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Scientific Note

Two novelties for *Cyrea dora* Canepari & Gordon, 2016 (Coleoptera: Coccinellidae): record for Paraguay and description of the female

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Abstract. This paper presents new information on *Cyrea dora* Canepari & Gordon, 2016 (Coleoptera: Coccinellidae: Brachiacanthini), namely, the first record for Paraguay and the description of the female, which exhibits variation in the elytral pattern. *Cyrea* Gordon & Canepari, 2013 is one of the most diverse genera of Coccinellidae in South America, but nearly half of its species are known only from males.

Keywords: Brachiacanthini, Coccinelloidea, Neotropical Region, South America.

The lady beetles (Coleoptera: Coccinellidae) comprise over 6000 species (Ślipiński & Tomaszewska 2010), nearly 2000 of which occur in South America (González & Větrovec 2021). Some groups, such as Brachiacanthini, are particularly diverse in this region, representing approximately 17% of the family's diversity in the continent (Almeida & Milléo 2000; Gordon et al. 2013; Canepari et al. 2013; Gordon et al. 2014; Canepari et al. 2016); this diversity surpasses that of the entire Coccinellidae family in Europe (Audisio et al. 2015). The genus *Cyrea* Gordon & Canepari, 2013 alone contains 128 species (González 2022). Paraguay, the eighth largest country in South America, has eighteen species of Brachiacanthini (Gordon et al. 2013; Canepari et al. 2016), ten of which are *Cyrea* species (Canepari et al. 2016; González 2022).

Cyrea was recently proposed for a group of species formerly in *Cyra* Mulsant, 1850 (Gordon et al. 2013), and was subsequently revised by Canepari et al. (2016). This revision resulted in the description of 76 new species. Later, other authors proposed a handful of new species (González 2022; Szawaryn & Czerwiński 2022). The genus *Cyrea* is distinguished from other Brachiacanthini by its simple tibiae and the absence of pores between ventrites 4–5 (Gordon et al. 2013). Since Canepari et al. (2016), no species of *Cyrea* have been described or recorded for Paraguay, except for *Cyrea lucille* Canepari & Gordon, 2016 (González 2022). This work presents the first record of *Cyrea dora* Canepari & Gordon, 2016 for Paraguay, along with a description of the female that exhibits a variation in the elytral macular pattern.

The material studied was borrowed from the Coleção Entomológica da Universidade Federal Rural de Pernambuco (CERPE), Recife, Pernambuco (Paschoal C. Grossi). The adult abdomen was removed and boiled in a 10% potassium hydroxide solution before the genitalia were dissected and examined. Photographs of the adult and dissected parts were taken using a Leica DMC 2900 digital camera coupled to a Leica M205 C compound stereomicroscope. Plates were prepared using Adobe Photoshop CC 2019 (version 20.0). Labels were transcribed in quotation marks (“”), and vertical bars (|) were used to separate the lines. The dissected abdomen and genitalia were placed in a microvial containing pure glycerin for preservation. The microvial was pinned together with the double-mounted insect. The material will be deposited at CERPE. The genitalia terminology is according to Ślipiński (2007). The description of the female specimen follows Canepari et al. (2016).

***Cyrea dora* Canepari & Gordon, 2016** (Figs. 1-8)

Diagnosis: *Cyrea dora* is similar to *Cyrea lucy* Canepari & Gordon, 2016 because of its elongate, parallel-sided body and elytral color pattern. However, *C. lucy* has two longitudinal bands connected to the base of each elytron, one extending from the humeral callus to the apical declivity and the other extends along the sutural margin to the apex. In contrast, *C. dora* has two spots on each elytron and one longitudinal sutural band.

Material examined: Female (CERPE): “Paraguay, Presidente | Hayes, Escalante, | 27-28.xi.2003, 151m, | -23.783°S, -60.783°W, | B. Garcete leg.” The specimen was dissected, and the abdomen and genitalia are stored in a microvial with glycerin.

