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Meindert A. Hielkema

Gouda, Netherlands, meindert.hielkema@naturalis.nl

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a new species from Suriname

Meindert A. Hielkema †

Veenenburg 6, 2804WX Gouda,
The Netherlands

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Cyclocephala kuijteni (Scarabaeidae: Dynastinae: Cyclocephalini), a new species from Suriname

Meindert A. Hielkema †

Veenenburg 6, 2804WX Gouda,
The Netherlands
meindert.hielkema@naturalis.nl

Abstract. *Cyclocephala kuijteni*, **new species** (Scarabaeidae: Dynastinae: Cyclocephalini), is described from Suriname. It is illustrated together with its aedeagus, and the characteristics differentiating it from the most similar species *C. castanea* (Olivier), *C. hardyi* Endrödi and *C. pygidialis* Joly are briefly discussed.

Key words. Taxonomy, Guianas.

ZooBank registration. urn:lsid:zoobank.org:pub:8F673BD6-7061-4B9E-9445-F8A5C21D5892

Introduction

The New World genus *Cyclocephala* Dejean, 1821 contains about 360 described species, with most representatives occurring in the Neotropics (Ratcliffe and Cave 2015). While investigating the scarabaeoid fauna of Suriname with my son Auke, we collected a large number of *Cyclocephala* specimens with a so-called mothing sheet, including a single male specimen I was unable to identify. The general shape of this specimen resembles *C. castanea* (Olivier, 1789), which is widespread in the Guiana Shield (Hielkema and Hielkema 2019) and common in Suriname (personal observation), but it is notably smaller and much darker with a differently shaped aedeagus. *Cyclocephala hardyi* Endrödi, 1975, a species known from Guyana and Brazil (Hielkema and Hielkema 2019), is externally rather similar to *C. castanea*. Joly (2000) discusses the morphological differences between these two species and describes the closely related *C. pygidialis* from Venezuela. Externally, the newly found specimen is easily distinguished from these three species by its very dark appearance, while its aedeagus most closely resembles that of *C. hardyi*. All these species share a notably enlarged pronotum. This paper serves to describe this previously unknown species.

Materials and Methods

The male holotype of the newly described species will be deposited in the collection of the Naturalis Biodiversity Center (RMNH), while the male specimen of *Cyclocephala castanea* that it is compared with here is stored in my private collection (MHCN). The habitus photos of these two specimens were made with a Nikon D600 with 60mm macro lens and stacked with Helicon Remote and Helicon Focus, while the photos of the aedeagi were made with a Zeiss Discovery.V12 Stereomicroscope with AxioVision. The images of a paratype of *C. hardyi* are copied (under CC BY-NC-ND 4.0) from Muséum national d'Histoire naturelle (2020), while the image of the paratype of *C. pygidialis* was obtained from the Canadian Museum of Nature (CMNC), where it was made with a Leica Z16 APO and stacked with LAS 4.13.

The collection acronyms used in this paper refer to the following collections:

CMNC Canadian Museum of Nature, Ottawa, Canada

MHCN Meindert Hielkema, Gouda, The Netherlands [postscript: collection donated to and now housed in the RMNH]

MNHN Muséum national d'Histoire naturelle, Paris, France

RMNH Naturalis Biodiversity Center, Leiden, The Netherlands

UNSM University of Nebraska State Museum, Lincoln, Nebraska, U.S.A.

USNM National Museum of Natural History, Washington, DC, U.S.A.

Systematics

Cyclocephala kuijteni Hielkema, new species

(Fig. 1a, 2a, 3a)

Type material. Holotype male. Label data, with a single slash (/) indicating a break between lines, and a double slash (//) indicating a different label: “Suriname, Para / 1 km W of Zanderij / 9-i-2010 // On UV/HPL in savanna / forest // [red paper] HOLOTYPE ♂ / *Cyclocephala kuijteni* / Hielkema 2023.” Aedeagus extracted and glued on separate card. Deposited at the RMNH.

