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**Monograph**

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# The dung beetles of Venezuela (Coleoptera: Scarabaeidae: Scarabaeinae): catalogue and updated distribution

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**Abstract.** Venezuela's diverse land ecosystems are grouped into four major regions (coast-islands, low plains, hills and mountains), ranging from sea level up to 4978 m. The Scarabaeinae (Scarabaeidae, Coleoptera) currently encompass 278 genera and 6837 species worldwide, but are poorly inventoried in Venezuela. We reviewed the literature and the material housed at the entomological collection of the Universidade Federal de Mato Grosso (CEMT), Cuiabá, Brazil, and found 32 genera and 149 species of dung beetles as certainly present in Venezuela. Twenty-four of these species are, as far as current knowledge goes, endemic to the country, while another 34 are restricted to Venezuela and the neighbouring countries of Colombia, Brazil, Trinidad and Tobago, and Guyana. Additionally, 36 species are deemed potential inhabitants of the country, whilst 14 others previously recorded in the literature as part of the Venezuelan fauna are here concluded not to be actually present there. Complete literature is listed for each genus and species, and information on type material, material examined, worldwide distribution, and Venezuelan records is also presented.

**Keywords.** Scarabaeoidea, Neotropics, South America, endemic species, type specimen, type locality.

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## Introduction

The Coleoptera Linnaeus, 1758 subfamily Scarabaeinae Latreille, 1802 comprises 278 genera and 6837 species worldwide (Schoolmeesters 2023). Dung beetles, as they are popularly known, are used as a bioindicator group whose highest diversity is found in tropical regions and whose ecosystem functions play a key role in environmental balance (Halffter & Matthews 1966; Hanski & Cambefort 1991; Stokstad 2004; Nichols *et al.* 2008; Nichols & Gardner 2011; Philips 2011; Ridsdill-Smith & Edwards 2011; Noriega *et al.* 2021a, 2021b).

Catalogues and checklists are invaluable sources of bibliographic information (Papavero 1994) and provide insight into species diversity at both local and global scales. Since 1869, many checklists have been published for scarab beetles at a worldwide level (e.g., Harold 1869d; Gillet 1911b; Gillet & Boucomont 1927; Blackwelder 1944; Krajcik 2012), but in recent decades this type of work has progressively shifted its focus in Central and South America to country-level studies. Among these are the checklists of Vaz-de-Mello (2000, 2022) for Brazil, Escobar (2000) and Medina *et al.* (2000, 2001) for Colombia, Ratcliffe (2002) for Panama, Morón (2003) for Mexico, Hamel-Leigue *et al.* (2006) for Bolivia, Carvajal *et al.* (2011) and Chamorro *et al.* (2018, 2019) for Ecuador, Solís & Kohlmann (2012) for Costa Rica, Ratcliffe *et al.* (2015) for Peru, Hielkema & Hielkema (2019) for the Guianas, Maes *et al.* (2020) for Nicaragua, Pablo-Cea *et al.* (2023) for El Salvador, and Mondaca (2023) for Chile.

For Venezuela, the first reports of dung beetles date back to Harold (1869d), who recorded four genera and five species for the country. Candèze (1891) subsequently presented a checklist from Venezuela entitled "*Voyage de M.E. Simon au Venezuela (Décembre 1887–Avril 1888)*", in which he recorded eight genera and fourteen species of dung beetles, among other beetle families. Later, Roze (1955), in a checklist of the Scarabaeinae fauna of the country, reported 15 genera and 72 species based on the holdings of Venezuelan museums. Finally, in a study focused on species monitoring, Ferrer-Paris *et al.* (2013) recorded 23 genera and 115 species from Venezuela, including 54 morphospecies not identified to the species level. The first and only regional catalogue for the Venezuelan dung beetles was compiled by Blanco (1987, 1988) for the species occurring in the state of Táchira.

Available knowledge on Venezuelan dung beetles is patchy and focused on some particular regions of the country, especially the Andes and areas crossed by the Orinoco River. As for the conservation status of the species, six of them, namely *Ateuchus ambiguus* Martínez & Martínez, 1990, *Eurysternus impressicollis* Castelnau, 1840, *Canthonella gomezi* (Halffter & Martínez, 1968), *Cryptocanthon nebulinus* Howden, 1973, *Cryptocanthon punctatus* Cook, 2002 and *Sulcophanaeus auricollis* (Harold, 1880), were included in the latest edition of the Red Book of the Fauna of Venezuela (Rodríguez *et al.* 2015). However, this number may be underestimated due to the limited knowledge of the fauna. Given the importance of species catalogues for the study of biodiversity and its conservation, here, we present an updated catalogue of the dung beetles (Scarabaeinae) found in Venezuela, including a distribution map for each species inhabiting the country.

## Material and methods

Venezuela is located in northern South America (CIA 2020) and is administratively divided into 23 states, a Capital District (Caracas and metropolitan area) and Federal Dependencies (72 islands) (Fig. 1). Its ecosystem diversity is classified into four major ecoregions – coastal-islands, low plains, hills and mountains (Huber & Oliveira-Miranda 2010) – encompassing a wide variety of landscapes (Fig. 2), with elevation ranging from 0 to 4978 m above sea level (Pérez *et al.* 2005).

Dung beetle records from Venezuela were compiled through an exhaustive review of the literature, covering both taxonomic and ecological studies. These records were then categorized into three groups: those reliable (i.e., the species is confirmed to occur in Venezuela), dubious (the species may occur in

Venezuela, but this has yet to be confirmed), and erroneous (the species is certainly not present in the country and the record was usually based on misidentified material). In the section on each species for which the Venezuelan records were classed as dubious or erroneous, we present the rationale for our decision to categorize them as such. The literature review was supplemented by the examination of material housed in the collection of the institution where the first and third authors reside, the Federal University of Mato Grosso (CEMT), Cuiabá, Brazil. This enabled us to make our own new species

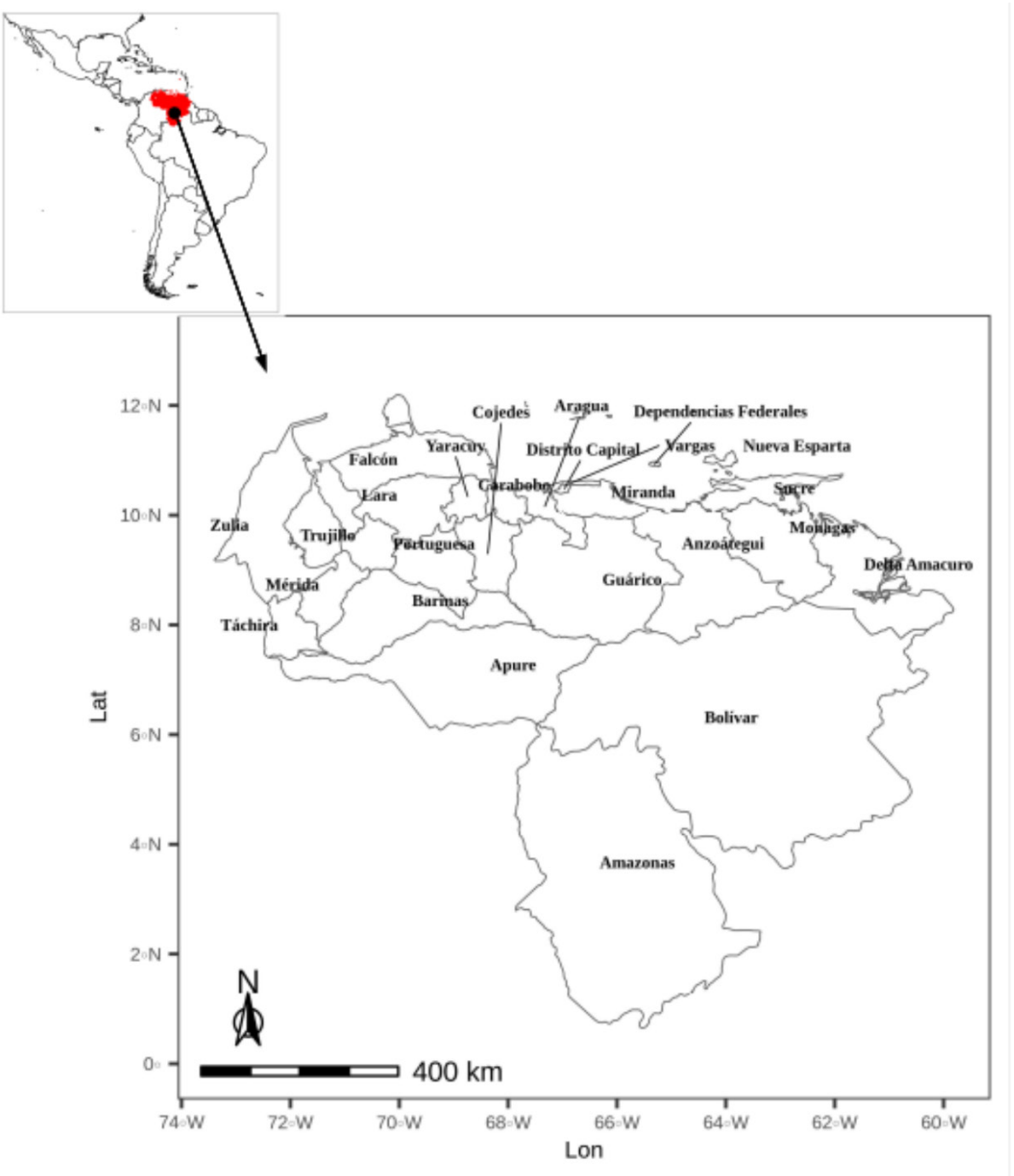


**Fig. 1.** Macrolocation of Venezuela on the South American continent and its states and federal dependencies.

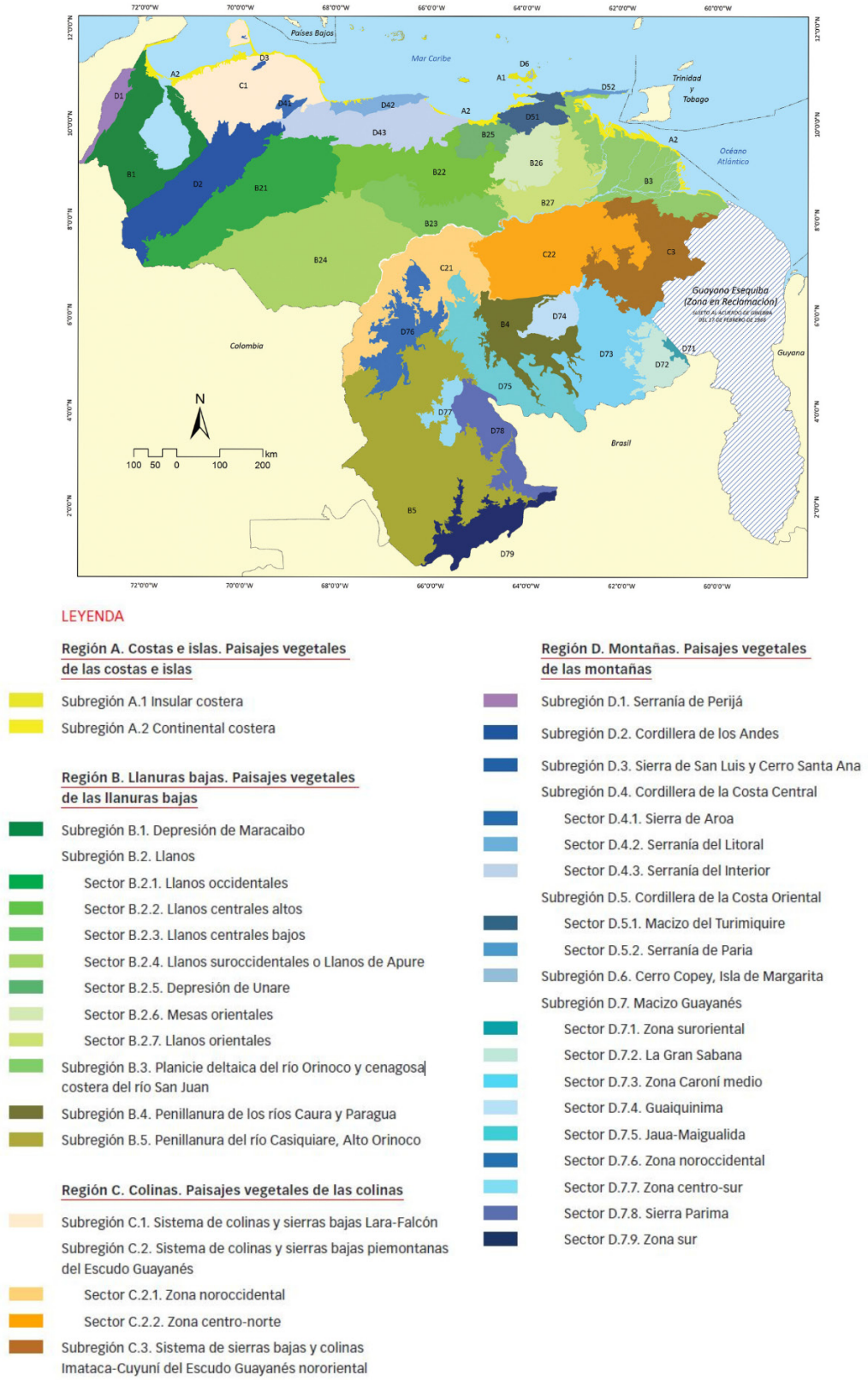


**Fig. 2.** Landscape units of Venezuela (from Huber & Oliveira-Miranda 2010).

records for the country as well as to assess records that, based solely on the information provided in the literature, would be dubious. We encourage colleagues to complement our work by examining further collections holding rich Venezuelan material. These include those of the Canadian Museum of Nature, Ottawa, Canada, the Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil, and other museums in Europe and Venezuela itself. We expect that the list of Venezuelan dung beetles will increase once these collections have been thoroughly reviewed.

Given the current taxonomic instability at the tribal, subtribal, and subgeneric levels, our catalogue ignores them and organizes the genera in alphabetical order without consideration of their tribal placement, and the species within each genus are also arranged alphabetically without consideration of the subgenera. Those interested in a classification of the New World fauna including tribes, subtribes, and subgenera should refer to Cupello *et al*. (2023b) and relevant works published afterwards (Daniel & Davis 2023; Bouchard *et al*. 2024; Génier & Darling 2024). Global distribution data for each species were retrieved from the literature, particularly from taxonomic revisions, as well as from the examination of the material housed in CEMT.

The catalogue presents a synonymic list for each species and specifies the collection where the type specimens are housed, informing whether or not we have examined them. For type material housed in CEMT, label contents are transcribed verbatim, using a forward slash ("/") to separate information between the lines of each label. Non-type material is cited in the following order: country (given in capital letters), state, number of specimens examined, specific locality, geographic coordinates, elevation, date, collector(s), additional data such as collecting method, and repository abbreviation. Corrections for state, locality, and geographic coordinates are enclosed in square brackets, "[ ]". The distribution of the species in Venezuela is given according to the subregions of the country as delimited by Huber & Oliveira-Miranda (2010). Distribution maps were made using Quantum GIS (QGis ver. 3.16.8 – Hannover; QGIS Development Team 2020) and the R software for the final figure. Records plotted on the maps are those we found on specimen labels and in the literature and which we deem reliable. For localities cited in both sources without coordinates, these were obtained from Geonames (http://www.geonames.org/).

The following collections are mentioned in the catalogue (curator or person responsible, when known, in parentheses):

BDGC = Bruce D. Gill personal collection, Woodlawn, Ontario, Canada
BMNH = The Natural History Museum, London, UK (Maxwell V.L. Barclay)
CEMT = Coleção Entomológica de Mato Grosso Eurides Furtado, Universidade Federal de Mato Grosso, Cuiabá, Brazil (Fernando Z. Vaz-de-Mello)
CMNC = Canadian Museum of Nature, Ottawa, Canada (François Génier)
CPFA = Patrick and Florent Arnaud personal collection, Saintry-sur-Seine, France
CUIC = Cornell University Insect Collection, Ithaca, NY, USA (Jason J. Dombroskie)
FGIC = François Génier personal collection, Gatineau, Canada
HAHC = Henry & Anne Howden collection, Ottawa, Canada (now housed in the CMNC)
MACN = Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires, Argentina (Pablo R. Mulieri)
MAMU = MacLeay Collections, Chau Chak Wing Museum, University of Sydney, Sydney, Australia
MCNZ = Museu de Ciências Naturais da Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre, Brazil (Luciano de Azevedo Moura)
MCZC = Museum of Comparative Zoology, Harvard University, Cambridge, MA, USA (Crystal Maier and Brian Farrell)
MFNB = Museum für Naturkunde Berlin, Leibniz-Institut für Evolutions- und Biodiversitäts-forschung, Berlin, Germany (Joachim Willers, Bernd Jaeger, and Johannes Frisch)

MIZA = Museo del Instituto de Zoología Agrícola, Universidad Central de Venezuela, Maracay, Venezuela (Luis J. Joly)
MNHN = Muséum national d'histoire naturelle, Paris, France (Olivier Montreuil and Antoine Mantilleri)
MQCAZ = Museo de Zoología de la Pontificia Universidad Católica, Quito, Ecuador (Álvaro Barragán, Carlos Capio and Fernanda Salazar)
MVMA = Museums Victoria, Melbourne, Australia
MXAL = Miguel Ángel Morón personal collection, Xalapa, México
MZSP = Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil (Sonia Casari and Carlos Campaner)
MZUF = Sezione di Zoologica "La Specola", Museo di Storia Naturale dell'Università degli Studi di Firenze, Florence, Italy (Luca Bartolozzi)
NHRS = Naturhistoriska Riksmuseet, Stockholm, Sweden (Johannes Bergsten)
NMPC = National Museum (Natural History), Prague, Czech Republic (Jiří Hájek)
OUMNH = Hope Entomological Collections, Oxford University Museum of Natural History, Oxford, UK (Darren Mann)
SDEI = Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany (Vinicius Ferreira)
SMTD = Museum für Tierkunde, Senckenberg Naturhistorische Sammlungen Dresden, Dresden, Germany (Olaf Jäger and Klaus-Dieter Klass)
USNM = Smithsonian National Museum of Natural History, Washington D.C., USA
ZMAS = Zoological Institute, Russian Academy of Sciences, Saint Petersburg, Russia (Andrey V. Frolov)
ZMUK = Zoologisches Museum, Universität Kiel, Kiel, Germany (Michael Kuhlmann)
ZSM = Zoologische Staatssammlung München, Munich, Germany (Michael Balke and Ditta A. Balke)

## Results

We record 32 genera and 149 species of Scarabaeine dung beetles as certainly present in Venezuela. Twenty-four of the species are endemic to the country and another 34 are restricted to Venezuela and the neighbouring countries of Colombia, Brazil, Trinidad and Tobago, and Guyana. Additionally, 36 species are deemed to be potentially present in Venezuela: all of them have Venezuelan records available in the literature, their presence in the country seems to be at least plausible based on the rest of the known range of the species (e.g., known to occur in neighbouring areas of Colombia, Brazil, or the Guianas), but we ourselves failed to positively confirm the presence in the country (usually because we have not seen any specimens from there). Finally, 14 other species are considered to have been erroneously recorded from the country in the literature, in most cases based on misidentified material.

### *Updated catalogue of the Scarabaeinae (Coleoptera: Scarabaeinae) from Venezuela*

Class Insecta Linnaeus, 1758
Order Coleoptera Linnaeus, 1758
Family Scarabaeidae Latreille, 1802
Subfamily Scarabaeinae Latreille, 1802

**I – Confirmed records**

Genus ***Agamopus*** Bates, 1887

*Agamopus* Bates, 1887: 42 (original description). Type species: *Agamopus lampros* Bates, 1887, by original monotypy.

*Agamopus* – Gillet 1911b: 49 (catalogue, cited for Panama). — Blackwelder 1944: 203 (catalogue). — Pereira 1947a: 1–5 (contribution); 1954a: 56 (key). — Vulcano & Pereira 1967: 577 (key). — Halffter & Martínez 1968: 210 (revision); 1977: 34, 43 (key). — Howden & Young 1981: 40 (diagnosis). — Medina & Lopera-Toro 2000: 301, 306 (key). — Medina *et al.* 2001: 133 (checklist for Colombia). — Ratcliffe 2002: 32 (checklist for Panama). — Halffter 2003: 24 (redescription). — Vaz-de-Mello *et al.* 2011a: 4, 8 (key). — Solís & Kohlmann 2012: 2, 4 (checklist for Costa Rica). — Boilly & Vaz-de-Mello 2013: 106 (key for French Guiana). — Cupello & Vaz-de-Mello 2018: 17 (nomenclator). — Hielkema & Hielkema 2019: 58 (catalogue for the Guianas).

***Agamopus lampros*** Bates, 1887
Fig. 3A

*Agamopus lampros* Bates, 1887: 42 (original description). Type locality: Panama: Chiriquí: David. Name-bearing type: lectotype (BMNH), designated by Costa-Silva *et al.* (2022); examined by FZVM.

*Agamopus lampros* – Gillet 1911b: 49 (catalogue, cited for Panama). — Boucomont 1928a: 187 (cited). — Balthasar 1938: 218 (comments). — Blackwelder 1944: 203 (catalogue); 1973: 6 (catalogue). — Pereira 1947a: 4 (key). — Halffter & Martínez 1968: 236 (comments, female description). — Howden & Young 1981: 41 (contributions, distribution). — Morón *et al.* 1988: 320 (record from Mexico). — Thomas 1993: 395 (record from Mexico). — Schoolmeesters 1996: 20 (record from Nicaragua). — Medina & Lopera-Toro 2000: 310 (cited as "*lamprus*", fig. 8e). — Navarrete-Heredia *et al.* 2001: 52 (list). — Medina *et al.* 2001: 135 (checklist for Colombia). — Ratcliffe 2002: 13 (checklist for Panama). — Halffter 2003: 24 (redescription). — Kohlmann & Wilkinson 2003: 221–222 (cited). — Kohlmann *et al.* 2007: 27 (atlas). — Vaz-de-Mello *et al.* 2011a: 49, figs 1–2 (key). — Solís & Kohlmann 2012: 4 (checklist for Costa Rica). — Arellano *et al.* 2013: 655 (citation). — Noriega *et al.* 2013: 470 (checklist from Colombian Caribbean). — Cupello & Vaz-de-Mello 2018: 17 (nomenclator). — Sánchez-Hernández *et al.* 2020: 226 (list for Mexico). — Costa-Silva *et al.* 2022: 73–75, 83 (revision, designation of lectotype, key).

**Material examined**

VENEZUELA – **Guárico** • 4 specs; Altagracia de Orituco, NM 08-T-044; 23 Aug. 2006; curso NM2006 leg.; faeces, 09:49, 41h; CEMT. – **Táchira** • 4 specs; Libertador, San Joaquín de Navay; 7.7741° N, 71.6675° W; 550 m a.s.l.; Aug. 2006; T. Good leg.; CEMT • 2 specs; Libertador, San Joaquín de Navay; 7.6622° N, 71.7104° W; 200 m a.s.l.; Aug. 2006; T. Good leg.; CEMT.

**Distribution**

Mexico, Guatemala, El Salvador, Nicaragua, Costa Rica, Panama, Colombia and Venezuela.

**Subregions of Venezuela**

Andes mountains and Central Coast Mountain Range.

**Literature record**

Costa-Silva *et al.* 2022: 73–75, 83 (Venezuela: Guárico and Táchira).

Genus ***Anomiopus*** Westwood, 1842

*Anomiopus* Westwood, 1842: 59 (original description). Type species: *Anomiopus virescens* Westwood, 1842, by subsequent designation of Canhedo (2006).

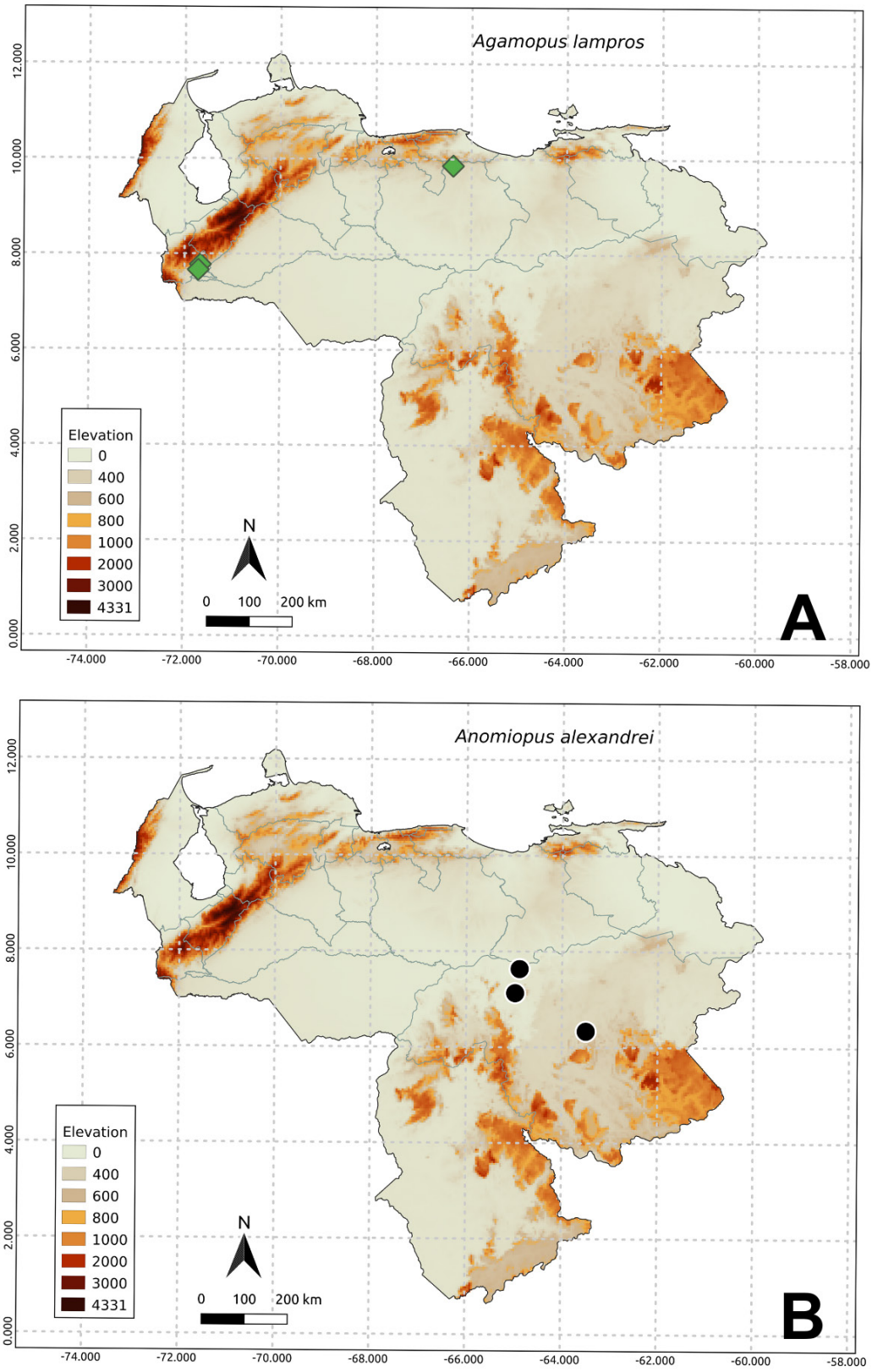


**Fig. 3.** Species distribution. **A**. *Agamopus lampros* Bates, 1887. **B**. *Anomiopus alexandrei* Canhedo, 2006. Green diamond = CEMT collection data; black circle = literature data.

*Onthocharis* Erichson, 1847b: 189 (original description). Type species: *Scatonomus smaragdinus* Westwood, 1842, by subsequent designation of Lacordaire (1855).

*Hypocanthidium* Balthasar, 1938: 214 (original description). Type species: *Hypocanthidium globulum* Balthasar, 1938, by original monotypy.

*Anomiopus* – Erichson 1843: 189 (list); 1847b: 761 (cited as synonym of *Onthocharis*). — Westwood 1843: 62 (redescription); 1847: 231 (redescription). — Lacordaire 1855: 94 (cited as synonym of *Onthocharis*, see footnote 2). — Harold 1869d: 1002 (catalogue, synonym of *Onthocharis*). — Gillet 1911a: 50 (catalogue, synonym of *Onthocharis*). — Lucas 1920: 100 (catalogue, synonym of *Onthocharis*). — Blackwelder 1944: 204 (cited as synonym of *Onthocharis*). — Medina & Lopera, 2000: 306 (key). — Vaz-de-Mello 2000: 190 (checklist for Brazil). — Medina *et al.* 2001: 137 (list). — Canhedo 2006: 354 (revision). — Hamel-Leigue *et al.* 2006: 12 (list). — Vaz-de-Mello *et al.* 2011a: 25 (key). — Carvajal *et al.* 2011: 124, 318 (description, list). — Krajcik 2012: 28 (list). — Solís & Kohlmann 2012: 2 (checklist for Costa Rica). — Boilly & Vaz-de-Mello 2013: 107 (key). — Chamorro *et al.* 2018: 75 (checklist for Ecuador); 2019: 9–10 (catalogue). — Hielkema & Hielkema 2019: 58 (catalogue for the Guianas).

*Hypocanthidium* – Pereira 1954a: 56 (key). — Halffter & Mathews 1966: 256 (catalogue, distribution). — Vaz-de-Mello *et al.* 2011a: 3 (junior synonym of *Anomiopus*). — Solís & Kohlmann 2012: 2 (synonym of *Anomiopus*).

### ***Anomiopus alexandrei*** Canhedo, 2006

Fig. 3B

*Anomiopus alexandrei* Canhedo, 2006: 434 (original description). Type locality: Brazil: Roraima: Ilha de Maracá. Name-bearing type: holotype (MCNZ) (Canhedo 2006), not examined.

*Anomiopus alexandrei* – Canhedo 2004a: 189 (key; nomen nudum). — Hielkema & Hielkema 2019: 58 (catalogue for the Guianas).

#### Type material examined

**Paratype**

BRAZIL • 1 ♂; "Roraima: Ilha de Maracá-RR/ —.IX.1996 / Ribeiro & / Vaz-de-Mello / leg. / *Anomiopus* / *alexandrei* sp. n. / PARÁTIPO ♂ / V.L Canhedo det. 1999 / CEMT / CUIABÁ / 00078205"; CEMT.

#### Distribution

Venezuela and Brazil (Canhedo 2006).

#### Subregions of Venezuela

Peneplain of the Caura and Paragua rivers, System of hills and low piedmont mountains of the Guiana Shield, and Guiana Shield.

#### Literature records

Canhedo 2004a: 189 (Venezuela: Bolívar); 2006: 349, 434 (Venezuela: Bolívar: Río Caura).

### ***Anomiopus edmondsi*** Canhedo, 2006

Fig. 4A

*Anomiopus edmondsi* Canhedo, 2006: 431 (original description). Type locality: Venezuela: Bolívar: Río Caura, Puerto Cabello. Name-bearing type: holotype (BDGC) (Canhedo 2006), not examined.

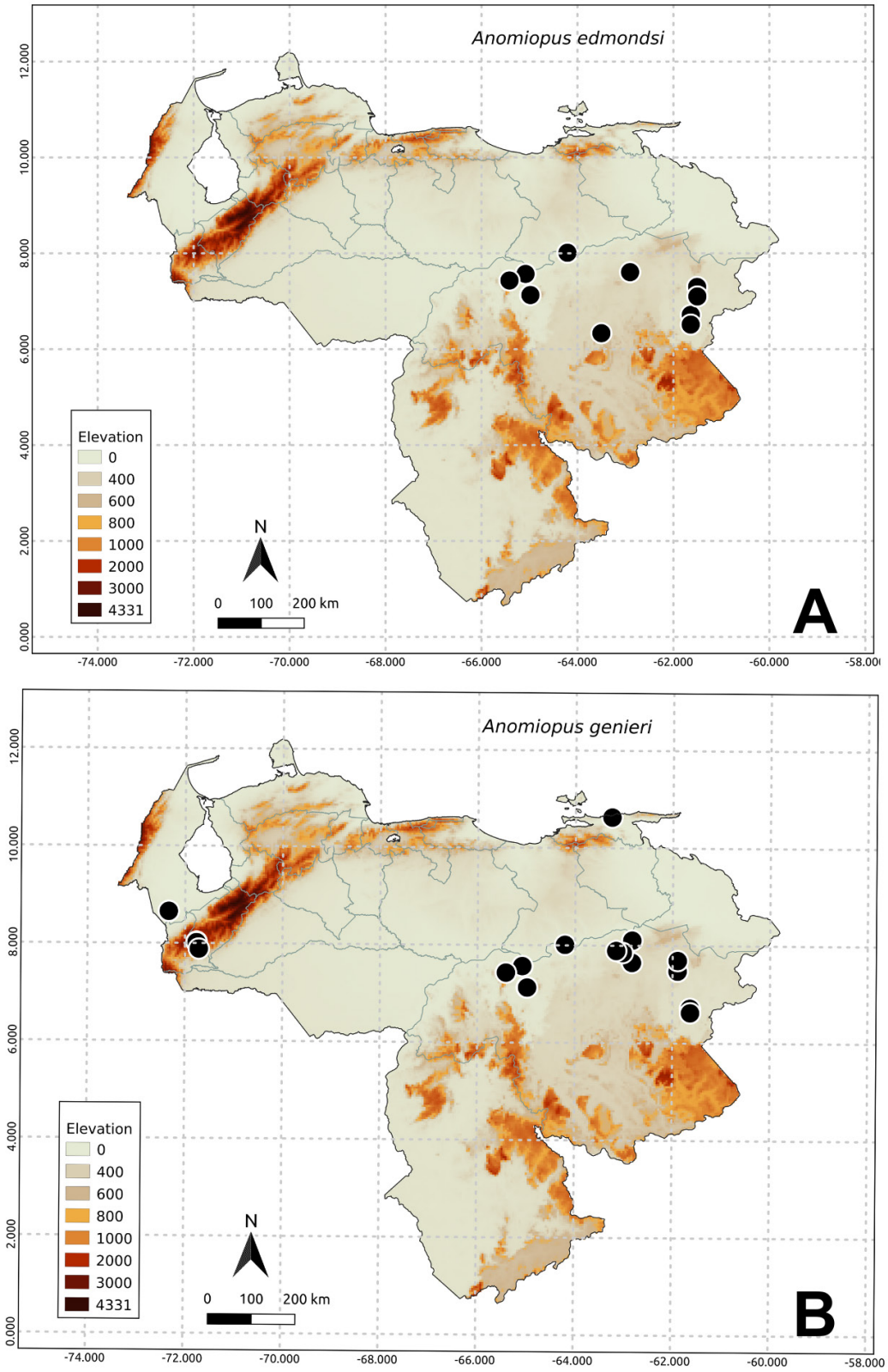


**Fig. 4.** Species distribution. **A**. *Anomiopus edmondsi* Canhedo, 2006. **B**. *Anomiopus genieri* Canhedo, 2006. Black circle = literature data.

*Anomiopus edmondsi* – Canhedo 2004a: 189 (key; nomen nudum). — Krajcik 2012: 28 (checklist). — Hielkema & Hielkema 2019: 59 (catalogue for the Guianas).

**Distribution**

Venezuela (endemic) (Canhedo 2006).

**Subregions of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield, system of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Guiana Shield.

**Literature records**

Canhedo 2004a: 189 (Venezuela: Bolívar); 2006: 349, 431 (Venezuela: Bolívar). — Krajcik 2012: 28 (Venezuela).

***Anomiopus genieri*** Canhedo, 2006
Fig. 4B

*Anomiopus genieri* Canhedo, 2006: 372 (original description). Type locality: Venezuela Bolívar: Río Sipao, 110 km E of Caiçara. Name-bearing type: holotype (CMNC) (originally FGIC; Canhedo 2006), not examined. An MZSP paratype examined by FZVM.

*Anomiopus genieri* – Hielkema & Hielkema 2019: 59 (catalogue for the Guianas).

**Distribution**

Venezuela, Trinidad and Tobago, and Guyana (Canhedo 2006).

**Subregions of Venezuela**

Continental costera, Maracaibo Depression, System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní del Escudo Northeast Guiana, Andes mountains, and Oriental Coast Range.

**Literature records**

Canhedo 2006: 349, 372 (Venezuela: Bolívar, Sucre, Táchira and [Zulia ?]: Camp. Siberia). — Krajcik 2012: 28 (Venezuela).

***Anomiopus gracilis*** Canhedo, 2006
Fig. 5A

*Anomiopus gracilis* Canhedo, 2006: 370 (original description). Type locality: Venezuela: Bolívar: Parupa, Gran Sabana, 1,500 m. Name-bearing type: holotype (CMNC), not examined. An MZSP paratype examined by FZVM.

*Anomiopus gracilis* – Krajcik 2012: 28 (list). — Hielkema & Hielkema 2019: 59 (catalogue for the Guianas).

**Distribution**

Venezuela and Brazil (Canhedo 2006, CEMT).

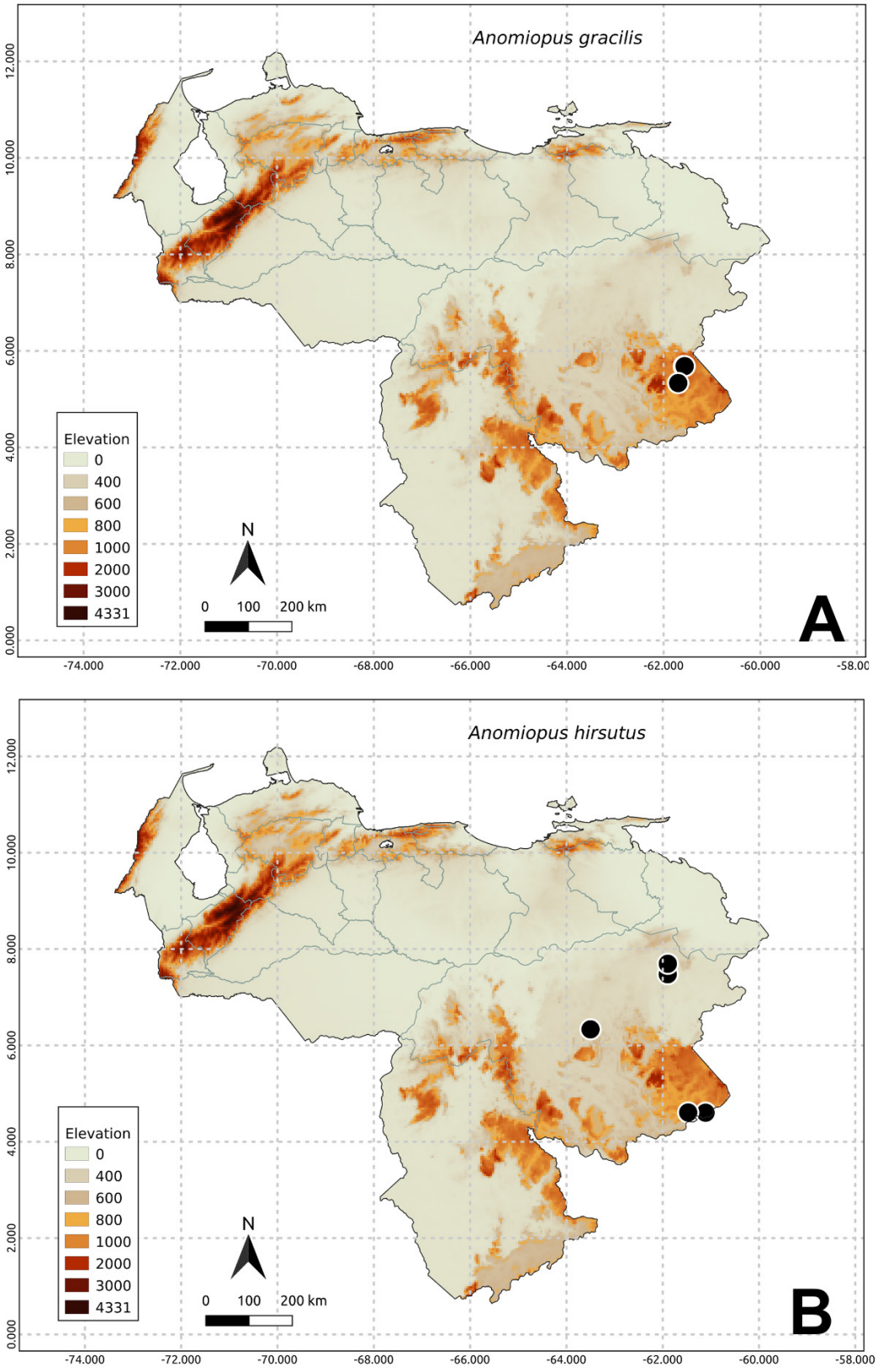


**Fig. 5.** Species distribution. **A**. *Anomiopus gracilis* Canhedo, 2006. **B**. *Anomiopus hirsutus* Canhedo, 2006. Black circle = literature data.

**Subregion of Venezuela**

Guiana Shield.

**Literature records**

Canhedo 2006: 349, 359–360 (Venezuela: Bolívar: Gran Sabana). — Krajcik 2012: 28 (Venezuela).

***Anomiopus hirsutus*** Canhedo, 2006
Fig. 5B

*Anomiopus hirsutus* Canhedo, 2006: 420 (original description). Type locality: Venezuela: Bolívar: 40 km W of Santa Helena, 1000 m. Name-bearing type: holotype (CMNC) (originally in FGIC; Canhedo 2006), not examined.

*Anomiopus hirsutus* – Canhedo 2004a: 189 (key; nomen nudum). — Krajcik 2012: 28 (list). — Hielkema & Hielkema 2019: 59 (catalogue for the Guianas).

**Distribution**

Venezuela (endemic) (Canhedo 2006).

**Subregions of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield, and Guiana Shield.

**Literature records**

Canhedo 2004a: 189 (Venezuela: Bolívar); 2006: 349, 420 (Venezuela: Bolívar). — Krajcik 2012: 28 (Venezuela).

***Anomiopus palmispinus*** Canhedo, 2006
Fig. 6A

*Anomiopus palmispinus* Canhedo, 2006: 408 (original description). Type locality: Venezuela: Bolívar: 10 km N of Corocito. Name-bearing type: holotype (CMNC) (originally, FGIC; Canhedo 2006), not examined.

*Anomiopus palmispinus* – Canhedo 2004a: 189 (key: nomen nudum). — Krajcik 2012: 28 (checklist). — Hielkema & Hielkema 2019: 60 (catalogue for the Guianas).

**Distribution**

Venezuela (endemic) (Canhedo 2006).

**Subregions of Venezuela**

Peneplain of the Caura and Paragua rivers, System of hills and low piedmont mountains of the Guiana Shield, and Guiana Shield.

**Literature records**

Canhedo 2004a: 189 (Venezuela: Bolívar); 2006: 349, 408 (Venezuela: Bolívar). — Krajcik 2012: 28 (Venezuela).

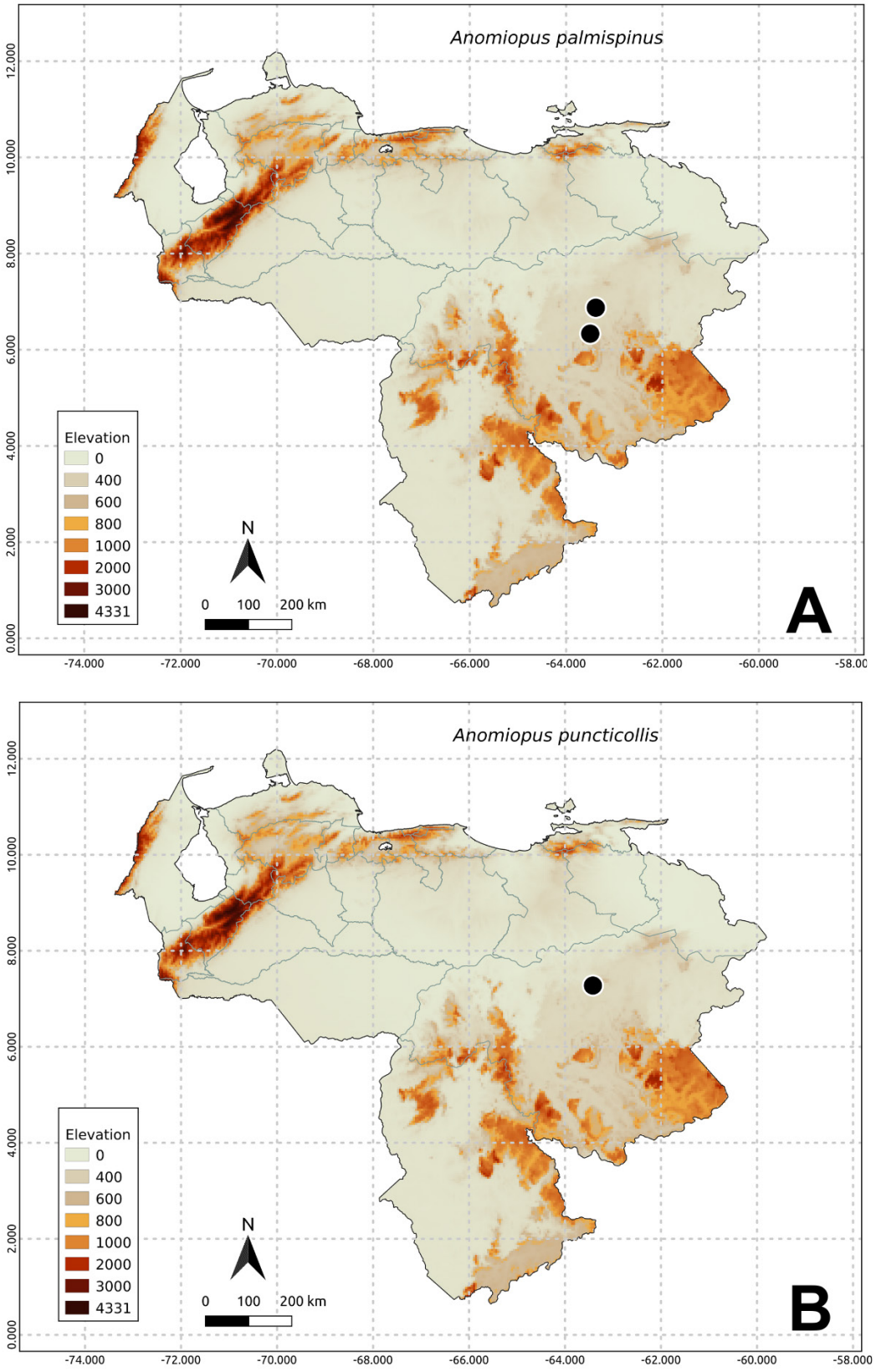


**Fig. 6.** Species distribution. **A**. *Anomiopus palmispinus* Canhedo, 2006. **B**. *Anomiopus puncticollis* (Harold, 1862). Black circle = literature data.

***Anomiopus puncticollis*** (Harold, 1862)
Fig. 6B

*Onthocharis puncticollis* Harold, 1862: 400 (original description). Type locality: Brazil. Name-bearing type: syntype (following Recommendation 73F of the Code, and contra "holotype" according to Canhedo 2006) (MNHN), examined by FZVM.

*Onthocharis puncticollis* – Gillet 1911b: 51 (catalogue). — Blackwelder 1944: 204 (catalogue).
*Anomiopus puncticollis* – Vaz-de-Mello 2000: 190 (checklist for Brazil). — Canhedo 2004b: 457 (key); 2006: 473 (description). — Hielkema & Hielkema 2019: 60 (catalogue for the Guianas).

**Distribution**

Venezuela and Brazil (Canhedo 2006).

**Subregion of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield.

**Literature records**

Canhedo 2004b: 457 (Venezuela); 2006: 473 (Venezuela: Bolívar: Río Caura, near Puerto Cabello and 10 km N of Corocito).

**Remarks**

Although the CEMT houses no specimens identified as *A. puncticollis*, let alone one from Venezuela, we accept Canhedo's (2004b, 2006) record of the species from the country (later repeated by Hielkema & Hielkema 2019) for her work was a complete monograph of the genus, including the study of the type specimens and proper delimitation of the species boundaries. It is, therefore, unlikely she would misidentify the specimens she had in front of her. This material, consisting of five specimens collected in the state of Bolívar in 1987, was recorded in her work as housed in BDGC, FGIC, and MCNZ, the holdings of which were not studied for the present catalogue.

***Anomiopus smaragdinus*** (Westwood, 1842)
Fig. 7A

*Scatonomus smaragdinus* Westwood, 1842: 59 (original description). Type locality: Brazil. Name-bearing type: kind of typification uncertain from the original description (contra certain "holotype" according to Canhedo 2006), unknown whereabouts (Canhedo 2006).
*Onthocharis bella* Waterhouse, 1891a: 356 (original description). Type locality: French Guiana. Name-bearing type: holotype (BMNH) (Canhedo 2006), examined by FZVM.

*Scatonomus smaragdinus* – Erichson 1843: 189. — Westwood 1843: 62 (description).
*Onthocharis smaragdinus* – Westwood 1847: 231 (description). — Lacordaire 1855: 94, 95 (comments).
*Onhocharis smaragdina* – Harold 1869d: 1003 (catalogue). — Gillet 1911b: 51 (catalogue). — Blackwelder 1944: 204 (catalogue).
*Onthocharis bella* – Gillet 1911b: 51 (catalogue). — Blackwelder 1944: 204 (list). — Vulcano & Pereira 1967: 581 (key for the Amazon).
*Anomiopus smaragdinus* – Vaz-de-Mello 2000: 190 (checklist for Brazil). — Canhedo 2004a: 188 (key); 2006: 400 (revision). — Ratcliffe *et al.* 2015: 196 (checklist for Peru). — Hielkema & Hielkema 2019: 60 (catalogue for the Guianas).

**Distribution**

Venezuela, Suriname, French Guiana, Brazil, and Peru.

**Subregions of Venezuela**

Peneplain of the Caura and Paragua rivers, and Guiana Shield.

**Literature records**

Canhedo 2004a: 188 (Venezuela: Bolívar); 2006: 349–400 (Venezuela: Bolívar).

Genus ***Ateuchus*** Weber, 1801

*Ateuchus* Weber, 1801: 10 (original description). Type species: *Ateuchus histeroides* Weber, 1801, by original monotypy.

