



Synopsis of Brazilian *Euphoria* Burmeister, 1842 (Scarabaeoidea: Cetoniidae: Cetoniinae: Cetoniini) with description of a new species

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ARTICLE INFO

Article history:

Received 09 May 2024

Accepted 12 July 2024

Available online 23 August 2024

Associate Editor: Adriana Marvaldi

Keywords:

Biodiversity

Coleoptera

Neotropical region

Systematics

Taxonomy

ABSTRACT

The Brazilian species of *Euphoria* Burmeister are revised. We describe *E. euridesi* sp. nov., a new species from the Cerrado biome of Brazil, and redescribe *E. lurida* (Fabricius 1775). Both species are illustrated and diagnostic characters that distinguish them are presented. A key to the seven South American species of *Euphoria* and observations on the natural history are also given.

Introduction

The last taxonomic revision of the genus *Euphoria* Burmeister, 1842 provided descriptions, diagnoses, and identification keys for species groups and all species then known (Orozco, 2012), and was later complemented with additional localities by Di Iorio (2013). *Euphoria* is a genus in the subfamily Cetoniinae comprising about 62 species, distributed throughout the Americas, with the highest species diversity found in Central America, Mexico, and the United States. In South America, only six species are known: *E. abreona* Janson, 1878, *E. hera* Burmeister, 1842, *E. steinheili* Janson, 1878, and *E. yucateca* Bates, 1889 are restricted to the Andean Region (*E. steinheili* and *E. yucateca* reaching Central America), and *E. boliviensis* Blanchard, 1850 and *E. lurida* (Fabricius, 1775) occur to the East of the Andean cordilleras (Orozco, 2012; Schoolmeesters, 2024).

Whilst *Euphoria boliviensis* is endemic to Bolivia, *E. lurida*, the commonest species in the genus, occur widely in the central-southern region of Brazil, northern Argentina, Bolivia, Paraguay, and Uruguay (Orozco, 2012). The latter species potentially of economic interest because it has been implicated in damaging crops in the Midwest, South, and Southeast regions of Brazil. It has been reported in the literature to be associated with common Acacia (flowers), avocado trees, *Baccharis* sp. (flowers), Bahia coconut trees, *Chrysanthemum* sp. (Asteraceae), *Citrus* spp. (orange and lemon tree flowers), coffee plants, corn (green parts), *Dianthus* sp. (Caryophyllaceae), eggplants (flowers and tender stems), cultivated fig trees (flowers and fruits), grapevines (flowers and fruits), gravatá (Bromeliaceae), guava trees, melon (fruits), onions (flowers), peach trees (flowers and fruits), pear trees (flowers and fruits), persimmon trees (flowers and fruits), pineapple (flowers), plum trees (fruits), potatoes, rice, rose bushes (flowers), safflower (*Carthamus tinctorius* L.) and strawberry plants (leaves and fruits) (Silva et al., 1968;

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Garcia et al., 1993; Cunha et al., 2007; Orozco, 2012; Androcioli et al., 2017). This species has also been associated with goat and cow dung, carrion, sap, decaying fruit and myrmecophily (Eidmann 1938 cited in Navarrete-Heredia, 2001; Orozco, 2012).

Because of the damage that pest insects may pose to certain crops, it is important to be able to accurately identify potential pests, so that if necessary, appropriate management can be provided. We have studied Brazilian specimens of *E. lurida* demonstrating morphological variations that are geographically-linked. Consequently, here we distinguish and describe a new species, and discuss misidentification problems with *E. lurida*.

Material and methods

216 specimens of *Euphoria* were examined, from the following collections (curators in parentheses):

CEMT – Coleção Entomológica de Mato Grosso Eurides Furtado, Universidade Federal de Mato Grosso, Cuiabá, Brazil (Fernando Z. Vaz-de-Mello);

CERPE – Coleção Entomológica da Universidade Federal Rural de Pernambuco, Recife, Brazil (Paschoal C. Grossi);

EPGC – Everardo and Paschoal Grossi Collection, Nova Friburgo, Brazil (Everardo Grossi & Paschoal Grossi);

MNRJ – Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil (Marcela L. Monné);

MuBio – Museu da Biodiversidade: Entomologia, Dourados, Brazil (Valter Vieira Alves-Junior);

MZUSP – Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil (Sônia Casari);

NHML - The Natural History Museum, London, UK (Maxwell Barclay & Michael Geiser);

ZMMU - Zoological Museum of the Moscow Lomonosov State University, Moscow, Russia (Aleksey A. Gusakov).

A Leica EZ4 stereomicroscope was used for morphological observations. All photographs were taken using a Leica M205C stereomicroscope (7.8–160.0×) with a Leica MC190 HD image capture system. The photos and plates were edited using Adobe Photoshop 2020 software. The distribution maps were made with QGIS 3.14.1 software, from data recorded in an Excel spreadsheet.

Morphological characters follow Krikken (1984) and Lawrence et al. (2011). The length of the specimens is the sum of the lengths of only the pronotum and elytra, because the variable angular positioning of the head and pygidium observed in specimens overly increased variation. The width was determined by measuring the distance from the outermost external margin of the elytral humeri. Delimitation of biogeographical provinces follows Morrone et al. (2022).

Data-label information is denoted as follows: a forward slash (/) is used to separate labels with different information for the types, quotation marks are used for verbatim data. When handwritten labels could not be deciphered, a question mark ([?]) is used. Square brackets ([]) are used to add additional information not present on the labels. Following the data on a label referring to a specimen or a set of specimens with the same data, the number of specimens, the sex (♂ for males and ♀ for females), and the acronym of the collection to which the examined specimen belongs are placed in parentheses.