Description. Male holotype: Length 18 mm, width across humeri 8 mm. Color reddish brown. Basal part of the frons and elytra, except for the outer edges and sutural margin, darker brown. Outer edges of protibia darkened (Fig. 1a).

Head. Clypeus parabolic, apex weakly reflexed upwards. Apical and lateral edges rugulose, disc with moderately dense punctation, punctures unequal in size, becoming sparser centrally. Clypeofrontal suture biarcuate, distinct. Frons with a shallow furrow from clypeofrontal suture to halfway base, punctate, punctures unequal in size and sparser towards the center. Antennae with 10 antennomeres, club subequal in length to antennomeres 2–7.

Pronotum. Shiny, sides evenly rounded, widest at one-third from base. Anterior angles acute, basal angles broadly rounded. Surface with minute punctures, set closer only along the sides, with some slightly larger punctures near the anterior angles. Base with marginal bead.

Scutellum. Base and center with moderately dense punctation.

Elytra. With large annulate punctures arranged in vague rows, mixed with fine punctation, the larger punctures becoming smaller towards margins and apex, punctures on apex obsolete.

Pygidium. Regularly rounded with minute, sparse punctures; basal angles with moderately dense, larger, setiferous punctures.

Prosternal process. High, distally with long setae on posterior half.

Legs. Protibia with 2 apical teeth close together, basal tooth slightly removed from others, at about two-thirds of tibial length. Protarsus enlarged, inside of tarsomere 4 with apical tooth, median claw narrowly incised.

Aedeagus. Laterally (Fig. 2a) resembling that of *C. hardyi* (Fig. 2b) and with a similar but much smaller forward-pointing dorsoapical process of the phallobase. The distal ends of the parameres (Fig. 3a) are shorter than those of *C. hardyi* (Fig. 3b), with the tips not touching. The aedeagi of *C. castanea* (Fig. 2c) and *C. pygidialis* (Fig. 2d) do not have a dorsoapical process, and their parameres are shaped much differently (Fig. 3c–d).

Female. Unknown.

Distribution. Only known from near the village of Zanderij in the district of Para, Suriname. Coordinates: 5°27'37"N, 55°13'21"W.

Etymology. This species is named in honor of the late Piet Kuijten, my mentor in scarabs and friend for many years.

Discussion

To prevent an accidental synonymy, the habitus and especially the aedeagus were compared with all images of *Cyclocephala* species included in Endrödi (1985) as well as with all later publications containing newly described *Cyclocephala* species. Outside of *C. castanea*, *C. hardyi* and *C. pygidialis* nothing similar was found, and especially the presence of a pointed dorsoapical process on the phallobase seems to be a unique characteristic of *C. kuijteni* and *C. hardyi*.

Cyclocephala kuijteni and the three most similar species in the genus (see above) can be distinguished from other species of *Cyclocephala* by their enlarged pronotums and the neck-like prolonged bases of their parameres.

The easiest way to distinguish this species from *C. castanea*, *C. hardyi* and *C. pygidialis* is by its dark reddish-brown color (Fig. 1a), as opposed to a light reddish-brown to yellowish-brown color in the other species (Fig.