*Choeridium* Le Peletier de Saint-Fargeau & Audinet-Serville, 1828: 356 [cited under two alternative spellings: *Choeridium* and *Chaeridium*, the former the correct original spelling (Cupello *et al.* 2021a)] (original description). Type species: *Choeridium simplex* Le Peletier de Saint-Fargeau & Audinet-Serville, 1828, by subsequent designation of Chevrolat (1843).

*Ateuchus* – Fabricius 1801: 54 (redescription). — Latreille 1829: 532 (redescription). — Castelnau 1840: 63 (redescription). — Reiché 1841: 212 (key). — Lacordaire 1855: 66 (redescription). — Lucas 1920: 125 (catalogue, distribution). — Chapin 1946: 79 (synonym of *Ateuchus* Weber). — Pereira 1954b: 56 (key). — Roze 1955: 43 (checklist for Venezuela). — Martínez 1959: 76 (catalogue for Argentina). — Halffter & Mathews 1966: 256 (catalogue, distribution). — Vulcano & Pereira 1967: 577 (key for the Amazon, cited as *Atheuchus* Weber, 1801). — Howden & Young 1981: 13, 68 (key, redescription). — Halffter & Edmonds 1982: 137 (catalogue, distribution). — Kohlmann 1984: 25 (redescription); 1997: 178 (redescription). — Medina & Lopera-Toro 2000: 306 (illustrated key). — Vaz-de-Mello 2000: 190 (checklist for Brazil). — Medina *et al.* 2001: 137 (checklist for Colombia). — Ratcliffe *et al.* 2002: 49 (key). — Ratcliffe 2002: 13 (checklist for Panama). — Morón 2003: 52 (list). — Hamel-Leigue *et al.* 2006: 12 (list for Bolivia). — Vaz-de-Mello *et al.* 2011a: 4, 13, 21, 28, 36, 43–44 (key). — Carvajal *et al.* 2011: 126, 318 (description, list for Ecuador). — Krajcik 2012: 49 (list). — Solís & Kohlmann 2012: 4 (checklist for Costa Rica). — Boilly & Vaz-de-Mello 2013: 108 (key). — Chamorro *et al.* 2018: 77 (list for Ecuador); 2019: 9, 13 (catalogue). — Hielkema & Hielkema 2019: 40 (catalogue for the Guianas).

*Choeridium* – Castelnau 1840: 83 (redescription). — Lacordaire 1855: 93 (redescription, synonym of *Ateuchus*). — Harold 1867a: 9 (key); 1868b: 32 (redescription); 1868c: 55 (key); 1869d: 1006 (catalogue). — Gillet 1911a: 52 (catalogue). — Lucas 1920: 182 (catalogue, distribution). — Dawson 1922: 61 (key). — Luederwaldt 1929: 11 (key); 1931a: 369 (key). — Paulian 1938: 234 (key). — Balthasar 1939c: 44 (comment). — Pessôa & Lane 1941: 437 (key). — Blackwelder 1944: 204 (list).

***Ateuchus aeneomicans*** (Harold, 1868)
Fig. 7B

*Choeridium aeneomicans* Harold, 1868d: 82 (original description). Type locality: Brazil: Amazonas: São Paulo de Olivença. Name-bearing type: syntypes (MNHN), examined by MC and FZVM.

*Choeridium aeneomicans* – Harold 1868b: 37, 66 (key, redescription); 1869d: 1006 (catalogue, cited for the Amazon). — Gillet 1911b: 52 (catalogue, cited for Amazonas and Panama). — Balthasar 1939c: 63 (key, cited for Brazil and Panama). — Blackwelder 1944: 204 (list, cited for Panama and Brazil).

*Choeridium æneo-micans* – Bates 1887: 46–47.

*Ateuchus aeneomicans* – Vulcano & Pereira 1967: 589 (key). — Howden & Young 1981: 68–69 (contributions). — Kohlmann 1997: 178–179 (key, redescription). — Feer 2000: 31 (checklist for French Guiana). — Vaz-de-Mello 2000: 190 (checklist for Brazil). — Medina *et al.* 2001: 137 (checklist for Colombia). — Ratcliffe 2002: 13 (checklist for Panama). — Kohlmann *et al.* 2007: 27 (atlas). — Arias-Buriticá *et al.* 2011: 875 (cited for Chocó, Colombia). — Krajcik 2012: 49 (list). —

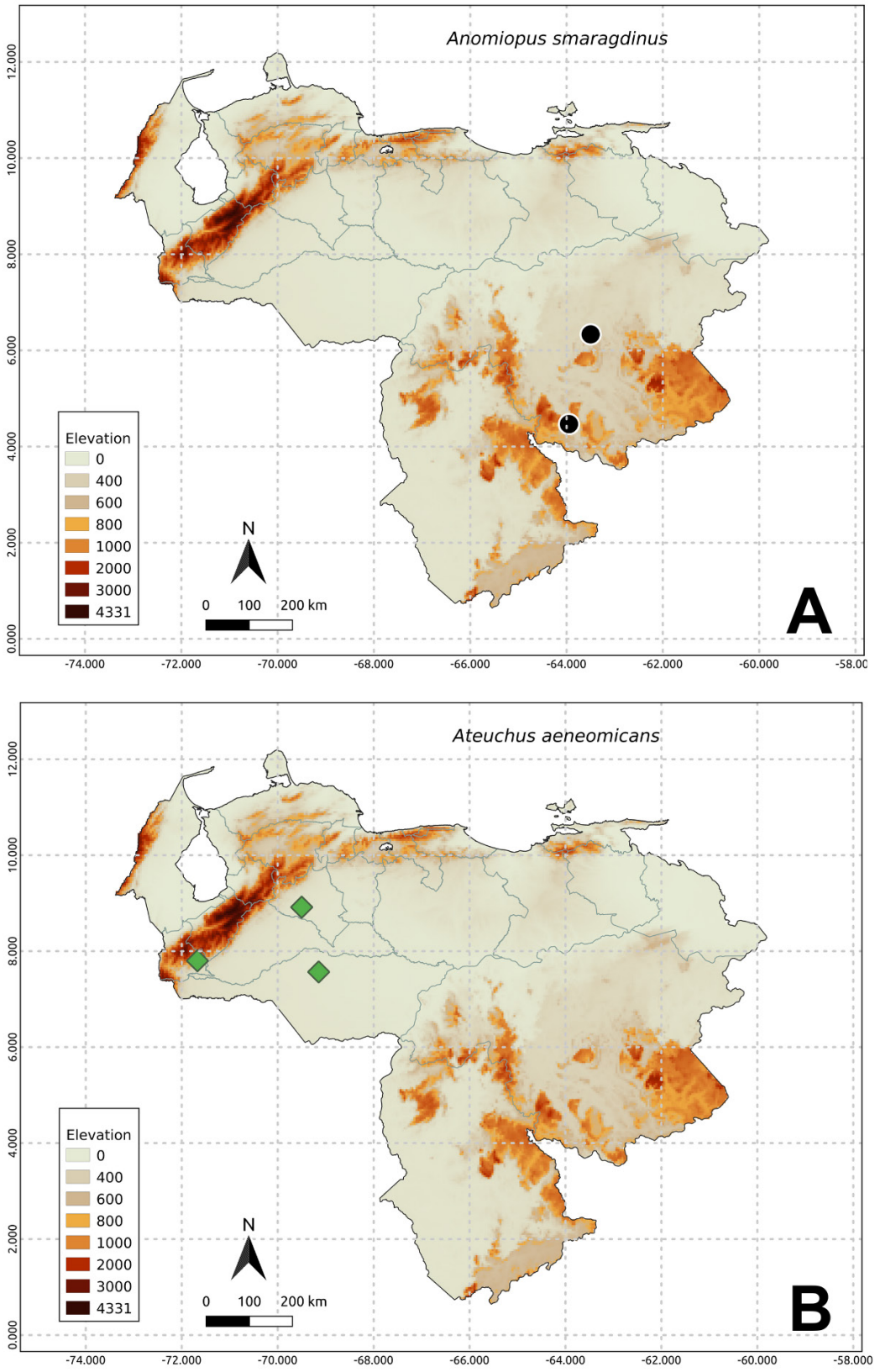


**Fig. 7.** Species distribution. **A**. *Anomiopus smaragdinus* (Westwood, 1842). **B**. *Ateuchus aeneomicans* (Harold, 1868). Green diamond = CEMT collection data; black circle = literature data.

Solís & Kohlmann 2012: 4 (checklist for Costa Rica). — Ratcliffe *et al.* 2015: 196 (checklist for Peru). — Chamorro *et al.* 2018: 91 (list for Ecuador); 2019: 14 (catalogue). — Hielkema & Hielkema 2019: 44 (catalogue for the Guianas). — Nieto *et al.* 2020: 136 (report).

**Material examined**

VENEZUELA – **Apure** • 1 ♂; Muñoz, Mantecal; 1 Jun. 1993; Hornburg leg.; CEMT. – **Portuguesa** • 2 ♀♀; Guanare; Oct. 1985; no collector; CEMT • 1 ♂; Guanare; 15 Oct. 1985; no collector; CEMT. – **Táchira** • 1 ♀; Libertador, San Joaquín de Navay; 07°47′59″ N, 71°40′24.24″ W; 655 m a.s.l.; 26 Aug. 2006; T. Good *et al.* leg.; human faeces; CEMT.

**Distribution**

Costa Rica, Panama, Colombia, Venezuela (**new country record**), Brazil, Ecuador, Peru and Bolivia (MC, pers. obs.).

**Subregions of Venezuela**

Plains, and Andes mountains.

**Literature record**

No previous reports for Venezuela.

***Ateuchus alvarezi*** (Martínez & Halffter, 1986)
Fig. 8A

*Canthidium alvarezi* Martínez & Halffter, 1986: 21 (original description). Type locality: Brazil: Roraima: Pacaraima: Surumu: Serra do Marari. Name-bearing type: holotype (MACN), confirmed to be there by MC in 2014.

*Ateuchus alvarezi* – Génier & Cupello 2018: 2 (new combination). — Hielkema & Hielkema 2019: 40 (catalogue for the Guianas).

**Material examined from Venezuela in CEMT**

**Paratype**

VENEZUELA • 1 ♂; "PARATIPO"; "*Canthidium* / *superbum* / sp. nov / A. Martínez-DET. 1982"/; "oct: 974 / VENEZUELA / Bolívar / Canaima / Carcavallo leg. / coll. Martínez / ♂"; CEMT-00078192.

**Distribution**

Venezuela, Guyana, and Brazil (Génier & Cupello 2018).

**Subregion of Venezuela**

Guiana Shield.

**Literature records**

Martínez & Halffter 1986: 21 (Venezuela: Bolívar: Canaima). — Génier & Cupello 2018: 2 (Venezuela).

***Ateuchus ambiguus*** Martínez & Martínez, 1990
Fig. 8B

*Ateuchus ambiguus* Martínez & Martínez, 1990: 161 (original description). Type locality: Venezuela: Mérida: San Rafael del Páramo de Mucuchíes, Laguna Grande, 3800 m. Name-bearing type: holotype (MACN), confirmed to be there by MC in 2014.

*Ateuchus ambiguus* – Krajcik 2012: 49 (list).

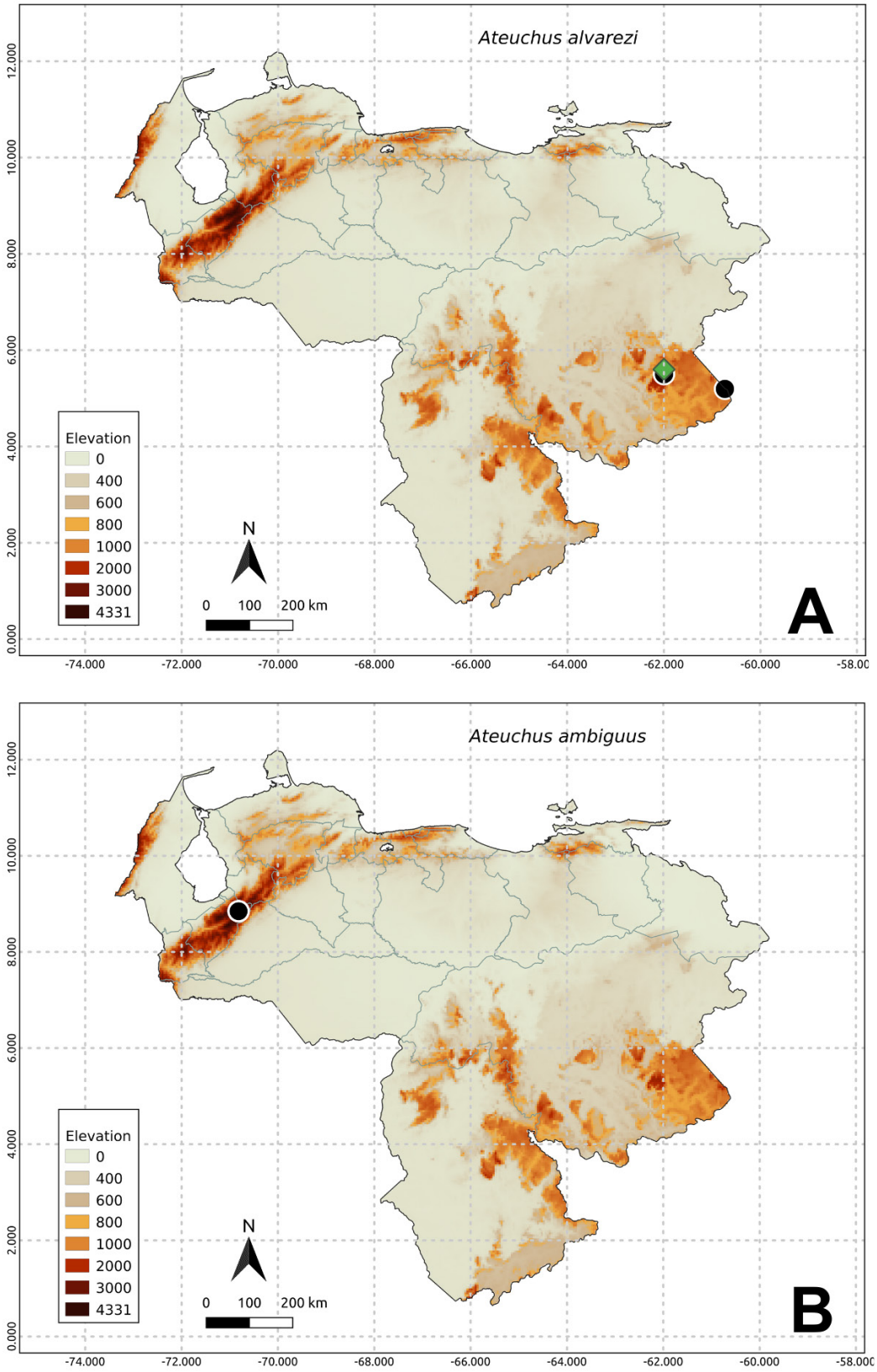


**Fig. 8.** Species distribution. **A**. *Ateuchus alvarezi* (Martínez & Halffter, 1986). **B**. *Ateuchus ambiguus* Martínez & Martínez, 1990. Green diamond = CEMT collection data; black circle = literature data.

**Distribution**

Venezuela (endemic) (Martínez & Martínez 1990).

**Subregion of Venezuela**

Andes mountains.

**Literature records**

Martínez & Martínez 1990: 161 (Venezuela: Mérida: Páramo de Mucuchíes, Laguna Grande). — Krajcik 2012: 49 (Venezuela: Mérida).

***Ateuchus bordoni*** Martínez & Martínez, 1990
Fig. 9A

*Ateuchus bordoni* Martínez & Martínez, 1990: 159 (original description). Type locality: Venezuela: Mérida: Pico El Águila. Name-bearing type: holotype (MACN), confirmed to be there by MC in 2014.

*Ateuchus bordoni* – Krajcik 2012: 49 (list).

**Distribution**

Venezuela (endemic) (Martínez & Martínez 1990).

**Subregion of Venezuela**

Andes mountains.

**Literature records**

Martínez & Martínez 1990: 159 (Venezuela: Mérida: Pico El Águila). — Krajcik 2012: 49 (Venezuela: Mérida).

***Ateuchus calcaratus*** (Harold, 1868)
Fig. 9B

*Choeridium calcaratum* Harold, 1868b: 76 (original description). Type locality: originally said to be French Guiana, but this is incorrect (MC, pers. obs.). Name-bearing type: syntypes, ambiguous status (see Cupello 2020 for details).

*Choeridium calcaratum* – Harold 1869d: 1007 (catalogue, cited for Brazil). — Gillet 1911b: 52 (catalogue, cited for Brazil). — Blackwelder 1944: 204 (list, cited for Brazil).
*Ateuchus calcaratus* – Vulcano *et al.* 1976: 522 (cited for French Guiana and Panama). — Vaz-de-Mello 2000: 190 (checklist for Brazil). — Ratcliffe 2002: 13 (checklist for Panama). — Hielkema & Hielkema 2019: 44 (catalogue for the Guianas).

**Material examined**

VENEZUELA – **Bolívar** • 1 ♂, 1 ♀; Caroní, Ciudad Guayana; Jan. 1996; Petr Pokorný leg.; CEMT • 2 ♀♀; El Manteco; 2 Aug. 2006; no collector; in dung; CEMT.

**Distribution**

Venezuela (**new country record**); the French Guiana record is incorrect (MC, pers. obs.).

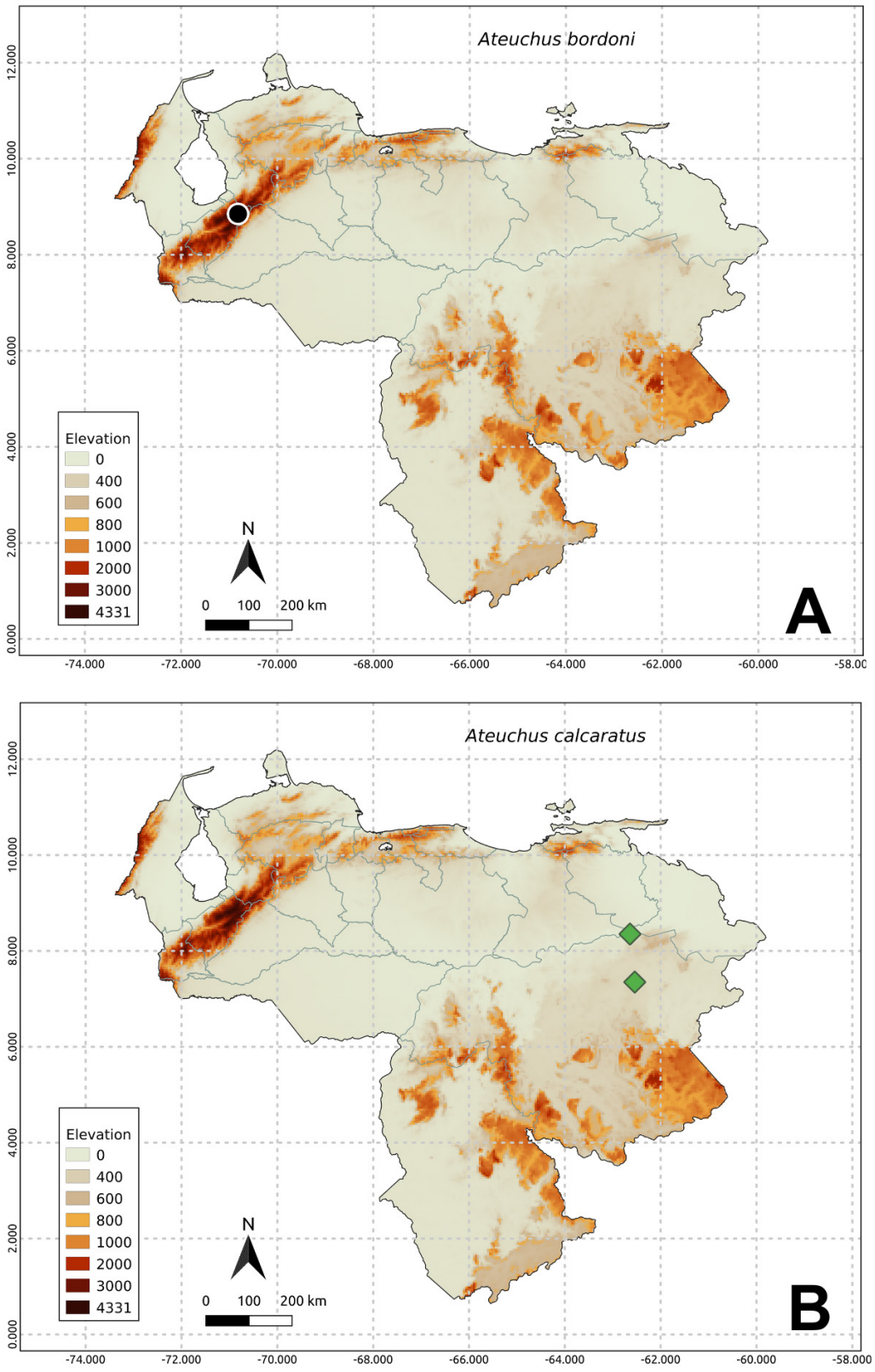


**Fig. 9.** Species distribution. **A**. *Ateuchus bordoni* Martínez & Martínez, 1990. **B**. *Ateuchus calcaratus* (Harold, 1868). Green diamond = CEMT collection data; black circle = literature data.

**Subregion of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield.

**Literature record**

No previous reports for Venezuela.

***Ateuchus columbianus*** (Harold, 1868)
Fig. 10A

*Choeridium columbianum* Harold, 1868b: 58 (original description). Type locality: Colombia. Name-bearing type: syntypes lost (MC, pers. obs.).

*Choeridium columbianus* – Harold 1869d: 1007 (catalogue, cited for Colombia). — Gillet 1911b: 52 (catalogue, cited for Colombia). — Balthasar 1939c: 62 (key, cited for Colombia). — Blackwelder 1944: 204 (list, cited for Colombia).
*Ateuchus columbianus* – Vulcano & Pereira 1967: 590 (key). — Medina *et al.* 2001: 137 (checklist for Colombia). — Ratcliffe *et al.* 2015: 196 (checklist for Peru).

**Material examined**

VENEZUELA – **Barinas** • 5 ♂♂, 1 ♀; Bolívar, Barinitas ("BARINITAS ENV."); Jan. 1996; Petr. Pokorny leg.; ex A. Dostal collection; CEMT. – **Mérida** • 1 ♂, 1 ♀; "Finca Campo Alegre"; Jan. 2001; R. Acconcia leg. CEMT. – **Táchira** • 1 ♂, 1 ♀; San Cristóbal, Frio River ["Río Frio"]; 1 Aug. 1984; B. Joffre leg.; CEMT.

**Distribution**

Colombia, Venezuela (**new country record**) and Peru.

**Subregion of Venezuela**

Andes mountains.

**Literature record**

No previous reports for Venezuela.

***Ateuchus hoplopygus*** (Harold, 1868)
Fig. 10B

*Choeridium hoplopygum* Harold, 1868b: 57 (original description). Type locality: Colombia. Name-bearing type: holotype lost (MC, pers. obs.).

*Choeridium hoplopygum* – Harold 1869d: 1007 (catalogue, cited for Colombia). — Gillet 1911b: 53 (catalogue, cited for Colombia). — Balthasar 1939c: 62 (key to species, cited for Colombia). — Blackwelder 1944: 204 (checklist of species, cited for Colombia).
*Ateuchus hoplopygus* – Vulcano & Pereira 1967: 590 (key). — Medina *et al.* 2001: 137 (checklist for Colombia).

**Material examined**

VENEZUELA – **Zulia** • 1 ♂; Rosário de Perijá; 19 Jul. 2006; no collector; in dung; CEMT.

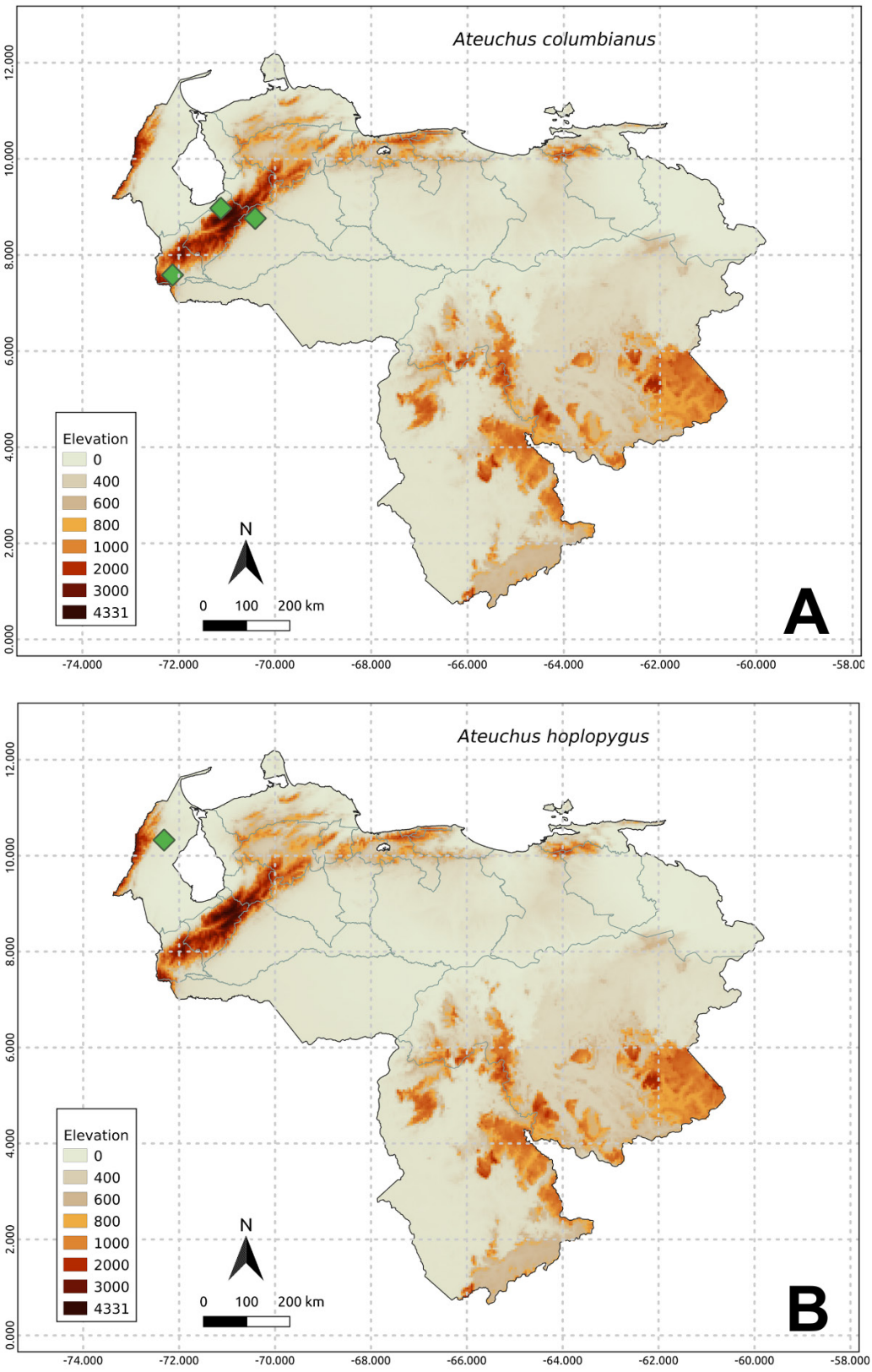


**Fig. 10.** Species distribution. **A**. *Ateuchus columbianus* (Harold, 1868). **B**. *Ateuchus hoplopygus* (Harold, 1868). Green diamond = CEMT collection data.

**Distribution**

Colombia and Venezuela (**new country record**).

**Subregion of Venezuela**

Maracaibo Depression.

**Literature record**

No previous reports for Venezuela.

***Ateuchus persplendens*** (Balthasar, 1939)

*Choeridium persplendens* Balthasar, 1939c: 50 (original description). Type locality: Colombia: Valle del Cauca: Dagua River. Name-bearing type: holotype (SMTD), examined by MC and FZVM.

**Distribution**

Colombia and Venezuela.

**Literature record**

Roze 1955: 43 (Venezuela: Sucre: Carúpano).

**Remarks**

Although the CEMT houses no specimens of *A. persplendens*, MC confirms the presence of the species in Venezuela as reported by Roze (1955) based on his study of material from other collections for his forthcoming revision of *Ateuchus*.

***Ateuchus simplex*** (Le Peletier de Saint-Fargeau & Audinet-Serville, 1828)
Fig. 11A

*Choeridium simplex* Le Peletier de Saint-Fargeau & Audinet-Serville, 1828: 356 (original description). Type locality: French Guiana. Name-bearing type: syntypes lost (MC, pers. obs.).

*Choeridium simplex* – Harold 1869d: 1007 (catalogue, cited for Cayenne). — Gillet 1911b: 53 (catalogue, cited for Cayenne). — Balthasar 1939c: 64 (cited for French Guiana, Amazonas, Peru and Ecuador); 1941: 347 (cited for Peru). — Blackwelder 1944: 204 (checklist of species, cited for French Guiana).
*Ateuchus simplex* – Roze 1955: 44 (checklist for Venezuela). — Vulcano & Pereira 1967: 588 (cited for northern South America). — Feer 2000: 31 (list, cited for French Guiana); 2008: 56, 62 (ecology); 2013: 766 (list French Guiana). — Feer & Pincebourde 2005: 29 (ecological study). — Brûlé *et al.* 2011a: 193 (list, cited for French Guiana). — Larsen 2011: 97 (cited for Suriname); 2013: 95 (cited for Suriname). — Brûlé & Dalens 2012: 37 (list, cited for French Guiana). — Price & Feer 2012: 327 (sampling). — Feer & Boissier 2015: 169 (list). — Ratcliffe *et al.* 2015: 196 (checklist for Peru). — Hielkema & Hielkema 2019: 44 (catalogue for the Guianas).

**Material examined**

VENEZUELA – **Bolívar** • 2 ♂♂; Sifontes, Cuyuní River, Isla de Anacoco; 6 Aug. 2006; no collector; in dung; CEMT.

**Distribution**

Venezuela, Suriname, French Guiana, Brazil, and Peru.

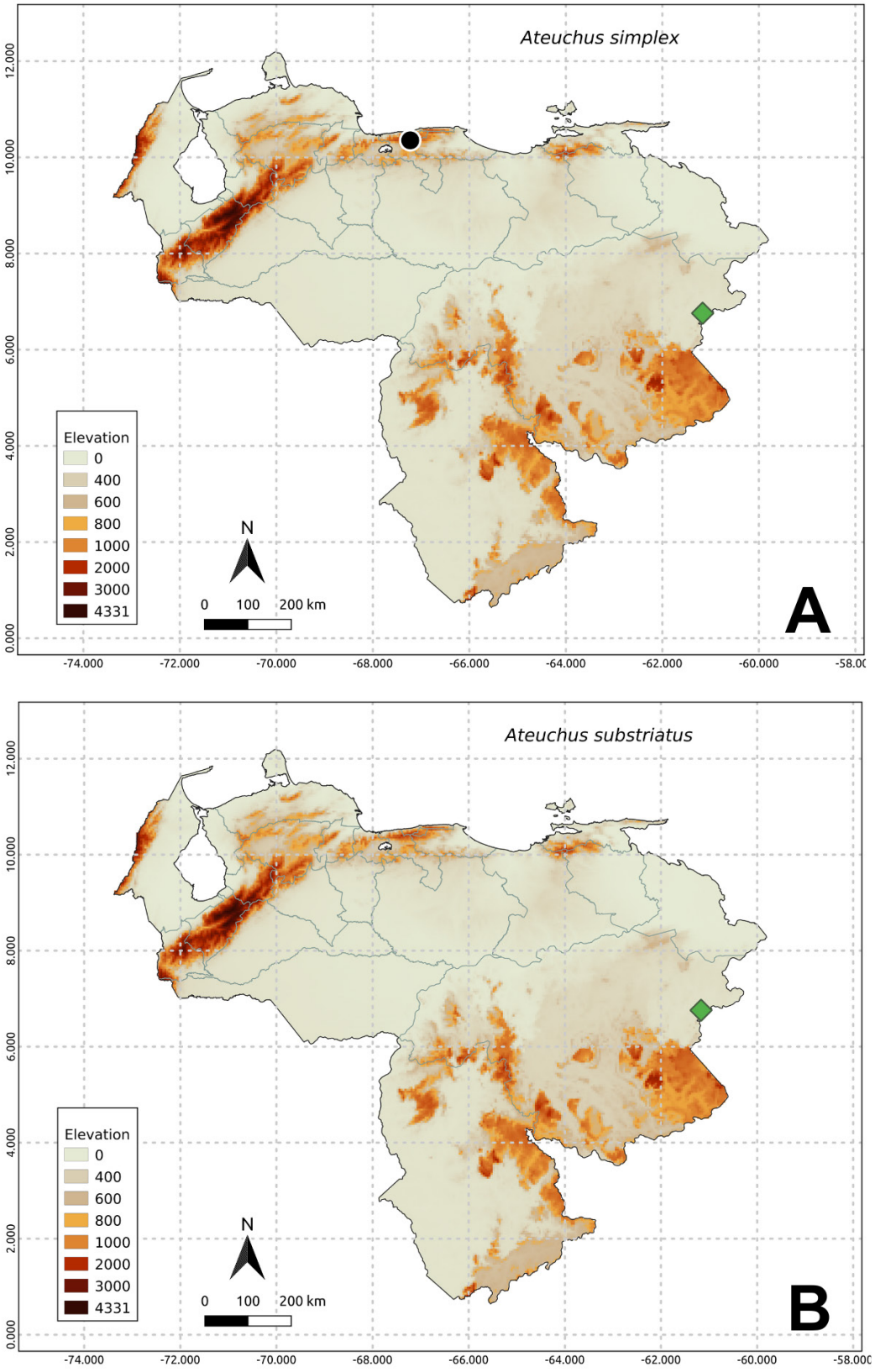


**Fig. 11.** Species distribution. **A**. *Ateuchus simplex* (Le Peletier & Serville, 1828). **B**. *Ateuchus substriatus* (Harold, 1868). Green diamond = CEMT collection data; black circle = literature data.

**Subregions of Venezuela**

System of low mountains and hills Imataca-Cuyuní of Escudo Northeast Guiana, and Central Coast Mountain Range.

**Literature record**

Roze 1955: 44 (Venezuela: Miranda: El Tuy [Valle del Tuy]).

***Ateuchus substriatus*** (Harold, 1868)
Fig. 11B

*Choeridium substriatum* Harold, 1868d: 81 (original description). Type locality: Brazil: Pará: Tapajós River (see Cupello & Vaz-de-Mello 2018 for details on this locality). Name-bearing type: uncertain status; see Cupello (2020).

*Choeridium substriatum* – Harold 1868b: 37, 64 (key, redescription); 1869d: 1007 (catalogue, cited for Tapajos [Brazil]). — Gillet 1911b: 53 (catalogue, cited for Amazonas). — Balthasar 1939c: 63 (key, cited for Amazonas). — Blackwelder 1944: 205 (checklist of species, cited for Brazil).
*Ateuchus substriatus* – Vulcano & Pereira 1967: 589 (key). — Feer 2000: 31 (list, cited for French Guiana); 2008: 62 (ecology, list); 2013: 766 (list for French Guiana). — Vaz-de-Mello 2000: 190 (checklist for Brazil). — Larsen 2011: 97 (cited for Suriname); 2013: 95 (cited for Suriname). — Nunes *et al.* 2014: 408–410 (list). — Ratcliffe *et al.* 2015: 196 (checklist for Peru). — Hielkema & Hielkema 2019: 44 (catalogue for the Guianas).

**Material examined**

VENEZUELA – 1 ♂; **Bolívar** • Sifontes, Cuyuní River, Isla de Anacoco; 6 Aug 2006; in dung; no collector; CEMT.

**Distribution**

Venezuela (**new country record**), Suriname, French Guiana, Brazil, and Peru.

**Subregion of Venezuela**

System of low mountains and hills Imataca-Cuyuní of Escudo Northeast Guiana.

**Literature records**

No previous reports for Venezuela.

Genus ***Bdelyropsis*** Pereira *et al.*, 1960

*Bdelyropsis* Pereira *et al.,* 1960: 160 (original description). Type species: *Bdelyrus bowditchi* Paulian, 1939, by original designation.

*Bdelyropsis* – Howden 1976: 95–103 (new species). — Morón 2003: 57 (atlas, cited for Mexico). — Vaz-de-Mello *et al.* 2011a: 4, 8 (key).

***Bdelyropsis venezuelensis*** Howden, 1976
Fig. 12A

*Bdelyropsis venezuelensis* Howden, 1976: 95 (original description). Type locality: Venezuela: Carabobo: Cerro el Cafe. Name-bearing type: holotype (CMNC) (originally, in HAHC; Howden 1976), not examined.

**Material examined**

VENEZUELA – **Carabobo** • 2 specs; San Esteban; 100 m a.s.l.; 31 Jan. 1973; Bordón leg.; CEMT. – **Yaracuy** • 2 specs; Hacienda Guáquira; 27 Nov. 2005; curso NM2006 leg.; 08:15, 25h, faeces; CEMT.

**Distribution**

Venezuela (endemic) (Howden 1976).

**Subregion of Venezuela**

Central Coast Mountain Range.

**Literature records**

Howden 1976: 95 (Venezuela: Aragua [actually Carabobo]: Cerro el Cafe). — Krajcik 2012: 52 (Venezuela). — Ferrer-Paris *et al*. 2013: 108 (Venezuela: Yaracuy: Hacienda Guáquira).

Genus ***Bdelyrus*** Harold, 1869

*Bdelyrus* Harold, 1869c: 97 (original description). Type species: *Bdelyrus lagopus* Harold, 1869, by original monotypy.

*Bdelyrus* – Cook 1998: 631–689 (revision); 2000: 551–565 (taxonomy). — Vaz-de-Mello 2000: 190 (checklist for Brazil). — Hielkema & Hielkema 2019: 43 (catalogue for the Guianas).

***Bdelyrus leptomerus*** Cook, 1998
Fig. 12B

*Bdelyrus leptomerus* Cook, 1998: 634–635, 655 (original description). Type locality: Brazil: Roraima: Pacaraima, Surumu, Serra do Marari. Name-bearing type: holotype (CMNC) (originally, HAHC), not examined.

*Bdelyrus leptomerus* – Cook 2000: 553 (key). — Vaz-de-Mello 2000: 190 (checklist for Brazil). — Hielkema & Hielkema 2019: 43 (catalogue for the Guianas).

**Distribution**

Venezuela and Brazil (Cook 1998).

**Subregion of Venezuela**

Guiana Shield.

**Literature records**

Cook 1998: 556 (Venezuela: Bolívar); 2000: 553 (Venezuela).

Genus ***Bradypodidium*** Vaz-de-Mello, 2008

*Bradypodidium* Vaz-de-Mello, 2008: 18 (original description). Type species: *Trichillum bradyporum* Boucomont, 1928a: 188, by original designation.

*Bradypodidium* – Vaz-de-Mello *et al.* 2011a: 22 (key). — Carvajal *et al.* 2011: 316 (list). — Krajcik 2012: 57 (list). — Solís & Kohlmann 2012: 5 (checklist for Costa Rica). — Boilly & Vaz-de-Mello 2013: 106 (key). — Chamorro *et al.* 2018: 74 (list for Ecuador); 2019: 9, 23 (catalogue). — Hielkema & Hielkema 2019: 44 (catalogue for the Guianas).

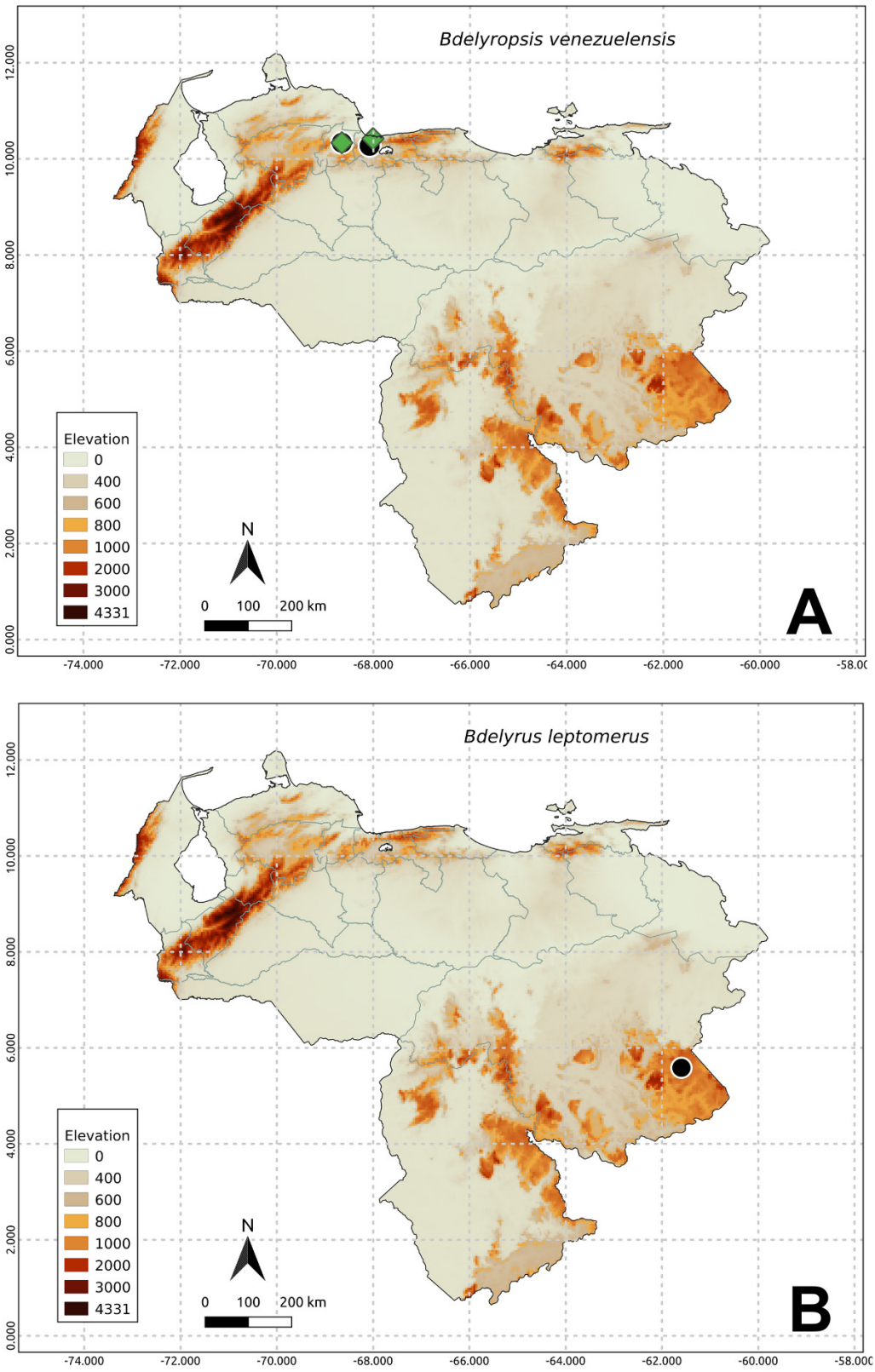


**Fig. 12.** Species distribution. **A**. *Bdelyropsis venezuelensis* Howden, 1976. **B**. *Bdelyrus leptomerus* Cook, 1998. Green diamond = CEMT collection data; black circle = literature data.

***Bradypodidium venezuelense*** (Ferreira & Galileo, 1993)
Fig. 13A–B

*Pedaridium venezuelense* Ferreira & Galileo, 1993: 27 (original description). Type locality: Venezuela: Carabobo: Parque Nacional San Esteban, 100 m. Name-bearing type: having originally been deposited in the Antonio Martínez personal collection (Ferreira & Galileo 1993), the holotype would now be expected to be in MACN (see Cupello & Vaz-de-Mello 2018), but it was not found there by MC in 2014.

*Bradypodidium venezuelense* – Vaz-de-Mello 2008: 20 (new combination). — Krajcik 2012: 57 (list).

**Material examined**

VENEZUELA – **Miranda** • 1 spec.; 8 km S of Caracas, Turgua; 26 Dec. 1965; M.E. Peterson leg.; CEMT. – **Aragua** • 1 spec.; Parque Nacional Henri Pittier, Estación Biológica Rancho Grande; 800 m a.s.l.; 24–25 [no month?] 1971; H. and A. Howden leg.; CEMT • 1 spec.; same locality data as for preceding; 1100 m a.s.l.; 3 Aug. 1976; I. Jaspe B. leg.; mercury light; CEMT.

**Distribution**

Venezuela (endemic) (Ferreira & Galileo 1993).

**Subregion of Venezuela**

Central Coast Mountain Range.

**Literature records**

Ferreira & Galileo 1993: 27 (Venezuela: Carabobo). — Vaz-de-Mello 2008: 20 (Venezuela: Carabobo: San Esteban and Aragua). — Krajcik 2012: 57 (Venezuela).

Genus ***Canthidium*** Erichson, 1847

*Canthidium* Erichson, 1847a: 109 (original description). Type species: *Canthidium thalassinum*, by subsequent designation of Martínez *et al.* (1964b); see Cupello (2018) for details.

*Pleronyx* Van Lansberge, 1874: 12 (original description). Type species: *Pleronyx dimidiatus* Van Lansberge, 1874, by original monotypy.

*Eucanthidium* Martínez & Halffter, 1986: 30 (original description). Type species: *Choeridium cupreum* Blanchard, 1846, by original designation.

*Canthidium* – Lacordaire 1855: 96 (redescription). — Harold 1867a: 10 (key, redescription); 1867b: 61 (list, distribution); 1869d: 1004 (list). — Bruch 1911: 186 (list). — Gillet 1911b: 54 (catalogue). — Lucas 1920: 164 (catalogue, distribution). — Luederwaldt 1929: 11 (key); 1931a: 369 (key). — Paulian 1938: 234 (key). — Pessôa & Lane 1941: 437 (key). — Blackwelder 1944: 205 (list). — Pereira 1954a: 56 (key). — Roze 1955: 44 (list). — Martínez 1959: 72 (catalogue for Argentina). — Halffter & Mathews, 1966: 257 (catalogue, distribution). — Vulcano & Pereira 1967: 577 (key). — Howden & Young 1981: 13, 71 (key, redescription). — Halffter & Edmonds 1982: 137 (catalogue, distribution). — Martínez & Halffter 1986: 23 (redescription). — Medina & Lopera-Toro 2000: 306 (key). — Vaz-de-Mello 2000: 190 (checklist for Brazil). — Medina *et al.* 2001: 137 (list). — Ratcliffe *et al.* 2002: 49 (key). — Ratcliffe 2002: 14 (checklist for Panama). — Morón 2003: 54 (diagnosis). — Solís & Kohlmann 2004: 5 (redescription). — Hamel-Leigue *et al.* 2006: 12 (list). — Vaz-de-Mello *et al.* 2011a: 27(key). — Carvajal *et al.* 2011: 128, 318 (description, list); 2012: 62 (list). — Solís & Kohlmann 2012: 5 (checklist for Costa Rica). — Boilly & Vaz-de-Mello 2013: 108 (key). — França *et al.* 2016: 3 (comments). — Chamorro *et al.* 2018: 93 (list for

Ecuador). — Cupello 2018: 451–455 (checklist and nomenclatural issues). — Chamorro *et al.* 2019: 24 (catalogue). — Hielkema & Hielkema 2019: 45 (catalogue for the Guianas).

***Canthidium lebasi*** Harold, 1867
Fig. 13C

*Canthidium lebasi* Harold, 1867a: 38 (original description). Type locality: Colombia. Name-bearing type: syntype (MNHN), examined by FZVM.

*Canthidium lebasi* – Candèze 1891: 330 (list from Venezuela). — Roze 1955: 44 (checklist for Venezuela). — Vulcano & Pereira 1967: 595 (key). — Havranek 1989: 61 (list). — Escobar 2000: 206 (checklist for Colombia). — Medina *et al.* 2001: 137 (checklist for Colombia). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Lozano 2010: 86 (list). — Ferrer-Paris *et al.* 2013: 108 (list).
*Canthidium* (*Eucanthidium*) *lebasi* – Martínez & Halffter 1986: 32 (list, distribution).
*Canthidium* (*Canthidium*) *lebasi* – Cupello 2018: 460 (catalogue). — Hielkema & Hielkema 2019: 47 (catalogue for the Guianas).

**Material examined**

VENEZUELA – **Táchira** • 2 specs; Chorro; May 1992; CEMT. – **Aragua** • 1 spec.; La Victoria; 26 Nov. 1989; CEMT.

**Distribution**

Colombia and Venezuela.

**Subregions of Venezuela**

Maracaibo Depression, System of hills and low sierras Lara-Falcón, Andes mountains, Central Coast Mountain Range and Guiana Shield.

**Literature records**

Roze 1955: 44 (Venezuela: Distrito Capital: Caracas). — Vulcano & Pereira 1967: 595 (Venezuela). — Martínez & Halffter 1986: 32 (Venezuela). — Havranek 1989: 61 (Venezuela: Táchira: outskirts of San Cristóbal). — Lozano 2010: 86 (Venezuela: Zulia). — Ferrer-Paris *et al*. 2013: 108 (Venezuela: Aragua [actually, Guárico]: Altagracia de Orituco; Bolívar: Isla de Anacoco; Miranda: Altos de Pipe; Yaracuy: Hacienda Guáquira; Zulia: Rosário de Perijá).

Genus ***Canthon*** Hoffmannsegg, 1817

*Canthon* Hoffmannsegg, 1817: 38 (original description). Type species: *Scarabaeus volvens* Fabricius, 1792, by subsequent designation of Duponchel (1842); see Bouchard *et al.* (2024).
*Coprobius* Latreille, 1829: 535 (original description). Type species: *Scarabaeus volvens* Fabricius, 1792, by subsequent designation of Reiche (1841).
*Coeloscelis* Reiche, 1841: 213 (original description). Type species: *Coeloscelis coriaceus* Reiche, 1841, *nomen dubium*, by original designation.
*Paedhyboma* Kolbe, 1893: 191 (original description). Type species: *Canthon aberrans* Harold, 1868, by original monotypy.
*Canthomoechus* Pereira & Martínez, 1959: 165 (original description). Type species: *Canthon quadratus* Blanchard, 1846, by original designation.