Results

Key to the South American *Euphoria*, adapted from Orozco (2012)
1. Apex of clypeus strongly emarginate or bifurcate (Fig. 1C) 2

- 1'. Apex of clypeus not strongly emarginate, only slightly rounded, or truncate (Fig. 2C) 3
2(1). Pronotum and elytra shining and setose (Fig. 1A, C-E). Brazil
..... *E. euridesi* sp. nov.
2'. Pronotum and elytra dull and glabrous. Colombia and Venezuela.
..... *E. hera* Burmeister, 1842
3(1'). Pronotum without a longitudinal central band. Dorsum with numerous cretaceous spots 4
3'. Pronotum with a longitudinal central band. Dorsum without cretaceous spots. Colombia, Ecuador, Venezuela *E. abreona* Janson, 1878
4(3). Dorsum shiny 5
4'. Dorsum tomentose. Colombia, Ecuador, Panama, Peru, and Venezuela *E. steinheili* Janson, 1878
5(4). Mesotibial carina developed into 1–2 short spines. Elytral markings frequently reniform or vermiform, only partially covering elytra 6
5'. Mesotibial carina developed into 1–2 long spines. Elytral markings globose, frequently almost entirely covering elytra and pygidium. Bolivia *E. boliviensis* Blanchard, 1850
6(5). Pronotum with two cretaceous bands on each side (Fig. 2A, C-E). Abdominal sternites sparsely punctate (Fig. 2B). Argentina, Bolivia, Brazil, Paraguay, and Uruguay *E. lurida* Fabricius, 1775
6'. Pronotum with one cretaceous band on each side, rarely without band. Abdominal sternites moderately densely to densely punctate. Central America, Colombia and Venezuela *E. yucateca* Bates, 1889

Euphoria euridesi sp. nov.

urn:lsid:zoobank.org:pub:C16DC9EC-BC6D-4119-8C6B-400658A70E6D (Figs. 1, 3)

Diagnosis. *Euphoria euridesi* sp. nov. has bifurcated clypeus, with two apical teeth that are bent upwards (Fig. 1C), differing from *E. lurida* which lacks the clypeal teeth (Fig. 2C). The head and pronotum of *E. euridesi* are sparsely to densely setose (F Fig. 1A-E) and the surface of body is usually all black (Fig. 1A-E).

Description. Holotype. Male. Size: length: 15–11 mm width: 8–6 mm. **Color:** Surface shiny, black with yellowish setae. **Head:** Clypeus bifurcated, with two apical teeth, that are bent upwards (Fig. 1A-D); weakly setose, with short setae (Fig. 1C); clypeolateral declivity weakly raised. Frons punctate, sparsely to densely setose; setae moderately long to long (Fig. 1C). Canthus and antennal scape setose (Fig. 1C). **Pronotum:** Surface moderately punctate; punctures more concentrated near the margins, evident by the setae that project from these punctures (Fig. 1C-E). A tomentose band on lateral margin and a second inner band adjacent to it; the second band frequently reduced (1 C-E). **Scutellum** longer than wide, impunctate (Figure 1A). **Elytra:** Margin of the disc slightly transverse anteriorly and rounded posteriorly; with one humeral umbone and one anteapical umbone on each elytron; Two parallel elevated longitudinal costae along the center of each elytron. Longitudinal sutural costa present. Posterior half of costae distinctly raised in lateral view (Fig. 1A, D-E). The surface is fully covered with c-shaped punctures and irregular punctures. Surface sparsely setose, setae short. Presence of small to moderately large, reniform, vermiform, or irregular yellowish tomentose dorsal markings (Fig. 1A, D-E). **Thoracic venter:** Hypomerum: Strongly concave below on the posterior half; surface rugose or convergently striate, and setose. Prosternum: Strongly setose anteriorly, with long setae. Mesosternum: rugose or differently punctate, with short setae. Mesometaventral process: extended beyond mesocoxae, process glabrous on mesosternal lobe, apex rounded, flat (Fig. 1B). Mesepisternum: with short setae. Mesepimeron: rugose, strongly setose. Metaventricle with a median sulcus evident, flat, impunctate and glabrous centrally (Fig. 1B);