Description: *Female*. Length 4.75 mm, width 3.10 mm; body elongate, slender, parallel sided.

Dorsal color most reddish, except by the black central 3/4 of pronotum, scutelar shield, sutural margin of elytron up to apex with continuity to lateral margin, and spot on humeral callus and apical spot (Fig. 1). Ventral surface black, except for labrum, antennae, apical palpomeres, tibiae and tarsi reddish (Fig. 2). *Head*. Punctures fine, separated by two times the diameter, each puncture about as large as one eye facet. Clypeus emarginate apically, lateral angle rounded, with denser and longer pubescence on the anterior margin, the shorter about 1 puncture long and the longer 6 punctures long. Canthi about 8 eye facets long, angled forward, apically rounded, black (Fig. 4). *Thorax*. Pronotal punctures slightly larger than head punctures, separated by 1 to 2 times a diameter; elytral punctures as large as on pronotum, separated by 2 to 5 times a diameter; metaventral punctures about as large as on elytron medially, separated by a diameter or less, becoming larger and separated by less than a diameter toward lateral margin (Fig. 2). Pronotum narrowed from base to apex, basal angle obtuse and anterior angle right; lateral margin weakly curved, almost straight; basal margin without trace of bordering line medially. Protibiae with narrow oblique angle, basal tooth absent, sponda distinctly extended beyond protibial margin (Fig. 5). Carinae on prosternal process widely separated at apex, convergent toward base, joined almost at base of prosternum. Metaventrite without setal tuft. *Elytra*. Surface reddish with four black spots and one sutural macula from base to apex up to lateral margin. Each elytron with two round black spots, one humeral spot and one larger spot on apical declivity. Epipleura base as narrow as metepisternum, feebly grooved, descending externally; epipleura horizontal and deeply emarginate for reception of femoral apices on its remaining length (Fig. 3). *Abdomen*. Basal abdominal ventrite without setal tuft. Postcoxal lines incomplete, descending, closely parallel to the posterior margin of ventrite 1 and with recurving apex (Fig. 6). Ventrite 1 with punctures separated by two times a diameter, becoming

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Figures 1-8. *Cyrea dora* Canepari & Gordon, 2016 (Coleoptera: Coccinellidae), female. 1. Dorsal habitus; 2. Ventral habitus; 3. Lateral habitus; 4. Frontal habitus; 5. Proleg, ventral view; 6. Abdomen; 7. Genital plate, ventral view; 8. Spermatheca. Scale bars: 1 mm.

separated by less toward lateral margin. Ventrites 2–6 with smaller punctures, with distance of at least two times a diameter. Ventrite 5 with crenulation at posterior margin. Ventrite 6 with round apex. Apical tergite finely, densely punctured, with strong sclerotization, exposed. *Genitalia*. Coxites subretangular (Fig. 7). Spermathecal capsule about eight times longer than wide, with cornu apex three times wider than base; nodulus sinuous (Fig. 8).

Distribution: Paraguay (Presidente Hayes) [**new record**]; Argentina (San Luis).

Paraguay is now home to nineteen species of Brachiacanthini and eleven species of *Cyrea*. Recently, González (2013) published a checklist of Coccinellidae from Paraguay, but it requires updating as numerous taxonomic studies on South American coccinellid have been published since then.

The male type specimen of *C. dora* is yellowish and the apical spot transverse and connected to the sutural and lateral margins, with a length of 3.5 mm (Canepari et al. 2016). Therefore, the elytral pattern described here (reddish color and apical spot round and isolated) constitutes a variation in *C. dora*, in addition to the length being 1.35 times larger. The females of 55 species of *Cyrea* are still unknown (Canepari et al. 2016; González & Větrovec 2021; González 2022).

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Conflict of Interest Statement

The author has no conflicts of interest.

Ethical Approval

Not applicable.

Data Availability

All data generated in this study are available in the paper itself.

Generative AI Statement

The author declares that no generative artificial intelligence tools were used in this study.

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