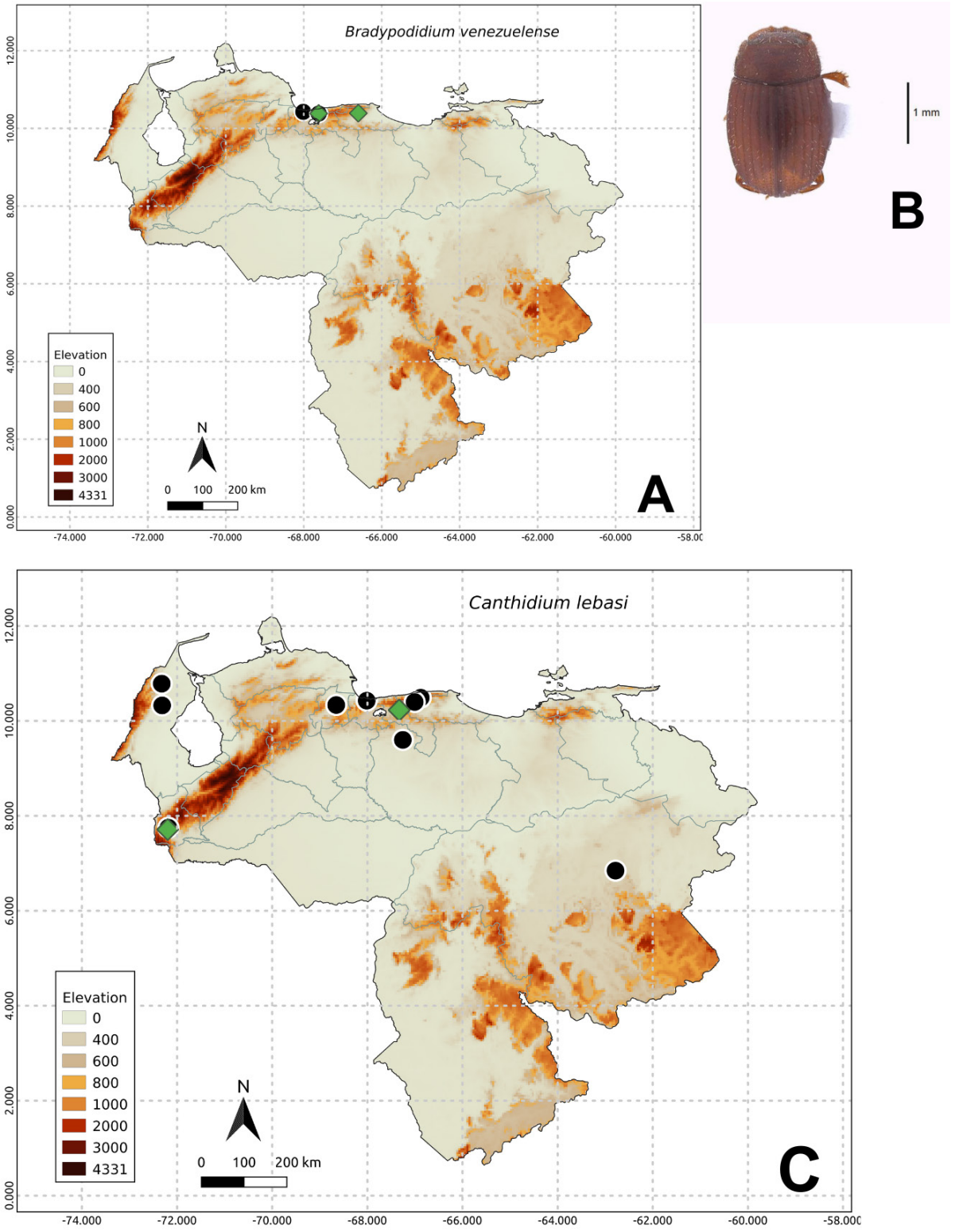


**Fig. 13.** Species distribution. **A**. *Bradypodidium venezuelense* (Ferreira & Galileo, 1993). **B**. Dorsal view of *B. venezuelense*. **C**. *Canthidium lebasi* Harold, 1867. Green diamond = CEMT collection data; black circle = literature data.

*Coprobius* – Brullé 1838: 294 (diagnosis). — Castelnau 1840: 68 (synonym of *Canthon*). — Reiche 1841: 213 (key, type species designation). — Agassiz 1846: 282 (catalogue). — Harold 1869d: 989 (synonym of *Canthon*). — Burmeister 1873: 410 (synonym of *Canthon*). — Gillet 1911b: 27 (synonym of *Canthon*). — Lucas 1920: 201 (synonym of *Canthon*). — Blackwelder 1944: 198 (synonym of *Canthon*). — Pereira & Martínez 1956a: 112 (synonym of *Canthon*). — Martínez 1959: 27 (synonym of *Canthon*). — Vulcano & Pereira 1964: 602 (synonym of *Canthon*). — Solís & Kohlmann 2002: 2 (synonym of *Canthon*); 2012: 2 (synonym of Canthon). — Ratcliffe 2002: 12 (synonym of *Canthon*). — Cupello & Vaz-de-Mello 2018: 9-16 (history, nomenclator).

*Canthon* – Castelnau 1840: 68 (redescription). — Agassiz 1846: 184 (catalogue). — Lacordaire 1855: 77 (redescription). — LeConte 1861: 125 (key). — Harold 1868a: 1 (redescription); 1869d: 989 (catalogue). — Blanchard 1885: 163 (redescription). — Blatchley 1910: 912 (key). — Gillet 1911b: 27 (catalogue). — Lucas 1920: 164 (catalogue, distribution). — Dawson 1922: 61 (key). — Paulian 1938: 235 (key); 1939: 22 (redescription, type species designation). — Pessôa & Lane 1941: 414 (diagnosis). — Islas 1942: 303 (redescription). — Blackwelder 1944: 198 (list). — Lane 1947: 110 (comment). — Roze 1955: 41 (checklist for Venezuela). — Pereira & Martínez 1956a: 96 (key). — Martínez 1959: 27 (catalogue for Argentina). — Halffter 1961: 231, 258 (key, redescription). — Vulcano & Pereira 1964: 602 (catalogue); 1967: 549 (key for the Amazon). — Halffter & Matthews 1966: 261 (catalogue, distribution). — Halffter & Martínez 1968: 265 (diagnosis); 1977: 38, 69 (key, redescription). — Howden & Young 1981: 14, 19 (key, redescription). — Halffter & Edmonds 1982: 139 (catalogue, distribution). — Medina & Lopera-Toro 2000: 311 (key). — Vaz-de-Mello 2000: 191 (checklist for Brazil). — Medina *et al.* 2001: 135 (checklist for Colombia); 2003: 64 (distribution). — Solís & Kohlmann 2002: 2 (redescription); 2012: 2 (checklist for Costa Rica). — Ratcliffe 2002: 13 (checklist for Panama). — Ratcliffe *et al.* 2002: 49 (key). — Morón 2003: 30 (redescription). — Hamel-Leigue *et al.* 2006: 13 (list). — Vaz-de-Mello *et al.* 2011a: 26 (key). — Carvajal *et al.* 2011: 113, 314 (diagnosis, list). — Krajcik 2012: 63 (list). — Boilly & Vaz-de-Mello 2013: 108 (key). — França *et al.* 2016: 3 (comments). — Chamorro *et al.* 2018: 76, 92 (list for Ecuador); 2019: 40 (catalogue). — Cupello & Vaz-de-Mello 2018: 9–16 (history, nomenclator). — Hielkema & Hielkema 2019: 61 (catalogue for the Guianas).

*Coeloscelis* – Agassiz 1846: 268 (catalogue). — Lacordaire 1855: 76 (redescription). — Harold 1869d: 989 (cited as synonym of *Canthon*). — Gillet 1911b: 27 (synonym of *Canthon*). — Blackwelder 1944: 198 (synonym of *Canthon*). — Pereira & Martínez 1956a: 112 (synonym of *Canthon*). — Martínez 1959: 27 (synonym of *Canthon*). — Vulcano & Pereira 1964: 602 (synonym of *Canthon*). — Solís & Kohlmann 2002: 2 (synonym of *Canthon*); 2012: 2 (synonym of *Canthon*). — Ratcliffe 2002: 12 (synonym of *Canthon*, cited as *Coeloschelis*). — Cupello & Vaz-de-Mello 2018: 9-16 (history, nomenclator).

*Paedhyboma* – Paulian 1938: 235 (key); 1939: 21 (redescription). — Vulcano & Pereira 1964: 636 (catalogue); 1967: 549 (key). — Halffter & Martínez 1977: 38 (synonym of *Canthon*). — Halffter & Edmonds 1982: 139 (cited as synonym of *Canthon*). — Solís & Kohlmann 2002: 2 (cited as synonym of *Canthon*); 2012: 3 (synonym of Canthon, cited as Paedohyboma). — Ratcliffe 2002: 12 (synonym of *Canthon*, cited as *Paedohyboma*). — Cupello & Vaz-de-Mello 2018: 1–205 (history, nomenclator).

*Canthomoechus* – Halffter 1961: 231 (key). — Vulcano & Pereira 1964: 590 (catalogue). — Halffter & Matthews 1966: 261 (catalogue, distribution). — Halffter & Martínez 1977: 38 (synonym of *Canthon*). — Halffter & Edmonds 1982: 139 (cited as synonym of *Canthon*). — Solís & Kohlmann 2002: 2 (cited as synonym of *Canthon*); 2012: 3 (cited as synonym of *Canthon*). — Ratcliffe 2002: 13 (synonym of *Canthon*). — Cupello & Vaz-de-Mello 2018: 9–16 (history, nomenclator).

***Canthon aberrans*** (Harold, 1868)
Fig. 14A

*Deltochilum aberrans* Harold, 1868a: 8 (original description). Type locality: Colombia. Name-bearing type: syntype (MNHN), examined by FZVM.

*Canthon bifurcatus* Robinson, 1948a: 37 (original description). Type locality: Venezuela: Mérida. Name-bearing type: holotype (USNM) (originally in Mark Robinson's personal collection; Robinson 1948a), not examined.

*Canthon juanae* Martínez, 1949b: 176 (original description). Type locality: Bolivia: La Paz: Nor Yungas: Choro River at its confluence with the Coroico River, camp "Dalen", 700 m a.s.l. Name-bearing type: having been originally deposited in Martínez's personal collection (Martínez 1949b), the holotype would now be expected to be in MACN (see Cupello & Vaz-de-Mello 2018), but MC did not find it there in 2014. MC located in the museum solely six specimens labelled as paratypes.

*Deltochilum aberrans* – Harold 1869d: 995 (catalogue, distribution); 1880: 18 (distribution). — Gillet 1911b: 35 (catalogue). — Campos 1921: 55 (list, cited for Ecuador). — Blackwelder 1944: 202 (checklist). — Martínez 1947b: 113 (notes, correction). — Pereira & d'Andretta 1955: 48 (synonym). — Vulcano & Pereira 1964: 636 (catalogue). — Solís & Kohlmann 2002: 5 (redescription).

*Paedhyboma aberrans* – Kolbe 1893: 191 (transferred to the genus). — Shipp 1897: 195 (cited). — Paulian 1939: 21 (redescription, distribution). — Balthasar 1941: 345 (catalogue, cited for Peru); 1951: 330 (cited for Peru). — Martínez 1947b: 113 (corrections to the work of Blackwelder 1944). — Gacharná 1951: 221 (catalogue for Colombia). — Pereira & d'Andretta 1955: 48 (synonymy). — Vulcano & Pereira 1964: 636 (catalogue of species); 1967: 551 (key). — Halffter & Martínez 1977: 87 (monograph). — Solís & Kohlmann 2002: 5 (synonym).

*Canthon juanae* – Martínez 1951: 23 (cited as synonym of *Canthon bifurcatus*). — Pereira 1953: 394 (cited as synonym of *Canthon plicatipennis*). — Pereira & d'Andretta 1955: 48 (cited as synonym of *Canthon aberrans*). — Vulcano & Pereira 1964: 636 (cited as synonym of *Paedhyboma aberrans*). — Solís & Kohlmann 2002: 5 (cited as synonym of *Canthon aberrans*).

*Canthon aberrans* – Pereira & d'Andretta 1955: 48 (transferred to the genus). — Vulcano & Pereira 1964: 636 (cited). — Solís & Kohlmann 2002: 5 (redescription, distribution). — Hamel-Leigue *et al.* 2006: 13 (cited for Bolivia). — Ratcliffe *et al.* 2015: 195 (checklist for Peru).

*Canthon bifurcatus* – Pereira & d'Andretta 1955: 48 (cited as synonym of *Canthon aberrans*). — Vulcano & Pereira 1964: 636 (cited as synonym of *Paedhyboma aberrans*). — Solís & Kohlmann 2002: 5 (cited as synonym of *Canthon aberrans*).

*Canthon* (*Canthon*) *aberrans* – Halffter & Martínez 1977: 87 (transferred to the subgenus). — Vaz-de-Mello 2000: 191 (checklist for Brazil). — Medina *et al.* 2001: 135 (checklist for Colombia); 2003: 64 (Appendix 1). — Ratcliffe 2002: 12 (checklist for Panama). — Carvajal *et al.* 2011: 314–315 (cited for Ecuador). — Krajcik 2012: 63 (checklist). — Solís & Kohlmann 2002: 5 (redescription, distribution). — Chamorro *et al.* 2018: 85, 87, 92 (figs 8a, 10h, key for Ecuador). — Chamorro *et al.* 2019: 43 (catalogue).

*Deltochilum* (*Paedhyboma*) *aberrans* –Solís & Kohlmann 2002: 5 (redescription).

**Distribution**

Costa Rica, Panama, Colombia, Venezuela, Brazil, Ecuador, Peru, and Bolivia (Solís & Kohlmann 2002).

**Subregion of Venezuela**

Andes mountains.

**Literature records**

Robinson 1948a: 37 (Venezuela: Mérida). — Martínez 1951: 23 (Venezuela). — Vulcano & Pereira 1964: 636 (Venezuela). — Solís & Kohlmann 2002: 5 (Venezuela). — Chamorro *et al*. 2019: 42 (Venezuela).

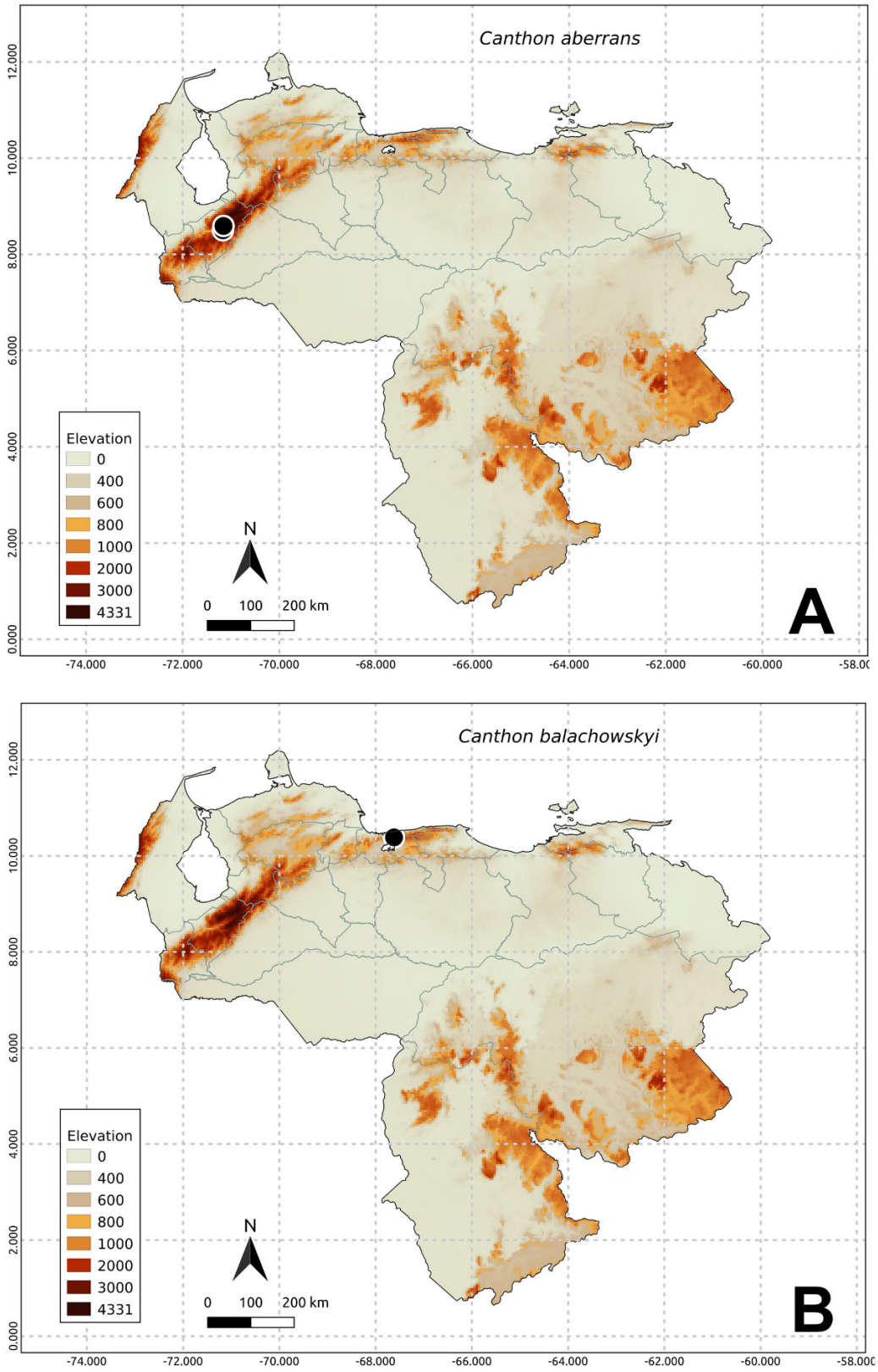


**Fig. 14.** Species distribution. **A**. *Canthon aberrans* (Harold, 1868). **B**. *Canthon balachowskyi* (Martínez & Halffter, 1972). Black circle = literature data.

***Canthon balachowskyi*** (Martínez & Halffter, 1972)
Fig. 14B

*Scybalocanthon balachowskyi* Martínez & Halffter, 1972: 46 (original description). Type locality: Venezuela: Aragua: Parque Nacional Henri Pittier, 1200 m a.s.l. Name-bearing type: holotype (MACN), examined by MC.

*Scybalocanthon balachowskyi* – Halffter & Martínez 1977: 68 (list, monograph).
*Canthon balachowskyi* – Silva & Valois 2019: 301–302 (revision, new combination).

**Distribution**

Venezuela (endemic) (Martínez & Halffter 1972).

**Subregion of Venezuela**

Central Coast Mountain Range.

**Literature records**

Martínez & Halffter 1972: 46 (Venezuela: Aragua).

***Canthon bicolor*** Castelnau, 1840
Fig. 15A

*Canthon bicolor* Castelnau, 1840: 69 (original description). Type locality: French Guiana. Name-bearing type: lectotype (OUMNH), designated by Nunes *et al.* (2018), examined by FZVM.

*Canthon bicolor* – Harold 1868a: 14, 71 (key, redescription); 1869d: 990 (catalogue, cited for Cayenne). — Gillet 1911b: 28 (catalogue). — Schmidt 1922: 64, 73 (distribution). — Balthasar 1939a: 189 (key). — Blackwelder 1944: 198 (checklist). — Vulcano & Pereira 1964: 604 (catalogue). — Halffter & Martínez 1977: 39, 70 (key, revision). — Forsyth & Gill 1993: 70 (list for French Guiana). — Feer 2000: 32 (list for French Guiana); 2008: 56, 62 (ecology); 2013: 766 (list for French Guiana). — Vaz-de-Mello 2000: 191 (checklist for Brazil). — Feer & Pincebourde 2005: 30 (list). — Brûle *et al.* 2011a: 193 (list); 2014: 183 (list). — Larsen 2011: 98 (list for Suriname); 2013: 96 (list for Palumeu River, Suriname). — Price & Feer 2012: 327 (list). — Feer & Boissier 2015: 169 (list).
*Canthon* (*Goniocanthon*) *bicolor* – Nunes *et al.* 2018: 17 (revision).

**Distribution**

Venezuela, Guyana, Suriname, French Guiana, and Brazil (Nunes *et al.* 2018).

**Subregions of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield and System of low mountains and hills Imataca-Cuyuní del Escudo Northeast Guiana.

**Literature records**

Nunes *et al*. 2018: 17 (Venezuela: Bolívar).

***Canthon cyanellus*** LeConte, 1859
Fig. 15B

*Canthon cyanellus* LeConte, 1859: 11 (original description). Type locality: United States: Texas. Name-bearing type: syntype (MCZC), examined by FZVM.

*Canthon sallei* Harold, 1863: 174 (original description). Type locality: Nicaragua: Granada: near Granada city. Name-bearing type: syntypes (BMNH – ex Sallé collection), examined by FZVM.

*Canthon spinosus* Harold, 1863: 174 (original description). Type locality: Mexico: Veracruz: Tuxpan. Name-bearing type: a single known syntype (MNHN – ex Harold collection), examined by FZVM.

*Canthon speciosus* Harold, 1868a: 41 (original description). Type locality: Mexico. Name-bearing type: a single known syntype (MNHN – ex Harold collection), examined by FZVM.

*Canthon sallei gutticollis* Schmidt, 1920: 123–124 (original description). Type locality: Colombia: "La Garita"; see Botero & Monné (2012) for details on this ambiguous locality. Name-bearing type: lectotype (NHRS), designated by Vaz-de-Mello & Cupello (2018), examined by FZVM.

*Canthon sallei triangulatus* Schmidt, 1920: 123–124 (original description). Type locality: Colombia: "La Garita"; see comments for the previous name. Name-bearing type: lectotype (NHRS), designated by Vaz-de-Mello & Cupello (2018), examined by FZVM.

*Canthon cyanellus havranekae* Martínez, 1988a: 89 (original description). Type locality: Venezuela: Táchira: Cárdenas: Táriba: Finca La Alameda, "Carretera Vieja Cordero-San Cristóbal". Name-bearing type: the holotype, having been originally deposited in Martínez's personal collection (Martínez 1988a), would now be expected to be in MACN (see Cupello & Vaz-de-Mello 2018), but it was not found there by MC in 2014.

*Canthon spinosus* – Harold 1868a: 42 (monograph, redescription); 1869d: 990 (cited for Mexico). — Bates 1887: 27 (list, cited for Mexico). — Gillet 1911b: 29 (catalogue, cited for Mexico).

*Canthon cyanellus* – Harold 1868a: 141 (monograph); 1869d: 990 (cited for Kansas). — Horn 1870: 44, 45 (key, cited for Mexico and Texas). — Blanchard 1885: 164, 166 (key, cited for Texas). — Gillet 1911b: 29 (catalogue, cited for Texas). — Leng 1920: 248 (catalogue, cited Mexico and Texas). — Schmidt 1920: 123 (contribution, comments); 1922: 74 (distribution). — Balthasar 1939a: 211 (key, distribution). — Islas 1942: 304–305, 333 (key, redescription, list). — Roze 1955: 41 (checklist for Venezuela). — Halffter 1961: 260 (redescription, distribution). — Vulcano & Pereira 1964: 609 (catalogue). — Martínez 1988a: 89 (list). — Amézquita *et al.* 1999: 119 (biodiversity). — Escobar 2000: 206 (checklist for Colombia). — Barbero 2001: 2 (list, cited for Nicaragua). — Estrada & Coates-Estrada 2002: 1911 (ecology). — Halffter & Arellano 2002: 147–148 (ecology). — Solís & Kohlmann 2002: 11 (redescription, distribution); 2012: 3 (checklist for Costa Rica). — Hernández *et al.* 2003: 96 (diversity). — Kohlmann *et al.* 2007: 28 (atlas). — Noriega *et al.* 2007: 81 (list). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Larsen *et al.* 2008: 1294 (list). — Medina & Pulido-Herrera 2009: 58 (diversity). — Cultid-Medina *et al.* 2012: 67 (guide). — Ferrer-Paris *et al.* 2013: 108 (list).

*Canthon sallei* – Harold 1868a: 39 (monograph, redescription); 1869d: 993 (catalogue, cited for Nicaragua). — Kirsch 1873: 340 (comments, cited for Peru). — Bates 1887: 26 (list, distribution). — Gillet 1911b: 33 (catalogue, cited for Central America and Colombia). — Balthasar 1939a: 211 (key, distribution). — Martínez 1947b: 113 (correction: *C. cyanellum* var. *sallei*). — Robinson 1948b: 85 (revision, key). — Solís & Kohlmann 2012: 3 (checklist for Costa Rica, cited as synonym of *Canthon cyanellus* LeConte, 1859).

*Canthon speciosus* – Bates 1887: 27 (list, cited for Mexico and Guatemala). — Gillet 1911b: 29 (catalogue, cited for Mexico and Guatemala). — Solís & Kohlmann 2012: 3 (checklist for Costa Rica, cited as synonym of *Canthon cyanellus*).

*Canthon cyanellus sallei* – Schmidt 1922: 74 (distribution). — Halffter 1961: 260 (redescription, distribution), 262, 265 (distribution, redescription). — Escobar 1997: 423 (list). — Martínez 1988a: 89 (list). — Barbero 2001: 2 (list, distribution, cited for Nicaragua). — Bustos-Gómez & Lopera-Toro 2003: 61 (diet). — Arias-Buriticá *et al.* 2011: 876 (cited).

*Canthon cyanellus gutticollis* – Schmidt 1922: 74 (distribution). — Roze 1955: 41 (checklist for Venezuela). — Halffter 1961: 262 (distribution).

*Canthon cyanellus triangulatus* – Schmidt 1922: 74 (distribution). — Halffter 1961: 262 (distribution).

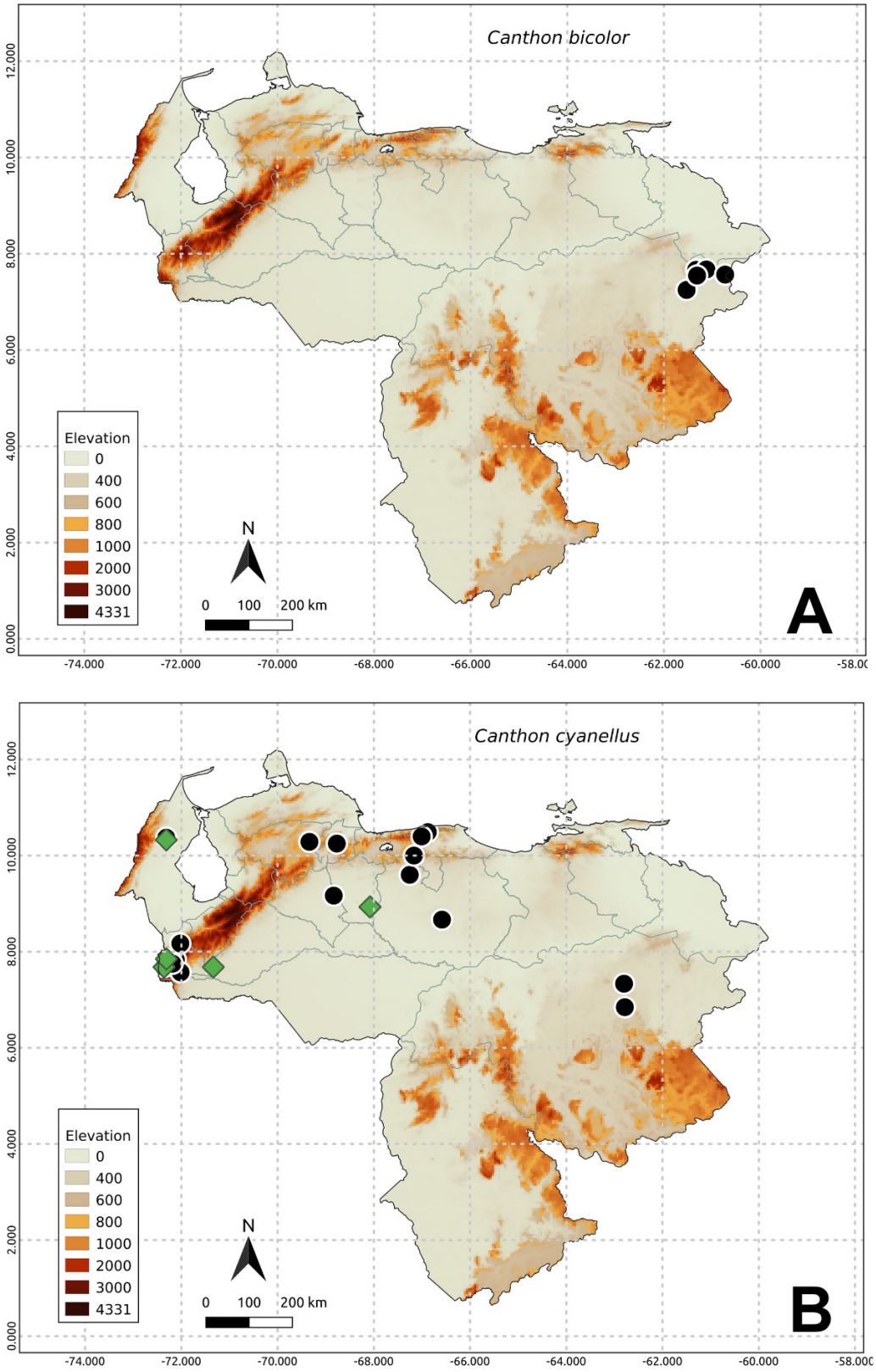


**Fig. 15.** Species distribution. **A**. *Canthon bicolor* Castelnau, 1840. **B**. *Canthon cyanellus* LeConte, 1859. Green diamond = CEMT collection data; black circle = literature data.

*Canthon cyanellus speciosus* – Balthasar 1939a: 211 (key, distribution). — Balthasar 1941: 343 (list). — Balthasar 1951: 328 (list). — Halffter 1961: 262 (distribution).
*Canthon sallei gutticollis* – Balthasar 1939a: 212 (key, distribution). — Vaz-de-Mello & Cupello 2018: 51 (designation of lectotype).
*Canthon sallei triangulatus* – Balthasar 1939a: 212 (key, distribution).
*Canthon cyanellum* – Blackwelder 1944: 199 (checklist, cited for Mexico).
*Canthon cyanellum gutticollis* – Blackwelder 1944: 199 (list).
*Canthon cyanellum sallei* – Blackwelder 1944: 199 (list).
*Canthon cyanellum triangulatus* – Blackwelder 1944: 199 (list).
*Canthon cyanellus havranekae* – Blanco 1987: 42 (catalogue). — Havranek 1989: 61 (list).
*Canthon* (*Canthon*) *cyanellus* – Padilla-Gil & Halffter 2007: 88 (comments). — Delgado *et al.* 2012: 327 (list). — Hielkema & Hielkema 2019: 61 (catalogue for the Guianas).

**Material examined**

VENEZUELA – **Barinas** • 1 spec.; Otopún; 28 Aug. 2006; in faeces; CEMT. – **Zulia** • 1 spec.; Rosario de Perijá; 18 Jul. 2016; in faeces; CEMT. – **Cojedes** • 4 specs; Hato Piñero, Reserva Natural La Candelaria; 30 Aug.–1 Sep. 1990; G.C. McGavin leg.; frog carcass pitfall trap; CEMT. – **Táchira** • 2 specs; Rubio, La Tuquerena; 14 Apr. 1982; D. Havranek leg.; CEMT • 2 specs; Palo Gordo, near San Cristobal, La Alameda Farm; 1000 m a.s.l.; Apr. 1987; D. Havranek leg.; CEMT.

**Distribution**

From southern Texas (United States) to Brazil (Solís & Kohlmann 2002).

**Subregions of Venezuela**

Maracaibo Depression, Plains, System of hills and low sierras Lara-Falcón, System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guiana Shield, Andes mountains, and Central Coast Mountain Range.

**Literature records**

Schmidt 1922: 74 (Venezuela: Distrito Capital: Caracas). — Blackwelder 1944: 199 (Venezuela). — Roze 1955: 41 (Venezuela). — Vulcano & Pereira 1964: 609 (Venezuela). — Martínez 1988a: 89 (Venezuela: Táchira: Finca "La Alameda"). — Barbero 2001: 2 (Venezuela). — Solís & Kohlmann 2002: 11 (Venezuela: Táchira). — Padilla-Gil & Halffter 2007: 88 (Venezuela: Táchira: Táriba and San Cristóbal). — Larsen *et al*. 2008: 1294 (Venezuela: Bolívar: Lago Guri). — Arias-Buriticá *et al*. 2011: 876 (Venezuela). — Ferrer-Paris *et al*. 2013: 108 (Venezuela: Bolívar: Isla de Anacoco; Miranda: Altos de Pipe; Sucre: Araya; Yaracuy: Hacienda Guáquira; and Zulia: Rosario de Perijá).

### ***Canthon juvencus*** Harold, 1868
Fig. 16A

*Canthon juvencus* Harold, 1868a: 111 (original description). Type locality: Colombia: Bolívar: Cartagena de Indias. Name-bearing type: syntypes (MFNB and MNHN), examined by FZVM.
*Canthon raripilus* Bates 1887: 30 (original description). Type locality: Panama: Panamá: in the districts of Balboa (Pearl Islands: Isla del Rey: San Miguel) and Taboga (Isla Taboga). Name-bearing type: syntypes (BMNH and MNHN), examined by FZVM.

*Canthon juvencus* – Harold, 1869d: 991 (cited for Cartagena); 1880: 17 (cited for Muzo, Colombia). — Candèze 1891: 329 (list). — Schmidt 1922: 76 (list, distribution). — Gillet 1911b: 30 (cited for Colombia). — Balthasar 1939a: 206 (key, cited for Colombia and Mexico). — Howden & Young, 1981: 28 (revision). — Escobar 1997: 423 (list); 2000: 207 (checklist for Colombia). — Amézquita

*et al.* 1999: 119 (biodiversity). — Solís & Kohlmann 2002: 27 (redescription); 2012: 7 (checklist for Costa Rica). — Bustos-Gómez & Lopera-Toro 2003: 61 (diet). — Noriega 2004: 40 (checklist for Tinigua Park, Colombia). — Hamel-Leigue *et al.* 2006: 13 (list). — Kohlmann *et al.* 2007: 29 (atlas). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Larsen *et al.* 2008: 1294 (list). — Medina & Pulido-Herrera 2009: 58 (diversity). — Arias-Buriticá *et al.* 2011: 876 (cited for Brazil, Colombia and Panama). — Cultid-Medina *et al.* 2012: 67 (guide). — Ferrer-Paris *et al.* 2013: 108 (list). — Ratcliffe *et al.* 2015: 195 (checklist for Peru). — Nieto *et al.* 2020: 136 (report).

*Canthon raripilus* – Gillet 1911b: 32 (cited for Panama). — Schmidt 1920: 125 (synonymized with *Canthon juvencus*, revision).

*Canthon juvencum* – Blackwelder 1944: 199 (list). — Roze 1955: 41 (checklist for Venezuela, cited as *C. juvenicum*).

*Canthon juvencum raripilus* – Gacharná 1951: 221 (catalogue).

*Glaphyrocanthon* (*Glaphyrocanthon*) *juvencus* – Pereira & Martínez 1956a: 127 (new combination, key).

*Glaphyrocanthon juvencus* – Martínez *et al.* 1964a: 10, 12 (distribution, key). — Vulcano & Pereira 1964: 662 (catalogue).

*Canthon* (*Canthon*) *juvencus* — Halffter & Martínez 1977: 90 (monograph, key). — Hielkema & Hielkema 2019: 61 (catalogue for the Guianas).

**Material examined**

VENEZUELA – **Guárico** • 1 spec.; near Paso Real Guárico; 20 Aug. 1959; C.J. Rosales leg.; CEMT. – **Yaracuy** • 1 spec.; Bolívar, Aroa; 10°0′0″ N, 68°0′0″ W; 702 m a.s.l.; 19 Jul. 2009; M. Asmüssen, P. Colmenares, and H. Martínez leg.; in human faeces; CEMT • 1 spec.; same data as for the preceding except for elevation; 710 m a.s.l.; CEMT.

**Distribution**

Costa Rica, Panama, Colombia, Venezuela, Suriname, Brazil, Peru and Bolivia.

**Subregions of Venezuela**

Maracaibo Depression, System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Escudo Northeast Guiana, and Central Coast Mountain Range.

**Literature records**

Candèze 1891: 329 (Venezuela: [actually, Carabobo]: San-Esteban). — Schmidt 1922: 76 (Venezuela). — Blackwelder 1944: 199 (Venezuela). — Pereira & Martínez 1956a: 127 (Venezuela). — Martínez *et al.* 1964a: 10 (Venezuela). — Vulcano & Pereira 1964: 662 (Venezuela). — Howden & Young 1981: 28 (Venezuela). — Solís & Kohlmann 2002: 27 (Venezuela). — Larsen *et al*. 2008: 1294 (Venezuela: Bolívar state). — Ferrer-Paris *et al*. 2013: 108 (Venezuela: Bolívar: Isla de Anacoco; Miranda: Altos de Pipe; Sucre: Araya; Yaracuy: Hacienda Guáquira; Zulia: Rosario de Perijá).

***Canthon rufocoeruleus*** (Martínez, 1948)
Fig. 16B

*Glaphyrocanthon rufocoeruleus* Martínez, 1948a: 47 (original description). Type locality: Venezuela: Distrito Capital: Pico del Naiguatá. Name-bearing type: holotype (MACN), examined by MC.

*Glaphyrocanthon rufocoeruleus* – Martínez 1949a: 282 (key). — Roze 1955: 43 (checklist, cited).

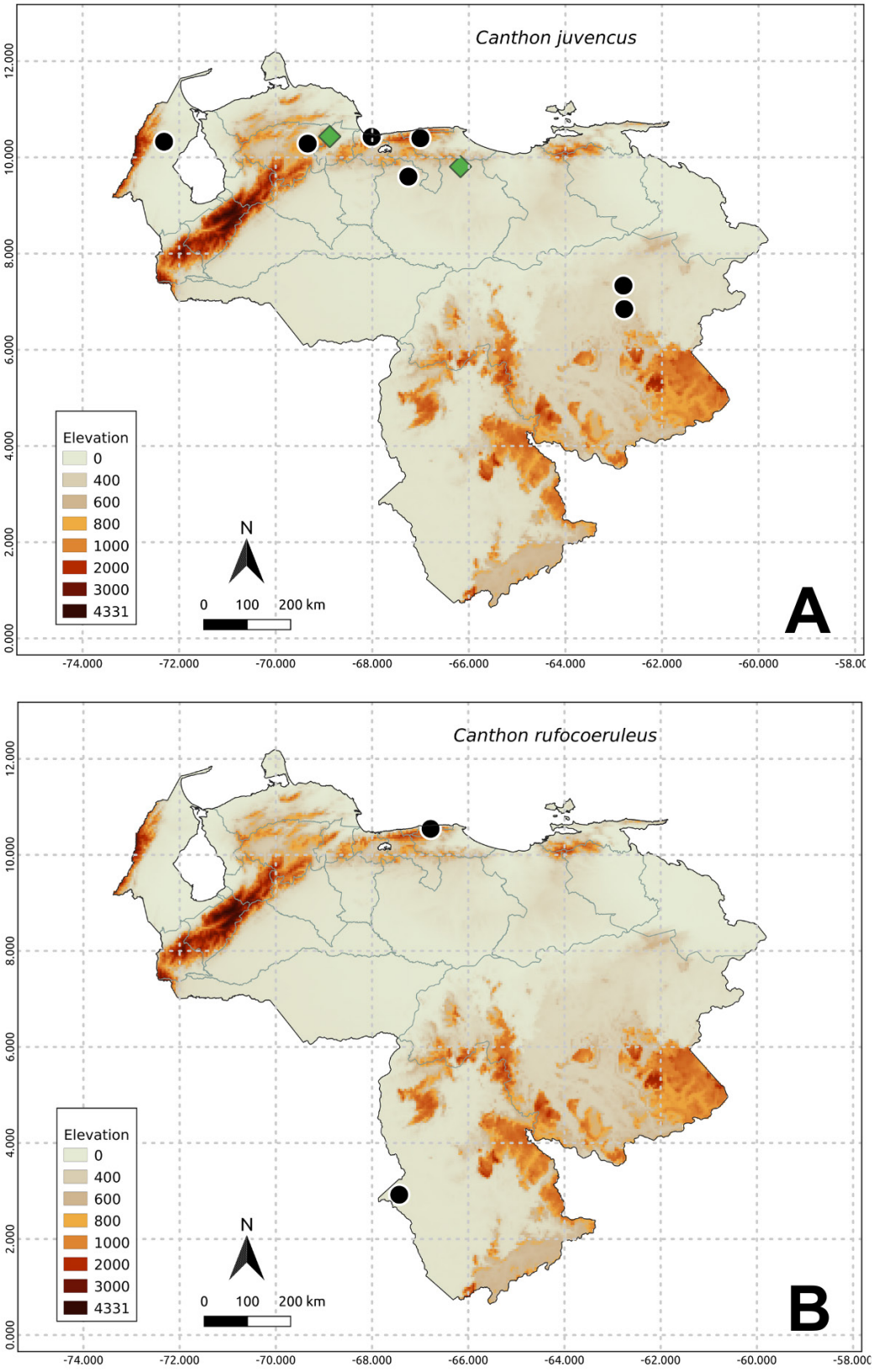


**Fig. 16.** Species distribution. **A**. *Canthon juvencus* Harold, 1868. **B**. *Canthon rufocoeruleus* (Martínez, 1948). Green diamond = CEMT collection data; black circle = literature data.

*Glaphyrocanthon* (*Coprocanthon*) *rufocoeruleus* – Martínez 1950: 160, 171 (new subgenus, catalogue). — Pereira & Martínez 1956a: 127 (list, distribution, identification key). — Martínez *et al.* 1964a: 2–3, 6, 10, 12 (comments, identification key). — Vulcano & Pereira 1964: 666 (catalogue); 1967: 560 (key, cited for Brazil).
*Canthon* (*Glaphyrocanthon*) *rufocoeruleus* – Halffter & Martínez 1977: 78, 80 (list).

**Distribution**

Venezuela and Brazil.

**Subregions of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco, and Central Coast Mountain Range.

**Literature records**

Martínez 1948a: 47 (Venezuela: Distrito Capital: Pico Naiguatá and Amazonas: Yavita); 1949a: 282 (Venezuela); 1950: 160 (Venezuela). — Pereira & Martínez 1956a: 127 (Venezuela). — Martínez *et al*. 1964a: 10 (Venezuela). — Vulcano & Pereira 1964: 666 (Venezuela); 1967: 560 (Venezuela).

**Remarks**

Rivera-Cervantes & Halffter (1999) treated *Glaphyocanthon rufocoeruleus* as a junior synonym of *Canthon subhyalinus subhyalinus* Harold, 1867. Their argument was limited to the observation that, according to them, no "significant difference" existed between *rufocoeruleus*, originally described from Venezuela, and "typical" (their word) *subhyalinus* from Colombia. Indeed, Martínez (1948a) gave no comparison between the two in the original description, indicating that he was at that point most likely unaware of the identity of *C. subhyalinus* and could have easily described the species again under his new name *rufocoeruleus*. Later, however, Martínez included both as separate species in identification keys (Pereira & Martínez 1956a; Martínez *et al.* 1964a), and pointed out the relative length between the mesotarsi and the mesotibiae as a distinguishing character (tarsi longer than the tibiae in *rufocoeruleus*, as long as or shorter than the tibiae in *subhyalinus*). Such was the importance that he gave to this character that, initially, Martínez even classified them in different subgenera of *Glaphyrocanthon* (Pereira & Martínez 1956a), even though he later changed his mind and not only transferred them to the same subgenus, but even entertained the idea that they could be conspecific subspecies under *Glaphyrocanthon quadriguttatus* (Olivier, 1789) (Martínez *et al.* 1964b). While the conspecifity with *quadriguttatus* was ruled out by Rivera-Cervantes & Halffter (1999), the purported difference in the legs was not even mentioned, prompting one to wonder whether the authors may have overlooked it and this compromised their judgement over the synonymy. Yet, no one has so far challenged Rivera-Cervantes & Halffter's (1999) decision to invalidate *rufocoeruleus*. Here, we reinstall Martínez's original classification, listing *rufocoeruleus* as valid and treating *C. subhyalinus* as a separate species, based on the third author's still unpublished morphological and geographical observations that, according to him, dismiss Rivera-Cervantes & Halffter's synonymy. Both *C. rufocoeruleus* and *C. subhyalinus subhyalinus* occur in Venezuela.

***Canthon septemmaculatus linearis*** Schmidt, 1920
Fig. 17A

*Canthon septemmaculatus linearis* Schmidt, 1920: 115 (original description). Type locality: Colombia. Name-bearing type: lectotype (NHRS), designated by Vaz-de-Mello & Cupello (2018).
*Canthon septemmaculatus maculicollis* Schmidt, 1920: 115 (original description). Type locality: Peru. Name-bearing type: lectotype (NHRS), designated by Vaz-de-Mello & Cupello (2018).

*Canthon septemmaculatus niger* Schmidt, 1920: 116 (original description). Type locality: Suriname. Name-bearing type: lectotype (NHRS), designated by Vaz-de-Mello & Cupello (2018).

*Canthon septemmaculatus lineatus* – Schmidt 1922: 80 (distribution).
*Canthon septemmaculatus linearis* – Balthasar 1939a: 197 (key). — Pessôa & Lane 1941: 419 (catalogue). — Blackwelder 1944: 201 (checklist). — Vaz-de-Mello 2000: 191 (checklist).
*Canthon septemmaculatus maculicollis* – Balthasar 1939a: 197 (key). — Pessôa & Lane 1941: 419 (catalogue). — Blackwelder 1944: 201 (checklist). — Vaz-de-Mello 2000: 191 (checklist).
*Canthon septemmaculatus niger* – Balthasar 1939a: 197 (key). — Pessoa & Lane 1941: 419 (catalogue). — Blackwelder 1944: 201 (checklist).
*Canthon septemmaculatus lineare* – Roze 1955: 43 (checklist for Venezuela).
*Canthon linearis* – Ferrer-Paris *et al.* 2013: 108 (list).

**Material examined**

VENEZUELA – **Táchira** • 1 spec.; Libertador, San Joaquín de Navay; 7°46′26.93″ N, 71°40′3″ W, [7.6, -71.71667]; 537 m a.s.l.; 23 Aug. 2008; T. Good *et al.* leg.; in human faeces; CEMT • 1 spec.; same locality data as for preceding; 655 m a.s.l.; 26 Aug. 2006; T. Good *et al.* leg.; in human faeces; CEMT • 5 specs; same locality data as for preceding; 7.7741° N, 71.6675° W; 550 m a.s.l.; Aug. 2006; T. Good leg.; CEMT. – **Anzoátegui** • 1 spec.; Anaco; 8 Aug. 1992; Hornburg leg.; CEMT. – **Cojedes** • 1 spec.; Hato Pinero, road to Reserva Natural La Candelaria; 15 Aug. 1990; G.C. McGavin leg.; CEMT. – **Bolívar** • 3 specs; Piratepui [Ptari-tepuí]; 12 Aug. 1992; Hornburg leg.; CEMT.

**Distribution**

Colombia, Venezuela, French Guiana, and Brazil.

**Subregions of Venezuela**

Plains, Andes mountains, Central Coast Mountain Range, and Guiana Shield.

**Literature records**

Schmidt 1922: 80 (Venezuela). — Blackwelder 1944: 201 (Venezuela). — Roze 1955: 43 (Venezuela: D.F: Cerro Ávila). — Ferrer-Paris *et al*. 2013: 108 (Venezuela: Aragua [actually, Guárico]: Altagracia de Orituco; Bolívar: Isla de Anacoco; Miranda: Altos de Pipe).

**Remarks**

The validity of *C. septemmaculatus linearis*, as pointed out decades ago by Halffter & Martínez (1977), is still dubious and some authors have treated the name as invalid under the nominotypical subspecies (e.g., Vaz-de-Mello & Cupello 2018).

***Canthon septemmaculatus septemmaculatus*** (Latreille, 1807)
Fig. 17B

*Ateuchus septemmaculatus* Latreille, 1807: 180 (original description). Type locality: Mexico: Veracruz: Xalapa. Name-bearing type: unknown typification status and whereabouts.