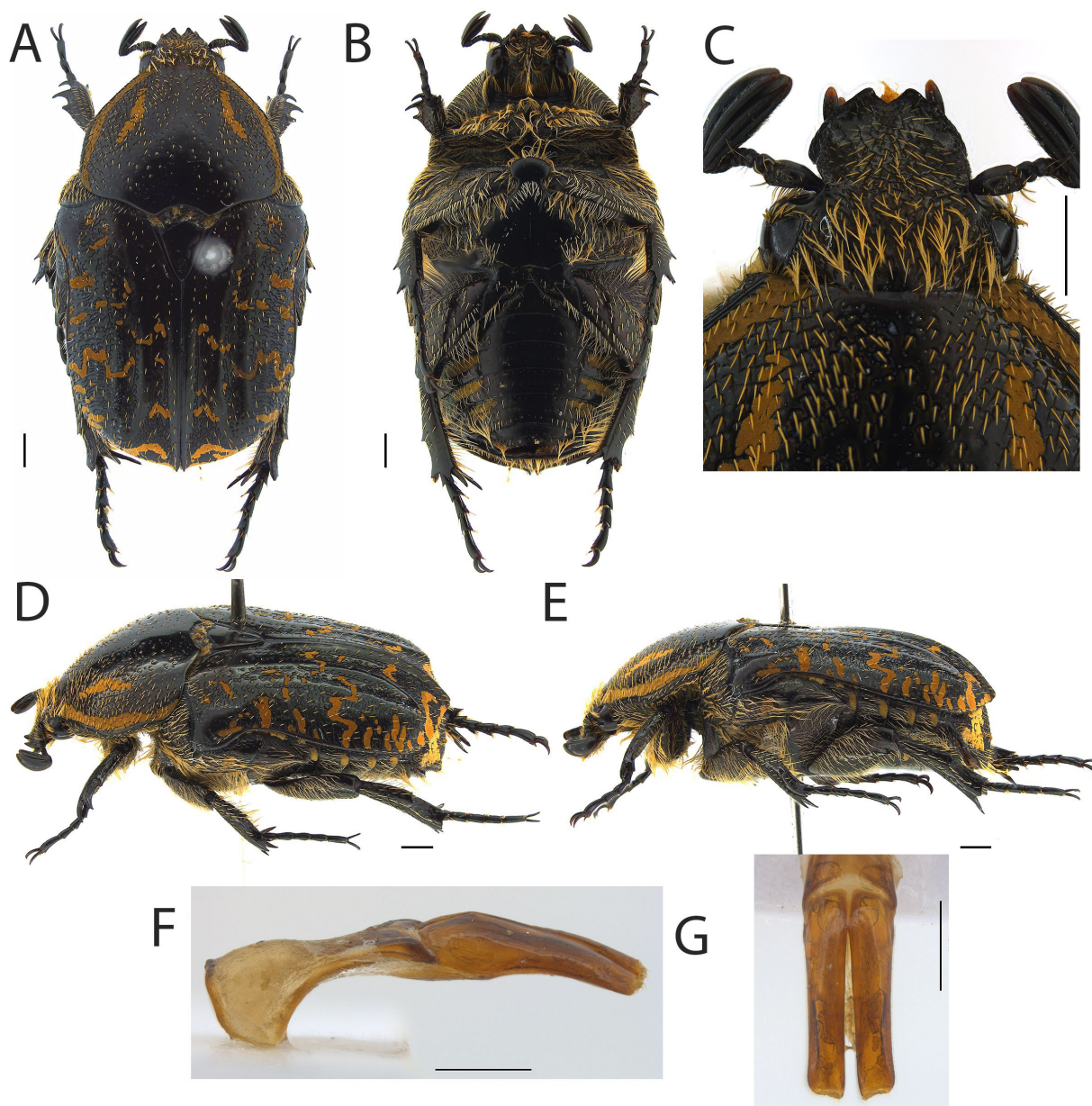


Figure 1 Holotype of *Euphoria euridesi* sp. nov., male. A. Habitus, dorsal view. B. Habitus, ventral view. C. Head, dorsal view. D. Habitus, dorsolateral view. E. Habitus, lateral view. F. Aedeagus, lateral view. G. Parameres. Scale bars = 1 mm.

laterally surface brownish, with yellowish tomentose markings, rugose and setose; anteriorly setose. Metepisternum with brownish surface, rugose and setose, with yellowish tomentose markings. Metepimeron punctate and with short setae on the side of the elytra. **Legs:** Tarsi with setae on the tarsomeres; the terminal tarsomere longer than the others. Protibia with three lines of setae dorsally, and one line of setae laterally; sparsely setose ventrally; one spur apically and three equidistant denticles: one apical-lateral, and two lateral-proximal, the latter, reduced. Profemur with lines of long setae dorsally and laterally, and sparsely setose ventrally. Mesotibia shorter than the Metatibia, both with two spurs apically; three apical denticles, presenting a superficially rough concavity between the apical pair and one proximal denticle, that is reduced on the metatibia; a dorsal line of long setae, and sparse setae. Metafemur wider than Mesofemur, both having two setose sulci dorsally, sparsely setose on surface striations. Surface of Procoxa and Mesocoxa punctate and setose, with setae longer on

procoxa and trochanter. Metacoxa striated, brownish, with sparse setae. **Abdomen:** Six visible ventrites, with two yellowish tomentose markings in the first five ventrites; sparsely setose laterally, glabrous centrally; setae long to moderate (Fig. 1B). **Pygidium:** Surface rugose, with moderately short setae; covered by two yellowish tomentose markings. **Aedeagus:** Parameres long and parallel, with square tips, without spines or hooks (Fig. 1F, G).

Morphological variation. Surface shiny, occasionally light brown, dark brown or reddish brown. Pronotum with second inner tomentose band often reduced to a few markings. Abdominal shape in lateral view similar in both sexes.

Geographic distribution. *E. euridesi* sp. nov. is known from Brazil occurring in Cerrado and Parana Forest provinces (Fig. 3).

Etymology. The specific epithet is a tribute to the memory of Eurides Furtado, friend, pioneer of Entomology in the State of Mato Grosso,

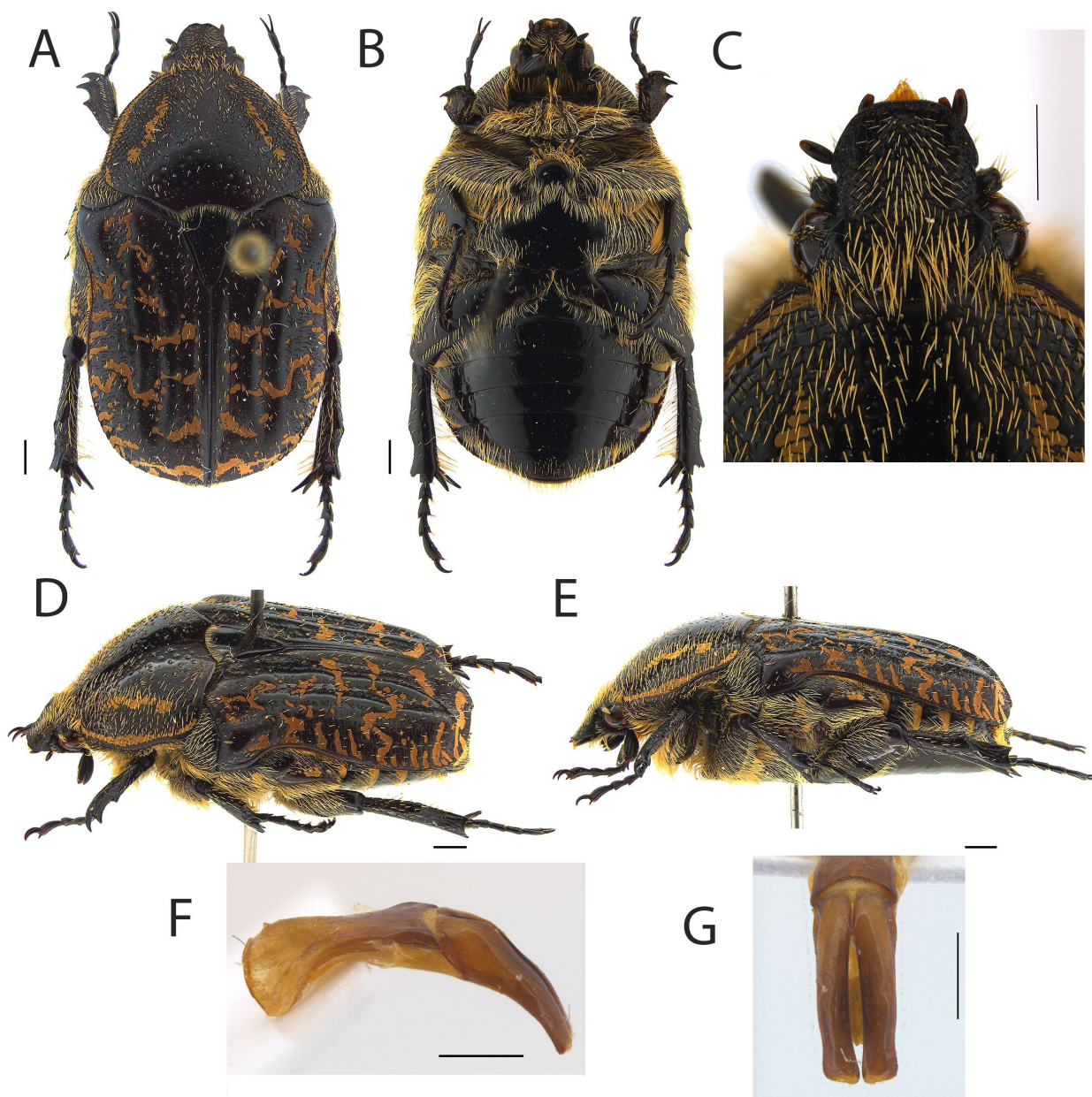


Figure 2 *Euphoria lurida*, male, specimen from Rio de Janeiro. A. Habitus, dorsal view. B. Habitus, ventral view. C. Head, dorsal view. D. Habitus, dorsolateral view. E. Habitus, lateral view. F. Aedeagus, lateral view. G. Parameres. Scale bars = 1 mm.

important lepidopterist, and major contributor to the CEMT collection, which now bears his name, as a tribute to his legacy.