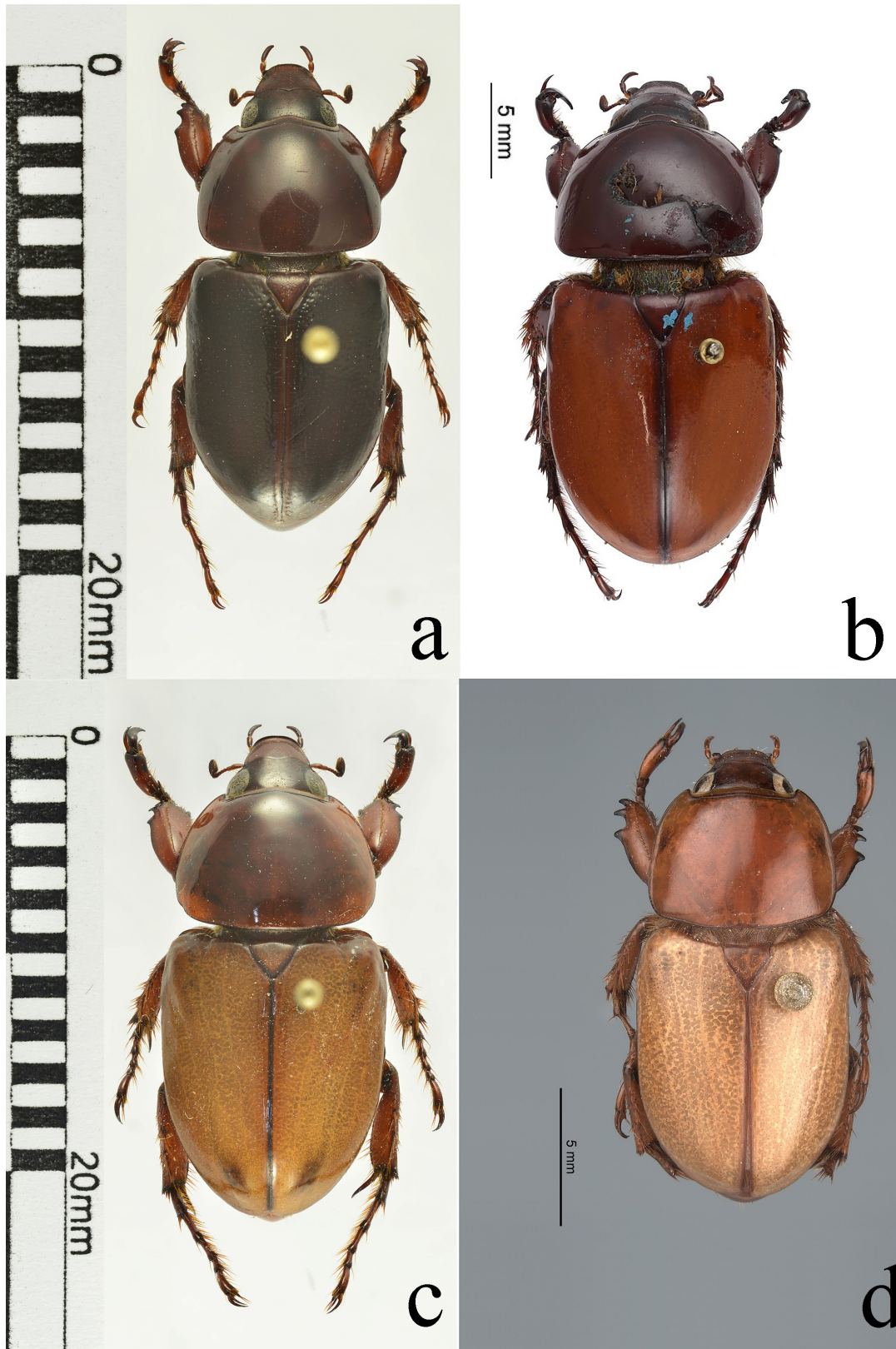


Figure 1. *Cyclocephala* spp., dorsal habitus. a) *C. kuijteni* n. sp., holotype. b) *C. hardyi* Endrödi, paratype. c) *C. castanea* (Olivier). d) *C. pygidialis* Joly, paratype.