*Ateuchus septemmaculatus* — Hoffmannsegg 1817: 38 (catalogue).
*Canthon septemmaculatus* — Harold 1868a: 51 (revision); 1869d: 993 (catalogue). — Gillet 1911b: 33 (catalogue). — Heyne & Taschenberg 1908: 61 (list). — Bruch 1915: 540 (catalogue). — Schmidt 1920: 114 (cited); 1922: 80 (distribution). — Balthasar 1939a: 196 (key). — Pessôa & Lane 1941: 419 (description, distribution). — Blackwelder 1944: 201 (checklist). — Roze 1955: 42 (checklist

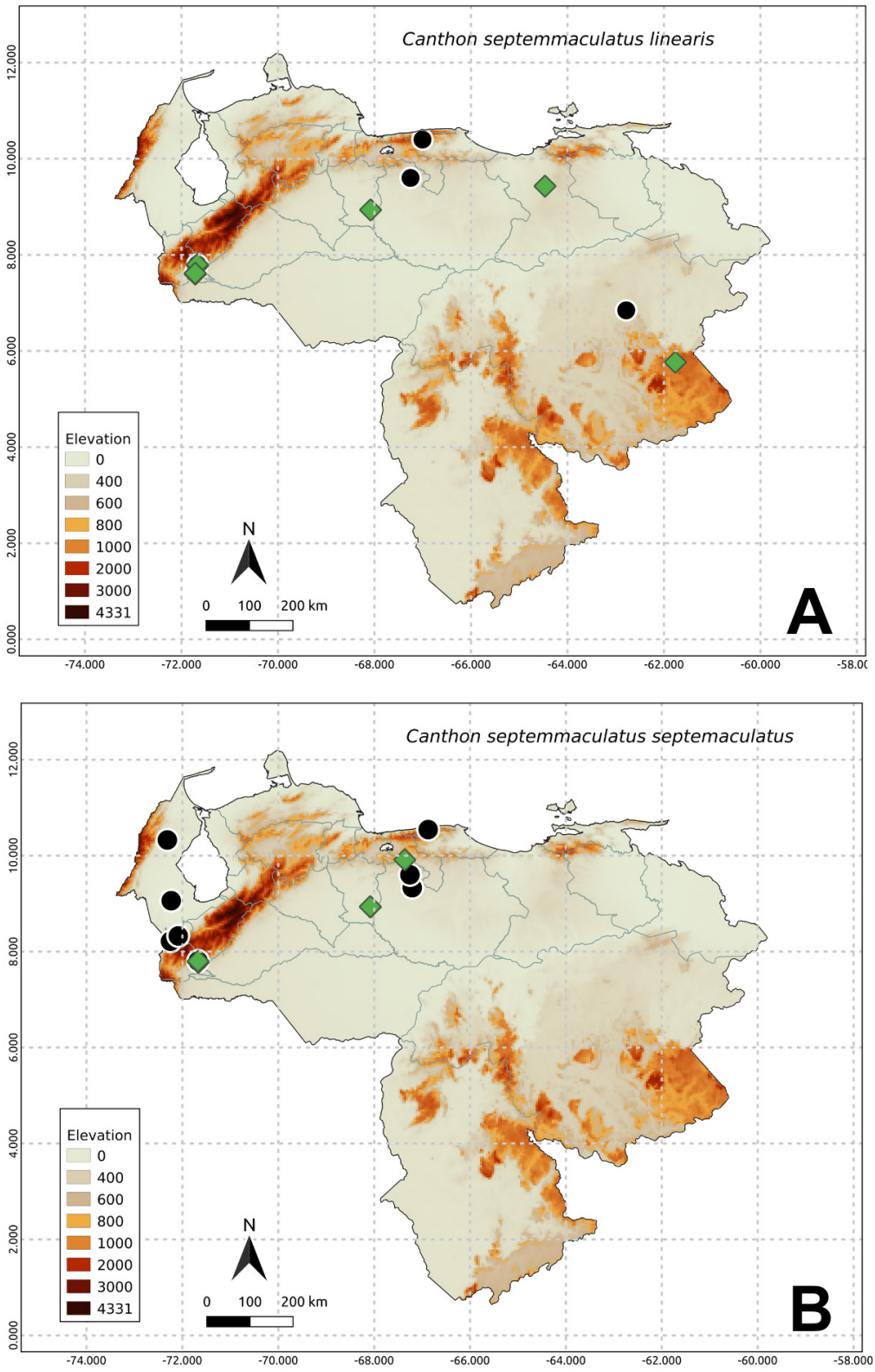


**Fig. 17.** Species distribution. **A**. *Canthon septemmaculatus linearis* Schmidt, 1920. **B**. *Canthon septemmaculatus septemmaculatus* (Latreille, 1807). Green diamond = CEMT collection data; black circle = literature data.

for Venezuela). — Martínez 1959: 42 (catalogue for Argentina). — Vulcano & Pereira 1964: 628 (catalogue); 1967: 552 (key). — Halffter & Martínez 1977: 71 (list of group species). — Howden & Young 1981: 23 (comments, distribution). — Blanco 1987: 42 (catalogue). — Escobar 2000: 207 (checklist for Colombia). — Vaz-de-Mello 2000: 191 (checklist for Brazil). — Medina *et al.* 2001: 136 (checklist for Colombia). — Kohlmann *et al.* 2007: 29 (atlas). — Solís & Kohlmann 2002: 44 (redescription, distribution). — Medina & Pulido-Herrera 2009: 59 (diversity). — Ferrer-Paris *et al.* 2013: 108 (list). — Giraldo *et al.* 2018: 30 (guide). — Santos *et al.* 2018: 46 (list for Acre, Brazil). — Hielkema & Hielkema 2019: 72 (catalogue for the Guianas). — Nieto *et al.* 2020: 136 (report).

**Material examined**

VENEZUELA – **Táchira** • 1 spec.; Libertador, San Joaquín de Navay; 7.7741° N, 71.6675° W; 550 m a.s.l.; Aug. 2006; T. Good leg.; CEMT • 1 spec.; same locality data as for preceding; 7°47′59.99″ N, 71°40′24.24″ W; 655 m a.s.l.; 26 Aug. 2006; T. Good leg.; in human faeces; CEMT. – **Guárico** • 1 spec.; San Juan de Los Morros; 24 Jul. 1995; L. Melloni leg.; CEMT. – **Cojedes** • 1 spec.; Hato Piñero, Reserva Natural La Candelaria, main road; 11 Aug. 90; G.C. McGavin leg.; CEMT • 1 spec.; Hato Piñero, Reserva Natural La Candelaria; 24 Aug. 90; G.C. McGavin leg.; CEMT • 1 spec.; Hato Piñero, Reserva Natural La Candelaria; 30 Aug.–1 Sep. 1990; G.C. McGavin leg.; frog carcass baited pitfall trap; CEMT • 1 spec.; Hato Piñero, road to Reserva Natural La Candelaria; 15 Aug. 1990; G.C. McGavin leg.; CEMT • 1 spec.: Hato Piñero Escorsonero; 17 Aug. 90; G.C. McGavin leg.; CEMT.

**Distribution**

Panama, Colombia, and Venezuela.

**Subregions of Venezuela**

Maracaibo Depression, Plains, Andes mountains, and Central Coast Mountain Range.

**Literature records**

Harold 1868a: 51 (Venezuela). — Pessôa & Lane 1941: 419 (Venezuela). — Blackwelder 1944: 201 (Venezuela). — Roze 1955: 42 (Venezuela: Zulia: Encontrados and Guárico: Sosa). — Vulcano & Pereira 1964: 628 (Venezuela). — Howden & Young 1981: 23 (Venezuela). — Blanco 1987: 42 (Venezuela: Táchira: La Fría and Coloncito). — Solís & Kohlmann 2002: 44 (Venezuela). — Ferrer-Paris *et al*. 2013: 108 (Venezuela: Aragua [actually, Guárico]: Altagracia de Orituco; Zulia: Rosario de Perijá).

***Canthon simulans*** (Martínez, 1950)
Fig. 18A

*Glaphyrocanthon simulans* Martínez, 1950: 165–166, 171 (original description). Type locality: Venezuela: Amazonas: Yavita. Name-bearing type: holotype (MACN), examined by MC.

*Glaphyrocanthon simulans* – Roze 1955: 43 (cited, checklist for Venezuela). — Pereira & Martínez 1956a: 128 (key). – Martínez *et al.* 1964a: 3, 10 (key). — Vulcano & Pereira 1964: 664 (key for the Amazon).

*Canthon* (*Glaphyrocanthon*) *simulans* – Halffter & Martínez 1977: 80 (revision). — Vaz-de-Mello 2000: 191 (checklist).

*Canthon simulans* – Ferrer-Paris *et al.* 2013: 108 (list). — Ratcliffe *et al.* 2015: 195 (checklist for Peru).

**Distribution**

Venezuela, Brazil, and Peru.

**Subregions of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco, and System of low mountains and hills Imataca-Cuyuní of Escudo Northeast Guiana.

**Literature records**

Martínez 1950: 165 (Venezuela: Amazonas: Yavita). — Pereira & Martínez 1956a: 128 (Venezuela). — Martínez *et al*. 1964a: 3, 10 (Venezuela). — Vulcano & Pereira 1964: 664 (Venezuela). — Ferrer-Paris *et al*. 2013: 108 (Venezuela: Bolívar: Isla de Anacoco).

***Canthon steinheili*** Harold, 1880
Fig. 18B

*Canthon steinheili* Harold, 1880: 16 (original description). Type locality: Colombia: Tolima: Ambalema. Name-bearing type: a single known syntype (MNHN), examined by FZVM.

*Canthon steinheili* – Gillet 1911b: 33 (catalogue, cited for Colombia). — Bruch 1915: 540 (catalogue, cited for Misiones, Argentina). — Balthasar 1939a: 225 (monograph, cited for Colombia). — Blackwelder 1944: 202 (list). — Gacharná 1951: 221 (catalogue, cited for Colombia). — Roze 1955: 43 (checklist for Venezuela). — Martínez 1959: 43 (catalogue for Argentina). — Vulcano & Pereira 1964: 630 (catalogue, distribution). — Halffter & Martínez 1977: 89 (list of species group). — Vaz-de-Mello 2000: 191 (checklist for Brazil). — Medina *et al.* 2001: 139 (checklist for Colombia).
*Canthon mutabilis steinheili* – Schmidt 1922: 77 (distribution).

**Material examined**

VENEZUELA – **La Guaira** • 1 spec.; Vargas, La Sabana; 10°35′49.81″ N, 66°16′13.08″ W; 17 m a.s.l.; 19 Jul. 2009; H. Martínez, P. Cely, M. Córdova, and M. Nuñez leg.; human faeces; CEMT • 1 spec.; same locality data as for the preceding; 31 m a.s.l.; minced meat; CEMT. – **Yaracuy** • 4 specs; Bolívar, Aroa; 10°0′0″ N, 68°0′0″ W; 1376 m a.s.l.; 20 Jul. 2009; M. Asmüssen, P. Colmenares, and H. Martínez leg.; human faeces; CEMT • 1 spec.; Bolívar, Aroa; 10°20′24.35″ N, 68°50′6.61″ W; 1373 m a.s.l.; 19 Jul. 2009; M. Asmüssen, P. Colmenares, and H. Martínez leg.; human faeces; CEMT • 1 spec.; Bolívar, Aroa; 10°0′0″ N, 68°0′0″ W; 97 m a.s.l.; 19 Jul. 2009; M. Asmüssen, P. Colmenares, and H. Martínez leg.; minced meat; CEMT.

**Distribution**

Colombia, Venezuela, Brazil, and Argentina.

**Subregion of Venezuela**

Central Coast Mountain Range.

**Literature records**

Schmidt 1922: 77 (Venezuela: Distrito Capital: Caracas, and Carabobo: Puerto Cabello). — Blackwelder 1944: 202 (Venezuela). — Roze 1955: 43 (Venezuela). — Martínez 1959: 43 (Venezuela). — Vulcano & Pereira 1964: 630 (Venezuela).

***Canthon subcyaneus*** Erichson, 1848
Fig. 19A

*Canthon subcyaneus* Erichson, 1848: 563 (original description). Type locality: Guyana. Name-bearing type: a single known syntype (MFNB), examined by FZVM.

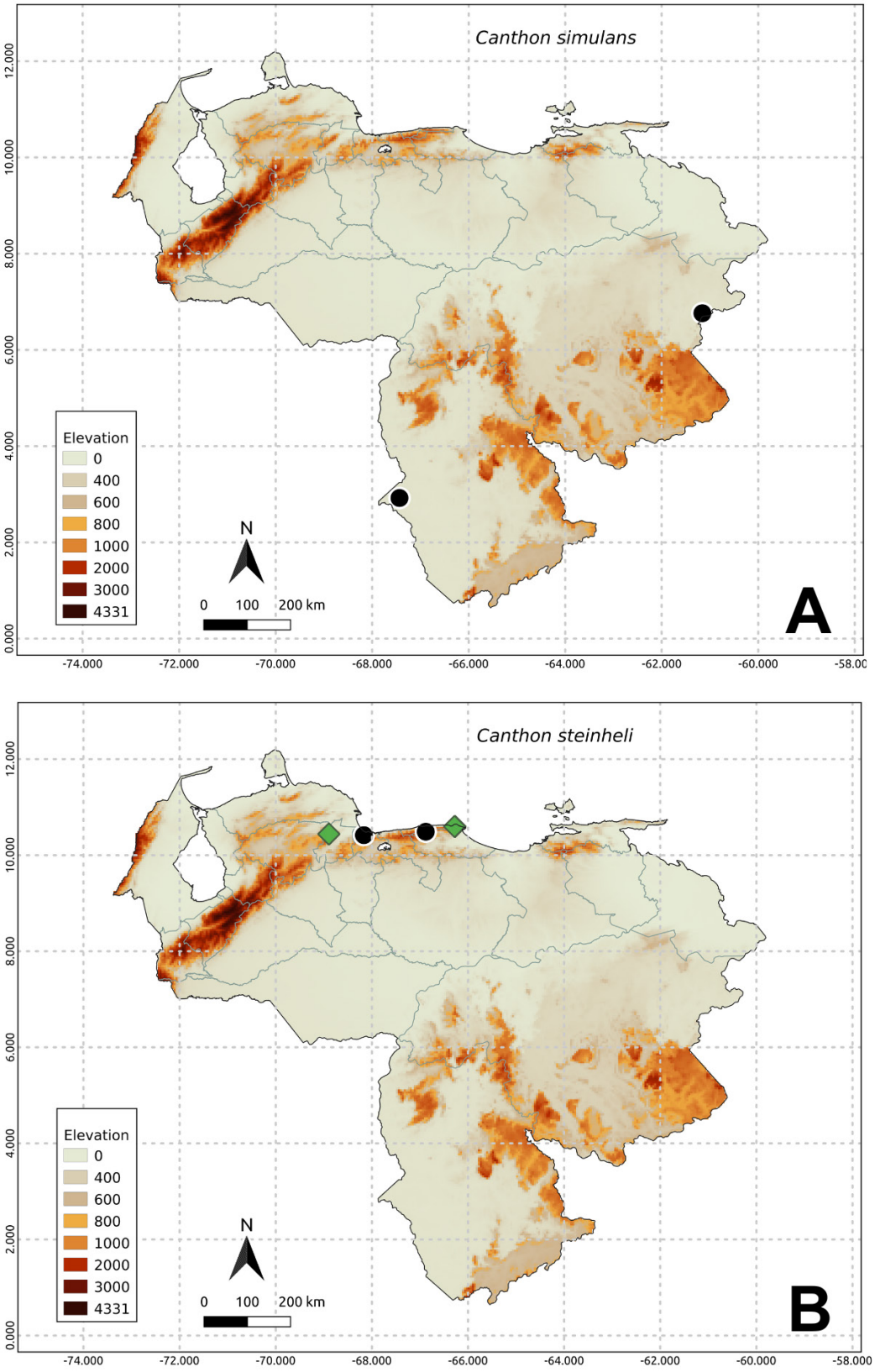


**Fig. 18.** Species distribution. **A**. *Canthon simulans* (Martínez, 1950). **B**. *Canthon steinheili* Harold, 1880. Green diamond = CEMT collection data; black circle = literature data.

*Canthon subcyaneus* – Harold 1868a: 16, 117 (key, redescription); 1869d: 994 (catalogue, cited for Cayenne). — Gillet 1911b: 34 (catalogue). — Schmidt 1922: 81 (distribution). — Boucomont 1928b: 2 (list). — Blackwelder 1944: 202 (list). — Vulcano & Pereira 1964: 631 (catalogue). — Escobar 2000: 207 (checklist for Colombia). — Medina *et al.* 2001: 136 (cited for Colombia).
*Canthon subcyaneum* – Gacharná 1951: 221 (list). — Roze 1955: 43 (checklist for Venezuela).
*Canthon* (*Glaphyrocanthon*) *subcyaneus* – Halffter & Martínez 1977: 80 (list). — Feer 2008: 62 (ecology, list); 2013: 676 (list for French Guiana). — Hielkema & Hielkema 2019: 67 (catalogue for the Guianas).

**Material examined**

VENEZUELA – **Bolívar** • 1 spec.; Isla de Anacoco; 9 Aug. 2006; curso de NM2006 leg.; 12:42, 48h; CEMT.

**Distribution**

Colombia, Venezuela, Guyana, Suriname, and Brazil. Presence in French Guiana to be confirmed (Hielkema & Hielkema 2019).

**Subregion of Venezuela**

System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield.

**Literature records**

Schmidt 1922: 81 (Venezuela). — Boucomont 1928b: 2 (Venezuela). — Blackwelder 1944: 202 (Venezuela). — Vulcano & Pereira 1964: 631 (Venezuela).

### ***Canthon subhyalinus subhyalinus*** Harold, 1867
Fig. 19B

*Canthon subhyalinus* Harold, 1867c: 79 (original description). Type locality: Colombia. Name-bearing type: a single known syntype (MFNB), examined by FZVM.
*Canthon quadrimaculatus* Schmidt, 1922: 79, 91 (original description). Type locality: Bolivia: Yungas. Name-bearing type: lectotype (NHRS), designated by Vaz-de-Mello & Cupello (2018), examined by FZVM.

*Canthon subhyalinus* – Harold 1868a: 16, 124 (key, redescription); 1869d: 994 (list, distribution); 1880: 17 (cited). — Gillet 1911b: 34 (catalogue, cited for Colombia). — Schmidt 1922: 81 (list, cited for Ecuador, Colombia and Cayenne). — Balthasar 1939a: 205 (key, cited for Colombia). — Howden & Young 1981: 22, 31 (key, redescription). — Deloya 1992: 2 (list). — Escobar 1997: 423 (list); 2000: 207 (checklist for Colombia). — Forsyth *et al.* 1998: 369 (list). — Medina *et al.* 2001: 136 (cited for Colombia). — Ratcliffe 2002: 13 (checklist for Panama). — Bustos-Gómez & Lopera-Toro 2003: 61 (diet). — Hamel-Leigue *et al.* 2006: 13 (cited for Bolivia). — Noriega *et al.* 2007: 82 (list). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Cultid-Medina *et al.* 2012: 70 (guide). — Ratcliffe *et al.* 2015: 195 (checklist for Peru). — Nieto *et al.* 2020: 136 (report).
*Canthon quadrimaculatus* – Boucomont 1928b: 2 (list).
*Canthon subhyalinum* – Blackwelder 1944: 202 (list, cited for Colombia, French Guiana, and Ecuador). — Gacharná 1951: 221 (list, cited for Colombia). — Roze 1955: 43 (checklist for Venezuela). — Vulcano & Pereira 1964: 665 (catalogue).

*Glaphyrocanthon* (*Glaphyrocanthon*) *subhyalinus* – Pereira & Martínez 1956a: 132 (new combination, distribution). — Halffter & Martínez 1977: 80 (revision). — Estrada & Coates-Estrada 2002: 1911 (ecology).

*Canthon* (*Glaphyrocanthon*) *quadrimaculatus* – Martínez *et al.* 1964a: 2 (revision). — Halffter & Martínez 1977: 80 (revision).

*Glaphyrocanthon* (*Coprocanthon*) *subhyalinus* – Martínez *et al.* 1964a: 12 (key). — Vulcano & Pereira 1967: 560 (key).

*Canthon* (*Glaphyrocanthon*) *subhyalinus* – Halffter & Martínez 1977: 80 (list). — Krajcik 2012: 63 (list, cited for Nova Granada, Bogotá). — Vaz-de-Mello 2000: 191 (checklist for Brazil). — Medina *et al.* 2003: 64 (cited for Colombia). — Chamorro *et al.* 2018: 93 (list for Ecuador); 2019: 59 (catalogue).

*Canthon* (*Glaphyrocanthon*) *subhyalinus subhyalinus* – Rivera-Cervantes & Halffter 1999: 63 (diagnosis). — Barbero 2001: 3 (catalogue, cited for Nicaragua). — Solís & Kohlmann 2002: 5 (key). — Morón 2003: 33 (cited for Mexico). — Carvajal *et al.* 2011: 314–315 (cited for Ecuador). — Hielkema & Hielkema 2019: 68 (bibliographic review for Guianas).

*Canthon subhyalinus subhyalinus* – Solís & Kohlmann 2002: 5, 47 (key, redescription); 2012: 3 (checklist for Costa Rica). — Kohlmann *et al.* 2007: 29 (checklist).

**Material examined**

VENEZUELA – **Aragua** • 1 spec.; Parque Nacional Henri Pittier, Estación Biológica Rancho Grande; 1200 m; 20 Mar. 1966; Bordon leg.; CEMT.

**Distribution**

Mexico, Costa Rica, Panama, Colombia, and Venezuela.

**Subregion of Venezuela**

Central Coast Mountain Range.

**Literature records**

Harold 1869d: 994 (Venezuela). — Roze 1955: 43 (Venezuela: Aragua). — Vulcano & Pereira 1964: 665 (Venezuela). — Rivera-Cervantes & Halffter 1999: 63 (Venezuela: Aragua; La Guaira: Naiguatá). — Chamorro *et al*. 2019: 59 (Venezuela).

***Canthon triangularis triangularis*** (Drury, 1773)
Fig. 20A

*Scarabaeus triangularis* Drury, 1773: ["index to the first volume"] (the species-group name was made available by being published accompanied by an indication in the sense of Articles 12.2.1 and 12.2.7 of the Code (ICZN 1999), namely a reference to the description and illustration given in the first volume of Drury's work [Drury 1770: 82, pl. 36 fig. 7]. See ICZN (1957) for details on the publication of this work, its index, and the availability and date of publication of new names first appeared in it). Type locality: Suriname. Name-bearing type: unknown typification status and whereabouts.

*Canthon triangularis caliginosus* Schmidt, 1920: 122 (description). Type locality: French Guiana. Name-bearing type: lectotype (NHRS), designated by Vaz-de-Mello & Cupello (2018), examined by FZVM.

*Scarabaeus triangularis* – Fabricius 1775: 30 (list, characteristics); 1781: 33 (cited for "America meridionali"); 1787a: 18 (characteristics); 1792: 69 (cited for Suriname) 1801: 63–64 (list). — Herbst 1789: 298 (catalogue, redescription). — Olivier 1789: 166 (characteristics, cited for Cayenne; Suriname).

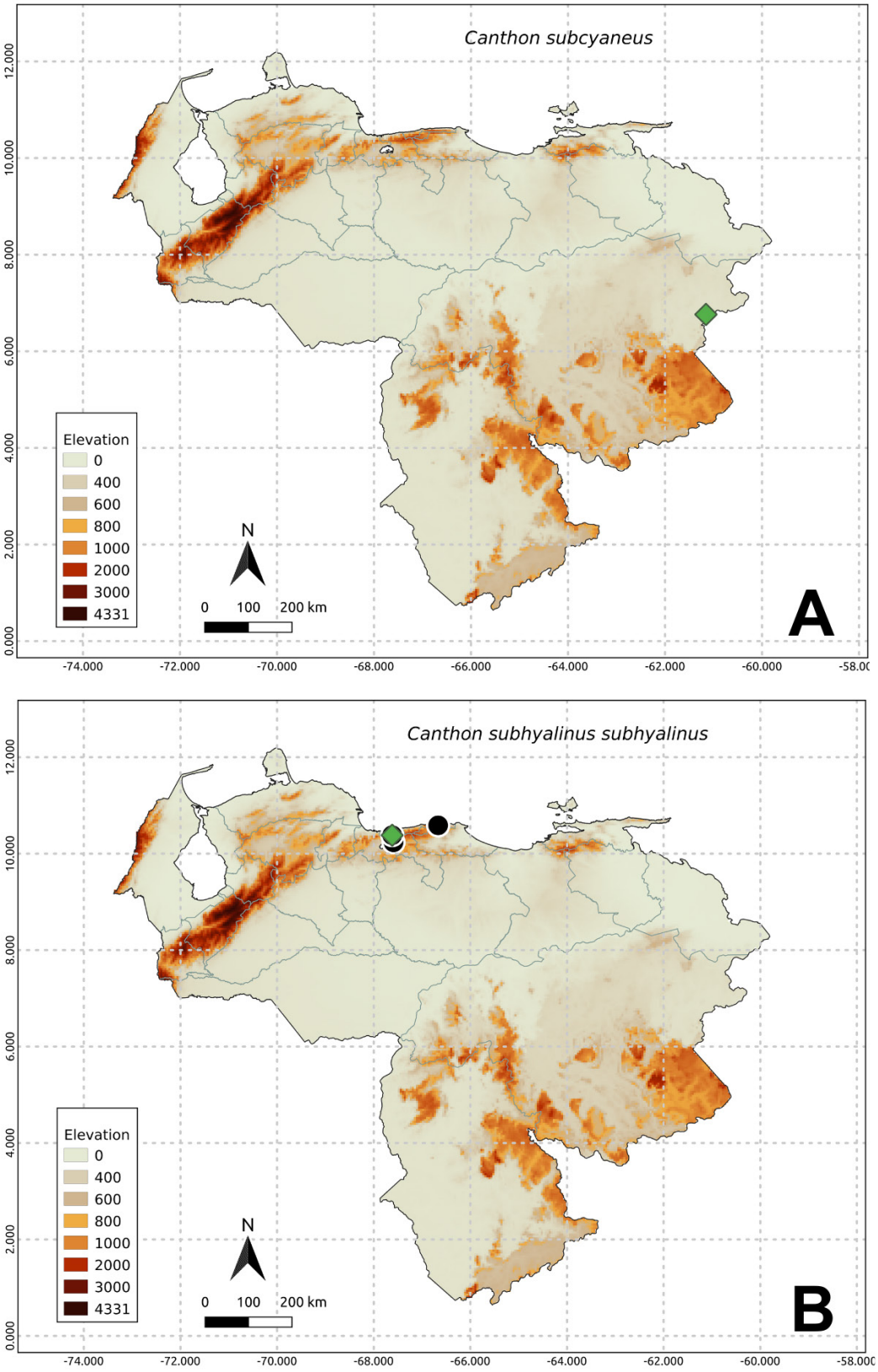


**Fig. 19.** Species distribution. **A**. *Canthon subcyaneus* Erichson, 1848. **B**. *Canthon subhyalinus subhyalinus* Harold, 1867. Green diamond = CEMT collection data; black circle = literature data.

*Canthon triangularis* – Castelnau 1840: 69 (list). — Erichson 1848: 563 (list, cited as *Ateuchus triangularis,* cited for Guyana). — Harold 1868a: 46 (monograph); 1869d: 994 (catalogue, cited for Cayenne). — Heyne & Taschenberg 1908: 61 (list). — Gillet 1911b: 34 (catalogue, cited for Suriname). — Schmidt 1922: 66, 81 (characteristics, distribution). — Boucomont 1928b: 1 (list). — Balthasar 1939a: 197 (key); 1941: 342 (distribution); 1951: 327 (list, distribution). — Pessôa & Lane 1941: 418 (comments). — Blackwelder 1944: 202 (list). — Gacharná 1951: 221 (list, cited for Colombia). — Roze 1955: 43 (checklist, cited as *C. triangulare*). — Vulcano & Pereira 1964: 632 (catalogue). — Halffter & Martínez 1977: 70 (revision). — Blanco 1987: 42 (catalogue). — Forsyth & Gill 1993: 70 (list). — Escobar 2000: 207 (checklist for Colombia). — Quintero & Roslin 2005: appendix A (ecology). — Feer 2008: 56, 62 (ecology); 2013: 766 (list for French Guiana). — Larsen *et al.* 2008: 1294 (list). — Medina & Pulido-Herrera 2009: 59 (diversity). — Vaz-de-Mello *et al.* 2011b: 86 (list). — Brûlé *et al.* 2011a: 193 (list, cited for French Guiana); 2014: 183 (list for Montagne Pelée). — Ferrer-Paris *et al.* 2013: 108 (list). — Ratcliffe 2013: 493 (list, cited for Brazil). — Nunes *et al.* 2014: 408–410 (cited, list). — Feer & Boissier 2015: 169 (list). — Hielkema & Hielkema 2019: 72 (catalogue for the Guianas). — Nieto *et al.* 2020: 136 (report). — Storck-Tonon *et al.* 2020: 2426 (diversity).

*Canthon triangularis caliginosus* – Schmidt 1922: 81 (key). — Balthasar 1939a: 197 (key); 1941: 342 (distribution); 1951: 327 (list, distribution). — Pessôa & Lane 1941: 418 (comments).

**Material examined**

VENEZUELA – **Táchira** • 2 specs; Libertador, San Joaquín de Navay; 7°47′59.99″ N, 71°40′24.24″ W; 655 m a.s.l.; 26 Aug. 2006; T. Good *et al.* leg.; human faeces; CEMT • 2 specs; La Morita del Chururu; 30 Sep. 1985; D. Havranek leg.; pig dung trap; CEMT • 4 specs; Río Frío; Mar 1988; J. Blanco leg.; CEMT.

**Distribution**

Colombia, Venezuela, Trinidad and Tobago, Suriname, French Guiana, Brazil, and Bolivia.

**Subregions of Venezuela**

Maracaibo Depression, System of hills and low piedmont mountains of the Guiana Shield, Andes mountains, and Guiana Shield.

**Literature records**

Pessôa & Lane 1941: 418 (Venezuela). — Blackwelder 1944: 202 (Venezuela). — Roze 1955: 43 (Venezuela). — Vulcano & Pereira 1964: 632 (Venezuela). — Blanco 1987: 42 (Venezuela: Táchira). — Larsen *et al.* 2008: 1294 (Venezuela: Bolívar: Lago Gurí). — Ferrer-Paris *et al.* 2013: 108 (Venezuela: Bolívar).

### ***Canthon variabilis*** (Martínez, 1948)

Fig. 20B

*Glaphyrocanthon variabilis* Martínez, 1948a: 43 (original description). Type locality: Venezuela: La Guaira: Pico Naiguatá. Name-bearing type: holotype (MACN), examined by MC.

*Glaphyrocanthon* (*Glaphyrocanthon*) *variabilis* – Martínez 1949a: 282 (key); 1950: 170 (notes, distribution). — Pereira & Martínez 1956a: 134 (distribution). — Martínez *et al.* 1964a: 16 (key). — Vulcano & Pereira 1964: 665 (catalogue). — Vaz-de-Mello 2000: 191 (checklist for Brazil). — Hielkema & Hielkema 2019: 68 (catalogue for the Guianas).

*Glaphyrocanthon variabilis* – Roze 1955: 43 (checklist for Venezuela).

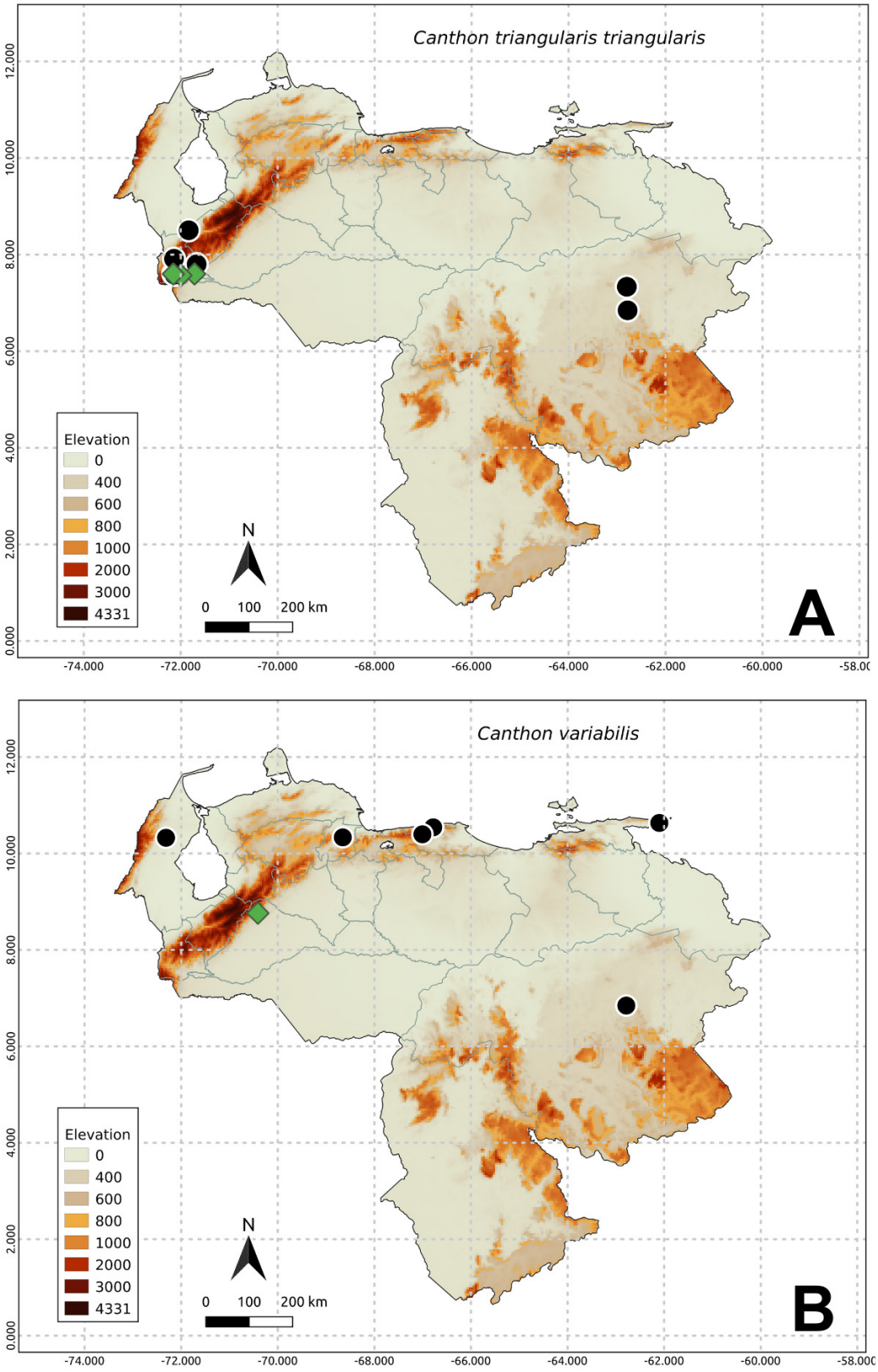


**Fig. 20.** Species distribution. **A**. *Canthon triangularis triangularis* (Drury, 1770). **B**. *Canthon variabilis* (Martínez, 1948). Green diamond = CEMT collection data; black circle = literature data.

*Canthon* (*Glaphyrocanthon*) *variabilis* – Halffter & Martínez 1977: 80 (new combination, revision).
*Canthon variabilis* – Forsyth *et al.* 1998: 369 (list). — Hamel-Leigue *et al.* 2006: 14 (inventory). — Noriega *et al.* 2007: 82 (list). — Krajcik 2012: 64 (list). — Ferrer-Paris *et al.* 2013: 109 (list).

**Material examined**

**Paratype**

VENEZUELA – 1 spec; PARÁTIPO/ "Venezuela. [illegible] / [illegible]. 7-VIII-/34/ Lichy leg."; "*Canthon* (*Glaphyrocan / thon*)*a. variabilis* Mar- / tinez G. Halffter y /A. Martínez det 78"; " Glaphyrocanthon / variabilis / sp. n./ A. Martínez -DET 1948"; CEMT-00068510.

**Additional material**

VENEZUELA – **Barinas** • 1 spec.; Barinitas; 23–25 Mar. 1967; Bordón leg.; CEMT.

**Distribution**

Colombia, Venezuela, Suriname, Brazil, and Bolivia.

**Subregions of Venezuela**

Maracaibo Depression, Andes mountains, Central Coast Mountain Range, Oriental Coast Range, and Guiana Shield.

**Literature records**

Martínez 1948a: 43 (Venezuela: La Guaira: Pico Naiguatá); 1950: 170 (Venezuela: La Guaira: Pico Naiguatá). — Roze 1955: 43 (Venezuela: Sucre: Puerto de Hierro). — Pereira & Martínez 1956a: 134 (Venezuela). — Vulcano & Pereira 1964: 665 (Venezuela); 1967: 562 (Venezuela). — Ferrer-Paris *et al*. 2013: 109 (Venezuela: Bolívar: Isla de Anacoco; Miranda: Altos de Pipe; Yaracuy: Guáquira farm; and Zulia: Rosario de Perijá).

## Genus ***Canthonella*** Chapin, 1930

*Canthonella* Chapin, 1930: 1 (original description). Type species: *Canthonella parva* Chapin, 1930, by original designation.
*Ipselissus* d'Olsoufieff, 1935: 35 (original description). Type species: *Epilissus silphoides* Harold, 1867, by original monotypy.
*Ipsepilissus* Paulian, 1939: 29 (original description). Type species: *Epilissus silphoides* Harold, 1867, by original designation.

*Canthonella* – Blackwelder 1944: 198 (list). — Martínez 1954: 64 (comments). — Pereira & Martínez 1956a: 94, 99 (key). — Halffter 1961: 230 (key). — Vulcano & Pereira 1964: 581 (catalogue). — Matthews 1965: 433, 447 (key, redescription); 1966: 7, 75 (key, redescription). — Zayas & Matthews 1966: 3, 16 (key, redescription). — Halffter & Matthews 1966: 260 (catalogue, distribution). — Halffter & Martínez 1967: 90 (redescription); 1977: 34, 58 (key, comments). — Halffter & Edmonds 1982: 139 (catalogue, distribution). — Ratcliffe & Smith 1999: 2 (comments, list). — Medina & Lopera-Toro 2000: 311 (key). — Vaz-de-Mello 2000: 192 (checklist for Brazil). — Medina *et al.* 2001: 136 (checklist for Colombia); 2003: 65 (distribution). — Vaz-de-Mello *et al.* 2011a: 25 (key). — Carvajal *et al.* 2011: 115, 314–315 (diagnosis, list). — Krajcik 2012: 64 (list). — Boilly & Vaz-de-Mello 2013: 107 (key). — Chamorro *et al.* 2018: 75, 76, 84, 93 (list for Ecuador); 2019: 9 (catalogue). — Hielkema & Hielkema 2019: 73 (catalogue for the Guianas).
*Ipsepilissus* – Martínez 1947b: 113 (correction). — Matthews 1966: 75 (cited).
*Ipselissus* – Martínez 1954: 59 (redescription). — Pereira & Martínez 1956a: 94, 99 (key, distribution). — Halffter 1961: 230 (key). — Vulcano & Pereira 1964: 581 (catalogue). — Halffter & Matthews

1966: 260 (catalogue, distribution). — Halffter & Martínez 1967: 103 (redescription); 1968: 211 (comments); 1977: 34, 51 (key, synonym of *Canthonella*).

***Canthonella gomezi*** (Halffter & Martínez, 1968)
Fig. 21A–B

*Ipselissus gomezi* Halffter & Martínez, 1968: 221 (original description). Type locality: Venezuela: Miranda: Altos de Pipe. Name-bearing type: holotype (MACN), examined by MC.

*Canthonella gomezi* — Halffter & Martínez 1977: 58 (new synonym, key). — Medina *et al.*, 2001: (list); 2003: 65 (phylogenetic analysis). — Krajcik 2012: 64 (list). — Ferrer-Paris *et al.* 2013: 109 (list).

**Material examined**

**Paratype**

VENEZUELA – **Miranda** • 1 spec.; "Venezuela / E° Miranda / Altos de Pipe / a la luz / coll. Martínez / Jun. 948"; "*Ipselissus gomezi* / Halffter y / Martínez"; "HALFFTER collection [red label]"; CEMT-00078136.

**Additional material**

VENEZUELA – **Miranda** • 1 spec.; Altos de Pipe, Instituto Venezolano de Investigaciones Científicas ("IVIC"); 12 Sep. 2008; "pasantes BDV2008" leg.; "BV-T-021, cebo:(?)"; CEMT • 1 spec.; same data as for the preceding; "BV-T-035"; CEMT.

**Distribution**

Colombia and Venezuela. Possibly in Peru (Ratcliffe *et al.* 2015).

**Subregion of Venezuela**

Guiana Shield.

**Literature records**

Halffter & Martínez 1968: 221 (Venezuela: Aragua and Miranda). — Medina *et al*. 2003: 65 (Venezuela). — Krajcik 2012: 64 (Venezuela: Miranda: Alto de Pipe). — Ferrer-Paris *et al*. 2013: 109 (Venezuela: Miranda: Altos de Pipe).

Genus ***Coprophanaeus*** d'Olsoufieff, 1924

*Phanaeus* (*Coprophanaeus*) d'Olsoufieff, 1924: 22 (original description). Type species: *Scarabeus jasius* Olivier, 1789, by original designation.

*Phanaeus* (*Coprophanaeus*) – Pessôa 1934: 295 (redescription). — Pessôa & Lane 1941: 476 (key). — Martínez 1959: 100 (catalogue for Argentina). — Halffter & Matthews 1966: 258 (checklist). — Vulcano & Pereira 1967: 570 (key). — Krajcik 2012: 204 (list).

*Coprophanaeus* – Blackwelder 1944: 209 (list). — Edmonds 1972: 820, 839 (key, redescription). — Howden & Young 1981: 12 (key). — Halffter & Edmonds 1982: 136 (catalogue, distribution). — Gámez & Mora 2000: 17 (list). — Medina & Lopera-Toro 2000: 303 (key). — Vítolo 2000: 593 (key); 2004: 289 (redescription). — Vaz-de-Mello 2000: 192 (checklist for Brazil). — Medina *et al.* 2001: 140 (checklist for Colombia). — Arnaud 2002b: 13 (key). — Ratcliffe *et al.* 2002: 49 (key). — Ratcliffe 2002: 16 (checklist for Panama). — Morón 2003: 59 (redescription). — Edmonds 1994: 17 (key). — Hamel-Leigue *et al.* 2006: 17 (list); 2009: 56 (distribution). — Edmonds & Zídek 2010: 8 (revision). — Vaz-de-Mello *et al.* 2011a: 24 (key). — Carvajal *et al.* 2011: 138, 320 (diagnosis,

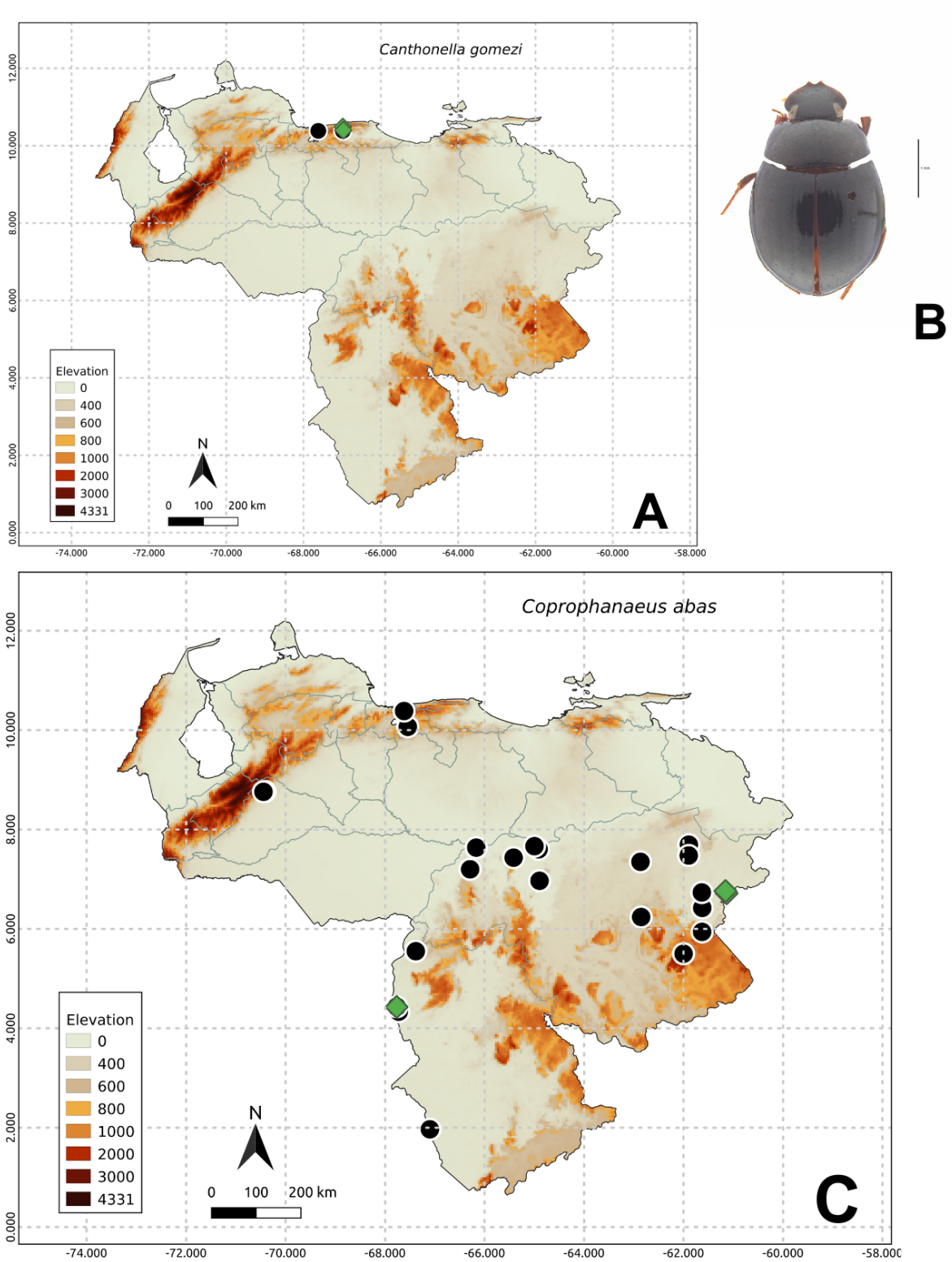


**Fig. 21.** Species distribution. **A**. *Canthonella gomezi* (Halffter & Martínez, 1968). **B**. Dorsal view of *C. gomezi*. **C**. *Coprophanaeus abas* (MacLeay, 1819). Green diamond = CEMT collection data; black circle = literature data.

list). — Solís & Kohlmann 2012: 7 (checklist for Costa Rica). — Cupello & Vaz-de-Mello 2013b: 359–360 (cited); 2014: 435–436 (cited). — Boilly & Vaz-de-Mello 2013: 107 (key). — França *et al.* 2016: 5 (comments). — Chamorro *et al.* 2018: 75, 93 (list for Ecuador); 2019: 69–70, (catalogue). — Hielkema & Hielkema 2019: 94 (catalogue for the Guianas).

***Coprophanaeus abas*** (MacLeay, 1819)
Fig. 21C

*Phanaeus abas* MacLeay, 1819: 126 (original description). Type locality: Trinidad and Tobago: Trinidad Island. Name-bearing type: neotype (BMNH), designated by Arnaud (2002d), not examined.
*Phanaeus* (*Coprophanaeus*) *rex* Balthasar, 1939f: 239 (original description). Type locality: South America. Name-bearing type: holotype (NMPC), not examined.

*Coprophanaeus* (*Coprophanaeus*) *abas* – Arnaud 2002b: 28 (key, distribution). — Edmonds & Zídek 2010: 43, 50 (key, comments, revision). — Gámez 2010: 15 (comments). — Pacheco & Vaz-de-Mello 2015: 2–3, 7 (list, distribution, key). — Gámez & Acconcia 2018: 73 (key). — Hielkema & Hielkema 2019: 94 (catalogue for the Guianas).
*Coprophanaeus jasius abas* – Arnaud 2002c: 3 (designation of neotype).
*Coprophanaeus rex* – Arnaud 2002c: 3 (cited as synonym of *Coprophanaeus jasius abas*).
*Coprophanaeus abas* – Arnaud 2002b: 28 (new combination, key, distribution). — Edmonds & Zídek 2010: 43, 50 (key, comments, revision). — Gámez 2010: 15 (comments). — Gámez & Acconcia 2018: 73 (key).

**Material examined**

VENEZUELA – **Amazonas** • 2 specs; Caño Piojo; Apr. 2006; D. Garcia leg.; CEMT. – **Bolívar** • 1 spec.; Isla de Anacoco; 6 Jun. 2006; curso NM2006 leg.; faeces, 23h, 16:20; CEMT.

**Distribution**

Colombia, Venezuela, Trinidad and Tobago, and Brazil.

**Subregions of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco, System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, Andes mountains, and Central Coast Mountain Range.

**Literature records**

Arnaud 2002b: 28 (Venezuela). — Edmonds & Zídek 2010: 43, 50 (Venezuela: Amazonas, Aragua, Barinas and Bolívar). — Gámez 2010: 15, 19 (Venezuela: Llanos del Orinoco). — Gámez & Acconcia 2018: 73 (Venezuela: Cordillera de Mérida).

***Coprophanaeus corythus*** (Harold, 1863)
Fig. 22A

*Phanaeus corythus* Harold, 1863: 163 (original description). Type locality: Mexico: Veracruz: Córdoba. Name-bearing type: lectotype (MNHN), designated by Arnaud (1982), not examined.
*Phanaeus perseus* Harold, 1880: 27 (original description). Type locality: Colombia: Antioquia: Medellin. Name-bearing type: lectotype (MNHN), designated by Arnaud (1982), not examined.
*Coprophanaeus* (*Coprophanaeus*) *telamon nevinsoni* Arnaud & Gámez, 2002: 10 (original description). Type locality: Colombia: Magdalena: Parque Nacional Tayrona. Name-bearing type: holotype (CPFA), not examined.

*Phanaeus corythus* – Harold 1869c: 65 (comments); Harold 1869d: 65 (catalogue, cited for Mexico). — Bates 1887: 55, 482 (distribution, figs 16–17). — Nevinson 1892: 3 (list). — Kolbe 1905: 581 (comments). — Gillet 1911b: 82 (catalogue). — Islas 1942: 314 (comments).

*Phanaeus* (*Coprophanaeus*) *corythus* – d'Olsoufieff 1924: 26, 68, 141 (key, distribution).

*Phanaeus telamon corythus* – Pereira & Martínez 1956b: 234 (new combination). — Arnaud 2002b: 35 (cited as synonym of *Coprophanaeus telamon*).

*Coprophanaeus telamon corythus* – Howden & Young 1981: 141 (redescription). — Deloya 1992: 21 (list). — Estrada & Coates-Estrada 2002: 1911 (ecology). — Hernández *et al.* 2003: 96 (diversity). — Kohlmann *et al.* 2007: 29 (checklist). — Arnaud 2002b: 35 (cited as synonym of *Coprophanaeus telamon*).

*Coprophanaeus telamon nevinsoni* – Arnaud 2002b: 36 (redescription). — Gámez 2004: 48, 58 (ecology). — Gámez & Acconcia 2009: 388, 392–394 (ecology). — Edmonds & Zídek 2010: 93 (revision, synonym of *C. telamon*).

*Coprophanaeus* (*Coprophanaeus*) *corythus* – Edmonds & Zídek 2010: 93 (revision, new status). — Gámez & Acconcia 2016: 57–60 (note).

*Phanaeus perseus* – Edmonds & Zídek 2010: 93 (revision, as synonym of *Coprophanaeus corythus*).