Remarks. Although we did not encounter any, specimens of *E. euridesi* sp. nov. having the clypeus worn away probably exist, which could lead to confusion with *E. lurida*. However, such specimens should be distinguishable because the clypeal teeth, being projected upwards, form an evident clypeal concavity. Additionally, the two species' geographical distribution is largely different.

Type Specimens Examined (92): Holotype (Fig. 1): Labels: [1 printed and handwritten text on white label] BRASIL, MT Reserva Vale da Solidão 14°22'S e 56°07'W 450m, Diamantino E. Furtado, Leg. / [2 printed and handwritten text on white label] No. 3197 *Euphoria lurida* (F., 1775) ♂ E. Furtado det. / [3 printed text on white label] Coleção Eurides Furtado CEMT 2022 / [4 printed and handwritten text on red label] "**HOLOTYPE** *Euphoria euridesi* sp. nov. ♂ Rodrigues, Grossi & F.Z. Vaz-de-Mello" (1 ♂ CEMT) • **Paratypes (91): BRASIL (91): Bahia:**

Caetitê, 13 km SE Maniaçu, 01-04.iii.2008, 850m, Mielke & Casagrande (1 CERPE). **Distrito Federal:** Brasília, xii.1976, A. Bello (1 CEMT); same collection data as for preceding: xii.1977 (2 CEMT); Brasília, Faz. Água Limpa, 15°57'18.8"S, 47°56'42.7"W, Armad. Isca Banana, 04.xii.2013, J. Evangelista Neto. (1 CEMT); same collection data as for preceding: 15°57'20.2"S, 47°56'42.7"W. (1 CERPE); 15°57'19.1"S, 47°56'42.1"W, 12.xii.2013. (1 CERPE); 15°57'20.9"S, 47°56'42.4"W, 12.xii.2013 (1 ♂ CEMT); 15°57'25.9"S, 47°56'42.8"W, Armad. Isca Abacaxi, 12.xii.2013 (1 CEMT); 15°57'22.5"S, 47°56'42.9"W, Armad. Isca Abacaxi, 19.xii.2013. (2 CEMT, 1 CERPE); 15°57'20.2"S, 47°56'42.7"W, 20.xi.2013. (1 CERPE); 15°57'22.1"S, 47°56'43.4"W, Armad. Isca Abacaxi, 27.xii.2013. (1 CEMT); 15°57'24.3"S, 47°56'43.7"W, Armad. Isca Abacaxi, 27.xii.2013. (1 CERPE); 15°57'26"S, 47°56'42.3"W, Armad. Isca Abacaxi, 03.i.2014. (1 CEMT); 15°57'19.7"S, 47°56'41.1"W, 09.i.2014. (1 CERPE); 15°57'19.3"S, 47°56'41"W, 15.i.2014. (1 CEMT); 15°57'24.3"S, 47°56'42.5"W, Armad. Isca Abacaxi, 15.i.2014. (1 CERPE); 15°57'21.2"S, 47°56'41.1"W, 31.i.2014. (1 CERPE); Brasília,

