Family Scarabaeidae

Subfamily Dynastinae

Tribe Cyclocephalini

Cyclocephala panthera Dechambre, 1979 (Figs 1–14)

Cyclocephala panthera Dechambre, 1979: 164.

Material examined. 45 specimens. **Bolivia**, *Cochabamba*: Chapare, XII.1964, 1 specimen (EPGC); Villa Tunari, Malaise trap, 16.XI.2000, 1 male, X.IV.2000, 1 female (BCRC); Hotel El Puente, 18.X.2011, 1 female (BCRC); N of Cristal Mayu, 19.X.2011, 1 male (BCRC); Araní, III.2005, 1 male, 1 female (UGBC); Yungas, Locotal, Crystal Mayu, Yungas vegetation, 500–1500 m a.s.l., 2 males (UGBC). **Brazil**: *Acre*, Rio Branco, 07.IX.1996, light, 1 specimen (EPGC); *Distrito Federal*: Brasília, 19.X.1970, light trap, 1 specimen, 16.X.1970 (EPGC); Estação Florestal Cabeça do Veado, 1100 m, 13–27.X.1971, E.G.I. & E.A. Munroe leg., 6 males, 3 females (BCRC); *Mato Grosso*: Diamantino, Vale da Solidão, 14°22'S, 56°07'W, 450 m a.s.l., X.2012, E. Furtado, 1 female (CEMT); *Alta Floresta*, XI.1998, light, 1 specimen (EPGC); *Alto Rio*

Arinos, X.1998, light, 3 specimens (EPGC); *Pará*, São Felix do Xingu, 29–30.IX.1975, M. Boulard, P. Jauffret, P. Pompanon leg., 1 male (MNHN); *Tocantins*, Porto Nacional, XII.2017, light, 1 specimen (CERPE). **Colombia**, *Boyacá*, Otanche, 10–20.XI.2019, 1 male, 1 female (UGBC). **Peru**: *Cusco*, La convención, Echarate, 442 m a.s.l., 11°49'16.4"S, 73°11'13.4"W, 1 female (MUSM); *Madre de Dios*: Manu Reserved Zone, Pakitzta B.S., 320 m a.s.l., 11°56.7'S, 71°17.0'W, D. Brzoska leg., 16.X.2000, 1 male (FSCA); Rio Tambopata Reserve, 30 km SW Puerto Maldonado, 290 m a.s.l., subtropical moist forest, 11–15.XI.1979, J.B. Heppner leg., 1 male, 1 female (FSCA); same data, 12°37'13.55"S, 69°10'47.40"W, 1 female (MUSM).

Redescription. Body length 20.2–20.1 mm; width 10.7–9.0 mm. Main body colour testaceous; head black, frons black or with testaceous colouration near to clypeal apex; pronotum with two longitudinal black maculae, two transversal black maculae on posterior margin and four black spots; scutellum black; each elytron with eight to nine irregular black spots (Figs 2–5); pygidium black in males (Fig. 6), bicoloured in females (Fig. 7); ventral surface and legs black.

Male. Head. Frons with small, dense punctures. Clypeus rugopunctate to rugulose, apex broadly truncate, angles rounded. Frontoclypeal suture weakly impressed. Antenna with ten antennomeres, club subequal in length to antennomeres 2–7 combined.

Pronotum. Surface with small, moderately dense punctures; punctures becoming slightly finer and sparser on sides. Base lacking marginal bead.

Elytra. Surface strongly punctate, punctures moderate in size, ocellate, uniformly distributed.

Pygidium. Surface glabrous, disc with minute to small, finely dense punctures (Fig. 6), convex in lateral view.

Legs. Protibia tridentate, basal tooth separated from others. Protarsus enlarged; tarsomere 5 bent; median claw large, curved, apex narrowly cleft. Metatarsus slightly longer than metatibia.

Venter. Prosternal process long, columnar; apex flattened into transversely suboval disc raised medially on anterior two-thirds, with long gold setae.

Genitalia. Parameres oval, elongate, wide at base, narrow at apex, anterolateral margin with strong tooth, apices with anterolateral projections strongly acuminate, slightly curved (Figs 9–10).