**Distribution**

Mexico, Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Colombia, and Venezuela.

**Subregions of Venezuela**

Maracaibo Depression, System of hills and low sierras Lara-Falcón, Serrania de Perija, Andes mountains and Central Coast Mountain Range.

**Literature records**

Howden & Young 1981: 141 (Venezuela). — Arnaud 2002b: 36 (Venezuela: Mérida and Zulia states). — Arnaud & Gámez 2002: 10 (Venezuela: Mérida State). — Gámez 2004: 48, 58 (Venezuela: Mérida and Zulia states). — Gámez *et al.* 2006: 96, 99–102 (Venezuela: Mérida: Zea). — Gámez & Acconcia 2009: 388, 392–394 (Venezuela: Zulia: Colón: Depresión de Maracaibo). — Edmonds & Zídek 2010: 93 (Venezuela). — Gámez & Acconcia 2016: 57–60 (Carabobo, Falcón and Zulia states).

***Coprophanaeus dardanus*** (MacLeay, 1819)
Fig. 22B

*Phanaeus dardanus* MacLeay, 1819: 126 (original description). Type locality: Brazil. Name-bearing type: Unknown typification status and whereabouts (Edmonds & Zídek 2010).

*Phanaeus bitias* Harold, 1863: 163 (original description). Type locality: Somewhere in the Amazon or the Atlantic Forest. Originally said to be Mexico: Oaxaca: Tuxtepec: "hot regions" ("Mexique (Tustepec), régions chaudes"), but this is mistaken. The species is exclusively South American (Edmonds & Zídek 2010; Cupello & Vaz-de-Mello 2013a). The type locality is here corrected following Recommendation 76A.2 of the Code. Name-bearing type: a male holotype fixed by monotypy and originally from Chevrolat's personal collection (Harold 1863), but whose current whereabouts is unknown (Edmonds & Zídek 2010). It was not found by Arnaud (1982) in the MNHN, where most of the Harold collection material has been housed since the 1950s (see Cupello 2020), nor by Olaf Jäger in the collection under his care in SMTD (pers. com. to MC, 3 March 2023), where the Chevrolat Scarabaeinae collection has been preserved since the 1910s via the Carl Felsche collection (Horn *et al.* 1990a; Cupello 2020). Bates (1887) informed that the holotype (cited as "the type-specimen") was in Sallé's collection. If correct, Sallé would have somehow

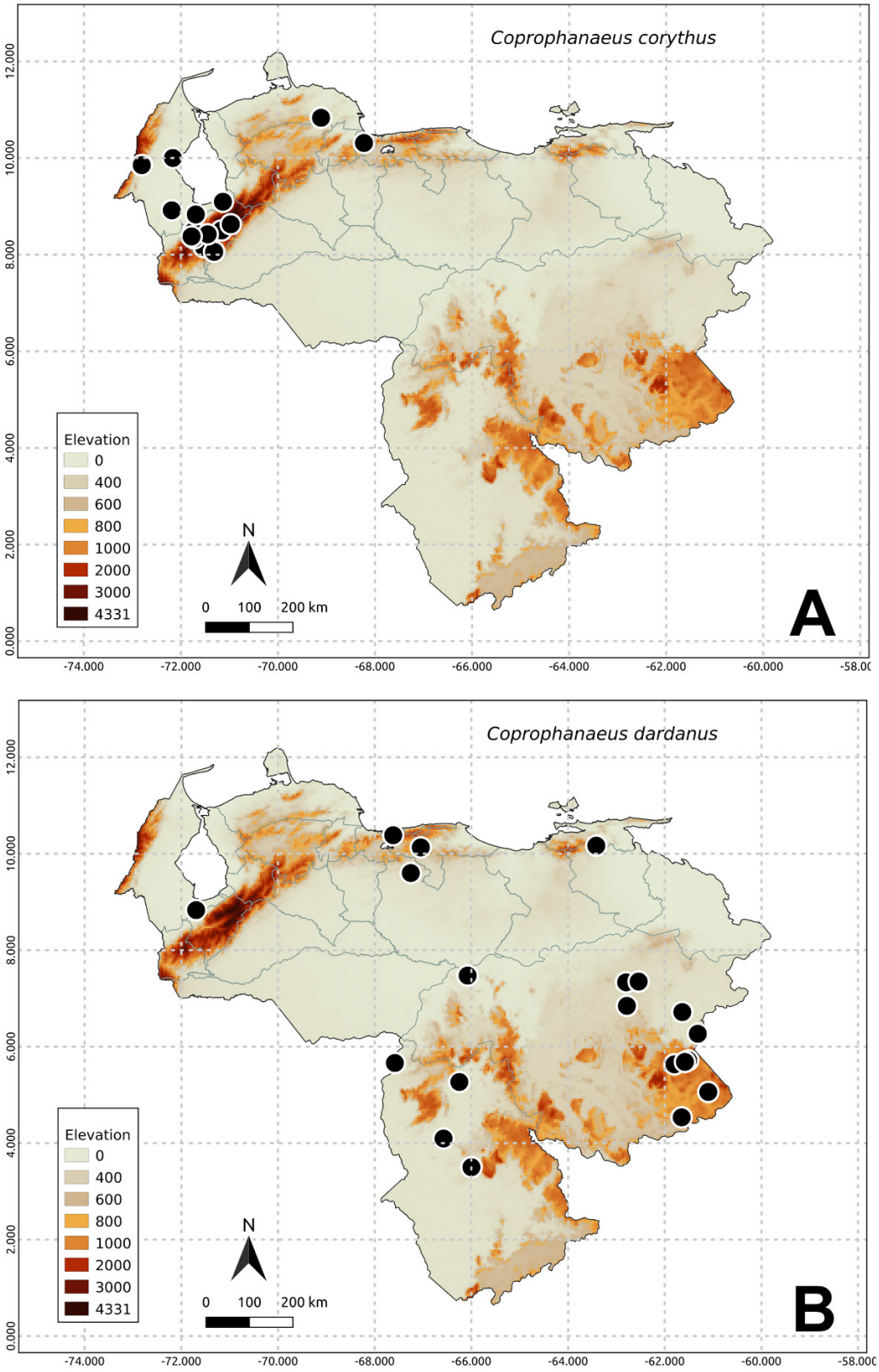


**Fig. 22.** Species distribution. **A**. *Coprophanaeus corythus* (Harold, 1863). **B**. *Coprophanaeus dardanus* (MacLeay, 1819). Black circle = literature data.

acquired it from Chevrolat and the specimen would now most likely be in the BMNH, where most of Sallé's collection of Mexican and Central American material has resided since the early 20th century (Cupello 2021). Alas, we did not have the opportunity to go to London to confirm this. The synonymy between *Phanaeus bitias* and *P. dardanus* – and, by extension, the incorrectness of the type locality of *P. bitias* – are, nevertheless, confirmed by the illustrations of the *P. bitias* holotype provided by Bates (1887: pl. III fig. 19, 19a). In them, we can clearly see the diagnostic bidentate cephalic process of males of the species presently called *Coprophanaeus dardanus* (see Edmonds & Zídek 2010). This synonymy had been initially entertained by Bates (1887) himself and was later formalized by Nevinson (1892); we are the first to revisit it ever since. The degree of development of both the cephalic and the pronotal processes of the holotype, also judging from Bates' illustrations, is that of a medium- to small-sized male.

*Phanaeus jasion* Felsche, 1901: 153 (original description). Type locality: French Guiana. Name-bearing type: holotype (SMTD), not examined.

*Phanaeus arrowi* d'Olsoufieff, 1924: 68 (original description). Type locality: Brazil: Bahia. Name-bearing type: lectotype (MNHN), designated by Arnaud (1982), not examined.

*Phanaeus dardanus* – Nevinson 1892: 3 (list). — Arnaud 2002b: 32 (cited).

*Phanaeus bitias* – Nevinson 1892: 3 (cited as synonym of *Phanaeus dardanus*). — Arnaud 2002b: 32 (cited as synonym of *Coprophanaeus dardanus*).

*Phanaeus jasion* – Gillet 1911b: 83 (catalogue). — Blackwelder 1944: 210 (checklist). — Arnaud 2002b: 32 (cited as synonym of *Coprophanaeus dardanus*).

*Phanaeus* (*Coprophanaeus*) *dardanus* – d'Olsoufieff 1924: 69 (distribution). — Pessôa 1934: 300 (comments).

*Coprophanaeus dardanus* – Edmonds 1972: 843 (recombination). — Forsyth & Gill 1993: 70 (list). — Larsen 2011: 99 (list for Suriname). — Feer 2000: 32 (list); 2013: 766 (list for French Guiana). — Feer & Pincebourde 2005: 30 (list, ecology). — Larsen *et al.* 2008: 1294 (list). — Gámez & Acconcia 2009: 394 (behaviour, table 1). — Brûle *et al.* 2011a: 193 (list); 2011b: 121 (list); 2014: 183 (list). — Brûle & Dalens 2012: 37 (list). — Brûle & Touroult 2013: 40 (list). — Feer & Boissier 2015: 169 (list). — Boilly *et al.* 2016: 89, 90 (key, comments catalogue). — Ferrer-Paris *et al.* 2013: 109 (list). — Silva *et al.* 2017: 491 (ecology).

*Coprophanaeus* (*Coprophanaeus*) *dardanus* – Edmonds 1972: 843 (recombination). — Martínez & Clavijo 1990: 7 (notes). — Forsyth & Gill 1993: 70 (list). — Larsen 2011: 99 (list for Suriname). — Feer 2000: 32 (list); 2013: 766 (list for French Guiana). — Vaz-de-Mello 2000: 192 (checklist for Brazil). — Arnaud 2002b: 32 (key). — Feer & Pincebourde 2005: 30 (list, ecology). — Gámez *et al.* 2006: 101 (ecology). — Larsen *et al.* 2008: 1294 (list). — Gámez & Acconcia 2009: 394 (behaviour, table 1). — Edmonds & Zídek 2010: 76, 80 (revision). — Brûle *et al.* 2011a: 193 (list); 2011b: 121 (list). — Brûle & Dalens 2012: 37 (list). — Brûle & Touroult 2013: 40 (list). — Cupello & Vaz-de-Mello 2013a: 361, 364–365, fig. 14 (key, distribution, comments). — Brûle *et al.* 2014: 183 (list). — Feer & Boissier 2015: 169 (list). — Pacheco & Vaz-de-Mello 2015: 3, 7 (checklist, key). — Boilly *et al.* 2016: 89, 90 (key, comments). — Ferrer-Paris *et al.* 2013: 109 (list). — Silva *et al.* 2017: 491 (ecology). — Hielkema & Hielkema 2019: 94 (catalogue for the Guianas).

*Phanaeus arrowi* – Arnaud 2002b: 32 (cited as synonym of *Coprophanaeus dardanus*).

**Distribution**

Colombia, Venezuela, Trinidad and Tobago, Guyana, Suriname, French Guiana, and Brazil.

**Subregions of Venezuela**

Maracaibo Depression, Peneplain of the Casiquiare River–Upper Orinoco, System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, Central Coast Mountain Range, Oriental Coast Range, and Guiana Shield.

**Literature records**

Martínez & Clavijo 1990: 7 (Venezuela: Amazonas: Atures and Atabapo). — Arnaud 2002b: 32 (Venezuela). — Gámez *et al.* 2006: 101 (Venezuela: Amazonas). — Larsen *et al.* 2008: 1294 (Venezuela: Bolívar state). — Gámez & Acconcia 2009: 394 (Venezuela: Zulia: Colón). — Edmonds & Zídek 2010: 76, 80 (Venezuela: Amazonas, Aragua, Bolívar, Miranda and Monagas). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Aragua [Guárico]: Altagracia de Orituco and Bolívar: Isla de Anacoco).

***Coprophanaeus gamezi*** Arnaud, 2002
Fig. 23A

*Coprophanaeus gamezi* Arnaud, 2002a: 8 (original description). Type locality: Venezuela, Bolívar, Rio Cora, Jabillal. Name-bearing type: holotype (CPFA), not examined.

*Coprophanaeus* (*Coprophanaeus*) *gamezi* – Arnaud 2002b: 29 (key, distribution). — Gámez 2004: 48, 59 (distribution for Venezuela); 2010: 15–16 (comments). — Gámez & Acconcia 2009: 388 (comments); 2018: 73 (key); 2020: 4, 13 (key). — Edmonds & Zídek 2010: 52 (key, comments, revision). — Lozano 2010: 86 (list). — Krajcik 2012: 204 (list). — Ferrer-Paris *et al.* 2013: 109 (list). — Pacheco & Vaz-de-Mello 2015: 2, 4, 7 (list, key). — França *et al.* 2016: 3 (list). — Giraldo *et al.* 2018: 46 (guide). — Hielkema & Hielkema 2019: 94 (catalogue for the Guianas). — Nieto *et al.* 2020: 136 (report).

**Material examined**

VENEZUELA – **Bolívar** • 1 spec.; Río Paraguaza; 100 m a.s.l.; 15 May 2004; D. García leg.; CEMT. – **Yaracuy** • 2 specs; Bolívar, Aroa; 10.0000° N, 68.8448° W; 100 m a.s.l.; 19 Jul. 2009; M. Asmüssen, P. Colmenares, and H. Martínez leg.; CEMT • 2 specs; Bolívar, Aroa; 10°0′0″ N, 68°0′0″ W; 468 m a.s.l.; 21 Jul. 2009; M. Asmüssen, P. Colmenares, and H. Martínez leg.; human faeces; CEMT.

**Distribution**

Colombia, Venezuela, Guyana, and Brazil.

**Subregions of Venezuela**

Maracaibo Depression, Plains, Delta plain of the Orinoco River and coastal swamp of the San Juan River, System of hills and low sierras Lara-Falcón, System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guiana Shield, Andes mountains, Central Coast Mountain Range, and Oriental Coast Range.

**Literature records**

Arnaud 2002a: 8 (Venezuela: Bolívar; Barinas; Distrito Capital: Libertador; Mérida: Padre Noguera; Monagas: Ezequiel Zamora); 2002b: 29 (Venezuela: Táchira and Barinas). — Gámez 2004: 48, 59 (Venezuela: Barinas: Barinitas; Distrito Capital: Libertador; Guárico: Paso Real; Mérida: Padre Noguera, Caparo River; Monaguas: Ezequiel Zamora; Táchira); 2010: 15–16 (Venezuela: Lake Maracaibo). — Gámez & Acconcia 2009: 388 (Venezuela: Zulia: Colón, Lake Maracaibo); 2018: 73 (Venezuela: Los Llanos subregion); 2020: 8 (Venezuela: Southern Lake Maracaibo and Sierra de Perijá). — Edmonds & Zídek 2010: 52 (Venezuela: Amazonas; Aragua; Barinas: Alberto Torrealba; Bolívar; Carabobo; Delta Amacuro; Guárico; Mérida: Padre Noguera; Sucre and Zulia: Colón). — Lozano 2010: 86 (Venezuela: Zulia). — Krajcik 2012: 204 (Venezuela). — Ferrer-Paris *et al*. 2013: 109 (Venezuela: Aragua [Guárico]: Altagracia de Orituco, Yaracuy: Hacienda Guáquira; Zulia: Rosario de Perijá).

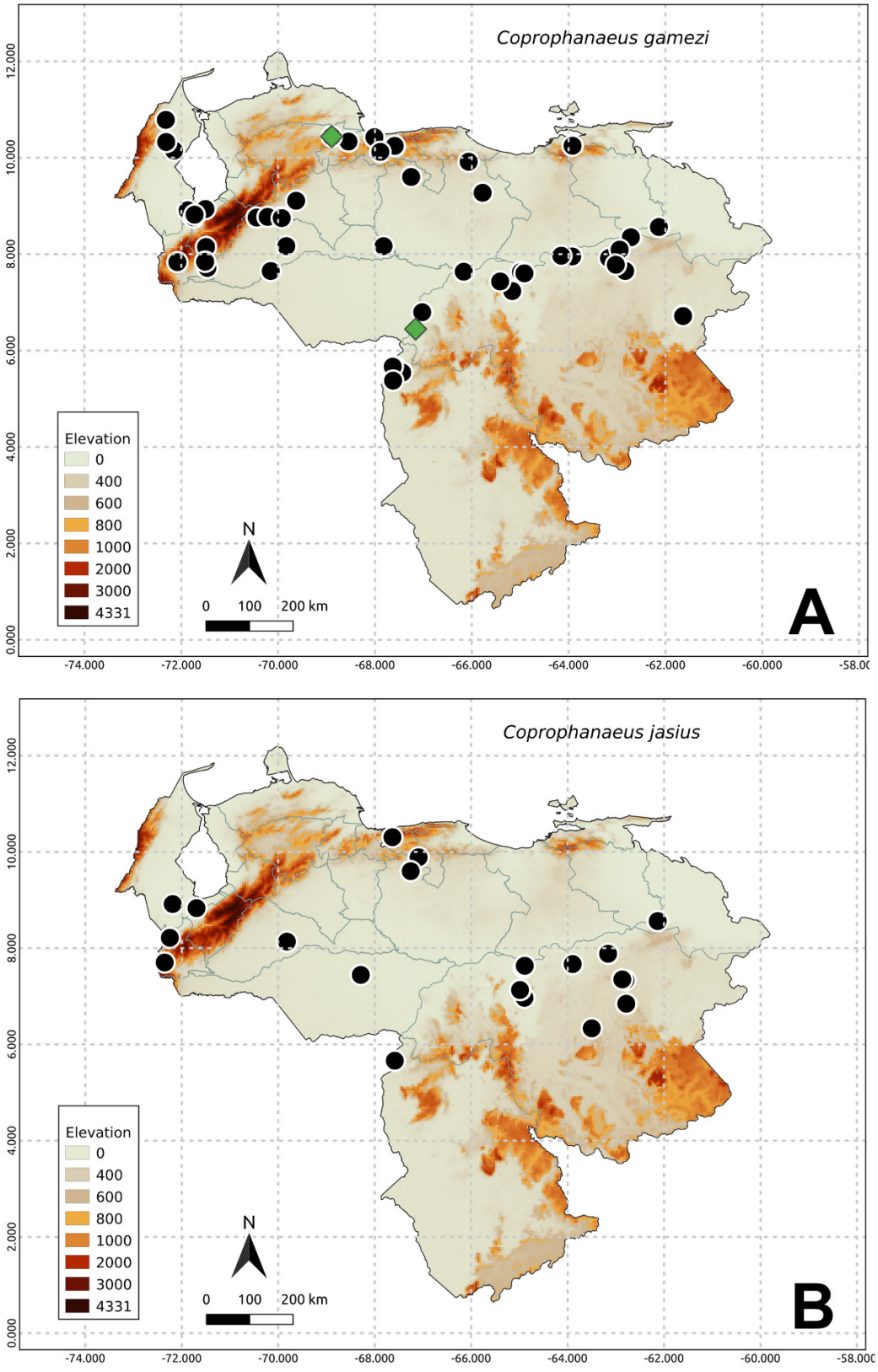


**Fig. 23.** Species distribution. **A**. *Coprophanaeus gamezi* Arnaud, 2002. **B**. *Coprophanaeu jasius* (Olivier, 1789). Green diamond = CEMT collection data; black circle = literature data.

***Coprophanaeus jasius*** (Olivier, 1789)
Fig. 23B

*Scarabaeus jasius* Olivier, 1789: 109 (original description). Type locality: French Guiana: Cayenne, La Chaumière. Name-bearing type: neotype (MNHN), designated by Arnaud (2002d), not examined.
*Phanaeus satyrus* Castelnau, 1840: 80 (description). Type locality: French Guiana. Name-bearing type: unknown typification status and whereabouts (Edmonds & Zídek 2010), most likely destroyed (see Maldaner *et al.* 2017).

*Copris jasius* – Olivier 1790: 156 (transferred to the genus, redescription).
*Scarabaeus jasius* – Sturm 1802: 66 (redescription). — Arnaud 2002a: 7 (cited); 2002b: 26 (cited). — Edmonds & Zídek 2010: 48 (mentioned). — Chamorro *et al.* 2019: 72 (catalogue).
*Phanaeus jasius* – Erichson 1848: 564 (cited). — Gillet 1911b: 83 (catalogue). — d'Olsoufieff 1924: 24, 64, 135, 140 (key, distribution). — Pereira & Martínez 1956b: 230 (comments). — Quintero & Roslin 2005: appendix A (ecology). — Chamorro *et al.* 2019: 72 (catalogue).
*Phanaeus* (*Coprophanaeus*) *jasius* – d'Olsoufieff 1924: 24, 64 (key, distribution). — Pessôa 1934: 296 (key, redescription). — Vulcano & Pereira 1967: 571 (key).
*Coprophanaeus jasius* – Blackwelder 1944: 209 (checklist).
*Coprophanaeus satyrus* – Blackwelder 1944: 209 (checklist, cited as synonym of *Coprophanaeus jasius*).
*Coprophanaeus* (*Coprophanaeus*) *jasius* – Martínez 1987: 68 (cited for Salta, Argentina). — Martínez & Clavijo 1990: 8 (notes). — Escobar 2000: 207 (checklist for Colombia). — Feer 2000: 32 (list for French Guiana); 2008: 62 (ecology, list); 2013: 767 (list for French Guiana). — Vítolo 2000: 599 (key for Colombia). — Vaz-de-Mello 2000: 192 (checklist for Brazil). — Medina *et al.* 2001: 140 (checklist for Colombia). — Arnaud 2002a: 7 (description, designation of neotype). — Arnaud 2002b: 26 (key). — Feer & Pincebourde 2005: 30 (list). — Quintero & Roslin 2005: appendix A (ecology). — Noriega *et al.* 2007: 83 (list for Santa Marta, Colombia). — Edmonds & Zídek 2010: 43, 48 (key, revision). — Brûle *et al.* 2011a: 193 (list). — Larsen 2011: 98 (list for Suriname); 2013: 96 (list for Suriname). — Vaz-de-Mello *et al.* 2011b: 86 (list). — Ferrer-Paris *et al.* 2013:109 (list for Venezuela). — Ratcliffe 2013: 494 (list). — Bicknell *et al.* 2014: supp. 1 (ecology). — Silva *et al.* 2014: 348 (diversity). — Brûle *et al.* 2014: 183 (list). — Pacheco & Vaz-de-Mello 2015: 2 (list for Roraima state, Brazil). — Boilly *et al.* 2016: 89–90 (key, catalogue). — Chamorro *et al.* 2019: 72 (catalogue). — Hielkema & Hielkema 2019: 95 (catalogue for the Guianas).
*Phanaeus satyrus* – Arnaud 2002b: 26 (cited as synonym of *Coprophanaeus jasius*). — Edmonds & Zídek 2010: 48 (cited as synonym of *Coprophanaeus jasius*). — Chamorro *et al.* 2019: 72 (catalogue, cited as synonym of *Coprophanaeus jasius*).

**Distribution**

Ecuador, Venezuela, Guyana, Suriname, French Guiana, and Brazil.

**Subregions of Venezuela**

Maracaibo Depression, Plains, Delta plain of the Orinoco River and coastal swamp of the San Juan River, Peneplain of the Caura and Paragua rivers, System of hills and low piedmont mountains of the Guiana Shield, Andes mountains, Central Coast Mountain Range, and Guiana Shield.

**Literature records**

d'Olsoufieff 1924: 65 (Venezuela). — Pereira & Martínez 1956b: 230 (Venezuela). — Blanco 1988: 43 (Venezuela: Táchira: Rubio, La Fría and nearby places). — Martínez & Clavijo 1990 8 (Venezuela: Amazonas: Puerto Ayacucho). — Arnaud 2002b: 26 (Venezuela: Bolívar state). — Gámez 2004: 48, 58

(Venezuela: Apure, Aragua, Barinas, Guárico and Zulia). — Vítolo 2004: 291 (Venezuela: Blackwelder 1944). — Gámez *et al*. 2006: 102 (Venezuela). — Larsen *et al*. 2008: 1294 (Venezuela: Bolívar: Lago Guri). — Gámez & Acconcia 2009: 394 (Venezuela: Zulia: Colón). — Edmonds & Zídek 2010: 43, 48 (Venezuela: Bolívar and Delta Amacuro). — Ferrer-Paris *et al*. 2013: 109 (Venezuela: Bolívar: Isla de Anacoco and Sabanas de Guri; Sucre: Araya).

***Coprophanaeus lancifer*** (Linnaeus, 1767)
Fig. 24A

*Scarabaeus lancifer* Linnaeus, 1767: 544 (original description). Type locality: Brazil: Pará: Belém, Parque Estadual do Utinga, 01°25′07.2″ S, 48°25′47.6″ W. Name-bearing type: neotype (BMNH – ex CEMT), designated by Maldaner *et al.* (2017), examined by MC and FZVM.

*Phanaeus heros* Castelnau, 1840: 80 (original description). Type locality: French Guiana. Name-bearing type: unknown syntypes, likely destroyed (Maldaner *et al.* 2017).

*Phanaeus miles* Castelnau, 1840: 80 (original description). Type locality: French Guiana. Name-bearing type: unknown syntypes, likely destroyed (Maldaner *et al.* 2017).

*Phanaeus septentrionalis* Pessôa, 1934: 291 (original description). Type locality: Brazil: Pará: Belém. Name-bearing type: lectotype (MZSP), designated by Maldaner *et al.* (2017), not examined.

*Scarabaeus lancifer* – Lichtenstein 1796: 5 (cited). — Nevinson 1892: 5 (list). — Arnaud 2002b: 23 (citation).

*Phanaeus lancifer* – Erichson 1848: 563 (catalogue). — Bodkin 1919: 213 (notes). — Gillet 1911b: 84 (catalogue). — d'Olsoufieff 1924: 76 (distribution).

*Phanaeus heros* – Nevinson 1892: 5 (cited). — Maldaner *et al.* 2017: 89 (cited).

*Phanaeus miles* – Nevinson 1892: 5 (cited). — Maldaner *et al.* 2017: 89 (cited).

*Megaphanaeus lancifer* – Blackwelder 1944: 209 (checklist).

*Phanaeus septentrionalis* – Martínez & Pereira 1967: 60 (synonym of *Phanaeus lancifer*). — Arnaud 2002b: 23 (cited as synonym of *Coprophanaeus lancifer*). — Maldaner *et al.* 2017: 89 (types).

*Coprophanaeus* (*Megaphanaeus*) *lancifer* – Edmonds 1972: 841 (comparative morphology). — Escobar 2000: 207 (checklist for Colombia). — Feer 2000: 32 (list); 2008: 62 (ecology); 2013: 767 (list for French Guiana). — Vaz-de-Mello 2000: 192 (checklist for Brazil). — Vítolo 2000: 599 (key for Colombia). — Medina *et al.* 2001: 140 (checklist for Colombia). — Feer & Pincebourde 2005: 30 (list). — Quintero & Roslin 2005: appendix A (ecology). — Hamel-Leigue *et al.* 2009: 54 (distribution for Bolivia). — Edmonds & Zídek 2010: 14, 16 (key, revision). — Brûlé *et al.* 2011a: 193 (inventory). — Larsen 2011: 98 (list for Suriname). — Vaz-de-Mello *et al.* 2011b: 86 (list); 2013: 96 (list for Suriname). — Ratcliffe 2013: 494 (ecology). — Bicknell *et al.* 2014: supp. file. — Silva *et al.* 2014: 348 (diversity). — Feer & Boissier 2015: 170 (list). — Pacheco & Vaz-de-Mello 2015: 2 (cited for Roraima State, Brazil). — Boilly *et al.* 2016: 87, 90 (key, catalogue for Guyane). — Maldaner *et al.* 2017: 89 (cited). — Hielkema & Hielkema 2019: 96 (catalogue for the Guianas).

**Distribution**

Venezuela, Guyana, Suriname, French Guiana, Brazil, Peru, and Bolivia.

**Subregions of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco, and System of hills and low piedmont mountains of the Guiana Shield.

**Literature record**

Edmonds & Zídek 2010: 14, 16 (Venezuela: Amazonas and Bolívar).

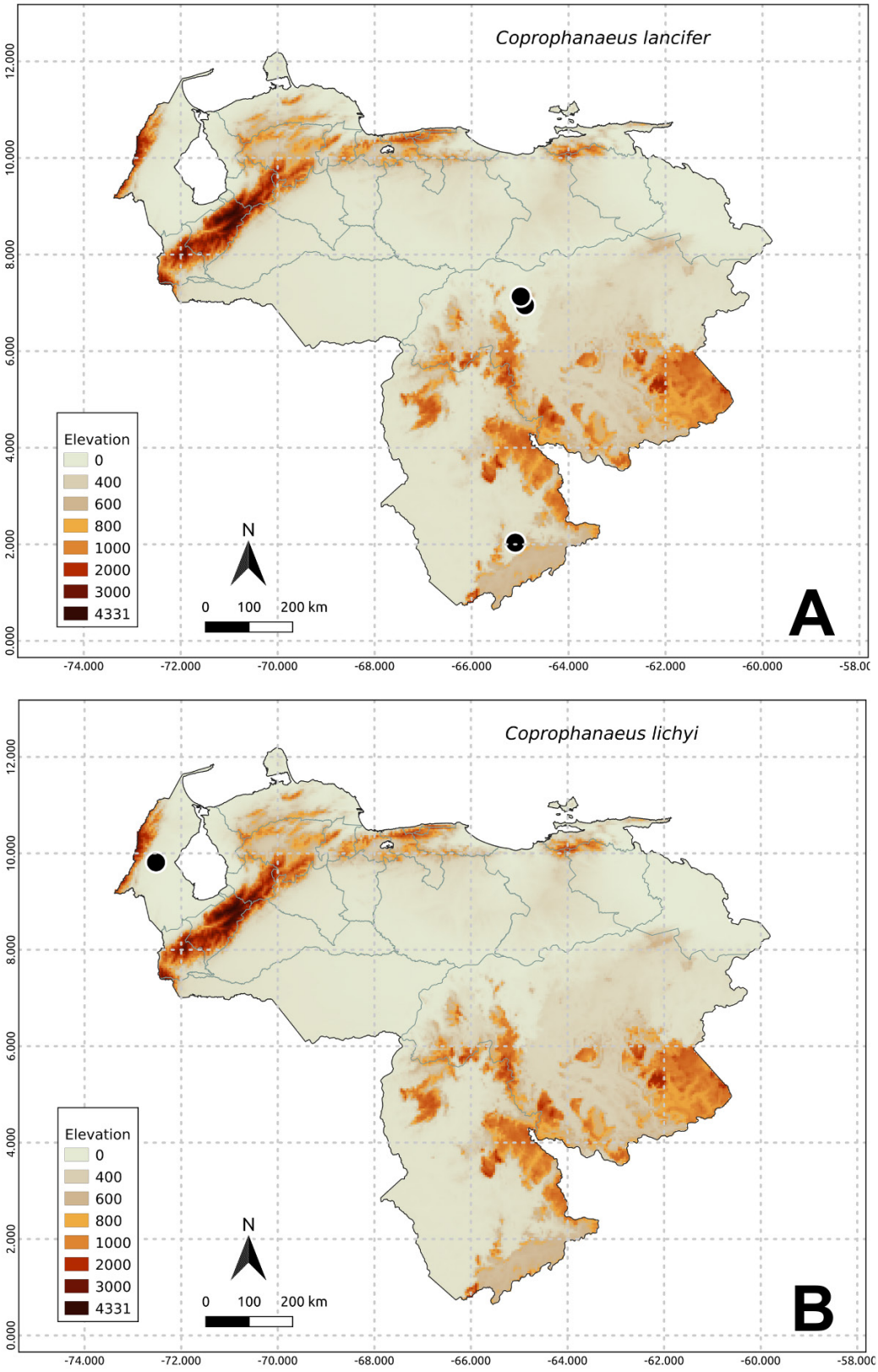


**Fig. 24.** Species distribution. **A**. *Coprophanaeu lancifer* (Linnaeus, 1767). **B**. *Coprophanaeus lichyi* Arnaud, 2002. Black circle = literature data.

***Coprophanaeus lichyi*** Arnaud, 2002
Fig. 24B

*Coprophanaeus lichyi* Arnaud, 2002a: 3 (original description). Type locality: Venezuela: Zulia: Sierra de Perijá, Rio Yaza. Name-bearing type: holotype (CPFA), not examined.

*Coprophanaeus lichyi* – Arnaud 2002b: 45 (key). — Edmonds & Zídek 2010: 104 (comments).

**Distribution**

Venezuela (endemic).

**Subregion of Venezuela**

Maracaibo Depression.

**Literature records**

Arnaud 2002a: 3 (Venezuela: Zulia: Sierra de Perijá); 2002b: 45 (Venezuela: Zulia).

***Coprophanaeus parvulus*** (d'Olsoufieff, 1924)
Fig. 25A

*Phanaeus parvulus* d'Olsoufieff, 1924: 67 (original description). Type locality: French Guiana: Passoura. Name-bearing type: lectotype (MHNH), designated by Arnaud (1982), not examined.

*Coprophanaeus parvulus* – Blackwelder 1944: 209 (checklist). — Larsen 2011: 98 (list for Suriname). — Escobar 2000: 207 (checklist for Colombia). — Feer 2000: 32 (list for French Guiana); 2008: 62 (ecology, list); 2013: 766 (list for French Guiana). — Vítolo 2000: 599 (key for Colombia). — Medina *et al.* 2001: 140 (checklist for Colombia). — Feer & Pincebourde 2005: 30 (list). — Quintero & Roslin 2005: appendix A (ecology). — Gámez & Acconcia 2009: 394 (comments). — Brûle *et al.* 2011a: 193 (inventory); 2014: 183 (inventory). — Brûle & Dalens 2012: 18 (cited). — Feer & Boissier 2015: 169 (list).

*Coprophanaeus* (*Coprophanaeus*) *parvulus* – Martínez & Clavijo 1990: 154 (notes, cited as *parrulus*). — Escobar 2000: 207 (checklist for Colombia). — Feer 2000: 32 (list for French Guiana); 2008: 62 (ecology, list); 2013: 766 (list for French Guiana). — Vítolo 2000: 599 (key for Colombia). — Medina *et al.* 2001: 140 (checklist for Colombia). — Arnaud 2002b: 38 (key). — Feer & Pincebourde 2005: 30 (list). — Quintero & Roslin 2005: appendix A (ecology). — Gámez *et al.* 2006: 101 (comments). — Gámez & Acconcia 2009: 394 (comments). — Edmonds & Zídek 2010: 3–5, 77, 89 (key, revision). — Brûle *et al.* 2011a: 193 (inventory); 2014: 183 (inventory). — Larsen 2011: 98 (list for Suriname). — Brûle & Dalens 2012: 18 (cited). — Feer & Boissier 2015: 169 (list). — Boilly *et al.* 2016: 89, 93 (key, catalogue). — Hielkema & Hielkema 2019: 95 (catalogue for the Guianas).

**Distribution**

Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, and Peru (Edmonds & Zídek 2010; Ratcliffe *et al.* 2015).

**Subregions of Venezuela**

Maracaibo Depression, Peneplain of the Caura and Paragua rivers, Peneplain of the Casiquiare River–Upper Orinoco and System of hills and low piedmont mountains of the Guiana Shield.

**Literature records**

Martínez & Clavijo 1990: 8 (Venezuela: Amazonas: Atures). — Arnaud 2002b: 38 (Venezuela: Bolívar). — Vítolo 2004: 292 (Venezuela: Amazonas: Puerto Ayacucho). — Gámez *et al*. 2006: 101 (Venezuela: Amazonas). — Gámez & Acconcia 2009: 394 (Venezuela: Zulia: Colón: Depresión de Maracaibo). — Edmonds & Zídek 2010: 77, 89 (Venezuela: Amazonas and Bolívar).

***Coprophanaeus telamon*** (Erichson, 1847)
Fig. 25B

*Phanaeus telamon* Erichson, 1847a: 106 (original description). Type locality: Peru. Name-bearing type: holotype (MFNB), not examined.

*Phanaeus telamon* – Harold 1869d: 1019 (list, cited for Peru). — Kirsch 1873: 341 (cited for Peru). — Bates 1887: 56 (diagnosis). — Nevinson 1892: 7 (list, revision, cited for Brazil and Peru). — Kolbe 1905: 581 (comments). — Gillet 1911b: 86 (catalogue, cited for Peru and Brazil). — Balthasar 1941: 350 (distribution); 1951: 336 (distribution). — Blackwelder 1944: 210 (list, cited for Brazil and Peru). — Pereira 1953: 391 (notes).

*Phanaeus* (*Coprophanaeus*) *telamon* – d'Olsoufieff 1924: 26, 68, 135, 142 (key, distribution). — Pessôa 1934: 296, 299 (key, redescription). — Martínez 1947b: 114 (cited). — Vulcano & Pereira 1967: 572 (key). — Krajcik 2012: 204 (list). — Gámez & Mora 2000: 17 (list).

*Coprophanaeus* (*Coprophanaeus*) *telamon telamon* – Pereira & Martínez 1956b: 233 (new combination). — Blanco 1988: 43 (catalogue). — Havranek 1989: 61 (list). — Martínez & Clavijo, 1990: 7 (notes of Phanaeina). — Arnaud 2002b: 35 (monograph, redescription). — Gámez 2004: 59 (distribution). — Hamel-Leigue *et al.* 2006: 17 (list); 2009: 57 (distribution for Bolivia). — Gámez & Acconcia 2009: 394 (ecological information). — Carvajal *et al.* 2011: 318, 320 (list).

*Coprophanaeus* (*Coprophanaeus*) *telamon* – Forsyth *et al.* 1998: 370 (conservation, list). — Amézquita *et al.* 1999: 119 (biodiversity). — Escobar 2000: 207 (checklist for Colombia). — Vaz-de-Mello 2000: 192 (checklist for Brazil). — Vítolo 2000: 599 (key); 2004: 290 (diagnosis, distribution, cited for Colombia). — Barbero 2001: 6 (note for Nicaragua). — Medina *et al.* 2001: 140 (checklist for Colombia). — Halffter & Arellano 2002: 148 (ecology). — Pulido-Herrera *et al.* 2003: 54 (list for Caqueta, Colombia); 2007: 307 (cited for Andean region of Colombia). — Carpio *et al.* 2009: 469 (ecology). — Medina & Pulido-Herrera 2009: 61 (diversity). — Gámez 2010: 16, 19 (comments). — Edmonds & Zídek 2010: 77, 91 (key, diagnosis). — Carvajal *et al.* 2011: 318, 320 (list). — Vaz-de-Mello *et al.* 2011b: 86 (list). — Cultid-Medina *et al.* 2012: 57 (guide). — Cupello & Vaz-de-Mello 2013a: 358, 361–364, 367 (comments, distribution). — Ferrer-Paris *et al.* 2013: 109 (list). — Figueroa *et al.* 2014: 127 (list, distribution). — Pardo-Locarno & Camero 2014: 211 (list for Chocó, Colombia). — Silva *et al.* 2014: 348 (diversity); 2016: 7 (ecology, biogeography). — Ratcliffe *et al.* 2015: 197 (checklist for Peru). — Chamorro *et al.* 2018: 93 (list for Ecuador); 2019: 77 (catalogue). — Gámez & Acconcia 2018: 65, 69, 73 (comments, cited for Peru). — Giraldo *et al.* 2018: 70 (guide). — Santos *et al.* 2018: 46 (list for Acre state, Brazil). — Hielkema & Hielkema 2019: 95 (catalogue for the Guianas). — Nieto *et al.* 2020: 136 (report).

**Material examined**

VENEZUELA – **Aragua** • 1 spec.; Cuyagua; 50 m a.s.l.; 6 Jul. 2004; D. García leg.; CEMT. – **Táchira** • 2 specs; San Cristóbal, Parque Nacional Natural Paramillo; Jul. 1993; J. Blanco leg.; CEMT. – **Yaracuy** • 1 spec.; Bolívar, Aroa; 10.3867° N, 68.6471° W; 1380 m a.s.l.; Jul. 2009; Asmüssen, Colmenares and Martínez leg.; CEMT.

**Distribution**

Colombia, Venezuela, Brazil, Ecuador, Peru, and Bolivia.

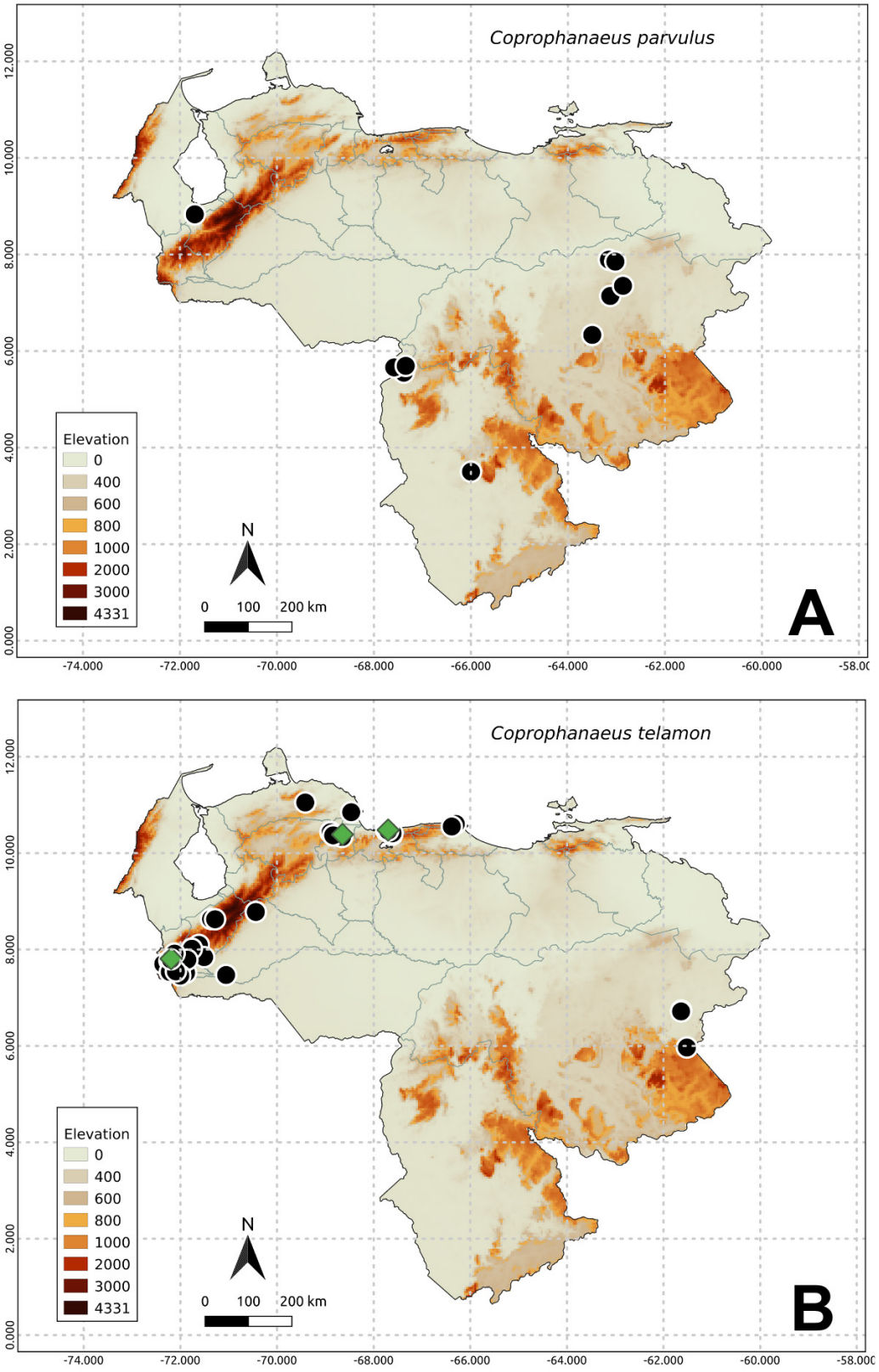


**Fig. 25.** Species distribution. **A**. *Coprophanaeus parvulus* (d'Olsoufieff, 1924). **B**. *Coprophanaeus telamon* (Erichson, 1847). Green diamond = CEMT collection data; black circle = literature data.

**Subregions of Venezuela**

Maracaibo Depression, Plains, System of hills and low sierras Lara-Falcón, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, Andes mountains, Central Coast Mountain Range, and Guiana Shield.

**Literature records**

Blanco 1988: 43 (Venezuela: Táchira: Carretera San Cristóbal–Chorro del Indio, Río Negro, Paramillo, Palo Gordo and Morretón). — Havranek 1989: 61 (Venezuela: Táchira). — Martínez & Clavijo 1990: 7 (Venezuela: Aragua: Parque Nacional Henri Pittier, Estación Biológica Rancho Grande). — Gámez & Mora 2000: 17 (Venezuela). — Arnaud 2002b: 35 (Venezuela: Táchira). — Barbero 2001: 6 (Venezuela). — Gámez 2004: 59 (Venezuela: Mérida: Guaraque: Mesa de Quintero; and Táchira: San Cristóbal: Hacienda Pánaga); 2010: 16, 19 (Venezuela: Andean plains flank). — Gámez & Acconcia 2009: 394 (Venezuela: Zulia: Colón: Depresión de Maracaibo); 2018: 65, 69, 73 (Venezuela: Barinas: Bolívar and Andrés Eloy Blanco). — Hamel-Leigue *et al*. 2009: 57 (Venezuela). — Edmonds & Zídek 2010: 77, 91 (Venezuela: Amazonas [Táchira?]: La Tuquerena Rubio; Aragua; Bolívar; Falcón; Mérida; and Táchira). — Cupello & Vaz-de-Mello 2013a: 367 (Venezuela: Aragua; Táchira: San Cristóbal; La Guaira; and Yaracuy: Bolívar). — Ferrer-Paris *et al*. 2013: 109 (Venezuela: Yaracuy: Hacienda Guáquira). — Chamorro *et al.* 2019: 77 (Venezuela).

Genus ***Cryptocanthon*** Balthasar, 1942

*Cryptocanthon* Balthasar, 1942: 36 (original description). Type species: *Cryptocanthon paradoxus* Balthasar, 1942, by original designation.

*Cryptocanthon* — Pereira & Martínez 1956a: 96, 181 (key, distribution). — Halffter 1961: 231 (key); 2003: 24 (redescription). — Vulcano & Pereira 1964: 673 (catalogue); 1967: 548 (key). — Halffter & Matthews 1966: 261 (catalogue, distribution). — Howden 1973: 39 (redescription). — Halffter & Martínez 1977: 35, 60 (key, list). — Howden & Young 1981: 13, 39 (key, redescription). — Halffter & Edmonds 1982: 139 (catalogue, distribution). — Medina & Lopera-Toro 2000: 306 (key). — Vaz-de-Mello 2000: 192 (checklist for Brazil). — Medina *et al.* 2001: 136 (checklist for Colombia). — Cook 2002: 4 (revision). — Ratcliffe 2002: 13 (checklist for Panama). — Medina *et al.* 2003: 65 (distribution). — Hamel-Leigue *et al.* 2006: 14 (list). — Vaz-de-Mello *et al.* 2011a: 23 (key). — Carvajal *et al.* 2011: 118, 316 (diagnosis, list). — Krajcik 2012: 82 (list). — Solís & Kohlmann 2012: 3 (checklist for Costa Rica). — Boilly & Vaz-de-Mello 2013: 106 (key). — Chamorro *et al.* 2018: 74, 93 (list for Ecuador); 2019: 79 (catalogue).

***Cryptocanthon andersoni*** Cook, 2002
Fig. 26A

*Cryptocanthon andersoni* Cook, 2002: 11 (original description). Type locality: Venezuela: Merida: Santos Marquina: Tabay, "Mucay, Send. Lago Suero" (?), 2700 m a.s.l. Name-bearing type: holotype (CMNC), not examined.

*Cryptocanthon andersoni* — Krajcik 2012: 82 (list).

**Distribution**

Venezuela (endemic).

**Subregion of Venezuela**

Cordillera de los Andes.

**Literature records**

Cook 2002: 11 (Venezuela: Mérida, Lara and Trujillo). — Krajcik 2012: 82 (Venezuela).

***Cryptocanthon gilli*** Cook, 2002
Fig. 26B

*Cryptocanthon gilli* Cook, 2002: 12 (original description). Type locality: Venezuela: Bolívar: 120 km S of El Dorado. Name-bearing type: holotype (CMNC), not examined.

*Cryptocanthon gilli* – Krajcik 2012: 82 (list). — Hielkema & Hielkema 2019: 74 (catalogue for the Guianas).

**Distribution**

Venezuela (endemic).

**Subregion of Venezuela**

System of low mountains and hills Imataca-Cuyuní Northeast Guyana Shield, and Guiana Shield.

**Literature records**

Cook 2002: 10, 12 (Venezuela: Bolívar state). — Krajcik 2012: 82 (Venezuela).

***Cryptocanthon nebulinus*** Howden, 1973
Fig. 27A–B

*Cryptocanthon nebulinus* Howden, 1973: 40, 45 (original description). Type locality: Venezuela: Aragua: Parque Nacional Henri Pittier, Estación Biológica Rancho Grande. Name-bearing type: holotype (CMNC), not examined.

*Cryptocanthon nebulinus* — Cook 2002: 10, 14 (revision). — Krajcik 2012: 82 (list).

**Material examined**

VENEZUELA – **Aragua** • 1 spec.; Parque Nacional Henri Pittier, Estación Biológica Rancho Grande; 1500 m a.s.l.; 21–25 Feb. 1971; S. Peck leg.; human dung trap; forest; CEMT • 1 spec.; Parque Nacional Henri Pittier, Estación Biológica Rancho Grande, Portachuelo; 1100 m a.s.l.; 21–24 Feb. 1971; S. Peck leg.; human dung trap; CEMT.

**Distribution**

Venezuela (endemic).

**Subregion of Venezuela**

Central Coast Mountain Range.

**Literature records**

Cook 2002: 10, 14 (Venezuela: Aragua). — Krajcik 2012: 82 (Venezuela: Aragua).