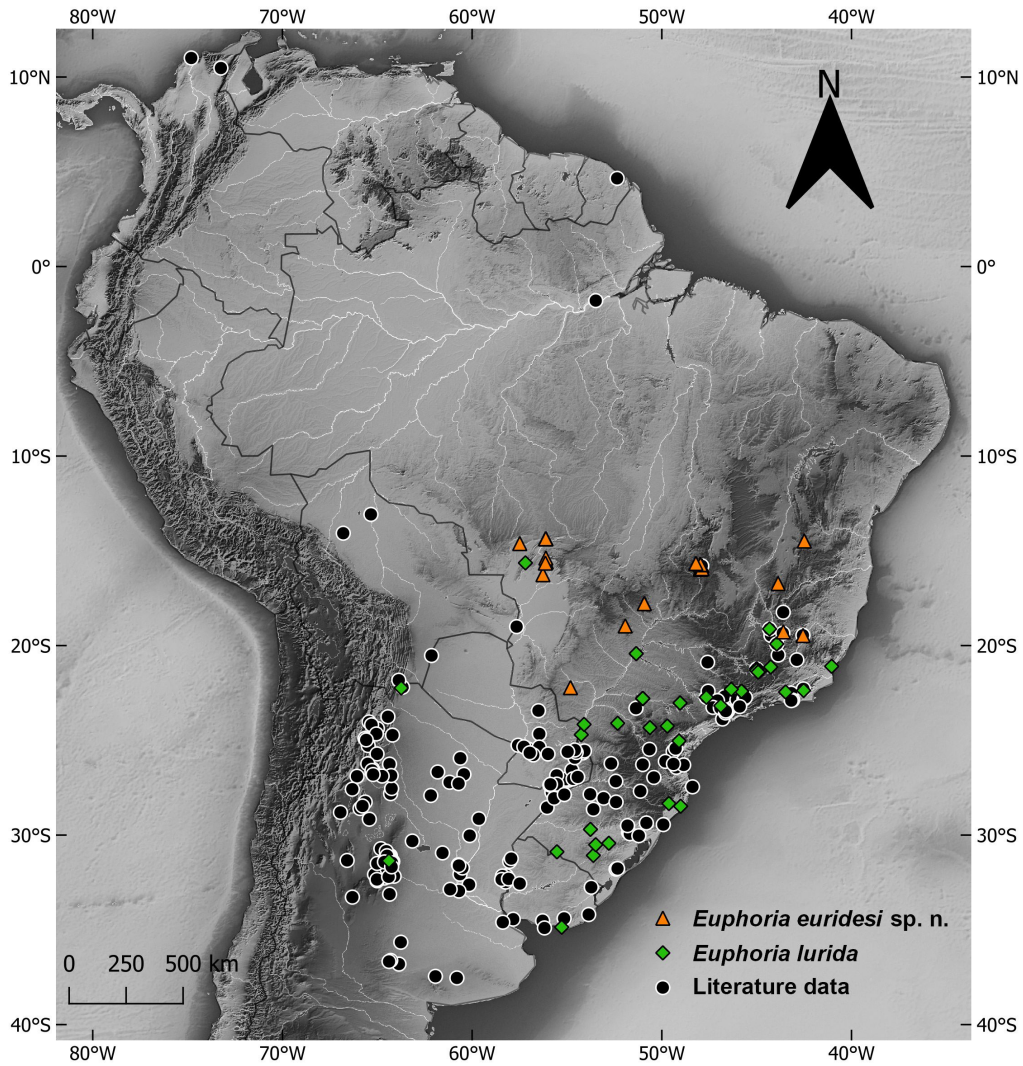


Figura 3 Known distribution map of *Euphoria euridesi* sp. n. (orange triangles) and *Euphoria lurida* (green diamonds). The black spots indicate records of *Euphoria lurida* specimens not examined by us.

FAL, Campo Limpo, 15°57'38"S, 47°57'21.7"W, Armad. Isca Banana, 16.xii.2016, J. Evangelista Neto. (1 CEMT); same collection data as for preceding: 15°57'38.8"S, 47°57'13.2"W, 16.i.2017. (1 CERPE); 15°57'39"S, 47°57'16.5"W, 16.xii.2016. (1 CEMT); 15°57'40.6"S, 47°57'21.1"W, 16.xii.2016. (1 CEMT, 1 CERPE); 15°57'38"S, 47°57'21.7"W, 16.i.2017. (1 CEMT); 15°57'40.5"S, 47°57'19.5"W, 16.i.2017. (1 CERPE); 15°57'40.6"S, 47°57'21.1"W, 16.i.2017. (1 CEMT); 15°57'38.1"S, 47°57'11.7"W, 21.xii.2017. (1 CERPE); Brasília, IBGE, Campo Limpo, 15°56'19.72"S, 47°53'15.73"W, Armad. Isca Banana, 16.i.2017, J. Evangelista Neto. (1 CEMT); same collection data as for preceding: 15°56'20.7"S, 47°53'14.1"W, 16.i.2017. (1 CERPE); 15°56'25.1"S, 47°53'21.8"W, 16.i.2017. (1 CEMT); 15°56'26"S, 47°53'23.2"W, 16.i.2017. (1 CERPE); 15°56'29.4"S, 47°53'26.7"W, 16.i.2017. (1 CEMT); Cerrado SS, 15°56'36"S, 47°52'48.9"W, 16.i.2017. (1 CEMT); Brasília, PN, Campo Limpo, 15°44'1"S, 47°58'27.1"W, Armad. Isca Banana, 16.i.2017, J. Evangelista Neto. (1 CEMT); same collection data as for preceding: 15°44'1"S, 47°58'27.1"W, 21.xii.2017. (1 CERPE); Brasília, PNB, Campo Limpo, 15°43'55"S, 47°58'24.1"W, Armad. Isca Banana, 16.i.2017, J. Evangelista Neto. (1 CEMT); same collection data as for preceding: 15°44'2.5"S, 47°58'27"W. (1 CERPE); Cerrado SS, 15°43'33.3"S, 47°57'22.9"W, 24.ii.2017. (1 CEMT); Brazlândia, Faz. São

Joaquim, i.1990, E. & P. Grossi (2 EPGC, 2 CERPE, 2 CEMT). **Goiás:** Aporé, i.2014, L.G.O.A. Nunes. (1 CEMT); Rio Verde, xi.1998, J. Carlos (1 CEMT); Rio Verde, ii.1998, J. Carlos. (1 CEMT); **Mato Grosso:** Cuiabá, 11.viii.1995, G. Neves. (1 CEMT); Cuiabá, B. Concil, 09.ix.1990, M. Serrano. (1 CEMT); Cuiabá, Faz. Santidi, 15°23'06"S, 56°06'42"W, 250mosl, Isca de fruta, 22.ix.2008, L.R. Silva. (1 CEMT); Diamantino, Alto Rio Arinos, 08.xii.2002, E. Furtado. (1 CEMT); same collection data as for preceding: 31.i.2000. (1 CEMT); V. [Vale da Solidão] 13.xii.2003. (1 ♀ 2 CEMT); V. [Vale da Solidão] 27.xii.2003. (1 CEMT); Diamantino, Reserva Vale da Solidão 14°22'S, 56°07'W 450m, 18.xii.1995, E. Furtado. (1 CEMT); same collection data as for preceding: 30.xii.2004, E. Furtado. (1 CEMT); 3.v.2009. (1 CEMT); 6.xii.2013. (1 CEMT, 1 CERPE); 7.xii.2013. (1 CEMT, 1 CERPE); 10.xii.2013. (1 CEMT); 12.xii.2013. (1 ♀ CEMT); 24.xii.2004. (4 CEMT, 1 MNRJ]. Poconé, 08.ix.1995, P. Toledo. (1 CEMT); Tangará da Serra, 15.xi.2006, Evangelista & Carneiro (1 CERPE); Várzea Grande, Pirineu, 28.viii.1989, S. Kida. (1 CEMT). **Mato Grosso do Sul:** Dourados, 07.ii.2003. (1 MuBio); Dourados, 01.xii.2004 (1 MuBio). **Minas Gerais:** Ipatinga, i.1988, E. & P. Grossi (4 EPGC, 4 CEMT, 4 CERPE); Montes Claros, xi.2001. (1 CEMT). Santana do Riacho, Serra do Cipó, MG-010, 107km, Reserva Vellozia, 19°16'46"S, 43°35'23"W, iii.2022, G.W. Fernandes. (1 CEMT).

***Euphoria lurida* (Fabricius, 1775)**

(Figs. 2, 3)

Cetonia lurida* Fabricius, 1775 [original combination] Type at NHML, examined.Cetonia sordens* Gmelin, 1790, 1573 [junior synonym]*Cetonia adspersa* Weber, 1801, 71 [junior synonym]*Cetonia fasciolata* Eschscholtz, 1822, 25 [junior synonym]*Cetonia bivittata* Gory & Percheron, 1833, 58 [junior synonym]*Cetonia rufescens* Gory & Percheron, 1833, 58 [junior synonym]

Diagnosis. *Euphoria lurida* has the clypeus emarginated, without apical teeth (Fig. 2C), whereas *E. euridesi* sp. nov., has distinct apical teeth on the clypeus (Fig. 1C). The head and pronotum of *E. lurida* is variably setose or glabrous (Fig. 2A-D). The surface of the body is usually all black or coppery, sometimes with a greenish reflection (Fig. 2A-E).