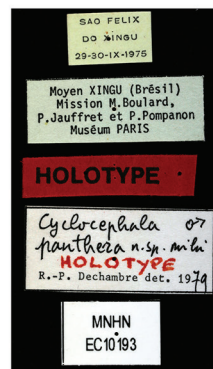
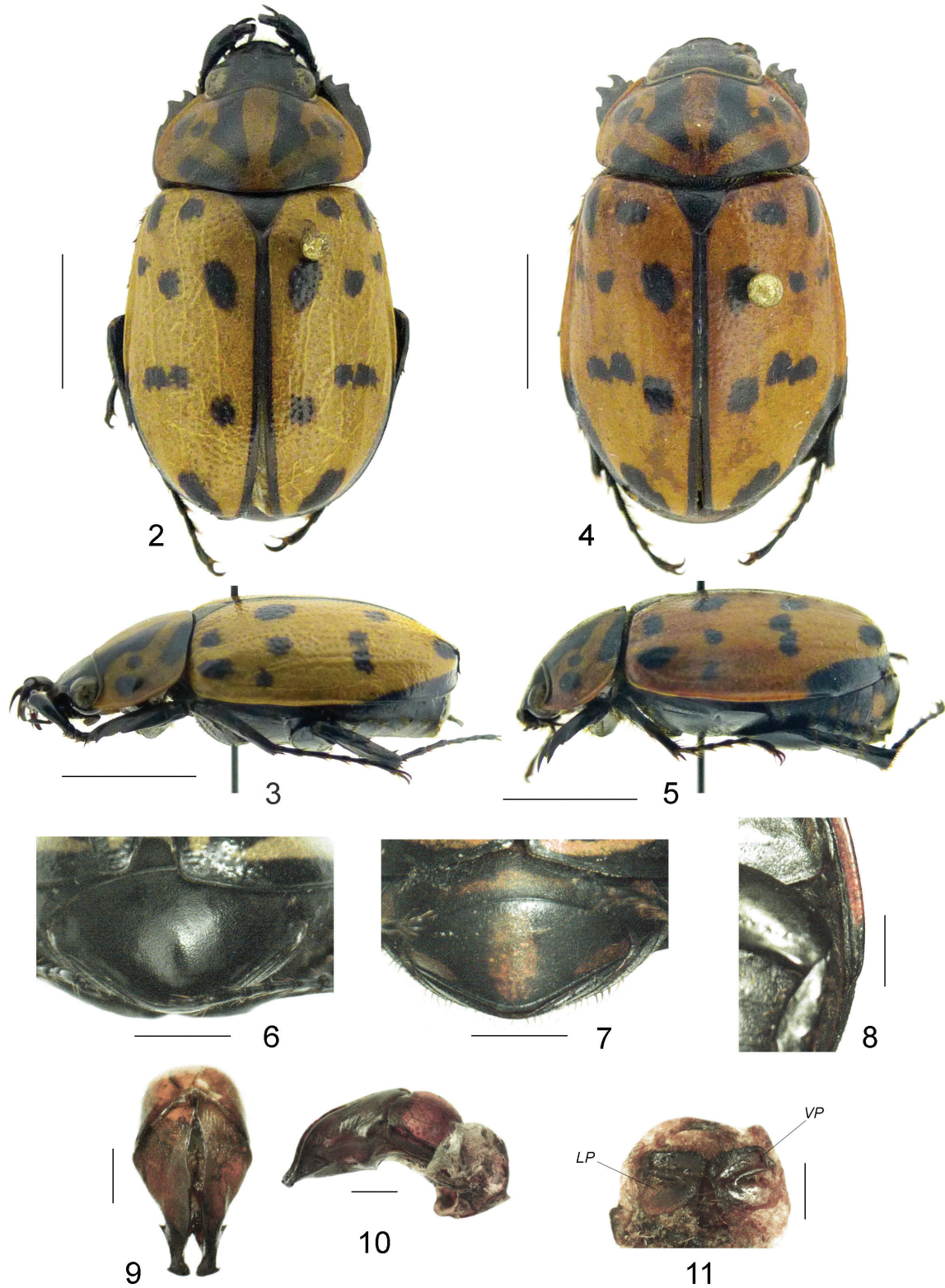


Fig. 1. *Cyclocephala panthera* Dechambre, holotype, habitus and labels. Photos courtesy Christophe Rivier, MNHN (<https://science.mnhn.fr/institution/mnhn/collection/ec/item/ec10193>). Scale bar 5 mm.



Figs 2–11. *Cyclocephala panthera* Dechambre, specimens from Colombia. 2–3 – male habitus dorsal (2) and lateral (3) view; 4–5 – female habitus in dorsal (4) and lateral (5) view; 6–7 – pygidium of male (6) and female (7); 8 – female epipleuron; 9 – parameres in dorsal view; 10 – aedeagus in lateral view; 11 – genital plates of female (VP – ventromesial plate, LP – laterodorsal plate). Scale bars: 5 mm (2–5), 2 mm (6–8), 1 mm (9–11).



Figs 12–13. *Cyclocephala panthera* Dechambre, specimens from Peru, habitus in dorsal view. **12**, male; **13**, female. Photos courtesy Paul Skelley (FSCA).

Female. Similar to male except the following characters: head surface rugose, with punctures slightly denser; pronotum with punctures slightly dense; epipleuron (in ventral view) enlarged, forming obtuse angle at level of abdominal sternite 1 and then tapering to apex (Fig. 8); elytral margin above epipleuron slightly swollen into small, elongate knob; pygidium weakly convex in lateral view (Fig. 5), with larger punctures; protibia tridentate, teeth subequally spaced; pro-tarsus simple, not enlarged; ventromesial genital plates quadrangular, their apices strongly sclerotised, with long, thick, testaceous setae, surface with micropunctures; laterodorsal genital plates oval, their apices rounded, with long gold setae (Fig. 11).

Diagnosis. *Cyclocephala panthera* is characterised by the distinctive colour pattern on pronotum and elytra (Figs 2–5), truncate clypeus, pronotum lacking marginal bead on base, and parameres with a strong tooth on anterolateral margin and apices having anterolateral projections strongly acuminate and slightly curved (Figs 9–10).

Distribution. *Cyclocephala panthera* is known from Brazil, Bolivia, Peru, and Colombia (new country record) (Fig. 14).

Natural history. Nothing is known of the natural history of this gorgeous species. It appears to be associated with subtropical forests, at elevations from 135 to 2700 m. According to the label data, adults are attracted to light and have been also collected with Malaise traps.



Fig. 14. Known distribution of *Cyclocephala panthera* Dechambre.

Remarks. The record of *Cyclocephala panthera* from Colombia is rather unexpected because the new locality is about 2200 km north of the other localities of this species recorded so far (Fig. 14). Some *Cyclocephala* species are known to have disjunct distribution ranges, e.g. *C. aequatoria* Endrödi, 1963 (Mexico, Guatemala, Ecuador) and *C. concolor* Burmeister, 1847 (Mexico, Guatemala, Honduras, Costa Rica, Colombia, Paraguay) (Endrödi, 1985; Ratcliffe et al., 2013). However, in the case of *C. panthera*, more thorough sampling is needed to clarify if its range is really disjunct or the species was introduced in Colombia.

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