***Cryptocanthon punctatus*** Cook, 2002
Fig. 27C

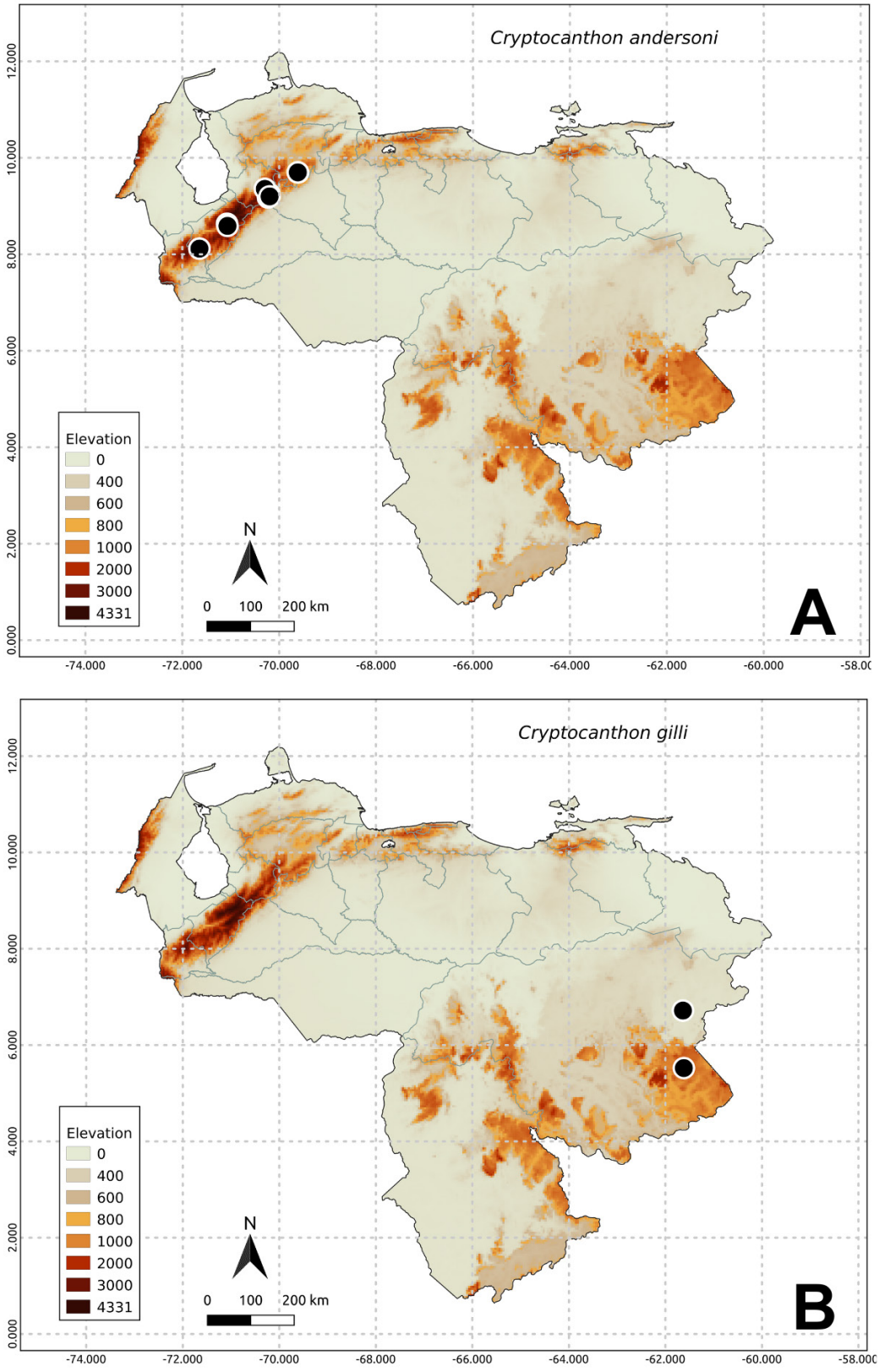


**Fig. 26.** Species distribution. **A**. *Cryptocanthon andersoni* Cook, 2002. **B**. *Cryptocanthon gilli* Cook, 2002. Black circle = literature data.

*Cryptocanthon punctatus* Cook, 2002: 83 (original description). Type locality: Venezuela: Trujillo: old road to Trujillo city. Name-bearing type: holotype (CMNC), not examined.

*Cryptocanthon punctatus* — Krajcik 2012: 82 (list).

**Distribution**

Venezuela (endemic).

**Subregion of Venezuela**

Andes mountains.

**Literature records**

Cook 2002: 11, 83 (Venezuela: Trujillo). — Krajcik 2012: 82 (Venezuela).

Genus ***Deltochilum*** Eschscholtz, 1822

*Deltochilum* Eschscholtz, 1822: 37 (original description). Type species: *Deltochilum dentipes* Eschscholtz, 1822, by original monotypy. Note: Bouchard *et al*. (2024) recently stated that *D. dentipes* was fixed as the type species of *Deltochilum* by the subsequent designation of Thon (1832), but this is incorrect. *Deltochilum dentipes* was the sole nominal species that Eschscholtz originally included in the genus without hesitation. It is true that he also said that *Ateuchus gibbosus* (Fabricius, 1775) (currently, *Deltochilum gibbosum*) was "closely related" to *D. dentipes* and "seems to also belong to the genus" ("[...] welcher ebenfalls zu dieser Gattung zu gehören scheint"). However, because this was at most a doubtful assignment of the species to *Deltochilum, gibbosus* cannot be considered a second originally included nominal species per Article 67.2.5 of the Code (ICZN 1999) and has, therefore, never been eligible for type fixation. *Deltochilum dentipes*, having been the only originally included nominal species, was automatically fixed as the type species by original monotypy (Art. 68.3). After we brought this to his attention, Patrice Bouchard (pers. com. to MC, 12th June 2024) now agrees with us.

*Anamnesis* Vigors, 1826: 510 (original description). Type species: *Anamnesis macleayii* Vigors, 1826, by original monotypy.

*Meghyboma* Kolbe, 1893: 192 (original description). Type species: *Deltochilum dentipes* Eschscholtz, 1822, by subsequent designation of Shipp (1897).

*Telhyboma* Kolbe, 1893: 192 (original description). Type species: *Deltochilum orbiculare* Van Lansberge, 1874, by original monotypy.

*Deltochilum* – Agassiz 1846: 341 (catalogue). — Burmeister 1848: 134 (redescription); 1873: 408 (redescription). — Lacordaire 1855: 79 (redescription). — LeConte 1861: 125 (key). — Harold 1869d: 995 (catalogue, distribution). — Van Lansberge 1874: 188 (characteristics). — Kolbe 1893: 191 (redescription). — Shipp 1897: 194 (comments). — Gillet 1911b: 35 (catalogue). — Lucas 1920: 228 (catalogue, distribution). — Paulian 1938: 235, 237 (key, redescription). — Pessôa & Lane 1941: 411, 426 (key, redescription). — Blackwelder 1944: 202 (list). — Lane 1946: 171 (comments). — Roze 1955: 43 (checklist for Venezuela). — Pereira & Martínez 1956a: 96 (key). — Martínez 1959: 50 (catalogue for Argentina). — Halffter 1961: 231 (key); 2003: 26 (redescription). — Vulcano & Pereira 1964: 639 (catalogue). — Halffter & Matthews 1966: 261 (catalogue, distribution). — Vulcano & Pereira 1967: 549 (key). — Halffter & Martínez 1977: 36 (key). — Howden & Young 1981: 14, 36 (key, redescription). — Halffter & Edmonds 1982: 139 (catalogue, distribution). — Medina & Lopera-Toro 2000: 311 (key). — Vaz-de-Mello 2000: 192 (checklist for Brazil). — Medina *et al.* 2001: 136 (checklist for Colombia). — Ratcliffe *et al.* 2002: 49 (key); 2015: 195 (checklist for Peru). — Ratcliffe 2002: 13 (checklist for Panama). — Medina *et al.* 2003: 64 (distribution). —

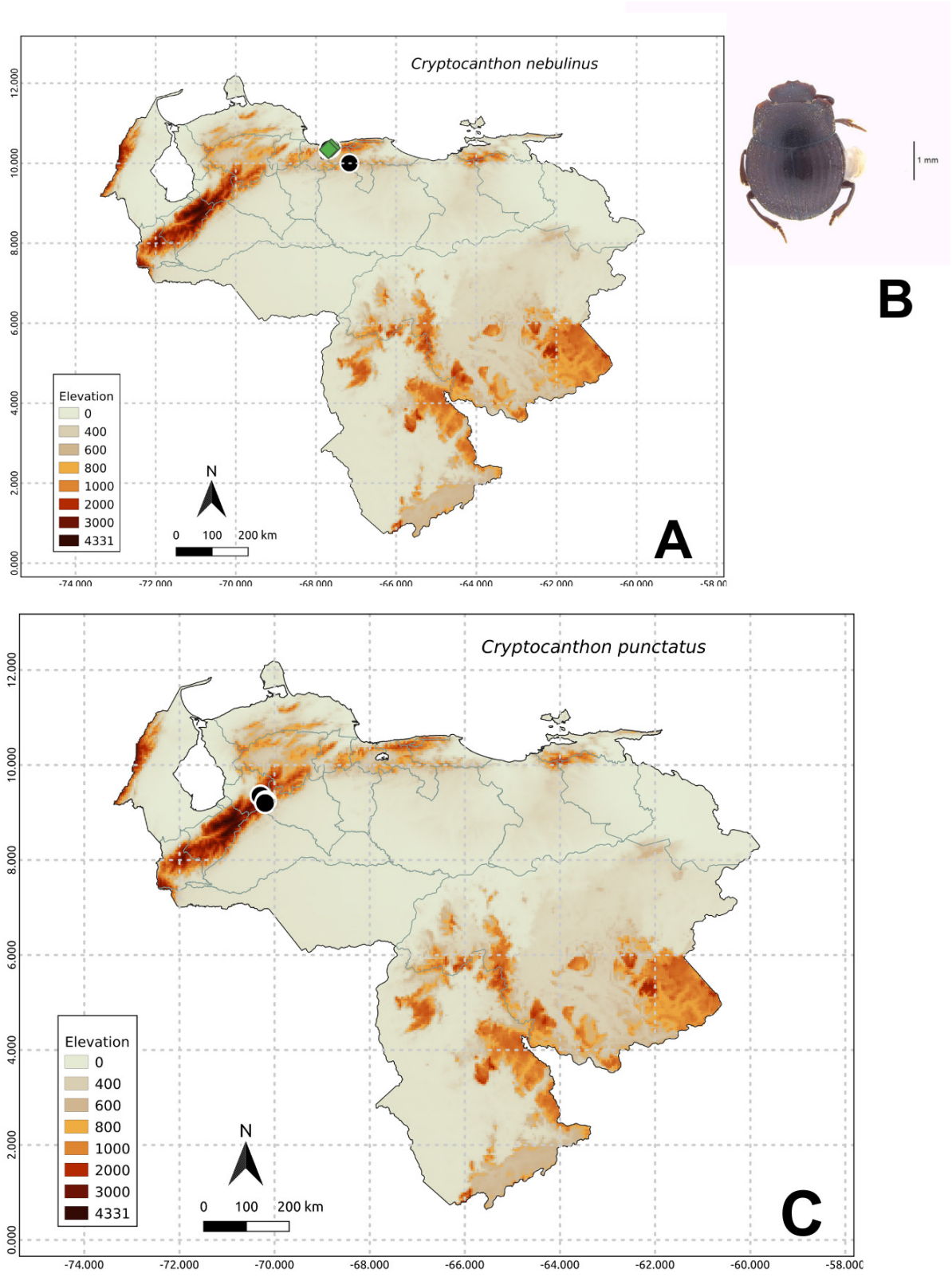


**Fig. 27.** Species distribution. **A**. *Cryptocanthon nebulinus* Howden, 1973. **B**. Dorsal view of *C. nebulinus*. **C**. *Cryptocanthon punctatus* Cook, 2002. Green diamond = CEMT collection data; black circle = literature data.

Hamel-Leigue *et al.* 2006: 14 (list). — Vaz-de-Mello *et al.* 2011a: 25 (key). — Carvajal *et al.* 2011: 123, 316 (diagnosis, list). — Krajcik 2012: 88 (list). — Solís & Kohlmann 2012: 4 (checklist for Costa Rica). — Boilly & Vaz-de-Mello 2013: 107 (key, characteristics). — Chamorro *et al.* 2018: 76, 93–94 (list for Ecuador); 2019: 9, 82 (catalogue). — Hielkema & Hielkema 2019: 74 (catalogue for the Guianas).

*Anamnesi* – Agassiz 1846: 58 (catalogue). — Harold 1869d: 995 (cited as synonym, cited as *Annamesis*). — Shipp 1897: 194 (comments, cited as synonym of *Deltochilum*). — Gillet 1911b: 35 (cited as synonym of *Deltochilum*, cited as *Annamesis*). — Paulian 1938: 237 (cited as synonym of *Deltochilum*, cited as *Annamesis*). — Blackwelder 1944: 202 (cited as synonym of *Deltochilum*, cited as *Annamesis*). — Lane 1946: 171 (comments). — Pereira & Martínez 1956a: 120 (cited as synonym of *Deltochilum*). — Martínez 1959: 50 (cited as synonym of *Deltochilum*). — Vulcano & Pereira 1964: 639 (cited as synonym of *Deltochilum*). — Ratcliffe 2002: 13 (cited as synonym of *Deltochilum*). — Solís & Kohlmann 2012: 4 (cited as synonym of *Deltochilum*, cited as *Annamesis*).

*Meghyboma* – Shipp 1897: 194 (comments, cited as synonym of *Deltochilum*). — Paulian 1938: 243, 246 (key, review). — Blackwelder 1944: 202 (cited synonym of *Deltochilum*). — Lane 1946: 174 (cited synonym of *Deltochilum*). — Halffter & Edmonds 1982: 139 (cited as subgenus of *Deltochilum*). — Solís & Kohlmann 2012: 4 (cited as synonym of *Deltochilum*).

*Telhyboma* – Paulian 1938: 219–220, 224 (cited, comments). — Génier 2012: 25–26, 30–31 (revision, new synonymy). — Gonzalez-Alvarado & Vaz-de-Mello 2021a: 2–3 (revision).

### ***Deltochilum abdominale*** Martínez, 1947
Fig. 28A

*Deltochilum abdominalis* [sic] Martínez, 1947a: 269 (original description). Type locality: Venezuela: Distrito Capital: Pico Naiguatá. Name-bearing type: holotype (MACN), examined by MC. Note: as explained by Harold (1869d), the genus-group name *Deltochilum* is formed from the combination of the Ancient Greek nouns δέλτᾰ (‘*délta*’), the name for the fourth letter in the Ancient Greek alphabet (Δ) and, by extension, used to refer to anything shaped like that letter, and χεῖλος (‘*kheîlos*’), meaning ‘lip’, ‘mouth’, in reference to the labrum of the single species originally assigned to the genus, a structure that Eschscholtz (1822) described as being “cordiform” (i.e., heart-shaped, or an inverted letter delta). Since, in his Latinisation of the new name, Eschscholtz changed the ending of ‘*kheîlos*’ to ‘*-um*’, a neuter suffix in Latin, to render ‘*-chilum*’, the noun *Deltochilum*, too, is to be regarded as neuter in gender in accordance with Article 30.1.3 of the Code (ICZN 1999). Latin or Latinised adjectival specific and subspecific names combined with it must, therefore, be declined accordingly (Article 31.2). Martínez (1947a), however, formed the binomen originally as *Deltochilum abdominalis*, with the two-termination New Latin adjective used as the specific name – meaning ‘abdominal’ – incorrectly declined in the masculine/feminine. We fix this in the heading above by declining the name in the neuter; i.e., by replacing the desinence ‘*-is*’ with ‘*-e*’ as grammatically required.

*Deltochilum abdominale* – Roze 1955: 43 (checklist, cited for Venezuela). — Havranek 1989: 61 (list). — Medina *et al.* 2001: 136 (checklist for Colombia). — Krajcik 2012: 88 (list).

*Deltochilum* (*Deltohyboma*) *abdominale* – Vulcano & Pereira 1964: 652 (catalogue). — Blanco 1987: 43 (catalogue). — González-Alvarado & Vaz-de-Mello 2021a: 62, 74 (revision, comments). — Martínez 1954: 47 (comments, cited for Colombia).

**Material examined**

**Paratype**

VENEZUELA – 1 ♂; “PARATIPO”; “VENEZUELA / D.F. 720 mts. / C° NAIGUATÁ / R. LICHY-LEG. / Coll-Martínez. / Jul 943”; “*Deltochilum* (*D.*) / *abdominalis* ♂ / sp.n. / A. Martínez-DET.19 46.”; CEMT- 00068431.

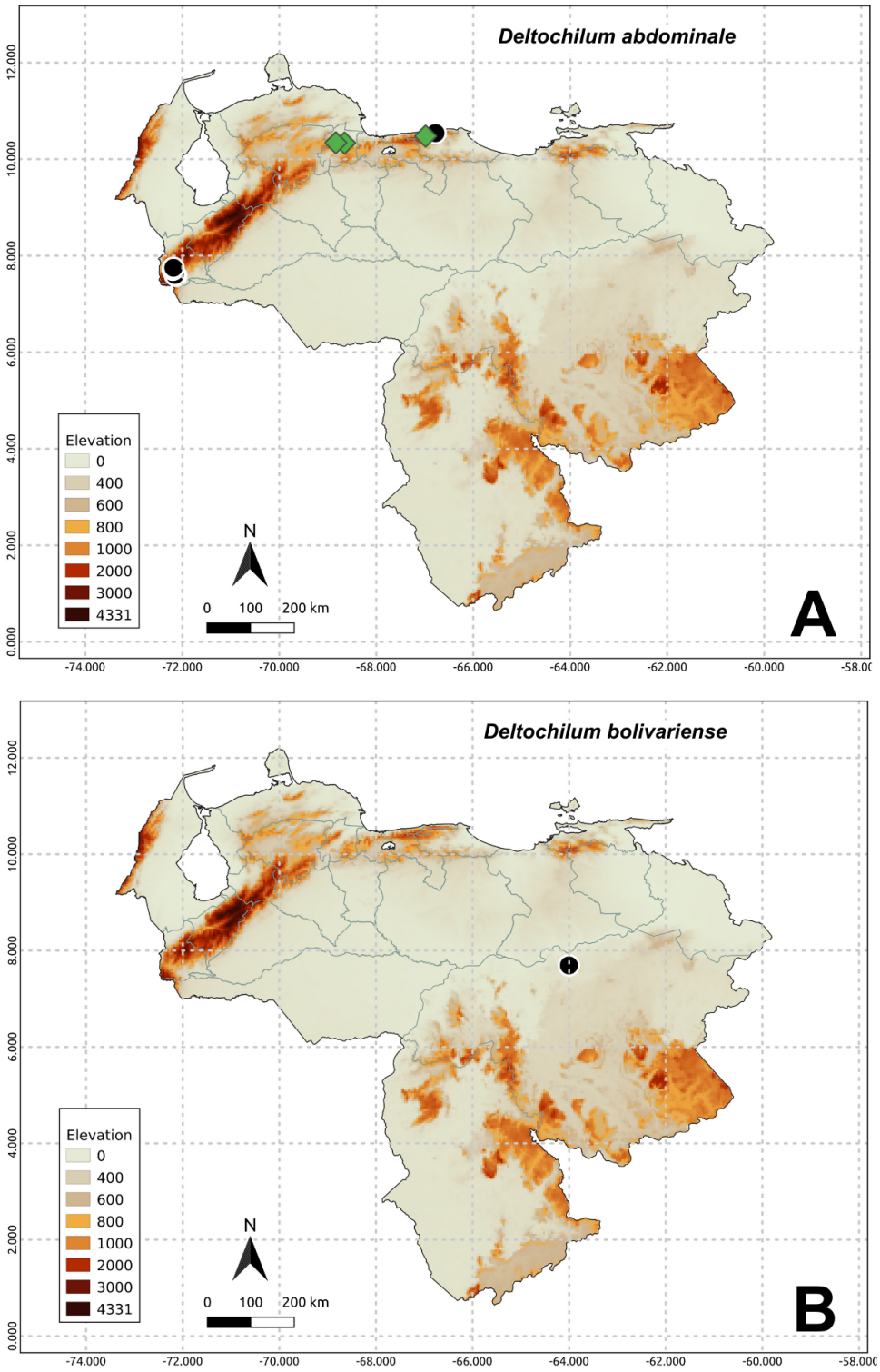


**Fig. 28.** Species distribution. **A**. *Deltochilum abdominale* Martínez, 1947. **B**. *Deltochilum bolivariense* González-Alvarado & Vaz-de-Mello, 2021. Green diamond = CEMT collection data; black circle = literature data.

**Additional material**

VENEZUELA – **Yaracuy** • 2 specs; Bolivar, Aroa; 10°20′22.74″ N, 68°50′5.71″ W ; 1372 m a.s.l.; 19 Jul. 2009; Colmenares and H. Martínez leg.; CEMT • 1 spec.; Hacienda Guáquira; 25 Nov. 2005; curso NM2006 leg.; faeces; 23h, 08:07; CEMT • 1 spec.; same locality data as for the preceding; 24 Nov. 2005; faeces; 23h 08:45; CEMT.

**Distribution**

Colombia and Venezuela.

**Subregions of Venezuela**

Andes mountains and Central Coast Mountain Range.

**Literature records**

Martínez 1947a: 269 (Venezuela: Distrito Capital). — Roze 1955: 43 (Venezuela). — Vulcano & Pereira 1964: 652 (Venezuela); 1967: 557 (Venezuela). — Blanco 1987: 43 (Venezuela: Táchira: Río Frío, Río Negro and Chorro del Indio). — Havranek 1989: 61 (Venezuela: Táchira: outskirts of San Cristóbal). — Krajcik 2012: 88 (Venezuela). — González-Alvarado & Vaz-de-Mello 2021a: 62 (Pacific dominion: Venezuelan).

***Deltochilum bolivariense*** González-Alvarado & Vaz-de-Mello, 2021
Fig. 28B

*Deltochilum bolivariensis* [sic] González-Alvarado & Vaz-de-Mello, 2021a: 68 (original description). Type locality: Venezuela: Bolívar: Puente Cocuizas, 70 km of Ciudad Bolívar. Name-bearing type: holotype (CMNC), not examined. Note: As noted above for *D. abdominale*, the grammatical gender of the genus-group name *Deltochilum* is neither masculine nor feminine as implied by González-Alvarado & Vaz-de-Mello (2021a), but neuter. Therefore, the original spelling of the specific name as rendered by the authors, *bolivariensis* – a two-termination New Latin adjective in the nominative case meaning 'from Bolívar', the Venezuelan state –, is incorrect and must be amended from the masculine/feminine to its neuter form, *bolivariense*.

**Distribution**

Venezuela (endemic).

**Subregions of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield.

**Literature records**

González-Alvarado & Vaz-de-Mello 2021a: 68 (Venezuela: Bolívar: Puente Cocuizas).

***Deltochilum bordoni*** Halffter & Martínez, 1976
Fig. 29A

*Deltochilum bordoni* Halffter & Martínez, 1976: 39–45 (original description). Type locality: Venezuela: Bolívar: Meseta de Sarisariñama. Name-bearing type: holotype (MACN), examined by MC.

*Deltochilum bordoni* — Krajcik 2012: 88 (list). — Hielkema & Hielkema 2019: 76 (bibliographic review for Guianas).

**Material examined**

**Paratype**

VENEZUELA – 1 ♀; "PARATIPO"; "*Deltochilum* (Delto- / hyboma) ♀. / *bordoni*. / Halffter / A. Martínez- DET. 19 / 76"; "Kaieteur, BG. / VIII.5 1911"; CEMT-00109591.

**Additional material**

VENEZUELA – **Bolívar** • 1 spec.; 120 km S of El Dorado; 20–27 Dec. 1987; B.D. Gill leg.; CEMT • 1 spec.; 135 km S of El Dorado; 20 Jul.–7 Aug. 1986; B. Gill leg.; CEMT.

**Distribution**

Venezuela and Guyana.

**Subregions of Venezuela**

System of low mountains and hills Imataca-Cuyuní of Northeast Guiana Shield, and Guiana Shield.

**Literature records**

Halffter & Martínez, 1976: 40 (Venezuela: Bolívar: Meseta de Sarisariñama). — Krajcik 2012: 88 (Venezuela).

***Deltochilum cristinae*** (Martínez, 1991)
Fig. 29B

*Calhyboma cristinae* Martínez, 1991: 386 (original description). Type locality: Venezuela: Apure: Puerto Páez. Name-bearing type: holotype (MACN), examined by MC.

*Deltochilum cristinae* – Krajcik 2012: 88 (checklist).
*Deltochilum* (*Calhyboma*) *cristinae* – González *et al.* 2009: 262 (cited for Colombia). — Hielkema & Hielkema 2019: 75 (catalogue for the Guianas).

**Distribution**

Colombia and Venezuela.

**Subregions of Venezuela**

Plains, and Serrania de Perija.

**Literature records**

Martínez 1991: 386 (Venezuela: Amazonas and Táchira). — González *et al*. 2009: 262 (Venezuela). — Krajcik 2012: 88 (Venezuela).

***Deltochilum guildingii*** (Westwood, 1834)
Fig. 30A

*Hyboma guildingii* Westwood, 1834: pl. "Beetles.", unnumbered (species-group name made available by being accompanied by an illustration of a member of the taxon, an indication in the sense of Article 12.2.7 of the Code [ICZN 1999]). Type locality: Equatorial America (from the label content; see González-Alvarado & Vaz-de-Mello's (2014) transcription). Name-bearing type: holotype (OUMNH), examined by FZVM. Note: the publication year is 1834, not 1835 as usually stated in the literature. See Evenhuis (1997b) and Bousquet (2016) for details on the publication date of the several parts of *The British cyclopaedia of natural history* and the authorship of its entomological entries, on the plate of one of which, "Beetle" (not in the corresponding text on p. 372 as often cited), the name first appeared.

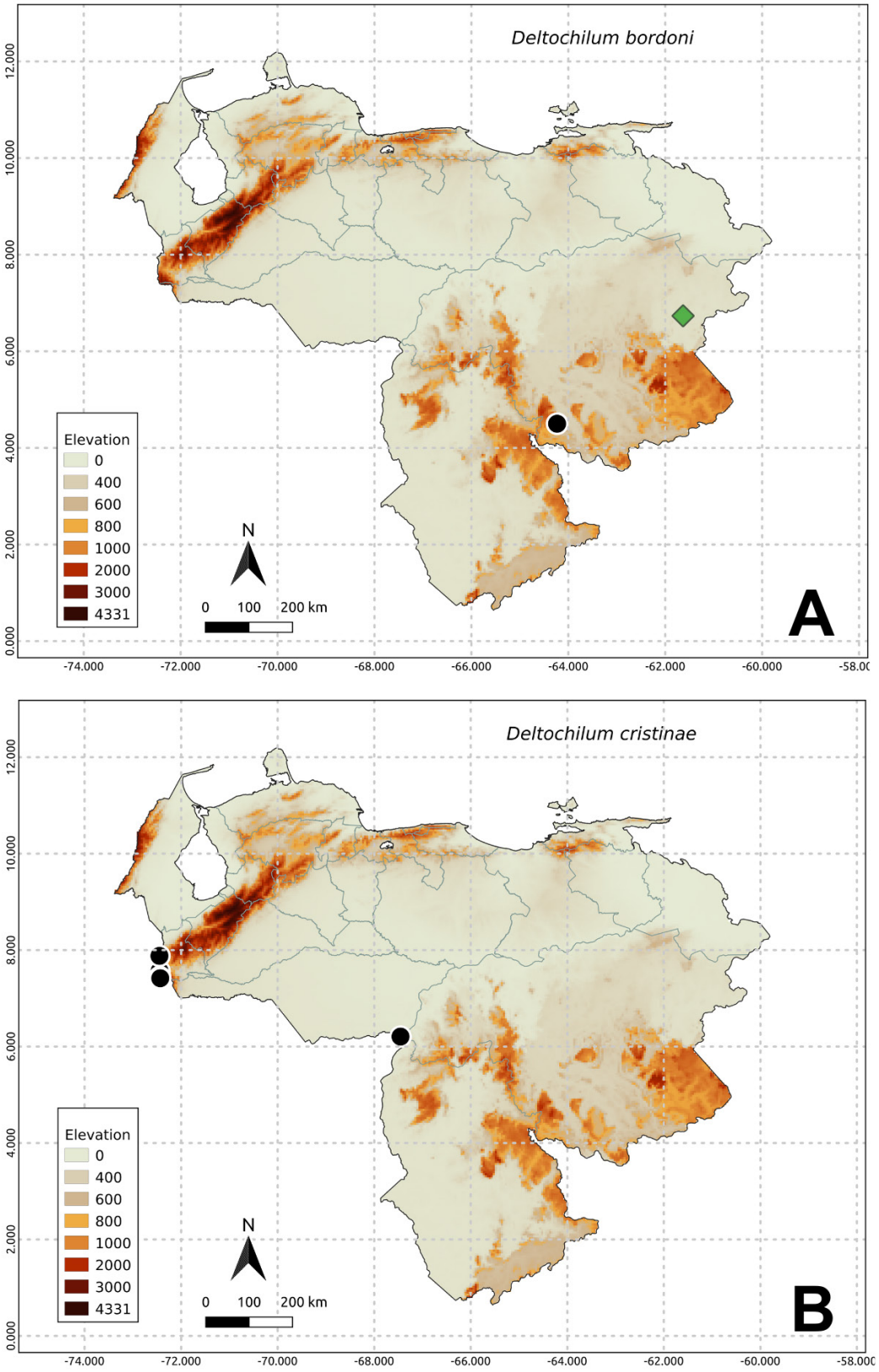


**Fig. 29.** Species distribution. **A**. *Deltochilum bordoni* Halffter & Martínez, 1976. **B**. *Deltochilum cristinae* Martínez, 1991. Green diamond = CEMT collection data; black circle = literature data.

*Hyboma chalcea* Buquet, 1844: 19 (original description). Type locality: unknown. Name-bearing type: lectotype (MNHN), designated by González-Alvarado & Vaz-de-Mello (2014), examined by FZVM.

*Deltochilum* (*Hybomidium*) *guildingii* – González-Alvarado & Vaz-de-Mello 2014: 451, 473 (diagnosis, distribution, key). — Hielkema & Hielkema 2019: 77 (catalogue for the Guianas).

**Material examined**

VENEZUELA – **Amazonas** • 1 spec.; Caño Piojo; Apr. 2006; D. García leg.; CEMT. – **La Guaira** • 1 spec.; Vargas, La Sabana; 10°36′25.34″ N, 66°16′31.08″ W; 17 m a.s.l.; 20 Jul. 2009; H. Martínez, P. Cely, M. Córdova and M. Nuñez leg.; human faeces; CEMT. – **Yaracuy** • 1 spec.; Bolívar, Aroa; 10°0′0″ N, 68°0′0″ W; 459 m a.s.l.; 20 Jul. 2009; M. Asmüssen, P. Colmenares and H. Martínez leg.; human faeces; CEMT. – **Táchira** • 5 specs; Libertador, San Joaquín de Navay; 7.6622° N, 71.7104° W; 200 m a.s.l.; Aug. 2006; T. Good leg.; CEMT. –

**Distribution**

Colombia, Venezuela, Trinidad and Tobago, Suriname, and Brazil.

**Subregions of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco, System of hills and low piedmont mountains of the Guiana Shield, Andes mountains, Central Coast Mountain Range, and Guiana Shield.

**Literature record**

González-Alvarado & Vaz-de-Mello 2014: 451, 473 (Venezuela: Amazonas and Bolívar).

***Deltochilum icarus*** (Olivier, 1789)
Fig. 30B

*Scarabaeus icarus* Olivier 1789: 155 (original description). Type locality: South America. Name-bearing type: lectotype (BMNH), designated by González-Alvarado & Vaz-de-Mello (2014), examined by FZVM.

**Distribution**

Venezuela, Suriname, French Guiana, and Brazil (González-Alvarado & Vaz-de-Mello 2014).

**Subregions of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield.

**Literature records**

González-Alvarado & Vaz-de-Mello 2014: 456 (Venezuela: Bolívar: 6 km S of San Isidro). — Hielkema & Hielkema 2019: 78 (Venezuela).

**Remarks**

The CEMT houses no Venezuelan specimens of *Deltochilum icarus*, but González-Alvarado & Vaz-de-Mello (2014) mention the presence of a male and a female from the state of Bolívar in the CMNC. Since their work is a complete monograph of the subgenus *Hybomidium* Shipp, 1897, including the study of the types and the delimitation of species boundaries, we consider it unlikely they would have misidentified the specimens. Moreover, the confirmed presence of the species in northern Amazonian areas in the Guianas and Brazil lends further credence to their Venezuelan record. We, thus, accept the species as certainly present in the country.

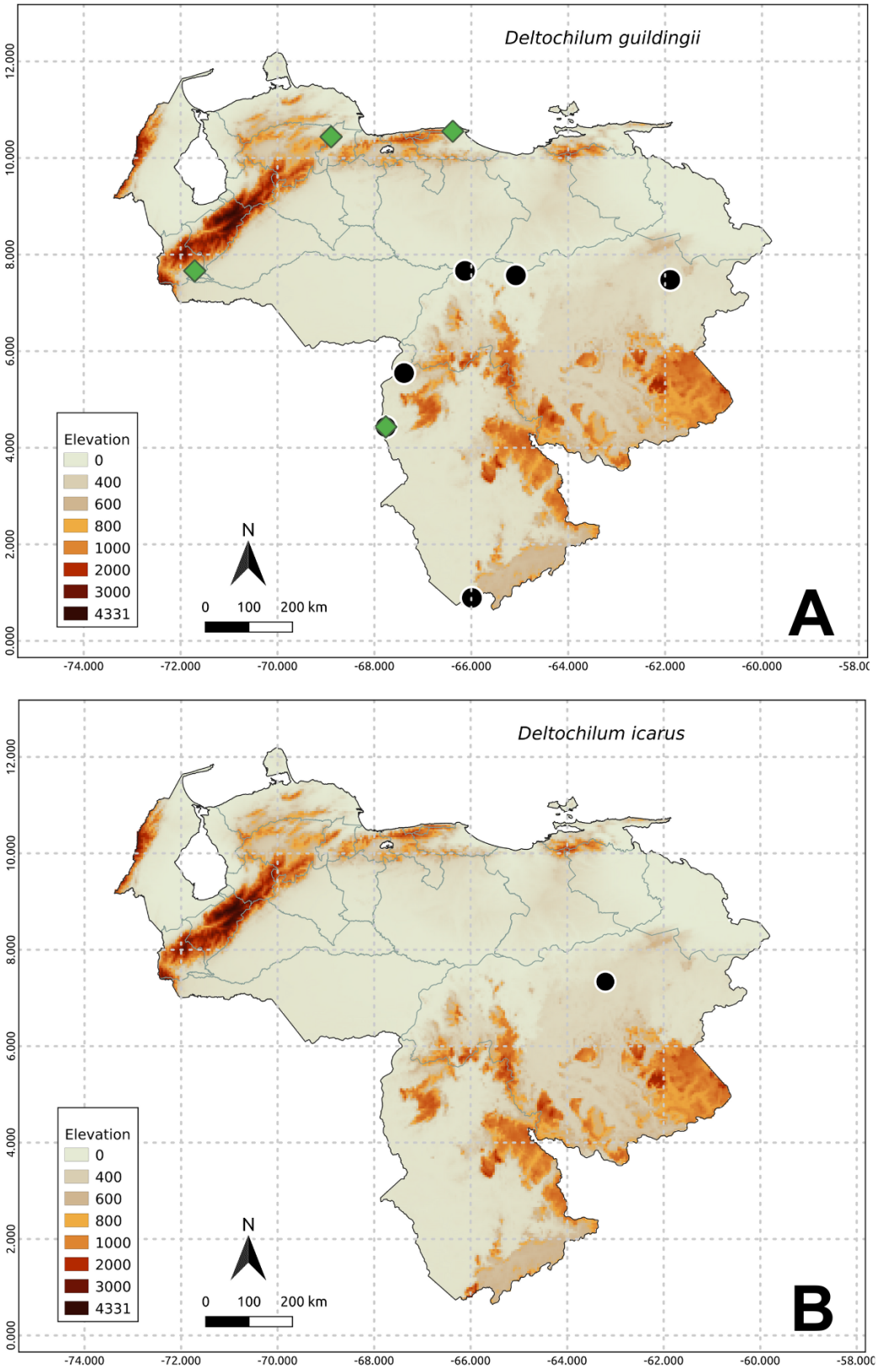


**Fig. 30.** Species distribution. **A**. *Deltochilum guildingii* (Westwood, 1835). **B**. *Deltochilum icarus* (Olivier, 1789). Green diamond = CEMT collection data; black circle = literature data.

***Deltochilum lindemannae*** Balthasar, 1967
Fig. 31A

*Deltochilum lindemannae* Balthasar, 1967: 1–2 (original description). Type locality: Brazil: Amazonas: Santa Isabel do Rio Negro, Cauaburi missions, Canal Maturacá. Name-bearing type: holotype originally said to be in ZSM (Balthasar 1967), but not found there by FZVM, nor in the Balthasar collection material at NMPC. Two paratypes, a male and a female, are in the latter (Bezděk & Hájek 2011), as originally informed (Balthasar 1967). The other five paratypes, however, all said to be in ZSM along with the holotype (Balthasar 1967), were also not found there.

*Deltochilum lindemannae* – González-Alvarado & Vaz-de-Mello 2021a: 58 (taxonomic revision, diagnosis of species-group).

**Distribution**

Venezuela and Brazil.

**Subregion of Venezuela**

System of low mountains and hills Imataca-Cuyuní of Escudo Northeast Guiana.

**Literature record**

González-Alvarado & Vaz-de-Mello 2021a: 63 (Venezuela: "Pantepui (one locality Venezuela, Bolívar, El Dorado)").

***Deltochilum nonstriatum*** González-Alvarado & Vaz-de-Mello, 2021
Fig. 31B

*Deltochilum nonstriatum* González-Alvarado & Vaz-de-Mello, 2021b: 99 (original description). Type locality: Venezuela: Bolívar: km 40 of Santa Elena, "Icabaru Road". Name-bearing type: holotype (CMNC), not examined.

**Distribution**

Venezuela (endemic).

**Subregion of Venezuela**

Guiana Shield.

**Literature record**

González-Alvarado & Vaz-de-Mello 2021b: 99, 104 (Venezuela: Bolívar).

***Deltochilum septemstriatum*** Paulian, 1938
Fig. 32A

*Deltochilum* (*Deltochilum*) *septemstriatum* Paulian, 1938: 289 (original description). Type locality: French Guiana: Cayenne: Kourou (Les Roches, Mont Pariacabo); Saint-Laurent-du-Maroni. Name-bearing type: syntypes (MNHN), examined by FZVM.

*Deltochilum* (*Deltohyboma*) *septemstriatum* – Blackwelder 1944: 203 (checklist, cited for French Guiana). — Vulcano & Pereira 1964: 658 (catalogue). — Feer 2000: 32 (list for French Guiana); 2008: 56, 62 (ecology); 2013: 766 (list for French Guiana). — Vaz-de-Mello 2000: 192 (checklist for Brazil). — Feer & Pincebourde 2005: 30 (list). — Quintero & Roslin 2005: appendix A (ecology). — Larsen 2011: 98 (list for Suriname); 2013: 96 (list for Suriname). — Brûle *et al.* 2011a:

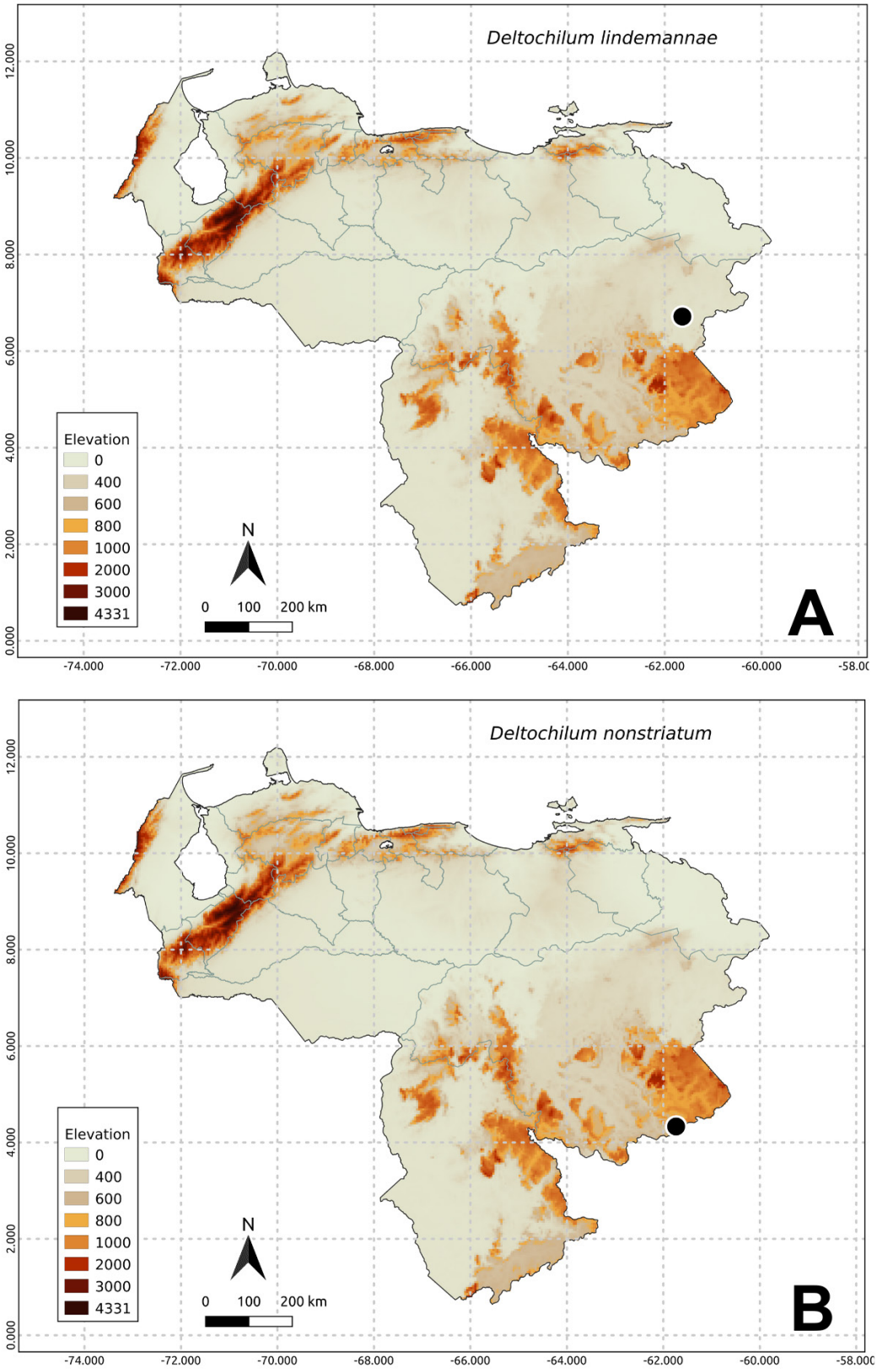


**Fig. 31.** Species distribution. **A**. *Deltochilum lindemannae* Balthasar, 1967 **B**. *Deltochilum nonstriatum* González-Alvarado & Vaz-de-Mello, 2021. Black circle = literature data.

193 (inventory); 2014: 183 (list). — Price & Feer 2012: 327 (list for French Guiana). — Ferrer-Paris *et al.* 2013: 109 (list). — Ratcliffe 2013: 493 (list, ecology). — Boilly 2015: 86–89 (key, fig. 4, comments). — Feer & Boissier 2015: 169 (list). — Hielkema & Hielkema 2019: 76 (catalogue for the Guianas). — González-Alvarado & Vaz-de-Mello 2021a: 58 (taxonomic revision).

**Material examined**

VENEZUELA – **Bolivar** • 1 spec.; Anacoco; 6 Aug. 2006 15: 35; col. curso NM2006; faeces; CEMT.

**Distribution**

Venezuela, Guyana, Suriname, French Guiana, and Brazil.

**Subregions of Venezuela**

System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Guiana Shield.

**Literature records**

Ferrer-Paris *et al*. 2013: 109 (Venezuela: Bolívar: Isla de Anacoco). — González-Alvarado & Vaz-de-Mello 2021a: 58 (Venezuela: Bolívar).

***Deltochilum tenuistriatum*** González-Alvarado & Vaz-de-Mello, 2021
Fig. 32B

*Deltochilum tenuistriatum* González-Alvarado & Vaz-de-Mello, 2021b: 102 (original description). Type locality: Venezuela: Bolívar: 10 km E of San Francisco Yuruani. Name-bearing type: holotype (CMNC), not examined.

**Distribution**

Venezuela (endemic).

**Subregion of Venezuela**

Guiana Shield.

**Literature record**

González-Alvarado & Vaz-de-Mello 2021b: 102, 104 (Venezuela: Bolívar).

Genus ***Dendropaemon*** Perty, 1830

*Dendropaemon* Perty, 1830: 38 (original description). Type species: *Eurysternus piceus* Perty, 1830, by subsequent designation of Blut (1939).

*Dendropemon* Agassiz, 1846: 119 (unjustified emendation of *Dendropaemon* Perty). Type species: *Eurysternus piceus* Perty, 1830, in accordance with Articles 33.2.3 and 67.8 of the Code (ICZN 1999) (see Cupello & Génier 2017).

*Dendropaemon* – Lacordaire 1855: 102 (redescription). — d'Olsoufieff 1924: 19, 121 (key, redescription). — Blut 1939: 267 (redescription). — Pessôa & Lane 1941: 470 (key). — Martínez 1959: 106 (catalogue for Argentina). — Halffter & Matthews 1966: 258 (catalogue, distribution). — Vulcano & Pereira 1967: 566 (key). — Edmonds 1972: 843 (description); 1994: 17 (key). — Halffter & Edmonds 1982: 136 (catalogue, distribution). — Gámez & Mora 2000: 17 (list). — Medina & Lopera-Toro 2000: 301 (key). — Vítolo 2000: 593 (key); 2004: 292 (redescription). — Vaz-de-Mello 2000: 192 (checklist for Brazil). — Medina *et al.* 2001: 140 (checklist for Colombia). — Arnaud 2002b:

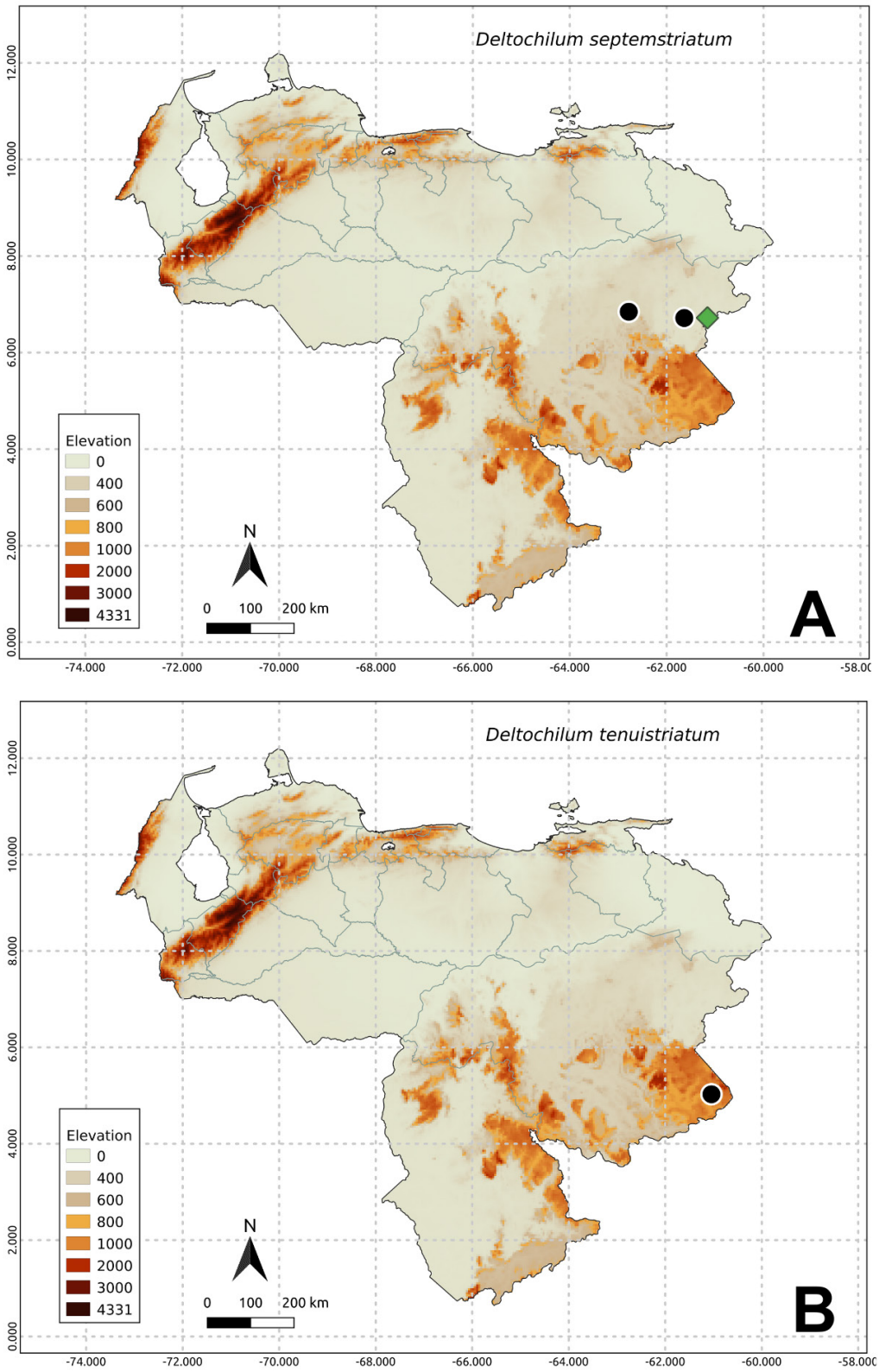


**Fig. 32.** Species distribution. **A**. *Deltochilum septemstriatum* Paulian, 1938. **B**. *Deltochilum tenuistriatum* González-Alvarado & Vaz-de-Mello, 2021. Green diamond = CEMT collection data; black circle = literature data.