Redescription. Male. **Size:** length: 13-10 mm; width: 8-6 mm. **Color:** Body shiny, black, dark-brown, light brown, reddish-brown, sometimes partially dark-green. Pronotum, elytra, mesepimeron, metaventrite, metacoxae, sides of abdominal sternites, and pygidium with whitish to yellowish tomentose bands and/or markings. Setae yellowish to whitish. **Head:** Clypeus rugose, glabrous or setose; apex sinuate, slightly bent upwards (Fig. 2C); striated clypeolateral declivity, clypeolateral ridge weakly raised. Frons rugose and/or punctate, sparsely to densely setose (Fig. 2C); setae moderate to long. Antegenal protusion evident, eye-canthus setose (Fig. 2C); Antennal scape shorter than club. **Pronotum:** Disc with margin on lateral border, concave median posterior lobe; surface moderately punctate; punctures round to lunulate, moderate in size, denser and confluent towards apex and sides, sparsely to moderately densely setose (Fig. 2A-E); setae short to moderately long. **Scutellum:** longer than wide, impunctate (Fig. 2A). **Elytra:** Surface with punctures bearing 2-3 rows of grooves, c-shaped punctures, and irregular punctures; punctures moderate in size; costae well defined. Posterior half of sutural costa raised in lateral view. Surface glabrous to sparsely setose (Fig. 2A, D, E); setae short. **Thoracic venter:** Hypomerum strongly concave posteriorly; surface rugose or striate convergently and setose. Prosternum narrow anteriorly, forming a spine, with many long setae on anterior base. Mesoventrite rugose, setose laterally and posteriorly, around the mesometasternal process. Mesometaventral process apex rounded, flat and extended beyond mesocoxae, process glabrous on lobe (Fig. 2B). Mesepisternum rugose and setose. Mesepimeron rugose and setose, visible dorsally. Metaventrite impunctate and glabrous at middle, being rugose and setose laterally; median sulcus weakly evident (Fig. 2B). Metepisternum rugose, setose and with some parts covered by tomentum. Metepimeron impunctate, weakly setose. **Legs:** With the last tarsomere longer than the others. Protibia dorsally rugose, differently punctate, having three setose lines in keels; setose; one spur apically and three denticles: one apical-lateral and two lateral, the central denticle closer to the apical than to the other or equidistant. Profemur partially striated dorsally and completely striated ventrally, striae with long setae. Mesotibia shorter than Metatibia, both dorsally striate or differently punctate and setose, ventrally with c-shaped punctures, with two pairs of apical denticles and one proximal, that may be worn, and presenting a superficially rugose concavity between the proximal denticle and one of the apical pairs of denticles; two spurs apically. Metafemur wider and less setose than Mesofemur, which has more differentiated punctures. Trochanter setose; Procoxa and Mesocoxa rugose, with setae; Metacoxa rugose and setose. **Abdomen:** sternites sparsely punctate; punctures small; with tomentum and weakly setose laterally, weakly setose to glabrous medially; setae moderately long to long (Fig. 2B). **Pygidium:** surface rugose, frequently tomentose, glabrous to moderately setose. **Aedeagus:** Parameres long and parallel, with square tips, without spines or hooks (Fig. 2F, G).

Geographic distribution. *Euphoria lurida* is known from Brazil, in the Araucaria, Atlantic, Pampean, Parana Forest and Rondonia provinces (Fig. 3).

Remarks. Some *E. lurida* specimens that we examined were found on the inflorescences of *Eryngium* sp. (Apiaceae) in open fields, as well as on *Senna corymbosa* (Lam.) H.S. Irwin & Barneby (Fabaceae). Other specimens were collected feeding on the sap flowers of *Baccharis dracunculifolia* DC. (Asteraceae) in Paraná and of *Indigofera suffruticosa* Mill. (Fabaceae) in Minas Gerais.

With regard to synonyms of *E. lurida*, we checked the original descriptions to eliminate the possibility of it being an already described species, but their distribution and the descriptions don't show the diagnostic features we developed for the new species described here.

Type Specimens Examined (1) Holotype of *Cetonia lurida* examined **tought images:** Labels: [1 handwritten text on cream label with black margin] *Cetonia lurida* Fabric. [?unreadable] / [2 printed text on white label] NHMUK014657880 (NHM).