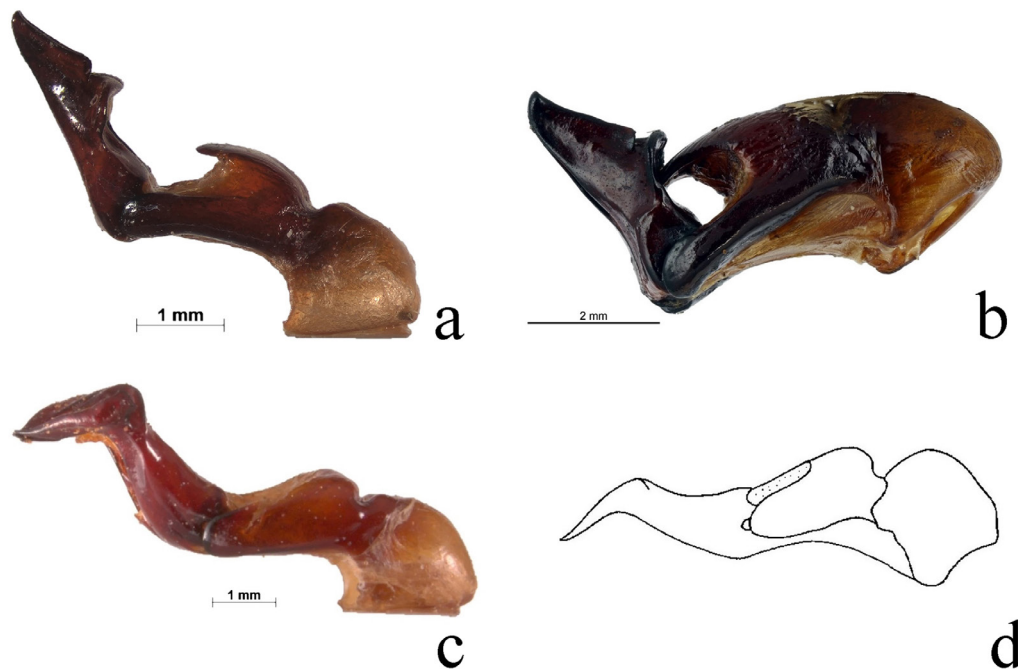


Figure 2. *Cyclocephala* spp., lateral views of the aedeagi. **a)** *C. kuijteni* n. sp., holotype. **b)** *C. hardyi* Endrödi, paratype. **c)** *C. castanea* (Olivier). **d)** *C. pygidialis* Joly, from Joly (2000).

1b–d), the distinctive shape of its parameres (Fig. 3a) and the presence and size of a dorsoapical process on the phallobase (Fig. 2a).

The single known specimen was captured at a mothing sheet (light trap) with HPL lamps and UV fluorescent tubes (BL) on a shrub savanna near the edge of a xerophytic forest, with some small ponds with night-blooming *Nymphaea* sp. (Nymphaeaceae) nearby. Despite several other visits to the same spot, we never encountered it again. Because *C. castanea* and *C. hardyi* are commonly found in flowers of waterlilies (*Nymphaea* spp. and *Victoria amazonica* (Poepp.) J.C.Sowerby) as noted in Gottsberger (1986) and Moore and Jameson (2013), several dozen flowers of the *Nymphaea* sp. in the nearby ponds were examined in April 2010, but these yielded only males of *C. castanea*. As it is possible that *C. kuijteni* is only active during a short period each year, additional collecting efforts, especially in January, are recommended.

As an aside, it should be noted that several paratypes of *C. pygidialis* Joly could not be located in the collections where they were supposed to be. According to Joly (2000), a single male paratype was sent to the each of the following collections: CMNO (= CMNC), NMNH (= USNM), UNSM, and MNHN. When the curators of these collections were asked for images of this species, it transpired that only the undissected specimen of the CMNC could be found. As it could not be confirmed that the other three specimens had ever been received at the collections where they were supposed to be, they may not have been sent there or may have been lost in transit. Although Joly approved the use of images from his description for the present paper, further emails to him regarding *C. pygidialis* remained unanswered, and the fate of the missing paratypes of that species thus remains unsolved for now.