14 (key). — Hamel-Leigue *et al.* 2006: 17 (list); 2009: 59 (distribution for Bolivia). — Vaz-de-Mello *et al.* 2011a: 24 (key). — Carvajal *et al.* 2011: 142 (diagnosis). — Krajcik 2012: 89 (list). — Boilly & Vaz-de-Mello 2013: 107 (key). — Figueroa *et al.* 2014: 136 (distribution for Peru). — Boilly *et al.* 2016: 93 (list, comments). — Génier & Arnaud 2016: 6 (monograph). — Cupello & Génier 2017: 821–824 (revision). — Chamorro *et al.* 2018: 75, 94 (list for Ecuador); 2019: 10, 106 (catalogue). — Hielkema & Hielkema 2019: 98 (catalogue for the Guianas).

*Dendropemon* – Harold 1869d: 1020 (catalogue, distribution). — Lucas 1920: 230 (nomenclator). — Gillet 1911b: 88 (catalogue). — Blackwelder 1944: 210 (list).

***Dendropaemon angustulus*** Génier & Arnaud, 2016
Fig. 33A

*Dendropaemon angustulus* Génier & Arnaud, 2016: 26 (original description). Type locality: Venezuela: Bolívar: 26 km N Guasipati. Name-bearing type: holotype (CMNC), not examined.

**Distribution**

Venezuela, Guyana, French Guiana, and Brazil.

**Subregion of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield.

**Literature record**

Génier & Arnaud 2016: 26 (Venezuela: Bolívar).

***Dendropaemon fredericki*** (Klages, 1906)
Fig. 33B

*Eurypodea fredericki* Klages 1906: 45 (original description). Type locality: Venezuela: Bolívar: Suapure, Caura River. Name-bearing type: holotype (CUIC) (Génier & Arnaud 2016), not examined.

*Tetramereia frederickii* – Klages 1907: 141 (redescription). — Blut 1939: 298 (cited). — Edmonds 1972: 851 (nomenclatural comments).

*Eurypodea fredericki* – Felsche 1908 (synonym). — d'Olsoufieff 1924: 120 (cited as synonym of *Dendropaemon convexus*). — Janssens 1940: 7 (contribution, cited as synonym). — Blackwelder 1944: 211 (checklist, cited as synonym of *Eurypodea convexus*).

*Dendropaemon fredericki* – Gillet 1911b: 88 (catalogue, cited as synonym of *Dendropaemon convexus*).

*Dendropaemon* (*Eurypodea*) *fredericki* – Génier & Arnaud 2016: 45, 86 (revision, key). — Hielkema & Hielkema 2019: 100 (catalogue for the Guianas).

**Distribution**

Colombia, Venezuela, Suriname, French Guiana, and Brazil.

**Subregions of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield.

**Literature records**

Klages 1906: 45 (Venezuela: [Bolívar]: Suapure); 1907: 141(Venezuela: Bolívar: Suapure). — Gillet 1911b: 88 (Venezuela). — d'Olsoufieff 1924: 120 (Venezuela?). — Blackwelder 1944: 211

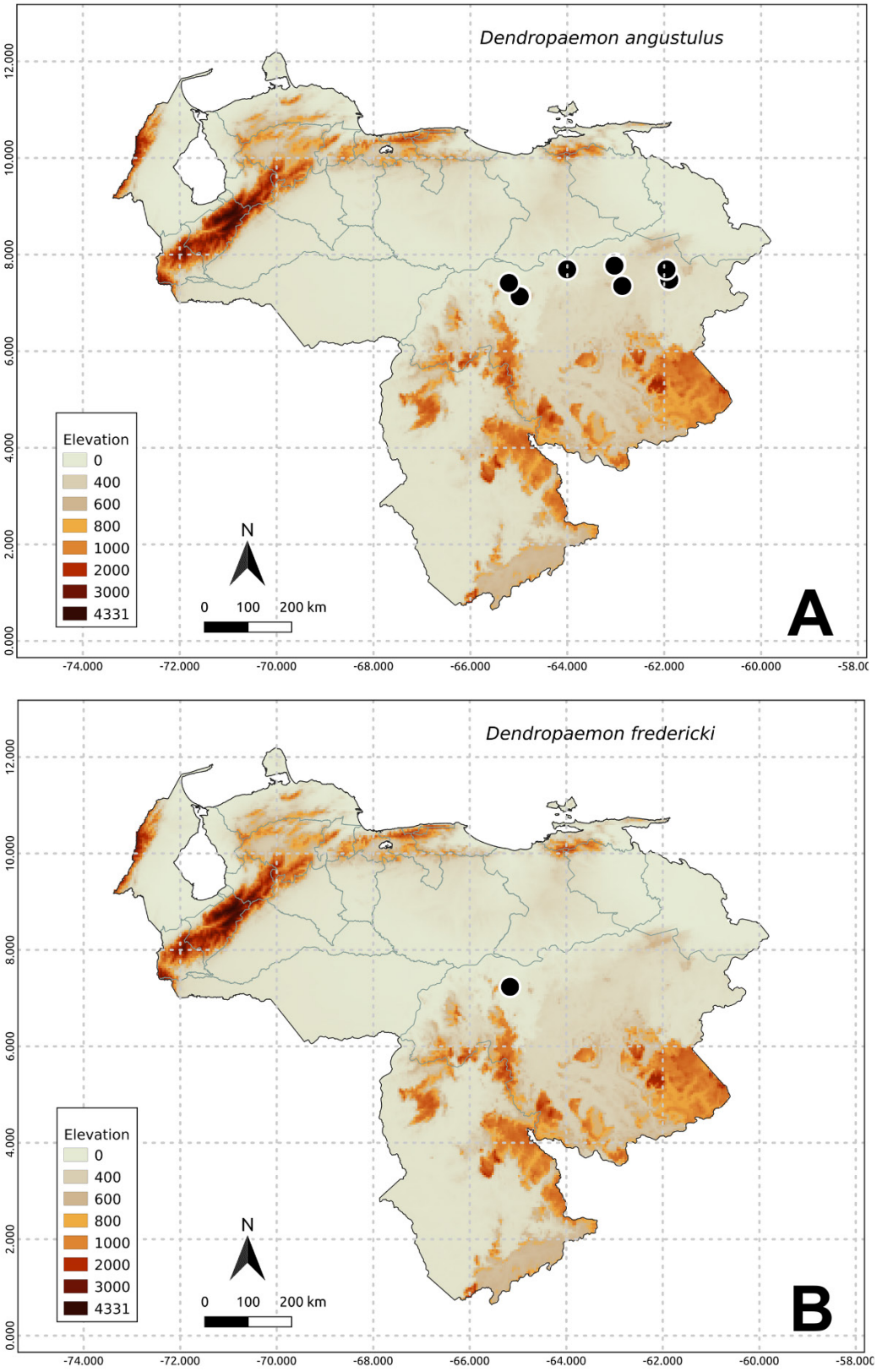


**Fig. 33.** Species distribution. **A**. *Dendropaemon angustulus* Génier & Arnaud, 2016. **B**. *Dendropaemon fredericki* (Klages, 1906). Black circle = literature data.

(Venezuela). — Arnaud 2002b: 16 (Venezuela: Bolívar: Suapure). — Noriega *et al*. 2008a: 133 (Venezuela). — Génier & Arnaud 2016: 45, 85 (Venezuela: Bolívar).

***Dendropaemon inemarginatus*** Génier & Arnaud, 2016
Fig. 34A

*Dendropaemon* (*Glaphyropaemon*) *inemarginatus* Génier & Arnaud, 2016: 52 (original description). Type locality: Venezuela: Amazonas: Atures: Coromoto. Name-bearing type: holotype (CMNC), not examined.

*Dendropaemon* (*Glaphyropaemon*) *inemarginatus* – Hielkema & Hielkema 2019: 100 (comments).

non *Dendropaemon* (*D.*) *refulgens* (misidentification) – Martínez & Clavijo 1990: 155 (biology).

**Distribution**

Venezuela (endemic).

**Subregion of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield.

**Literature records**

Martínez & Clavijo 1990: 155 (Venezuela: Amazonas: Atunes). — Génier & Arnaud 2016: 52 (Venezuela: Amazonas: Atures: Coromoto).

***Dendropaemon nigritulus*** Génier & Arnaud, 2016
Fig. 34B

*Dendropaemon* (*Nigropaemon*) *nigritulus* Génier & Arnaud, 2016: 54 (original description). Type locality: Brazil: Roraima: Pacaraima, Surumu, Serra do Marari. Name-bearing type: holotype (CMNC), not examined.

*Dendropaemon* (*Nigropaemon*) *nigritulus* – Boilly *et al.* 2016: 94 (list, comments). — Hielkema & Hielkema 2019: 100 (catalogue for the Guianas).

**Material examined**

VENEZUELA — **Amazonas** • 1 spec.; Atabapo, Cano Piojo; 130 m; Apr 2006; D.G. Fagre leg.; CEMT.

**Distribution**

Colombia, Venezuela, Guyana, Suriname, French Guiana, and Brazil.

**Subregions of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco, and System of hills and low piedmont mountains of the Guiana Shield.

**Literature record**

Génier & Arnaud 2016: 54, 86 (Venezuela: Bolívar).

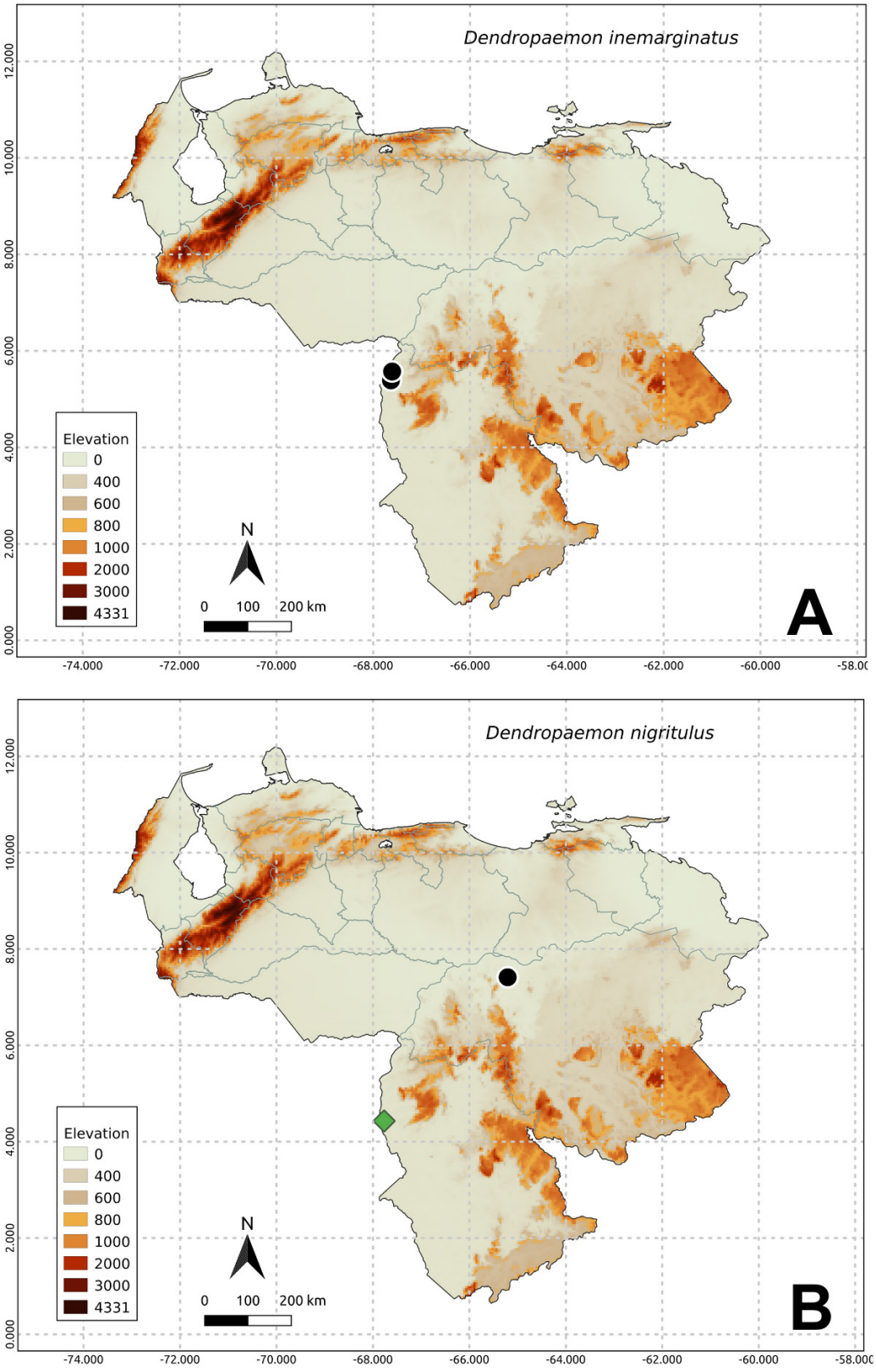


**Fig. 34.** Species distribution. **A**. *Dendropaemon inemarginatus* Génier & Arnaud, 2016. **B**. *Dendropaemon nigritulus* Génier & Arnaud, 2016. Black circle = literature data.

## Genus ***Diabroctis*** Gistel, 1857

*Diabroctis* Gistel, 1857: 92 (original description). Type species: *Scarabaeus mimas* Linnaeus, 1758, by original designation.

*Taurocopris* d'Olsoufieff, 1924: 18, 61 (original description). Type species: *Scarabaeus mimas* Linnaeus, 1758, by subsequent designation of Edmonds (1972).

*Taurocopris* – Pessôa 1934: 282 (cited). — Janssens 1940: 2 (cited). — Pessôa & Lane 1941: 473 (key). — Blackwelder 1944: 208 (list). — Martínez 1959: 96 (catalogue for Argentina). — Martínez & Pereira 1967: 58 (nomenclatural comments). — Vulcano & Pereira 1967: 567 (key).

*Diabroctis* – Martínez & Pereira 1967: 58 (nomenclatural comments). — Edmonds 1972: 820 (key, redescription). — Arnaud 1982: 115 (list of types). — Gámez & Mora 2000: 17 (list). — Medina & Lopera-Toro 2000: 300, 303 (key). — Vaz-de-Mello 2000: 186 (checklist for Brazil). — Vítolo 2000: 595 (key); 2004: 279 (list). — Medina *et al.* 2001: 134, 140 (list). — Arnaud 2002b: 14, 18 (key). — Gámez 2004: 51, 52 (distribution for Venezuela, key). — Hamel-Leigue *et al.* 2006: 3 (list); 2009: 60 (cited). — Noriega *et al.* 2007: 80 (list). — Vaz-de-Mello 2011a: 5, 10, 17, 24, 32, 39, 44 (list, key). — Ferrer-Paris *et al.* 2013: 96 (list). — Boilly *et al.* 2016: 94 (list, comments). — Valois *et al.* 2018: 351 (diagnosis). — Hielkema & Hielkema 2019:100 (catalogue for the Guianas).

### ***Diabroctis cadmus*** (Harold, 1868)

Fig. 35A

*Phanaeus cadmus* Harold, 1868e: 82 (original description). Type locality: French Guiana. Name-bearing type: lectotype (MNHN), designated by Arnaud (1982), not examined.

*Phanaeus mimaeformis* Ancey, 1880: 205 (original description). Type locality: unknown; incorrectly stated as Costa Rica by Ancey (1880) based on mislabelled material, but the species does not occur there (Valois *et al.* 2018). Name-bearing type: lectotype (RBINS), designated by Valois *et al.* (2018), not examined.

*Phanaeus cadmus* – Harold 1869d: 1017 (catalogue). — Nevinson 1892: 2 (list). — Heyne & Taschenberg 1908: 65 (list). — d'Olsoufieff 1924: 15 (comments). — Gillet 1911b: 81 (catalogue, cited for Colombia, Guianas, Costa Rica).

*Phanaeus mimaeformis* – Bates 1887: 387 (cited for Costa Rica). — Nevinson 1892: 2 (as junior synonym of *D. cadmus*). — d'Olsoufieff 1924: 63 (cited as junior synonym of *D. cadmus*).

*Taurocopris cadmus* – d'Olsoufieff 1924: 22, 62, 140 (key, comments, distribution). — Janssens 1940: 2, 4 (cited, key). — Blackwelder 1944: 208 (list, cited for Costa Rica). — Vulcano & Pereira 1967: 567 (key).

*Diabroctis cadmus* – Edmonds 1972: 821 (cited). — Arnaud 1982: 115 (list of types, MNHN). — Martínez & Clavijo 1990: 151 (key, comments). — Escobar 2000: 208 (checklist for Colombia). — Gámez & Mora 2000: 17 (list). — Vítolo 2000: 595 (key); 2004: 279 (diagnosis, distribution). — Arnaud 2002b: 18 (key, distribution). — Gámez 2004: 48, 51, 52, 58 (list, distribution, key). — Noriega *et al.* 2007: 83 (list). — Giraldo *et al.* 2018: 22 (guide). — Valois *et al.* 2018: 351, 365 (key, diagnosis). — Hielkema & Hielkema 2019:100, 292 (catalogue for the Guianas). — Nieto *et al.* 2020: 136 (report).

**Material examined**

VENEZUELA – **Zulia** • 1 spec.; Rosario de Perijá; 20 Jul. 2006; curso NM2006 leg.; faeces, 13h – 00:00; CEMT.

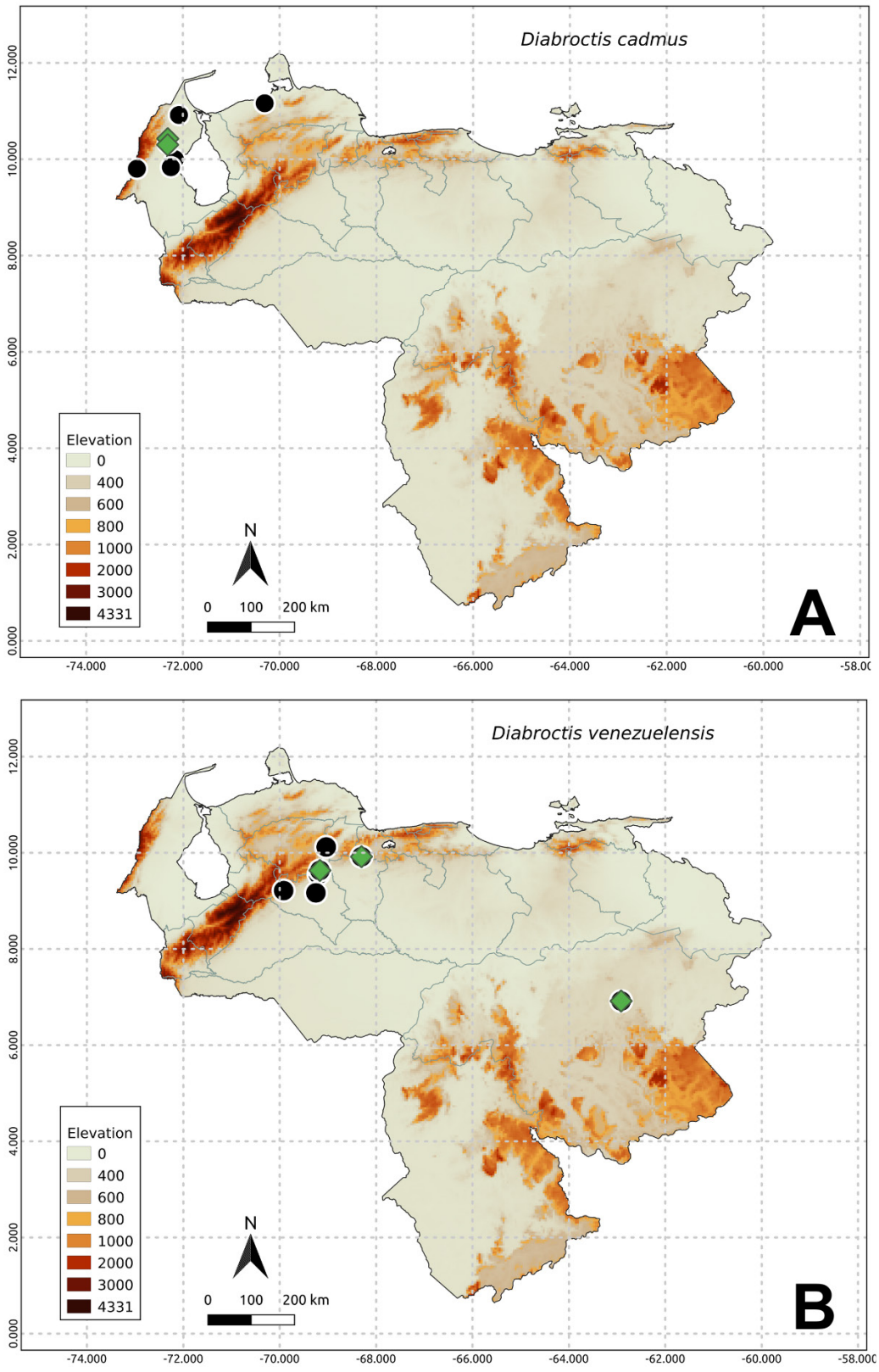


**Fig. 35.** Species distribution. **A**. *Diabroctis cadmus* (Harold, 1868). **B**. *Diabroctis venezuelensis* Martínez & Clavijo, 1990. Green diamond = CEMT collection data; black circle = literature data.

**Distribution**

Colombia and Venezuela.

**Subregions of Venezuela**

Maracaibo Depression, and System of hills and low sierras Lara-Falcón.

**Literature records**

d'Olsoufieff 1924: 62, 140 (Venezuela). — Roze 1955: 45 (Venezuela: Falcón: Buena Vista). — Martínez & Clavijo 1990: 5 (Venezuela: Zulia: Maracaibo, El Guaco). — Gámez & Mora 2000: 17 (Venezuela). — Arnaud 2002b: 18 (Venezuela: Zulia). — Gámez 2004: 58 (Venezuela: Zulia: Mara and El Guaco). — Vítolo 2004: 279 (Venezuela: Zulia). — Ferrer-Paris *et al*. 2013: 109 (Venezuela: Zulia: Rosario de Perijá). — Valois *et al*. 2018: 350, 365 (Venezuela: Zulia).

***Diabroctis venezuelensis*** Martínez & Clavijo, 1990
Fig. 35B

*Diabroctis mimas venezuelensis* Martínez & Clavijo, 1990: 147 (original description). Type locality: Venezuela: Portuguesa: Araure. Name-bearing type: holotype (MIZA) (Valois *et al.* 2018), examined from photos by FZVM.

*Diabroctis mimas venezuelensis* –Arnaud 2002b: 18 (cited as *Diabroctis mimas venezuelina* Martínez & Clavijo, 1990, cited as synonym of *Diabroctis mimas*). — Gámez 2004: 48, 51–52, 58 (key, list). — Hamel-Leigue *et al.* 2009: 60 (cited as synonym of *Diabroctis mimas*).
*Diabroctis venezuelensis* – Valois *et al.* 2018: 357 (revision). — Hielkema & Hielkema 2019:100, 292 (catalogue for the Guianas).

**Material examined**

VENEZUELA – **Bolívar** • 1 ♂, 2 ♀♀; near Río Paraguaz, 100 m a.s.l., 15 May 2004; CEMT. – **Portuguesa** • 1 ♂; Araure; 1978; CEMT. – **Cojedes** • 1 ♀; Tinaquillo; 15 May 1978; CEMT.

**Distribution**

Venezuela (endemic).

**Subregions of Venezuela**

Plains, System of hills and low piedmont mountains of the Guiana Shield, Andes mountains, and Central Coast Mountain Range.

**Literature records**

Martínez & Clavijo 1990: 147 (Venezuela: Cojedes; Portuguesa: Araure; Lara [actually, Yaracuy]: Sabana de Parra). — Arnaud 2002b: 18 (Venezuela). — Gámez 2004: 48 (subregion of Llanos). — Valois *et al*. 2018: 357–358 (Venezuela: Cojedes, Bolívar and Portuguesa).

Genus ***Dichotomius*** Hope, 1838

*Dichotomius* Hope, 1838: 321 (original description). Type species: *Scarabaeus boreus* Olivier, 1789, by original designation; see Martínez (1951).
*Pinotus* Erichson, 1847a: 108 (original description). Type species: uncertain. Usually claimed to be *Scarabaeus carolinus* Linnaeus, 1767 (e.g., Lacordaire 1855; Luederwaldt 1929; Nunes & Vaz-de-Mello 2019), but, as argued by Martínez (1951), this nominal species was not among the two

expressly assigned to *Pinotus* by Erichson (1847a). Martínez (1951) stated that *Pinotus talaus* Erichson, 1847 was the actual type, and this was indeed one of the two species expressly assigned to the genus by Erichson (1847a). However, why Martínez believed that *talaus* specifically was the type is unclear. Regardless, if no type species had been fixed prior to 1951, Martínez's (1951) act should be interpreted as a valid subsequent designation of *P. talaus* as the type species of *Pinotus* under Art. 69.1.1 of the Code (ICZN 1999). Bouchard *et al*. (2024), unaware of Martínez's act, recently designated the same nominal species as the type, but Martínez's designation would take precedence over theirs. To settle this issue, it must be determined whether no type species fixation indeed existed prior to Martínez (1951).

*Brachycopris* Haldeman, 1848: 125 (original description). Type species: *Scarabaeus carolinus* Linnaeus, 1767, by original designation.

*Pseudoheliocopris* Ferreira, 1970: 3 (original description). Type species: *Pseudoheliocopris freyi* Ferreira, 1970, by original designation, not *P. cornutus* Ferreira, 1970 by original designation as informed by Nunes & Vaz-de-Mello (2019).

*Dichotomius* – Agassiz 1846: 353 (catalogue). — Erichson 1847a: 108 (synonymy with *Pinotus*). — Lucas 1920: 237 (cited as synonym of *Pinotus*). — Blackwelder 1944: 206 (cited as synonym of *Pinotus*). — Martínez 1951: 139 (comments); 1959: 80 (catalogue for Argentina). — Pereira 1954a: 57 (key). — Roze 1955: 44 (checklist for Venezuela). — Halffter & Matthews 1966: 257 (catalogue, distribution). — Vulcano & Pereira 1967: 577 (key). — Howden & Young 1981: 13, 123 (key, redescription). — Halffter & Edmonds 1982: 137 (catalogue, distribution). — Blanco 1988: 40 (catalogue). — Kohlmann & Solís 1997: 344 (redescription). — Medina & Lopera-Toro 2000: 306 (key). — Vaz-de-Mello 2000: 193 (checklist for Brazil). — Medina *et al.* 2001: 138 (checklist for Colombia). — Ratcliffe 2002: 15 (checklist for Panama). — Ratcliffe *et al.* 2002: 49 (key). — Kohlmann 2003: 49 (list). — Hamel-Leigue *et al.* 2006: 15 (list). — Sarmiento-Garcés & Amat-García 2009: 286 (description); 2014: 25 (redescription). — Vaz-de-Mello *et al.* 2011a: 20 (key). — Carvajal *et al.* 2011: 129, 320 (diagnosis, list). — Krajcik 2012: 91 (list). — Solís & Kohlmann 2012: 6 (checklist for Costa Rica). — Boilly & Vaz-de-Mello 2013: 109 (key). — Ferrer-Paris *et al.* 2013: 96 (list). — Chamorro *et al.* 2018: 77, 94–95 (list for Ecuador); 2019: 10, 109 (catalogue). — Pardo-Díaz *et al.* 2019: 1–4 (characteristics). — Cassenote *et al.* 2020: 1 (distribution, diagnosis). — Nieto *et al.* 2020: 136 (report).

*Pinotus* – Lacordaire 1855: 98 (redescription, type species designation). — Harold 1869b: 124 (redescription); 1869d: 1009 (catalogue). — Bruch 1911: 187 (list). — Gillet 1911b: 59 (catalogue). — Lucas 1920: 514 (catalogue, distribution). — Luederwaldt 1929: 8, 10 (redescription, key); 1931b: 369 (key). — Paulian 1938: 234 (key). — Pessôa & Lane 1941: 437 (key). — Blackwelder 1944: 206 (list). — Martínez 1951: 139 (synonym of *Dichotomius*); 1959: 80 (cited as synonym of *Dichotomius*). — Halffter & Matthews 1966: 257 (cited as synonym of *Dichotomius*). — Howden & Young 1981: 123 (cited as synonym of *Dichotomius*). — Halffter & Edmonds 1982: 137 (cited as synonym of *Dichotomius*). — Kohlmann & Solís 1997: 344 (cited as synonym of *Dichotomius*). — Ratcliffe 2002: 15 (cited as synonym of *Dichotomius*). — Solís & Kohlmann 2012: 6 (cited as synonym of *Dichotomius*). — Sarmiento-Garcés & Amat-García 2014: 25 (cited as synonym of *Dichotomius*). — Nunes & Vaz-de-Mello 2019: 37–38, 2231–2351 (revision).

*Brachycopris* – Harold 1869d: 1009 (cited as synonym of *Pinotus*). — Gillet 1911b: 59 (cited as synonym of *Pinotus*). — Lucas 1920: 146 (synonym of *Pinotus*). — Blackwelder 1944: 206 (cited as synonym of *Pinotus*). — Martínez 1951: 139 (comments, synonym of *Pinotus*); 1959: 80 (cited as synonym of *Dichotomius*). — Kohlmann & Solís 1997: 344 (cited as synonym of *Dichotomius*). — Ratcliffe 2002: 15 (cited as synonym of *Dichotomius*). — Solís & Kohlmann 2012: 6 (cited as synonym of *Dichotomius*). — Sarmiento-Garcés & Amat-García 2014: 25 (cited as synonym of *Dichotomius*). — Nunes & Vaz-de-Mello 2019: 2239 (cited).

*Pseudoheliocopris* – Cambefort 1976: 270 (synonymy with *Dichotomius*).

***Dichotomius agenor*** (Harold, 1869)
Fig. 36A

*Pinotus agenor* Harold, 1869c: 141 (original description). Type locality: Colombia. Name-bearing type: lectotype (MNHN), designated by Montoya-Molina & Vaz-de-Mello (2021), examined by FZVM.

*Pinotus agenor* – Luederwaldt 1929: 99 (list). — Blackwelder 1944: 206 (list, cited for island of Tobago and Colombia).

*Dichotomius* (*Luederwaldtinia*) *agenor* – Vulcano & Pereira 1967: 586 (key). — Howden & Young 1981: 124, 127 (key, redescription, distribution, new combination). — Blanco 1988: 40, 41 (catalogue). — Kohlmann & Solís 1997: 345 (key, redescription). — Escobar 2000: 208 (checklist for Colombia). — Medina *et al.* 2001: 138 (checklist for Colombia). — Ratcliffe 2002: 15 (checklist for Panama). — Kohlmann *et al.* 2007: 30 (checklist). — Cultid-Medina *et al.* 2012: 46 (guide). — Solís & Kohlmann 2012: 6 (checklist for Costa Rica). — Ferrer-Paris *et al.* 2013: 109 (list). — Giraldo *et al.* 2018: 24 (guide). — Sarmiento-Garcés & Amat-García 2014: 89 (key, diagnosis, distribution for Colombia). — Hielkema & Hielkema 2019: 54 (catalogue for the Guianas). — Pardo-Díaz *et al.* 2019: 6, 13 (comments). — Montoya-Molina & Vaz-de-Mello 2021: 8 (key, catalogue, description).

**Material examined**

VENEZUELA – **Mérida** • 8 specs; Caparú, Lagunilllas; 8.4923° N, 71.3356° W; 810 m a.s.l.; J. Gómez leg.; CEMT • 9 specs; La Parroquia; 8.5595° N, 71.2000° W; 1250 m a.s.l.; 27 May 2000; Gómez and Mora leg.; CEMT • 7 specs; Libertador, Meseta de Zumba, Hacienda Los Arcos; 08°33′14″ N, 71°13′20″ W; 1181 m a.s.l.; 6 May 2016; R. Acconcia and J. Gámez leg.; human feces pitfall; CEMT • 2 specs; Mérida; 2200 m; 11 Apr. 1995; Homburg and Krause leg.; CEMT. – **Táchira** • 6 specs; Libertador, Meseta de Zumba, Hacienda Los Arcos; 7.6622° N, 71.7104° W; 200 m a.s.l.; Aug. 2006; T. Good leg.; CEMT. – **Yaracuy** • 1 spec.; Bolívar, Aroa; 10°0′0″ N, 68°0′0″ W; 468 m a.s.l.; 21 Jul. 2009; M. Asmüssen, P. Colmenares and H. Martínez leg.; human faeces; CEMT.

**Distribution**

Costa Rica, Panama, Colombia, Venezuela and Guyana.

**Subregions of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco, System of hills and low piedmont mountains of the Guiana Shield, and Guiana Shield.

**Literature records**

Blanco 1988: 40–41 (Venezuela: Táchira). — Ferrer-Paris *et al*. 2013: 109 (Aragua [actually, Guárico]: Altagracia de Orituco; Bolívar: Isla de Anacoco and Sabanas de Guri; Miranda: Altos de Pipe; Sucre: Araya; Yaracuy: Hacienda Guáquira and Zulia: Rosario de Perijá). — Montoya-Molina & Vaz-de-Mello 2021: 8, 10 (Venezuela: Mérida, Táchira and Yaracuy).

***Dichotomius blancoi*** Nunes & Vaz-de-Mello 2019
Fig. 36B

*Dichotomius blancoi* Nunes & Vaz-de-Mello, 2019: 2315 (original description). Type locality: Venezuela: Táchira: Parque Nacional Natural Paramillo. Name-bearing type: holotype (CEMT), examined by CL and FZVM.

**Material examined**

**Holotype**

VENEZUELA – **Táchira** • 1 ♂; “Parque Paramillo/ edo. Táchira- Vzla/ Mayo 1993/ Leg. J. Blanco”; CEMT.

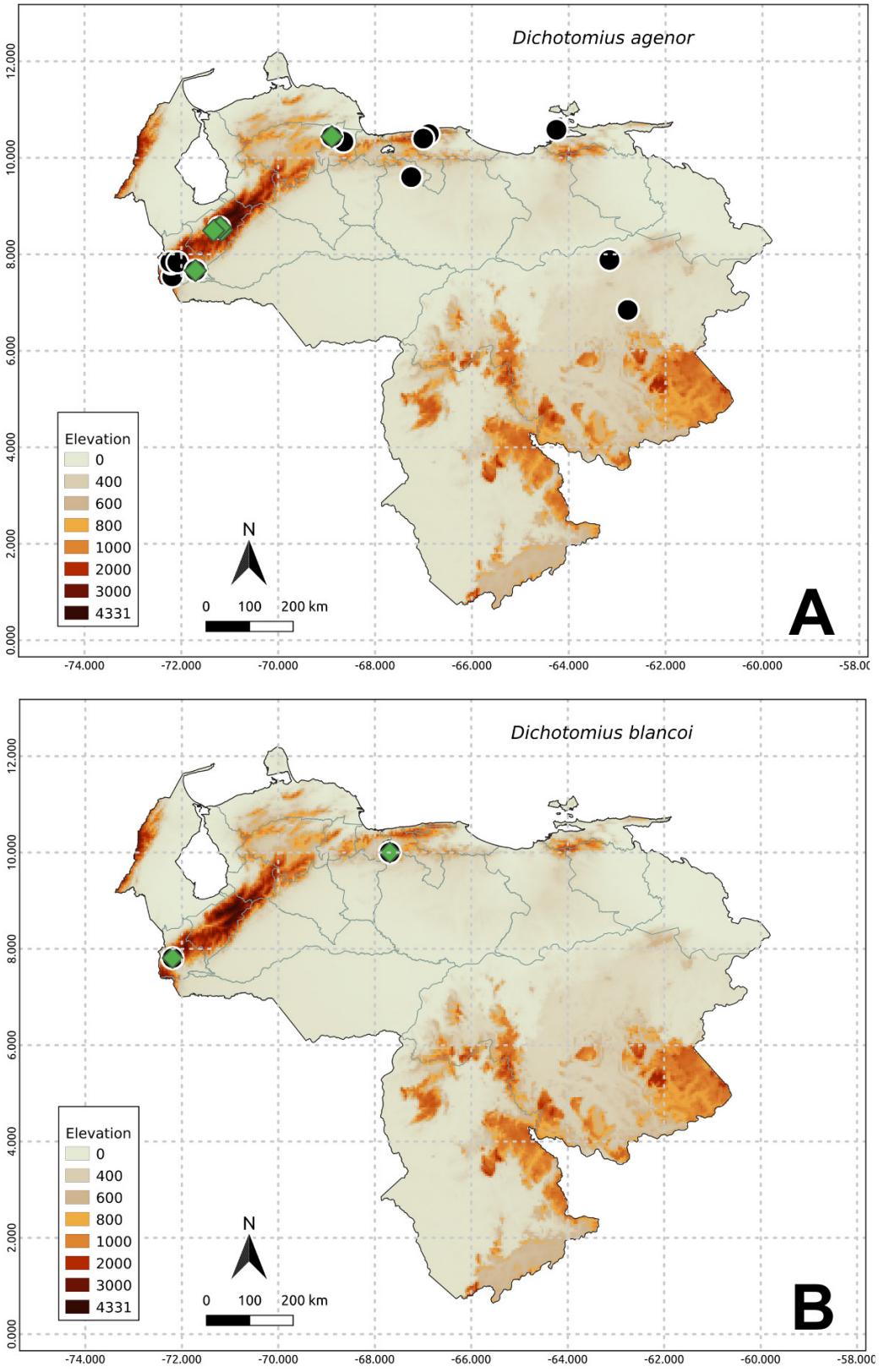


**Fig. 36.** Species distribution. **A**. *Dichotomius agenor* (Harold, 1869). **B**. *Dichotomius blancoi* Nunes & Vaz-de-Mello, 2019. Green diamond = CEMT collection data; black circle = literature data.

**Paratypes**

VENEZUELA – **Táchira** • 1 ♂, 1 ♀; same data as for holotype; CEMT.

**Additional material**

VENEZUELA – **Aragua** • 3 specs; Mario Briceño Iragorry, Parque Nacional Henri Pittier, Estación Biológica Rancho Grande, way to Pico Periquito; 10°20′51″ N, 67°41′17″ W; 1145m a.s.l.; human faeces; 18–20 Aug. 2010; R. Acconcia and J. Gámez leg.; CEMT.

**Distribution**

Venezuela and Brazil.

**Subregions of Venezuela**

Andes mountains, and Central Coast Mountain Range.

**Literature records**

Nunes & Vaz-de-Mello 2019: 2315 (Venezuela: Táchira).

***Dichotomius boreus*** (Olivier, 1789)
Fig. 37A

*Scarabaeus boreus* Olivier, 1789: 106 (original description). Type locality: French Guiana and Brazil. Name-bearing type: syntypes (MNHN), examined by FZVM.

*Dichotomius* (*Dichotomius*) *boreus* – Vulcano & Pereira 1967: 585 (key). — Forsyth & Gill 1993: 70 (list). — Escobar 2000: 206 (checklist for Colombia). — Vaz-de-Mello 2000: 193 (checklist for Brazil). — Pulido-Herrera *et al.* 2003: 54 (list for Caqueta, Colombia); 2007: 307 (cited for Andean region of Colombia). — Noriega 2004: 39 (checklist for Tinigua Park, Colombia). — Quintero & Roslin 2005: appendix A (ecology). — Feer 2008: 56, 62 (ecology); 2013: 767 (list for French Guiana). — Medina & Pulido-Herrera 2009: 59 (diversity). — Brûlé *et al.* 2011a: 193 (list, cited for French Guiana); 2014: 183 (list for Montagne Pelée). — Brûle & Dalens 2012: 37 (list). — Ferrer-Paris *et al.* 2013: 109 (list). — Ratcliffe 2013: 493 (list, cited for Brazil). — Sarmiento-Garcés & Amat-García 2014: 43 (key, diagnosis, distribution for Colombia). — Feer & Boissier 2015: 169 (list). — Hielkema & Hielkema 2019: 52 (catalogue for the Guianas). — Pardo-Díaz *et al.* 2019: 5–7, 11, 13 (comments). — Storck-Tonon *et al.* 2020: 2426 (diversity). — Chamorro *et al.* 2021: 195 (remarks).

**Material examined**

VENEZUELA – **Amazonas** • 1 spec.; Puerto Ayacucho; May 2000; CEMT • Selva del Amazonas; 150 m a.s.l.; Aug. 2003; CEMT. – **Bolívar** • 1 spec.; Río Paraguaza; 100 m a.s.l.; 15 May 2004; D. García leg.; CEMT • 2 specs; Upper Parguaza River; 24 Nov. 2000; CEMT.

**Distribution**

Colombia, Venezuela, Guyana, Suriname, French Guiana, and Brazil.

**Literature record**

Ferrer-Paris *et al.* 2013: 109 (Venezuela: Bolívar: Isla de Anacoco).

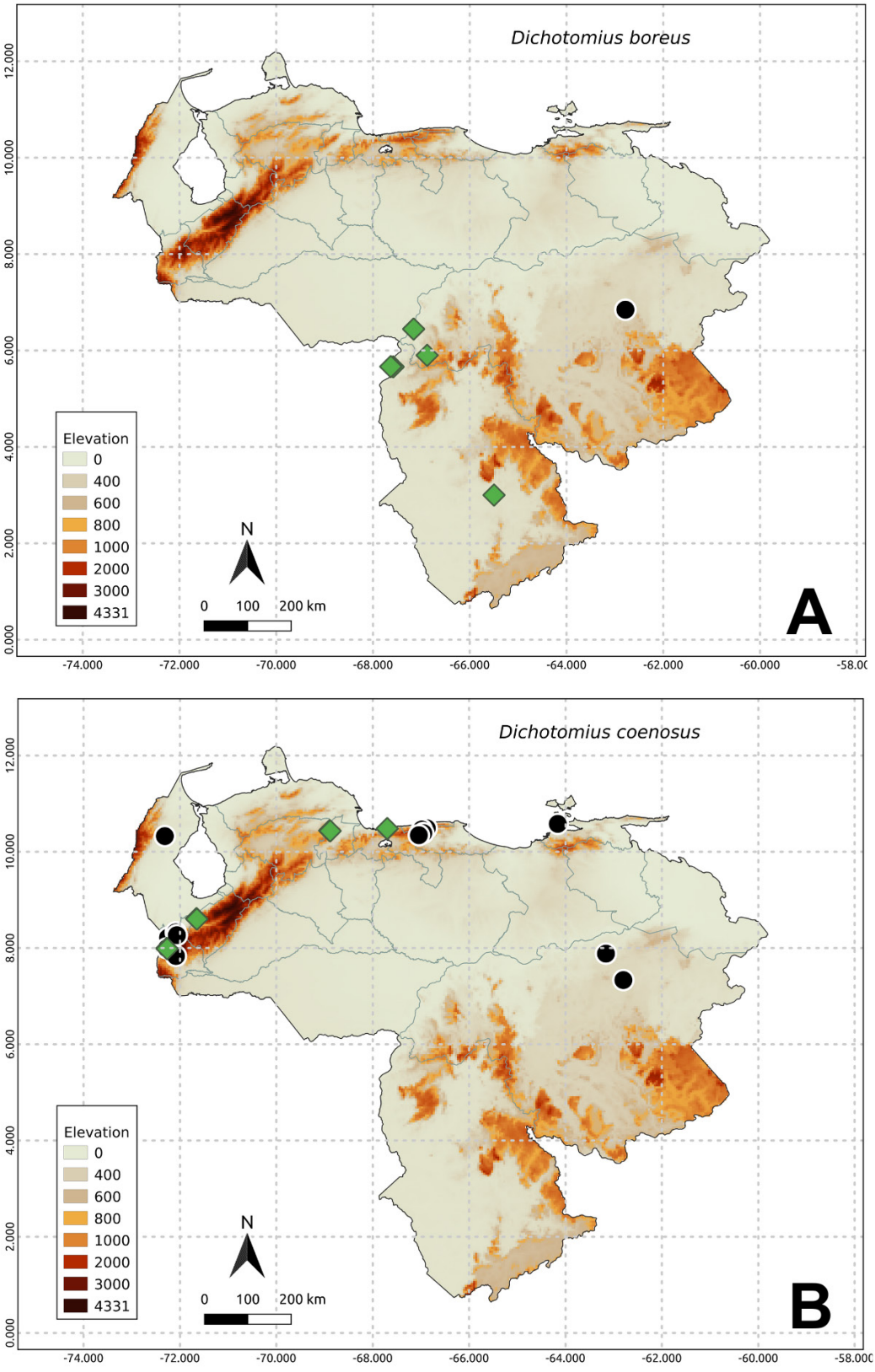


**Fig. 37.** Species distribution. **A**. *Dichotomius boreus* (Olivier, 1789). **B**. *Dichotomius coenosus* (Erichson, 1848). Green diamond = CEMT collection data; black circle = literature data.

***Dichotomius coenosus*** (Erichson, 1848)
Fig. 37B

*Copris* (*Pinotus*) *coenosa* [sic] Erichson 1848: 564 (original description). Type locality: Guyana. Name-bearing type: syntypes (MFNB), examined by FZVM.

*Pinotus coenosus* – Gillet 1911b: 60 (catalogue). — Luederwaldt 1929: 17 (key). — Blackwelder 1944: 207 (list).

*Dichotomius* (*Dichotomius*) *coenosus* – Roze 1955: 44 (checklist for Venezuela). — Blanco 1988: 40, 41 (catalogue). — Vaz-de-Mello 2000: 193 (checklist for Brazil). — Larsen *et al.* 2008: 1294 (list). — Ferrer-Paris *et al.* 2013: 109 (list). — Sarmiento-Garcés & Amat-García 2014: 29 (diagnosis, distribution for Colombia). — Pardo-Díaz *et al.* 2019:8 (comments). — Hielkema & Hielkema 2019: 52 (catalogue for the Guianas).

**Material examined**

VENEZUELA – **Mérida** • 1 spec.; El Vigia; May 1984; Joffre B. leg.; CEMT. – **Táchira** • 1 spec.; San Pedro del Río; May 1986; Joffre B. leg.; CEMT. – **Yaracuy** • 2 specs; Bolívar, Aroa; 10°0′0″ N, 68°0′0″ W; 464 m a.s.l.; 19 Jul. 2009; M. Asmüssen, P. Colmenares and H. Martínez leg.; human faeces; CEMT. – **Aragua** • 1 spec.; Cuyagua; 50 m a.s.l.; 6 Jul. 2004; D. García leg.; CEMT.

**Distribution**

Panama, Colombia, Venezuela, Guyana, Suriname, and Brazil.

**Subregions of Venezuela**

Coastal mainland, System of hills and low piedmont mountains of the Guiana Shield, Andes mountains, and Central Coast Mountain Range.

**Literature records**

Gillet 1911b: 60 (Venezuela). — Luederwaldt 1929: 17 (Venezuela). — Blackwelder 1944: 207 (Venezuela). — Roze 1955: 44 (Venezuela: Distrito Capital and Miranda). — Blanco 1988: 40–41 (Venezuela: Táchira). — Larsen *et al*. 2008: 1294 (Venezuela: Bolívar). — Ferrer-Paris *et al*. 2013: 109 (Bolívar: Sabanas de Guri, Sucre: Araya and Zulia: Rosario de Perijá).

***Dichotomius costaricensis*** (Luederwaldt, 1935)
Fig. 38A

*Pinotus bitiensis costaricensis* Luederwaldt, 1935: 335 (original description). Type locality: Costa Rica. Name-bearing type: holotype (BMNH), examined by FZVM.

*Dichotomius costaricensis* – Kohlmann & Solís 1997: 345, 360 (key, redescription, new combination). — Escobar 2000: 208 (list for Colombia). — Medina *et al.* 2001: 138 (checklist for Colombia). — Ratcliffe 2002: 15 (checklist for Panama). — Solís & Kohlmann 2012: 6, 12 (checklist for Costa Rica). — Sarmiento-Garcés & Amat-García 2014: 84 (monograph).

**Distribution**

Costa Rica, Panama, Colombia, and Venezuela.

**Subregion of Venezuela**

Sierra of San Luis and Cerro Santa Ana.

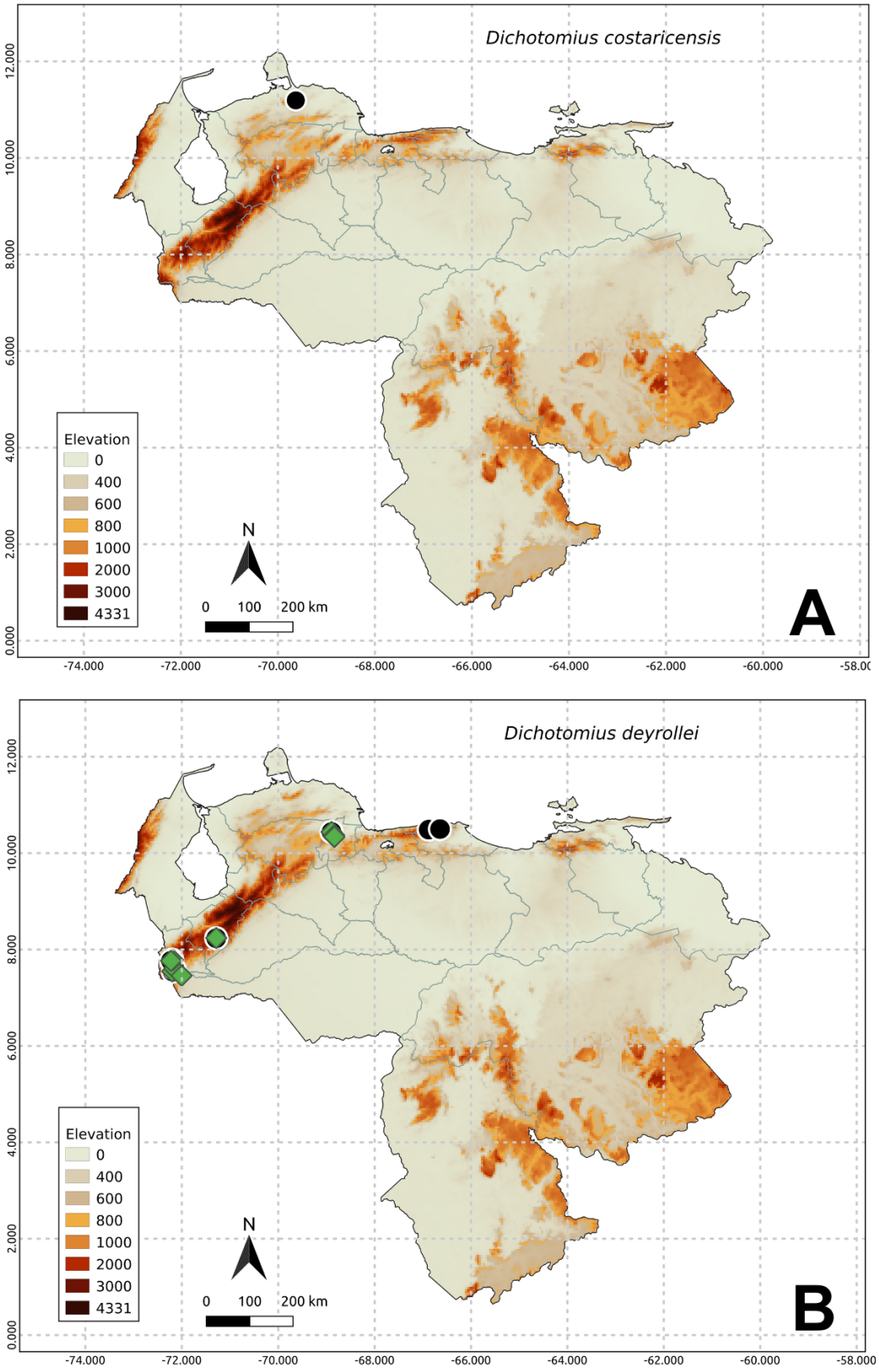


**Fig. 38.** Species distribution. **A**. *Dichotomius costaricensis* (Luederwaldt. 1935). **B**. *Dichotomius deyrollei* (Harold, 1869). Green diamond = CEMT collection data; black circle = literature data.