Specimens Examined (123): ARGENTINA (2): Córdoba, Diquecito, XI.1958, A. Martínez (1 MZSP 22059); Salta, Aquaray, XII.1959, A. Martínez (1 MZSP 22058). **BRASIL (115): Espírito Santo:** Presidente Kennedy, i.1991, E. & P. Grossi. (3 EPGC, 3 CERPE); **Mato Grosso:** Porto Estrela, EE Serra das Araras, xi.2011, Souza & Gigliotti. (1 CEMT); **Minas Gerais:** Belo Horizonte, B. da Serra, x.1946, A. Penna F° (1 CERPE), same but xi.1946 (1 CERPE); Conceição dos Outros, Rio Sapucaí, ii.2000, De-Paula & Almeida. (3 CEMT); Conceição dos Outros, Rio Sapucaí, iii.2000, De-Paula & Almeida. (1 CEMT); Conceição dos Outros, Rio Sapucaí, x.2000, De-Paula & Almeida. (1 CEMT); Conceição dos Ouros, Rio Sapucaí, 1.x.2000, De-Paula & Almeida. (1 CEMT); Cordisburgo, xii.1993, F.Z. Vaz-de-Mello. (1 CEMT); Inconfidentes, Coffea arabica plantation, 22° 18'40"S, 46° 20'09"W, 908m, FIT with ethanol and methanol (bait), 10.xii.2015, H.L. Rainho. (1 CEMT); Ingaí, Mata Boqueirão, near Poço Bonito, iii.2003, R.J. Silva. (1 CEMT); Ingaí, Poço Bonito, 21.x.2016, Grossi, Vaz-de-Mello, Friero, Silva, Furhmann & Mariano (1 CERPE); Itumirim, Serra do Janela, vi.2018, Psidium guajava, J. Louzada & L. Vieira. (6 CEMT); Lavras, 29.v. R.D. Guimarães. (1 CEMT); Lavras, 28.xii.1984, S.M. Pouda. (1 CEMT); Lavras, 13.iv.1995, N. Costa. (1 CEMT); Lavras, 10.xi.1985, J.A. Souza. (1 CEMT); Lavras, 10.iv.1987, Alessandra J.B. (1 CEMT); Lavras, 6.ix.2001, H.J. Andrade. (1 CEMT); Lavras, 03.iii.2002, Alves. (1 CEMT); Lavras, 15.ix.2006, Gabriel (1 CEMT); Lavras, 18.vi.2007, T.Q. Pedroso. (1 CEMT); Lavras, campus UFPA, cow dung, 05.i.2012, A. Diaz-Rojas. (1 ♂ 1 CEMT); Lavras, near Poço Bonito, xi.2007, F.Z. Vaz-de-Mello. (1 CEMT); Lavras, Serrinha, 21° 19'S, 45° 00'W, ii.2008, M.F. Souza. (1 CEMT); Passa Quatro, near FloNa Passa Quatro, 15-17.xi.2007, F. Friero (2 CEMT); São João del Rei, ii.2002, D. Brightoni. (1 CEMT); **Paraná:** Campo Mourão, Parque Estadual do Lago Azul, 1.x.2010, Dolibaina, Carneiro, Mielke & Dias (1 CERPE); Entre Rios do Oeste, 23.xii.2010, M.E. Maldaner. (1 CEMT); Jaguaraiava, P.E. do Cerrado, 01-04.ii.2011, Grossi, Parizotto, Leivas, Herzog & Manfio (9 CERPE), same but, 18-19.xi.2009, P. Grossi (1 CERPE), same but 18.xi.1999, S. Laroca & M.C. Almeida (1 CERPE); Rancho Alegre, Faz. Congonhas, Capoeira, Canopy banana, 26.xii.2012, J. Lopes & P.M. Félix. (1 CEMT); Rancho Alegre, Faz. Congonhas, 22° 47'45"S, 51° 00'12"W, 580m, canopy banana, 29.i.2013, P.M. Felix. (11 CEMT); Rancho Alegre, Faz. Congonhas, 22° 47'45"S, 51° 00'12"W, 580m, 28.ii.2013, P.M. Felix. (3 CEMT); Telêmaco Borba, Klabin Papele Celulose ethanol baited multiple funnel FIT Pinus taeda stand, 2.iii.2002, C.A.H. Flechtmann. (1 CEMT); Terra Rocha, 23.vii.2008, C. Martins (1 CEMT); Tunas do Paraná, Pq. Est. de Campinhos, 17.xii.2008, G. Weiss (2 CERPE). **Rio de Janeiro:** Miguel Pereira, i.2002, J. Carlos (1 ♂ CEMT); Nova Friburgo, ii.1995 (4 CERPE); **Rio Grande do Sul:** Bagé, BR 293, 10.xii.2008, MG Hermes (5 CERPE); Bagé, Palmas 17.xi.2008, DR Parizotto (1 CERPE); Caçapava do Sul, 16.xi.2008, DR Parizotto (1 CERPE); Encruzilhada do Sul, 30° 26'04"S, 52° 47'28"W, xii.2019, V. Costa-Silva

& L. Malta-Borges (14 CEMT); Santa Maria, 22.ix.1977, D. Link, *Cassia corymbosa*. (1 CEMT); [Santa Maria] UFMS campus Sta Maria 29°43'S, 53°42'W, xii.2019, V. Costa-Silva. (1 CEMT); Santana do Livramento, 11.xi.2007, MG Hermes (1 CERPE), same but 11.xii.2008 (1 CERPE). **Santa Catarina:** Bom Jardim da Serra, Distr. Mantiqueira, xii.2001, C. Arioli. (4 CEMT); Tubarão, 06.ix.2007, R.B. Goulart. (1 CEMT). **São Paulo:** Cerqueira César, xii.1994, J. Carlos (1 CEMT); Cerqueira César, xii.1999, J. Carlos (1 CEMT); Ilha Solteira, 15.v.1991, E. Borrmann. (1 CEMT); Ilha Solteira, Faz. Piracicaba, vi-xii.1999, R.A.P. Filho. (1 CEMT); Jundiá, 30.i.2000, Clara. (1 CEMT); Piracicaba, 18.x.2002, G. Libardi. (1 CEMT). **no data:** (1 ZMMU). **URUGUAY (1): Maldonado:** Piriápolis, x.1998, J. Carlos. (1 CEMT). **NO DATA (5):** (1 CEMT, 4 ZMMU).