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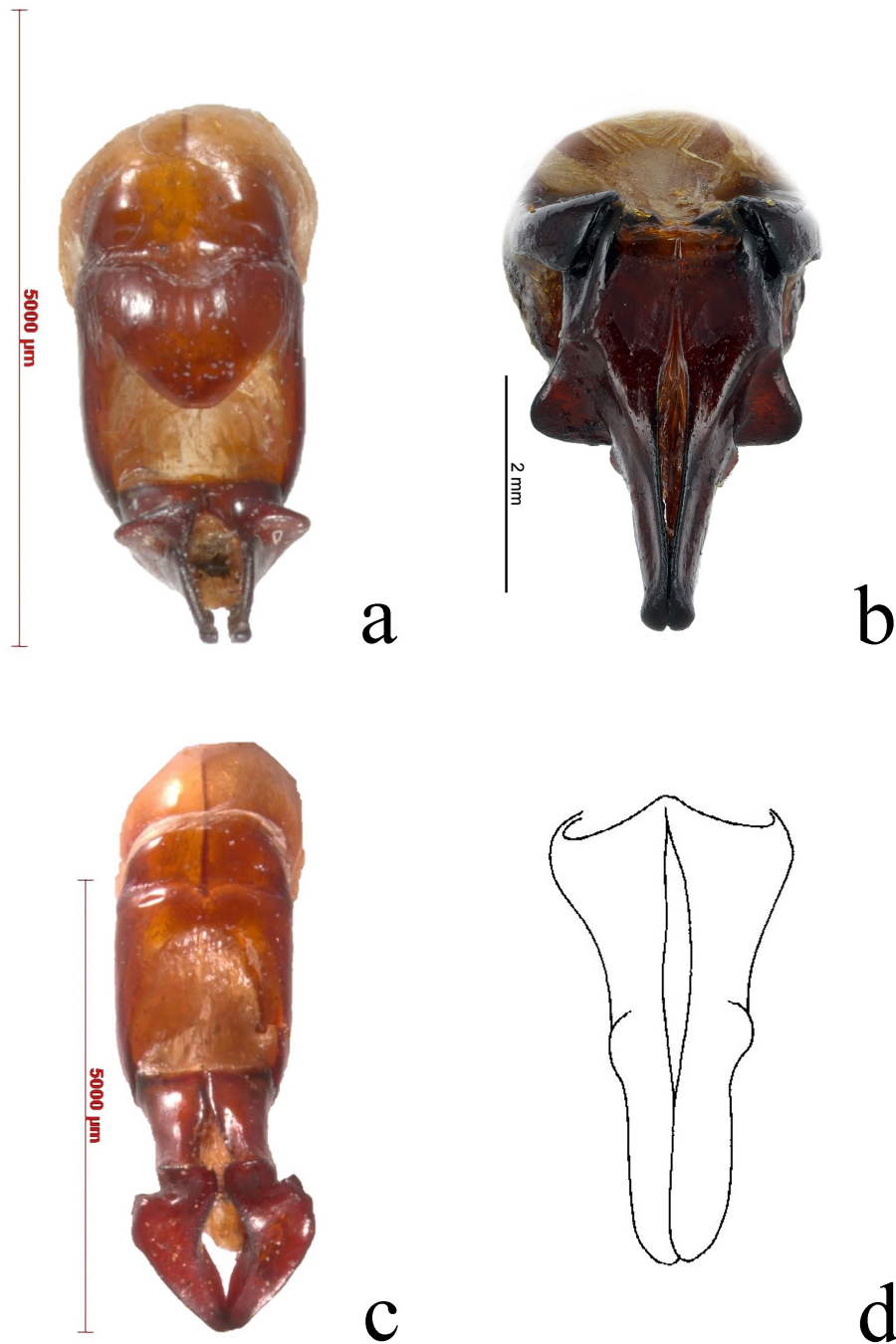


Figure 3. *Cyclocephala* spp., frontal views of the parameres. **a)** *C. kuijteni* n. sp., holotype. **b)** *C. hardyi* Endrödi, paratype. **c)** *C. castanea* (Olivier). **d)** *C. pygidialis* Joly, from Joly (2000).

Ratcliffe (University of Nebraska State Museum, Systematics Research Collections, U.S.A.) is likewise thanked for doing the same in the scarab collections of the UNSM and the USNM (the latter being on loan at the UNSM). My thanks go to Luis Joly (Universidad Central de Venezuela, Museu del Instituto de Zoología Agrícola, Venezuela) for granting me permission to use the images of his description of *C. pygidialis*. Paul Schoolmeesters (Herent, Belgium) kindly provided literature from his great library. Brett Ratcliffe and Mario Cupello (Universidade Federal do Paraná, Departamento de Zoologia, Laboratório de Sistemática e Bioecologia de Coleoptera, Brazil) are thanked for reviewing this paper.

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