Other localities in Orozco, 2012 and Di Iorio 2013: ARGENTINA:
Bueno Aires: Buenos Aires; Coronel Suárez. **Catamarca:** Amadores (Dto. Paclín); Ampajango; Andagalá; Catamarca; La Merced; Miraflores; Ramblones. **Chaco:** Charata; J.J. Castelli; Roque Sáenz Peña; San Bernardo; Tres Estacas. **Córdoba:** Alta Córdoba; Alta Gracia (La Granja); Capilla del Monte (Aguas Azules); Chepes; Córdoba; Cosquín; Cruz del Eje; Dto. Calamuchita; El Sauce; Embalse; La Cumbre; La Falda; La Paz; Los Cocos; Los Molinos; Los Reartes; Punilla; Río Ceballos; Río Cuarto; Río Tercero; Salinas Grandes; San Clemente; San Javier; Santa María; Santa Rosa; Sierra [de] Córdoba; Tanti; Unquillo; Valle Hermoso; Villa Cabrera; Villa Carlos Paz. **Corrientes.** Santo Tomé. **Entre Ríos:** Colonia Hughes; Concepción del Uruguay; Concordia; Diamante; Liebig; Paraná (Estación Experimental Agropecuaria Paraná); Pronunciamiento; Salto Grande; Victoria; Villa Elisa (Arroyo Perucho Verna). **Jujuy:** León; San Juancito; San Salvador de Jujuy; Santa Bárbara, Villamontes. **La Pampa:** Cereales; General Pico; Santa Rosa; Toay. **La Rioja:** Anillaco; Chepes. **Mendoza.** **Misiones:** 25°40'S, 54°10'W; Aristóbulo del Valle; Azara; Cuñapirú; Dos de Mayo; El Dorado; Loreto; Misiones; Montecarlo; Parque Nacional Iguazú; Posadas; Pindapoy; Puerto Bemberg [currently Puerto Libertad]; Puerto Magdalena; Reserva Yacutinga; San Javier. **Salta:** Campo Durán (Destilería); Campo Quijano; Coronel Moldes; El Naranjo; General Güemes; Las Lajitas; Rosario de Lerma. **San Luis:** Carpintería; Merlo; Villa Elena. **Santa Fé:** Cañada El Sauce; Carcarañá; Laguna El Cristal; Piquete; Reconquista; Rosario; Santa Fé; Santo Tomé; "Saray"; Sunchales. **Santiago del Estero:** El Colorado (Lagunas El Cisne); La Banda; Laprida; National Route 9, 30 km S Santiago del Estero city, "La María"; Río Salado; Sachayoj; Saladillo. **Tucumán:** between 7 de Abril and Nueva Esperanza; Las Cejas; Las Tipas; San Pedro de Colalao; Tafi Viejo; Tapia; Ticucho; Tucumán. **BOLIVIA: Beni:** Santa Rosa; Santiago. **Tarija:** Carapari. **BRAZIL: Distrito Federal:** Brasília. **Mato Grosso:** Chapada. **Mato Grosso do Sul:** Corumbá. **Minas Gerais:** Belo Horizonte; Congonhas; Cordisburgo; Diamantina; Ipatinga; Lavras; Monte Verde; Parque Nacional Serra do Cipó; Sete Lagoas; Viçosa. **Pará:** Prainha. **Paraná:** Araucaria; Caviuna; Curitiba; Foz do Iguaçu; Irati; Pato Branco; Rolândia. **Rio de Janeiro:** Niteroi; Nova Friburgo; Petrópolis; Rio de Janeiro. **Rio Grande do Sul:** Canabarro; Canela; Capão do Leão, (Estação Experimental de Terras Baixas); Chapada; Cruz Alta; Passo Fundo; Pelotas; Porto Alegre; Santo Augusto; Três Cachoeiras; Triunfo (Distr. Barreto, Horto Florestal, 29°52'00"S, 29°56'00"S; 51°45'00"W, 51°41'00"W). **Santa Catarina:** Anita Garibaldi; Corupá; Joinville; Lança; Mafra; Nova Teutônia; Santa Cecília; Rio Natal; Rio Negrinho; Rio Neginlio; Rio Vermelho; São Bento do Sul. **São Paulo:** Batatais; Campinas; Campos do Jordão; Cipó-[Guaçu]; Guanabara; Guarulhos; Itu; Jundiá; Monte Alegre [do Sul], (Fazenda Santa Maria & Fazenda N.S. Encarnação); Piracicaba; Rio Claro (Horto Florestal); Santo Antônio do Pinhal; São Jose dos Campos; São Paulo; Serra da Cantareira; Tremembé. **COLOMBIA: Antioquia;** Cesar. **Atlántico:** Barranquilla; Limón. **Magdalena:** Valledupar. **FRENCH GUIANA: Cayenne.** **PARAGUAY:** Icuá Pindo[?]; Travi[?]. **Alto Paraná. Caaguazú:** Coronel Oviedo. **Central:** Asunción. **Cordillera:** Peribeby; San Bernardino. **Guairá:** General Eugenio Garay; Paso Yobai; Villarica.

Itapúa: Encarnación; Pirapó. **Paraguarí:** Sapucaí. **San Pedro:** Cororo; San Estanislao. **URUGUAY:** La Sierra[?]. **Canelones:** Canelones. **Cerro Largo:** Plácido Rosas. **Colonia:** Colonia. **Lavalleja:** Cerro Campanero. **Montevideo:** Montevideo. **Paysandú:** Paysandú. **Rio Negro:** Menafra. **Rocha:** Castillo [= Castillos].

Discussion

Euphoria lurida is the name of the most common species of *Euphoria* in South America East of the Andes. Despite our having split it into two species here, this species requires further detailed taxonomic scrutiny. In the description of *Euphoria euridesi* sp. n., we aim to compare the descriptions of *E. lurida*, the descriptions of its synonyms, and their types.

Although Orozco (2012) considered the bifurcated state of the clypeus as a variation within *E. lurida*, we recognised geographically-determined structure in this character. Therefore, it is here considered the main basis for distinguishing a second Brazilian species from *E. lurida*. Other characters identified as variations by Orozco (2012), such as the pattern of spots on the pronotum and elytra, the number of setae on the head and pronotum, and the color of the integument, may, upon further research, lead to the conclusion that they too represent potential new species.

For example, Argentinean specimens of *E. lurida* loaned from MZUSP have a reddish coloration, broad bodies, and slightly different light spots on the pronotum compared to typical specimens. Unfortunately, we were unable to robustly analyse such variations here because we were only able to hitherto study two of such specimens. Therefore, we emphasize the need to examine more specimens from Argentina to verify whether such variation is indicative of an undescribed species.

Furthermore, records of *E. lurida* indicated on the distribution map based upon literature records (Fig. 3) may potentially represent the new species described here. These unverified records could represent instances of species misidentification, inaccurately reported locations, or, as in the case of the specimens from Argentina, potentially new species.

Acknowledgments

We are deeply grateful to Vinícius da Costa-Silva (University of Pretoria) for study the holotype of *Cetonia lurida* during his visit to NHML, and also to Max Barclay and Keita Matsumoto (NHML) for providing images of the specimen. We extend our thanks to Sonia Casari and Rafael Sousa for lending us the *Euphoria* specimens from MZUSP. Aleksey Gusakov is thanked for additional images of *Euphoria lurida* from ZMMU. We also thank the reviewers for their constructive criticism, especially Conrad Gillett (University of Helsinki), who significantly contributed to the quality of the text by revising the English.

Funding

DFR thanks Conselho Nacional de Desenvolvimento Científico e Tecnológico for the grant (CNPq/MCTI/CONFAP FAPS-PROTAX 130312/2022-3); PCG was funded by CNPq, Processes numbers: 309786/2019-3 and 312917/2022-8 PQ2; FZVM was funded by CNPq 313397/2021-0 PQ1A; 440604/2015-0, Financiadora de Estudos e Projetos (Finep n° 01.12.0359.00), Fundação de Amparo à Pesquisa do Estado de Mato Grosso (FAPEMAT PRONEM 568005/2014 and 0147956/2017), and Synthesis BE-TAF-3985.

Conflicts of interest

The authors declare no conflicts of interest.

Author contribution statement

DFR wrote the first version of the manuscript, studying the specimens in the laboratory, confirmed the existence of a new species, and made the diagnosis, descriptions, key, and illustrations. The manuscript was updated by PCG, and adjusted by PCG and FZV.

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