**Literature records**

Kohlmann & Solís 1997: 360 (Venezuela: Falcón). — Solís & Kohlmann 2012: 12 (Venezuela).

***Dichotomius deyrollei*** (Harold, 1869)
Fig. 38B

*Pinotus deyrollei* Harold, 1869c: 139 (original description). Type locality: Brazil. Name-bearing type: lectotype (MNHN), designated by Montoya-Molina & Vaz-de-Mello (2021), examined by FZVM.

*Pinotus deyrollei* – Luederwaldt 1929: 99 (key, cited for Trinidad Island). — Blackwelder 1944: 206 (list, cited for Brazil).

*Dichotomius* (*Luederwaldtinia*) *deyrollei* – Roze 1955: 44 (checklist for Venezuela). — Vulcano & Pereira 1967: 586 (key). — Blanco 1988: 40–41 (catalogue, comments). — Escobar 2000: 208 (checklist for Colombia). — Medina *et al.* 2001: 138 (checklist for Colombia). — Noriega 2004: 39 (checklist for Tinigua Park, Colombia). — Medina & Pulido-Herrera 2009: 60 (diversity). — Sarmiento-Garcés & Amat-García 2014: 89, 91 (key, diagnosis, distribution for Colombia). — Pardo-Díaz *et al.* 2019: 6, 13 (comments). — Montoya-Molina & Vaz-de-Mello 2021: 7, 22 (key, diagnosis, distribution, redescription).

**Material examined**

VENEZUELA – **Mérida** • 2 specs; Arzobispo Chacón, Mucutuy environs; 08°14′18″ N, 71°17′12″ W; 1380 m a.s.l.; 13 Mar. 2015; R. Acconcia leg.; light; CEMT. – **Táchira** • 2 specs; Río Negro; 25 Mar. 1984; Joffre B. leg.; CEMT • 1 spec.; 42 km SE of San Cristóbal; 700 m a.s.l.; 19 May 1974; S. Peck leg.; dung trap 30; CEMT • 4 specs; San Cristóbal, Parque Nacional Natural Paramillo; Jul. 1993; J. Blanco leg.; CEMT. – **Yaracuy** • 1 spec.; Bolívar, Aroa; 10°0′0″ N, 68°0′0″ W; 710 m a.s.l.; 20 Jul. 2009; M. Asmüssen, P. Colmenares and H. Martínez leg.; human faeces; CEMT • 1 spec.; Bolívar, Aroa; 10°22′8.21″ N, 68°50′18.52″ W; 1626 m a.s.l.; 21 Jul. 2009; M. Asmüssen, P. Colmenares and H. Martínez leg.; human faeces; CEMT • 1 spec.; Bolívar, Aroa; 10°20′21.98″ N, 68°50′6.03″ W; 1362 m a.s.l.; 19 Jul. 2009; M. Asmüssen, P. Colmenares and H. Martínez leg.; human faeces; CEMT.

**Distribution**

Colombia, Venezuela, and Trinidad and Tobago.

**Subregions of Venezuela**

Andes mountains and Central Coast Mountain Range.

**Literature records**

Roze 1955: 44 (Venezuela: Distrito Capital: Caracas). — Vulcano & Pereira 1967: 586 (Venezuela); Blanco 1988: 40–41 (Venezuela: Táchira: Río Negro: Parque Nacional El Tamá); Montoya-Molina & Vaz-de-Mello 2021: 7, 22 (Venezuela: Mérida, Miranda, Táchira and Yaracuy).

***Dichotomius fallax*** (Harold, 1880)
Fig. 39A

*Pinotus fallax* Harold, 1880: 26 (original description). Type locality: Colombia: Cundinamarca: Tequendama: La Mesa; and Venezuela: Distrito Capital: Caracas. Name-bearing type: syntypes (MNHN), examined by FZVM.

*Pinotus* (*Selenocopris*) *fallax* – Luederwaldt 1929: 64 (key).

*Pinotus fallax* – Gillet 1911b: 60 (catalogue). — Gacharná 1951: 222 (list for Colombia). — Balthasar 1941: 349 (list, characteristics); 1951: 334 (list). — Blackwelder 1944: 207 (checklist).
*Dichotomius fallax* – Roze 1955: 44 (cited, checklist for Venezuela). — Vulcano & Pereira 1967: 587 (key). — Medina *et al.* 2001: 138 (checklist for Colombia). — Larsen *et al.* 2008: 1294 (list).

**Material examined**

VENEZUELA – **Bolívar** • 1 spec.; El Manteco; 5 Aug. 2006; curso NM2006 leg.; heces, 24h, 08:00; CEMT • 2 specs; Campo Minero, Río Yuruani, El Dorado; 190 m; 23–30 May 1987; CEMT • 1 spec.; Las Piñas, 30 km E of Paragua; 12 Apr. 1983; C. Bordon leg.; CEMT. – **Yaracuy** • 1 spec.; Bolívar, Aroa; 10°0′0″ N, 68°0′0″ W; 483 m; 19 Jul. 2009; M. Assmüssen, P Colmenares and H. Martínez leg.; human faeces; CEMT. – **Zulia** • 1 spec.; Rosario de Perijá; 18 Jul. 2006; curso NM2006 leg.; faeces, 23h, 13:09; CEMT.

**Distribution**

Colombia, Venezuela, Trinidad and Tobago (**new country record**, CEMT), Brazil (**new country record**, CEMT) and Peru.

**Subregions of Venezuela**

Maracaibo Depression, System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní del Escudo Northeast Guiana, and Central Coast Mountain Range.

**Literature records**

Harold 1880: 26 (Venezuela: Caracas). — Gillet 1911b: 60 (Venezuela). — Luederwaldt 1929: 64 (Venezuela). — Balthasar 1941: 349 (Venezuela); 1951: 334 (Venezuela).— Blackwelder 1944: 207 (Venezuela). — Vulcano & Pereira 1967: 587 (Venezuela). — Larsen *et al*. 2008: 1294 (Venezuela: Bolívar: Lago Guri).

***Dichotomius henripittieri*** Montoya-Molina & Vaz-de-Mello, 2021
Fig. 39B–D

*Dichotomius* (*Luederwaldtinia*) *henripittieri* Montoya-Molina & Vaz-de-Mello, 2021: 31 (original description). Type locality: Venezuela: Aragua: Mario Briceño Iragorry: Parque Nacional Henri Pittier: Estación Biológica Periquito. Name-bearing type: holotype (CEMT), examined by CL and FZVM.

**Material examined**

**Holotype**

VENEZUELA – **Aragua** • ♂; "Mario / Briceño Iragorry, PN. Henri / Pittier, Est. Bio. Rancho Grande, / way to Pico Periquito, 10°20' / 51"N, 67°41'17"W, 1145m, / human feces; 18–20, viii.2010, / R. Acconcia & J. Gámez"; CEMT.

**Paratypes**

VENEZUELA • 3 ♂♂, 3 ♀♀; same data as for holotype; CEMT.

**Distribution**

Venezuela (endemic).

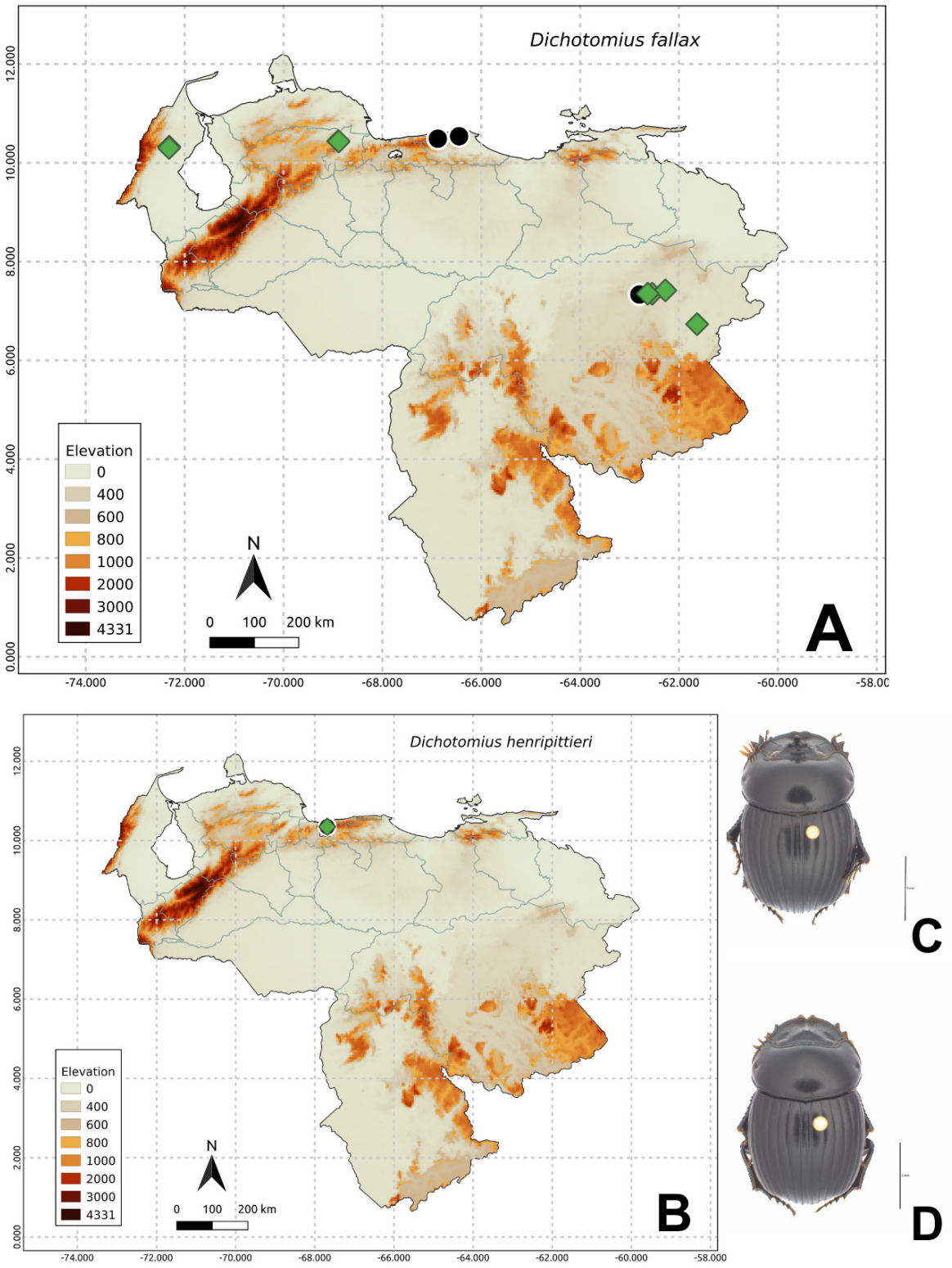


**Fig. 39.** Species distribution. **A**. *Dichotomius fallax* (Harold, 1880). **B**. *Dichotomius henripittieri* Montoya-Molina & Vaz-de-Mello, 2021. **C**. Male of *D. henripittieri*. **D**. Female of *D. henripittieri.* Green diamond = CEMT collection data; black circle = literature data.

**Subregion of Venezuela**

Central Coast Mountain Range.

**Literature record**

Montoya-Molina & Vaz-de-Mello 2021: 31 (Venezuela: Aragua).

***Dichotomius inachoides*** (Felsche, 1901)
Fig. 40A

*Pinotus inachoides* Felsche, 1901: 144 (original description). Type locality: Venezuela: Mérida. Name-bearing type: holotype (SMTD), examined by FZVM.

*Pinotus inachoides* – Gillet 1911b: 61 (catalogue). — Blackwelder 1944: 207 (list).
*Pinotus* (*Cephagonus*) *inachoides* – Luederwaldt 1929: 109 (key, characteristics).
*Dichotomius* (*Luederwaldtinia*) *inachoides* – Roze 1955: 44 (cited, checklist for Venezuela). — Vulcano & Pereira 1967: 585 (key for the Amazon). — Krajcik 2012: 91 (list). — Montoya-Molina & Vaz-de-Mello 2021: 7, 33 (key, diagnosis, distribution).

**Material examined**

VENEZUELA – **Aragua** • 1 spec.; Cuyagua; 50 m a.s.l.; 6 Jul. 2004; D. García leg.; CEMT. – **Barinas** • 7 specs; Bolívar, Barinitas, Paguey, Sector El Cacao, Andean foothills; 1080 m a.s.l.; 3–4 Sep. 2015; R. Acconcia and J. Gámez leg.; CEMT. – **Merida** • 1 ♂; Monte Zerpa, La Hechicera; Nov. 1987; Joffre B. leg.; CEMT • 1 ♀; Santa Rosa, La Hechicera; Jun. 1986; Joffre B. leg.; CEMT • 2 specs; Sucre, Jají; 8°40′20.49″ N, 71°24′38.59″ W; 1999 m a.s.l.; 8 Jul. 2009; D. Mora, P. Colmenares, M.Córdova and M. Nuñez leg.; human faeces; CEMT. – **Táchira** • 2 ♀♀; "La Flautera Palmira" (?); 15 Jul. 1985; Joffre B. leg.; CEMT.

**Distribution**

Colombia and Venezuela.

**Subregions of Venezuela**

Coastal mainland, Plains, Andes mountains and Oriental Coast Range.

**Literature records**

Gillet 1911b: 61 (Venezuela). — Luederwaldt 1929: 109 (Venezuela). — Blackwelder 1944: 207 (Venezuela). — Vulcano & Pereira 1967: 585 (Venezuela). — Krajcik 2012: 91 (Venezuela). — Montoya-Molina & Vaz-de-Mello 2021: 7, 33 (Venezuela: Aragua; Barinas; Mérida; Sucre and Táchira).

***Dichotomius latilobatus*** Boilly & Vaz-de-Mello, 2021
Fig. 40B

*Dichotomius latilobatus* Boilly & Vaz-de-Mello, 2021: 22 (original description). Type locality: French Guiana: Saint-Laurent-du-Maroni: Enéné Patatpe, Mitaraka Massif. Name-bearing type: holotype (MNHN), examined by FZVM.

**Material examined**

VENEZUELA – **Bolívar** • 1 spec.; Isla de Anacoco; 6 Aug. 2006; curso NM2006 leg.; faeces, 23h; CEMT.

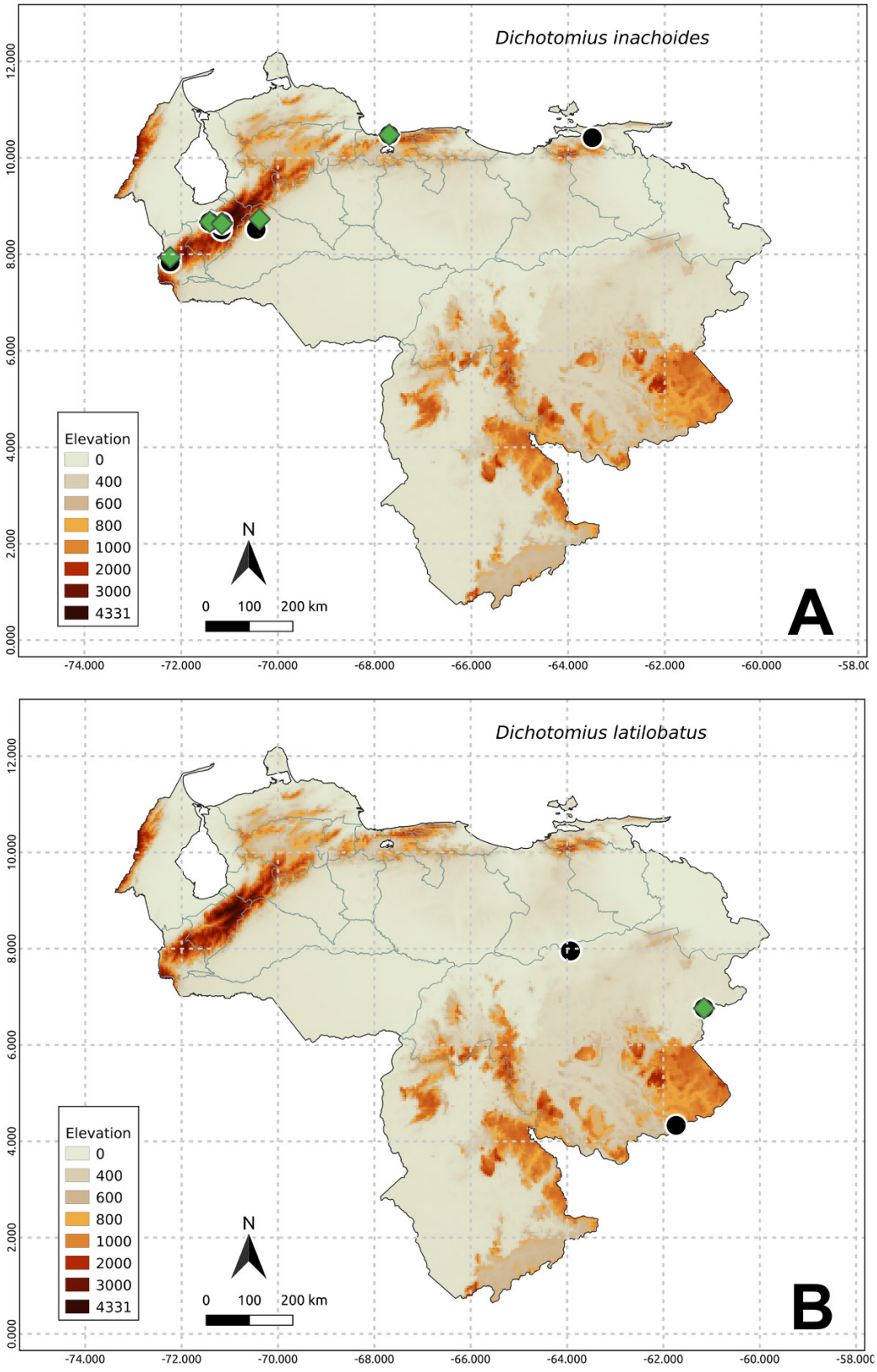


**Fig. 40.** Species distribution. **A**. *Dichotomius inachoides* (Felsche, 1901). **B**. *Dichotomius latilobatus* Boilly & Vaz-de-Mello, 2021. Green diamond = CEMT collection data; black circle = literature data.

**Distribution**

Venezuela, Suriname, French Guiana, and Brazil.

**Subregions of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Guiana Shield.

**Literature record**

Boilly & Vaz-de-Mello 2021: 22 (Venezuela: Bolívar).

***Dichotomius mamillatus*** (Felsche, 1901)
Fig. 41A

*Pinotus mamillatus* Felsche, 1901: 143 (original description). Type locality: Ecuador. Name-bearing type: lectotype (SMTD), designated by Rossini & Vaz-de-Mello (2020), examined by FZVM.

*Pinotus calcaratus* Arrow, 1913: 457 (original description). Type locality: Brazil: Rondônia: Madeira River, "Madeira-Mamoré Railway Company Camp 41" ("Matto Grosso", "Madeira-Mamore / R.R.Co.Camp 41"). Name-bearing type: holotype (BMNH) (Rossini & Vaz-de-Mello 2020), examined by FZVM.

*Pinotus mamillatus* – Gillet 1911b: 61 (catalogue). — Balthasar 1941: 349 (checklist); 1951: 334 (checklist). — Blackwelder 1944: 207 (checklist). — Sarmiento-Garcés & Amat-García 2009: 291 (cited). — Rossini & Vaz-de-Mello 2020: 60 (cited).

*Pinotus calcaratus* – Luederwaldt 1929: 97, 102–103 (key, diagnosis); 1936: 213 (cited). — Rossini & Vaz-de-Mello 2020: 60 (cited as synonym of *Dichotomius mamillatus*).

*Dichotomius* (*Dichotomius*) *mamillatus* – Vulcano & Pereira 1967: 585 (key, synopsis). — Luederwaldt 1929: 53 (key). — Amézquita *et al.* 1999: 119–120, 123 (list for Orinoquía, Colombia). — Escobar 2000: 208 (checklist for Colombia). — Medina & Lopera-Toro 2000: 309 (key for the Amazon). — Vaz-de-Mello 2000: 193 (checklist for Colombia). — Medina *et al.* 2001: 138 (checklist for Colombia). — Pulido-Herrera *et al.* 2003: 54 (list for Caqueta, Colombia); 2007: 307 (list for Andean Region Colombia). — Celi *et al.* 2004: 44 (list for Morona Santiago, Ecuador). — Noriega-Alvarado 2004: 39 (list for La Macarena, Colombia). — Noriega & Botero-Trujillo 2008: 451 (comments). — Noriega *et al.* 2008b: 79 (ecology). — Carpio *et al.* 2009: 469 (ecology). — Medina & Pulido-Herrera 2009: 60 (list for Orinoquia, Colombia). — Sarmiento-Garcés & Amat-García 2009: 287, 291, 295 (diagnosis, key). — Larsen 2011: 98, 102 (list for Suriname); 2013: 98 (list for Suriname). — Vaz-de-Mello *et al.* 2011b: 87 (list). — Krajcik 2012: 91 (checklist). — Noriega & Navarrete-Heredia 2013: 191(comments). — Ratcliffe 2013: 493, 504, 510–511 (fig. 48, cited as *Dichotomius* nr. *mamillatus*). — Martínez *et al.* 2014: 17–18 (comments). — Silva *et al.* 2014: 349 (ecology); 2015: 611 (list for Mato Grosso state, Brazil); 2016: 554 (ecology, biogeography). — Ratcliffe *et al.* 2015: 196 (checklist for Peru). — Chamorro *et al.* 2018: 89 (key for Ecuador); 2019: 114–115 (catalogue). — Giraldo *et al.* 2018: 61 (guide). — Santos *et al.* 2018: 46 (list for Acre, Brazil). — Rossini & Vaz-de-Mello 2020: 59–61 (key, distribution, diagnosis, redescription).

*Dichotomius* (*Dichotomius*) *calcaratus* – Vulcano *et al.* 1976: 517 (new combination). — Vaz-de-Mello 2000: 193 (checklist for Brazil). — Rossini & Vaz-de-Mello 2020: 60 (as synonym of *Dichotomius mamillatus*).

*Dichotomius* (*Dichotomius*) *mamillatus* – Vaz-de-Mello 2000: 193 (checklist for Colombia). — Vaz-de-Mello *et al.* 2011b: 87 (list). — Chamorro *et al.* 2018: 89 (key for Ecuador); 2019: 114–115 (catalogue). — Rossini & Vaz-de-Mello 2020: 59–61 (key, distribution, diagnosis, redescription).

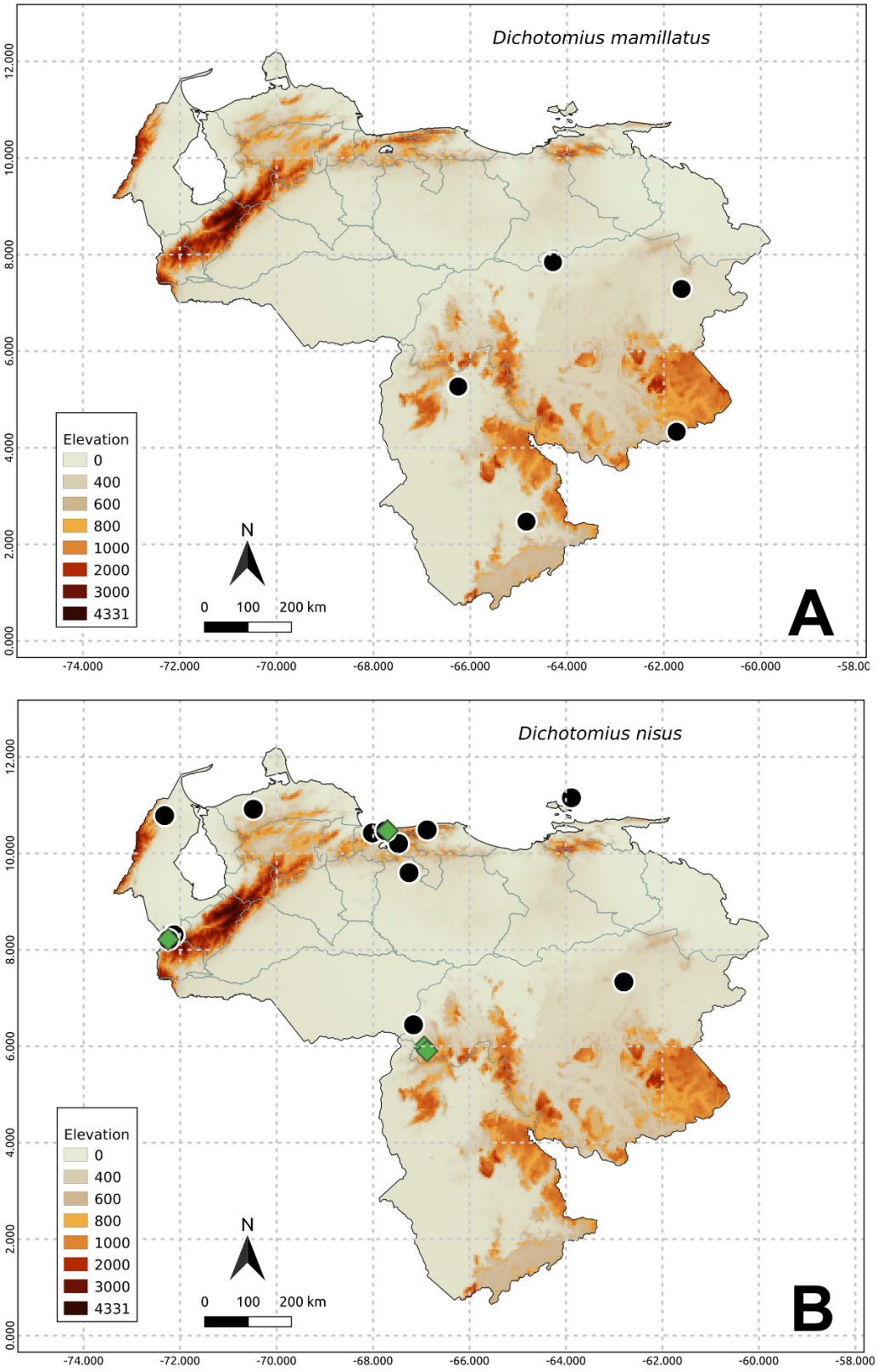


**Fig. 41.** Species distribution. **A**. *Dichotomius mamillatus* (Felsche, 1901). **B**. *Dichotomius nisus* (Olivier, 1789). Green diamond = CEMT collection data; black circle = literature data.

**Distribution**

Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, Ecuador, Peru, and Bolivia.

**Subregions of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco, System of hills and low piedmont mountains of the Guiana Shield, and Guiana Shield.

**Literature record**

Rossini & Vaz-de-Mello 2020: 60 (Venezuela: Amazonas and Bolívar).

***Dichotomius nisus*** (Olivier, 1789)
Fig. 41B

*Scarabaeus nisus* Olivier, 1789: 139 (original description). Type locality: French Guiana. Name-bearing type: lectotype (MNHN), designated by Cassenote *et al.* (2020), examined by FZVM.
*Pinotus garbei* Luederwaldt, 1922: 11 (original description). Type locality: French Guiana: Cayenne. Name-bearing type: lectotype (MZSP), designated by Cassenote *et al.* (2020), examined by FZVM.
*Pinotus taunay* var. *pilosus* Luederwaldt, 1931b: 303 (original description). Type locality: Brazil: São Paulo: "Alto da Serra". Name-bearing type: holotype by monotypy (MZSP), not examined.

*Copris nisus* – Olivier 1790: 166 (list, characteristics). — Fabricius 1801: 44 (list, comments). — Nunes & Vaz-de-Mello 2019: 2239 (comments).
*Copris* (*Selenocopris*) *nisus* – Burmeister 1846: unpaged [p. 93 of 220] (key).
*Pinotus nisus* – Harold 1869c: 141 (list, revision). — Candèze 1891: 330 (list). — Gillet 1911b: 61 (catalogue, cited for Guyana, Brazil, Argentina). — Luederwaldt 1914: 369 (comments); 1929: 84 (key, comments, cited for Brazil). — Blackwelder 1944: 207 (list, distribution).
*Pinotus garbei* – Luederwaldt 1929: 84 (synonym of *D. nisus*).
*Dichotomius* (*Luederwaldtinia*) *nisus* – Martínez 1951: 140 (comments). — Roze 1955: 44 (checklist for Venezuela). — Halffter & Matthews 1966: 98 (comments). — Blanco 1988: 40–41 (catalogue, comments). — Escobar 2000: 208 (checklist for Colombia). — Vaz-de-Mello 2000: 193 (checklist for Brazil). — Krajcik 2006: 54 (list); 2012: 91 (list, cited for "Cayenne"). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Feer 2008: 56, 62 (ecology). — Larsen *et al.* 2008: 1294 (list). — Medina & Pulido-Herrera 2009: 60 (diversity). — Lozano 2010: 86 (list). — Ferrer-Paris *et al.* 2013: 109 (list). — Nunes & Vaz-de-Mello 2013: 411, 413, 416–418 (comments, fig. 2, key); 2019: 2238, 2240 (comments). — França *et al.* 2016: 2, 4 (list, comments). — Silva *et al.* 2016: 7 (ecology, biogeography). — Giraldo *et al.* 2018: 68 (guide). — Hielkema & Hielkema 2019: 55 (catalogue for the Guianas). — Pardo-Díaz *et al.* 2019: 1, 5, 7–8, 12–14 (comments). — Nieto *et al.* 2020: 136 (report).
*Scarabaeus nisus* – Nunes & Vaz-de-Mello 2019: 2237, 2239 (comments).
*Dichotomius* (*Selenocopris*) *nisus* – Cassenote *et al.* 2020: 2–6 (distribution, diagnosis).

**Material examined**

VENEZUELA – **Aragua** • 4 specs; Cuyagua; 50 m a.s.l.; 6 Jul. 2004; D. García leg.; CEMT. – **Bolívar** • 1 ♀; Rio Pargaza; 15 May 2004; D. Garcia leg.; CEMT. – **Táchira** • 1 ♂, 1 ♀; La Fría, Hacienda La Libertad; 21 Jul. 1984; Joffre B. leg.; CEMT.

**Distribution**

Colombia, Venezuela, French Guiana, Brazil, Bolivia, Paraguay, Argentina, and Uruguay.

**Subregions of Venezuela**

Coastal island, coastal mainland, Maracaibo Depression, System of hills and low sierras Lara-Falcón, System of hills and low piedmont mountains of the Guiana Shield, Andes mountains and Central Coast Mountain Range.

**Literature records**

Candèze 1891: 330 (Venezuela: Falcón: Corosal; and Carabobo: San-Esteban). — Roze 1955: 44 (Venezuela: Distrito Capital: Caracas; Aragua; and Nueva Esparta: Isla Margarita). — Blanco 1988: 40–41 (Venezuela: Táchira). — Larsen *et al*. 2008: 1294 (Venezuela: Bolívar: Lago Guri). — Lozano 2010: 86 (Venezuela: Zulia). — Ferrer-Paris *et al*. 2013: 109 (Venezuela: Aragua [Guárico]: Altagracia de Orituco). — França *et al*. 2016: 4 (Venezuelan dry forests and pastures). — Cassenote *et al*. 2020: 2 (Venezuela: Bolívar).

***Dichotomius ocellatopunctatus*** (Felsche, 1901)

*Pinotus ocellatopunctatus* Felsche, 1901: 141 (original description). Type locality: Venezuela: Mérida. Name-bearing type: lectotype (SMTD), designated by Vaz-de-Mello & Nunes (2016), examined by FZVM.

*Pinotus ocellatopunctatus* – Gillet 1911b: 61 (catalogue). — Luederwaldt 1929: 74 (key). — Blackwelder 1944: 207 (list). — Pereira 1947b: 318, 319 (key, comments).
*Dichotomius ocellatopunctatus* – Roze 1955: 44 (cited, checklist for Venezuela). — Vulcano & Pereira 1967: 586 (key). — Krajcik 2012: 91 (list). — Vaz-de-Mello & Nunes 2016: 297 (redescription, new combination). — Valois *et al.* 2022: 119–120, 123 (revision, key).

**Material examined**

**Paralectotype**

VENEZUELA • 1 ♀; "PARALECTOTYPE / *Pinotus* ♀/ *ocellatopunctatus* / Felsche / des. F.Z. Vaz-de-Mello, 2014 [yellow label]"; "staatl. Museum für / Tierkunde Dresden"; "Coll. C. Felsche / Kauf 20, 1918 [green label]"; "Merida [white label]"; CEMT-00078242.

**Distribution**

Venezuela (endemic).

**Literature records**

Gillet 1911b: 61 (Venezuela). — Luederwaldt 1929: 74 (Venezuela). — Blackwelder 1944: 207 (Venezuela). — Vulcano & Pereira 1967: 586 (Venezuela). — Krajcik 2012: 91 (Venezuela). — Vaz-de-Mello & Nunes 2016: 297 (Venezuela: Mérida). — Valois *et al*. 2022: 123 (Venezuela).

***Dichotomius protectus*** (Harold, 1867)
Fig. 42A

*Pinotus protectus* Harold, 1867d: 98 (original description). Type locality: Colombia. Name-bearing type: syntypes (MNHN), examined by FZVM.
*Pinotus protectus tridentatus* Luederwaldt, 1923: 10 (original description). Type locality: Ecuador and Venezuela. Name-bearing type: syntypes (MZSP), not examined.

*Pinotus protectus* – Harold 1869b: 130 (redescription, cited for Colombia); 1869d: 1010 (catalogue, cited for Colombia). — Candèze 1891: 330 (list). — Heyne & Taschenberg 1908: 62 (list, cited for

Colombia). — Gillet 1911b: 61 (catalogue). — Campos 1921: 56 (cited for Ecuador). — Luederwaldt 1929: 34 (key). — Blackwelder 1944: 207 (list). — Gacharná 1951: 222 (list for Colombia).

*Dichotomius* (*Dichotomius*) *protectus* – Roze 1955: 44 (cited, checklist for Venezuela). — Blanco 1988: 40, 41 (catalogue). — Havranek 1989: 61, 62 (list, comments). — Escobar 2000: 208 (checklist for Colombia). — Medina *et al.* 2001: 138 (checklist for Colombia). — Hamel-Leigue *et al.* 2006: 15 (list, cited for Bolivia). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Orozco & Pérez 2008: 38–39 (list for Colombia). — Sarmiento-Garcés & Amat-García 2009: 290, 295 (diagnosis, key); 2014: 51, 64 (key, diagnosis). — Carvajal *et al.* 2011: 320 (list for Ecuador). — Krajcik 2012: 92 (list). — Ferrer-Paris *et al.* 2013: 109 (list). — Ratcliffe *et al.* 2015: 197 (checklist for Peru). — Chamorro *et al.* 2018: 94 (list for Ecuador); 2019: 119 (catalogue). — Giraldo *et al.* 2018: 100 (guide). — Pardo-Díaz *et al.* 2019: 5, 7, 11 (comments). — Nieto *et al.* 2020: 136 (report).

**Material examined**

VENEZUELA – **Aragua** • 1 spec.; Cayagua; 50 m a.s.l.; 6 Jul. 2004; D. García leg.; CEMT • 2 specs; Parque Nacional Henri Pittier, Estación Biológica Rancho Grande; 1500 m a.s.l.; 21–25 Feb. 1971; S. Peck leg.; human dung trap; forest; CEMT • 2 specs; road Tiara–Caracas; 2000 m a.s.l.; 22–25 Feb. 1971; S. Peck leg.; carrion; forest; CEMT. – **Distrito Capital** • 1 spec.; Caracas; Dec. 1949; CEMT. – **Mérida** • 2 specs; Monte Zerpa, Merida; 2200 m a.s.l.; Jul. 1995; A. de Ascençao leg.; dung; CEMT • 1 spec.; Zea; Nov. 2003; G. Arriágada leg.; CEMT. – **Miranda** • 2 specs; Altos de Pipe, Instituto Venezolano de Investigaciones Científicas ("Campus IVIC"); 10°23′51″ N, 66°58′15″ W; 1500 m a.s.l.; Jul. 2009; F.Z. Vaz-de-Mello leg.; CEMT. – **Táchira** • 1 spec.; near Pregonero, Futura Presa Las Cuevas; 600 m a.s.l.; 17 Jan. 1989; D. Havranek leg.; human faeces trap; CEMT • 2 specs; near Pregonero, presa/La Honda (La Idea); 1100 m a.s.l.; 16 Aug. 1989; D. Havranek leg.; mini-cup trap C(T7-6); CEMT • 1 spec.; Vía Chorro del Indio; Aug. 1987; J. Blanco leg.; CEMT • 1 spec.; Vía Chorro del Indio; Aug. 1987; J. Blanco leg.; CEMT.

**Distribution**

Colombia, Venezuela, Ecuador, Peru, and Bolivia.

**Subregions of Venezuela**

Andes mountains and Central Coast Mountain Range.

**Literature records**

Gillet 1911b: 61 (Venezuela). — Luederwaldt 1929: 34 (Venezuela). — Blackwelder 1944: 207 (Venezuela). — Roze 1955: 44 (Venezuela). — Blanco 1988: 40, 41 (Venezuela: Táchira). — Havranek 1989: 61 (Venezuela: Táchira state). — Ferrer-Paris *et al*. 2013: 109 (Venezuela: Mérida: La Azulita-Jají; Miranda: Altos de Pipe). — Chamorro *et al*. 2019: 119 (Venezuela).

***Dichotomius robustus*** (Luederwaldt, 1935)
Fig. 42B

*Pinotus robustus* Luederwaldt, 1935: 337 (original description). Type locality: Guyana: Cuyuni-Mazaruni: Essequibo River, Moraballi Creek. Name-bearing type: lectotype (BMNH), designated by Rossini & Vaz-de-Mello (2020), not examined.

*Pinotus robustus* – Blackwelder 1944: 208 (checklist).

*Dichotomius* (*Dichotomius*) *robustus* – Vulcano & Pereira 1967: 584 (key). — Escobar 2000: 208 (checklist for Colombia). — Medina *et al.* 2001: 138 (checklist for Colombia). — Feer 2008: 54, 56, 62 (ecology); 2013: 767 (list for French Guiana). — Medina & Pulido-Herrera 2009: 60 (list for

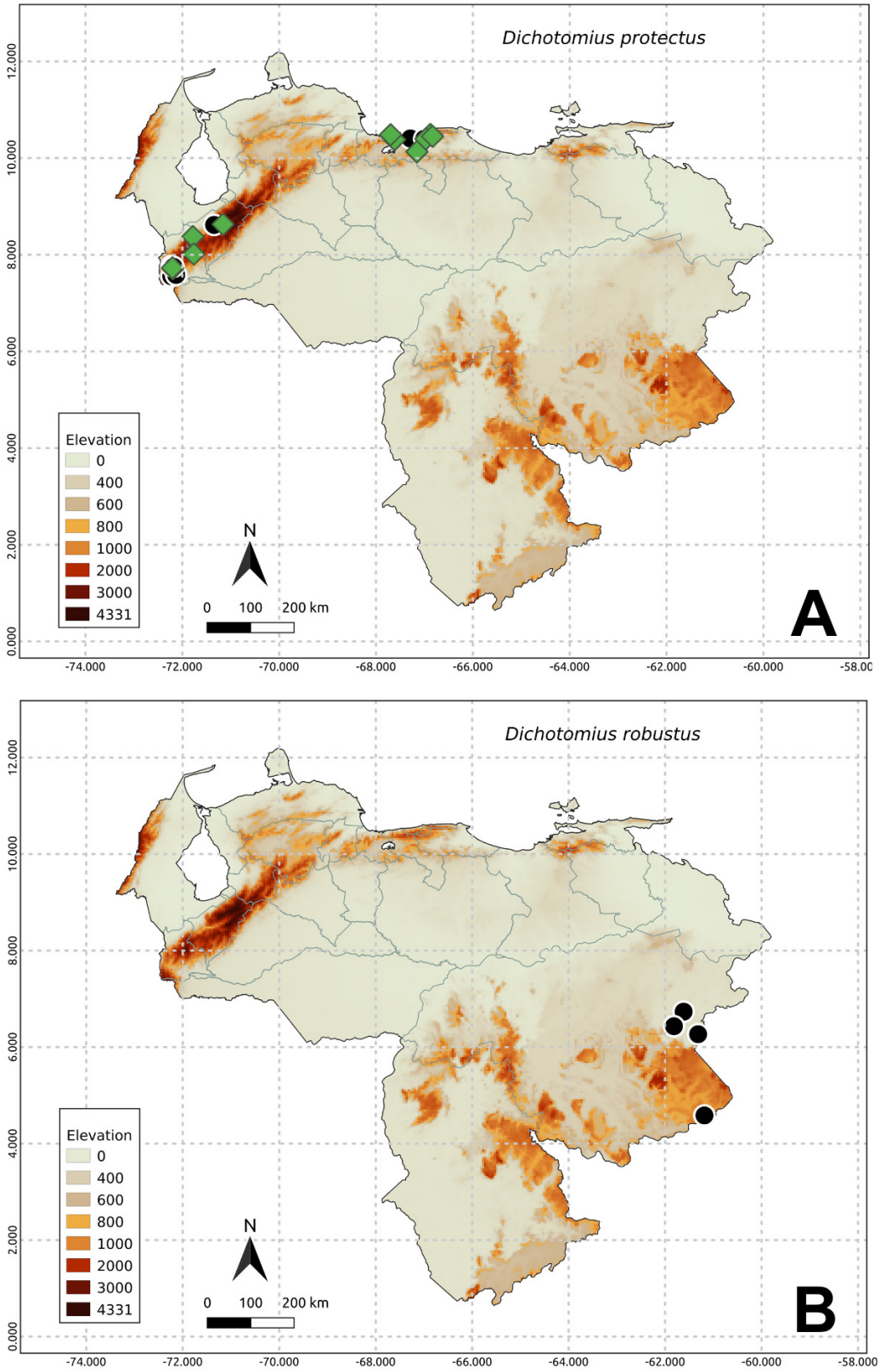


**Fig. 42.** Species distribution. **A**. *Dichotomius protectus* (Harold, 1867). **B**. *Dichotomius robustus* (Luederwaldt, 1935). Green diamond = CEMT collection data; black circle = literature data.

Orinoquía, Colombia). — Sarmiento-Garcés & Amat-García 2009: 292, 295 (diagnosis, key). — Larsen 2011: 98, 102 (list for Suriname); 2013: 96, 100 (list for Suriname). — Vaz-de-Mello *et al.* 2011b: 88 (list). — Nunes *et al.* 2014: 408–410 (cited, list). — Silva *et al.* 2014: 349 (ecology); 2017: 490 (list). — Feer & Boissier 2015: 169 (list). — Ratcliffe *et al.* 2015: 196 (checklist for Peru). — Santos *et al.* 2018: 46 (list for Acre state, Brazil). — Rossini & Vaz-de-Mello 2020: 63 (revision, distribution, diagnosis).

**Distribution**

Colombia, Venezuela, Trinidad and Tobago, Guyana, Suriname, French Guiana, Brazil, Peru, Ecuador, and Bolivia.

**Subregions of Venezuela**

System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Guiana Shield.

**Literature record**

Rossini & Vaz-de-Mello 2020: 63 (Venezuela: Bolívar).

***Dichotomius satanas*** (Harold, 1867)
Fig. 43A

*Pinotus satanas* Harold, 1867d: 98 (original description). Type locality: Colombia. Name-bearing type: syntypes (MNHN), examined by FZVM.

*Pinotus satanas* – Harold 1880: 24 (distribution for Colombia). — Blackwelder 1944: 208 (list, distribution). — Gillet 1911b: 62 (catalogue).

*Dichotomius satanas* – Halffter & Matthews 1966: 83 (comments). — Howden & Young 1981: 126 (redescription, distribution). — Deloya 1992: 2 (list). — Halffter *et al.* 1992: 149 (ecology). — Kohlmann & Solís 1997: 345, 367 (key, redescription, cited for Panama). — Maes 1998: 655 (list for Nicaragua). — Escobar 2000: 208 (checklist for Colombia). — Medina *et al.* 2001: 138 (list, cited for Colombia); 2002: 182–185 (ecology). — Estrada & Coates-Estrada 2002: 1911 (ecology). — Ramírez & Locarno 2004: 61–63 (list). — Kohlmann *et al.* 2007: 29 (checklist). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Giraldo *et al.* 2011: 118 (comments). — Cultid-Medina *et al.* 2012: 48 (guide). — Delgado *et al.* 2012: 327 (list). — Noriega *et al.* 2012: 47 (list for Antioquia, Colombia). — Solís & Kohlmann 2012: 6 (checklist for Costa Rica). — Noriega & Navarrete-Heredia 2013: 191 (comments). — Pardo-Locarno & Camero 2014: 210–212, 216 (list for Chocó, Colombia). — Torres *et al.* 2017: 48–49, 67 (cited for Boyaca, Colombia). — Nunes & Vaz-de-Mello 2019: 2239 (comments). — Pardo-Díaz *et al.* 2019: 2, 5–12, 14 (comments).

**Material examined**

VENEZUELA – **Táchira** • 1 ♂; Vía Chorro del Indio; Oct. 1984; Joffre B. leg.; CEMT • 1♀; same data as for preceding except for the date; Oct. 1984; CEMT.

**Distribution**

Mexico, Belize, Guatemala, Nicaragua, Costa Rica, Panama, Colombia, Venezuela (**new country record**), Ecuador, and Peru.

**Subregion of Venezuela**

Andes mountains.

**Literature record**

Not reported for Venezuela.

***Dichotomius triquetrus*** (Luederwaldt, 1923)

*Pinotus triquetrus* Luederwaldt, 1923: 11 (original description). Type locality: Trinidad and Tobago: Couva-Tabaquite-Talparo: Caparo. Name-bearing type: lectotype (MZSP), designated by Montoya-Molina & Vaz-de-Mello (2021), not examined.

*Pinotus triquetrus* – Blackwelder 1944: 208 (checklist, cited for Trinidad).
*Dichotomius triquetrus* – Montoya-Molina & Vaz-de-Mello 2021: 8, 47–48 (key, redescription, designation of lectotype).

**Distribution**

Venezuela and Trinidad and Tobago.

**Literature record**

Montoya-Molina & Vaz-de-Mello 2021: 47 (Venezuela).

***Dichotomius tristis*** (Luederwaldt, 1923)
Fig. 43B

*Pinotus tristis* Luederwaldt, 1923: 12 (original description). Type locality: Venezuela. Name-bearing type: holotype by monotypy (MZSP), not examined.

*Pinotus tristis* – Luederwaldt 1929: 98 (list for Brazil). — Blackwelder 1944: 208 (list).
*Dichotomius tristis* – Roze 1955: 44 (checklist for Venezuela). — Vulcano & Pereira 1967: 585 (key). — Larsen *et al.* 2008: 1294 (list). — Krajcik 2012: 91 (list). — Giraldo *et al.* 2018: 66 (guide). — Montoya-Molina & Vaz-de-Mello 2021: 53 (diagnosis, distribution).

**Material examined**

VENEZUELA – **Amazonas** • 1 spec.; 150 m a.s.l.; Aug. 2003; CEMT • 1 spec.; Atunes. Puerto Ayacucho; 112 m a.s.l.; 13 May 2004; D. García-Favre leg.; CEMT. – **Aragua** • 1 spec.; Cuyagua; 6 Aug. 2004; D. Garcia leg.; CEMT • 1 spec.; Parque Nacional Henri Pittier, Choroni; 29 Jul. 1992; Homburg leg.; CEMT. – **Barinas** • 5 specs; Andrés Eloy Blanco, Reserva Forestal Caparo, Estación Cachicamo; 07°28′16″ N, 71°03′18″ W; 159 m a.s.l.; 22–23 Jul. 2014; R. Acconcia and J. Gámez leg.; human faeces; CEMT • 1 spec.; Calderas de Barinas, San Ramón, Finca Valle Encantado; 08°52′49″ N, 70°29′42″ W; 1249 m; 30 Sep. 2010; R. Acconcia leg.; human faeces; CEMT. – **La Guaira** • 2 specs; Vargas, La Sabana; 10°35′52.65″ N, 66°16′48.61″ W; 22 m a.s.l.; 20 Jul. 2009; H. Martínez, P. Cely, M. Córdova and M. Nuñez leg.; chicken carrion; CEMT. – **Táchira** • 1 ♂, 1 ♀; San Cristobal, Barrio El Lobo; Apr. 1984; Joffre B. leg.; CEMT • 5 specs; San Cristóbal, Parque Nacional Natural Paramillo; Jul. 1993; J. Blanco leg.; CEMT.

**Distribution**

Colombia, Venezuela, Trinidad and Tobago, and Brazil.

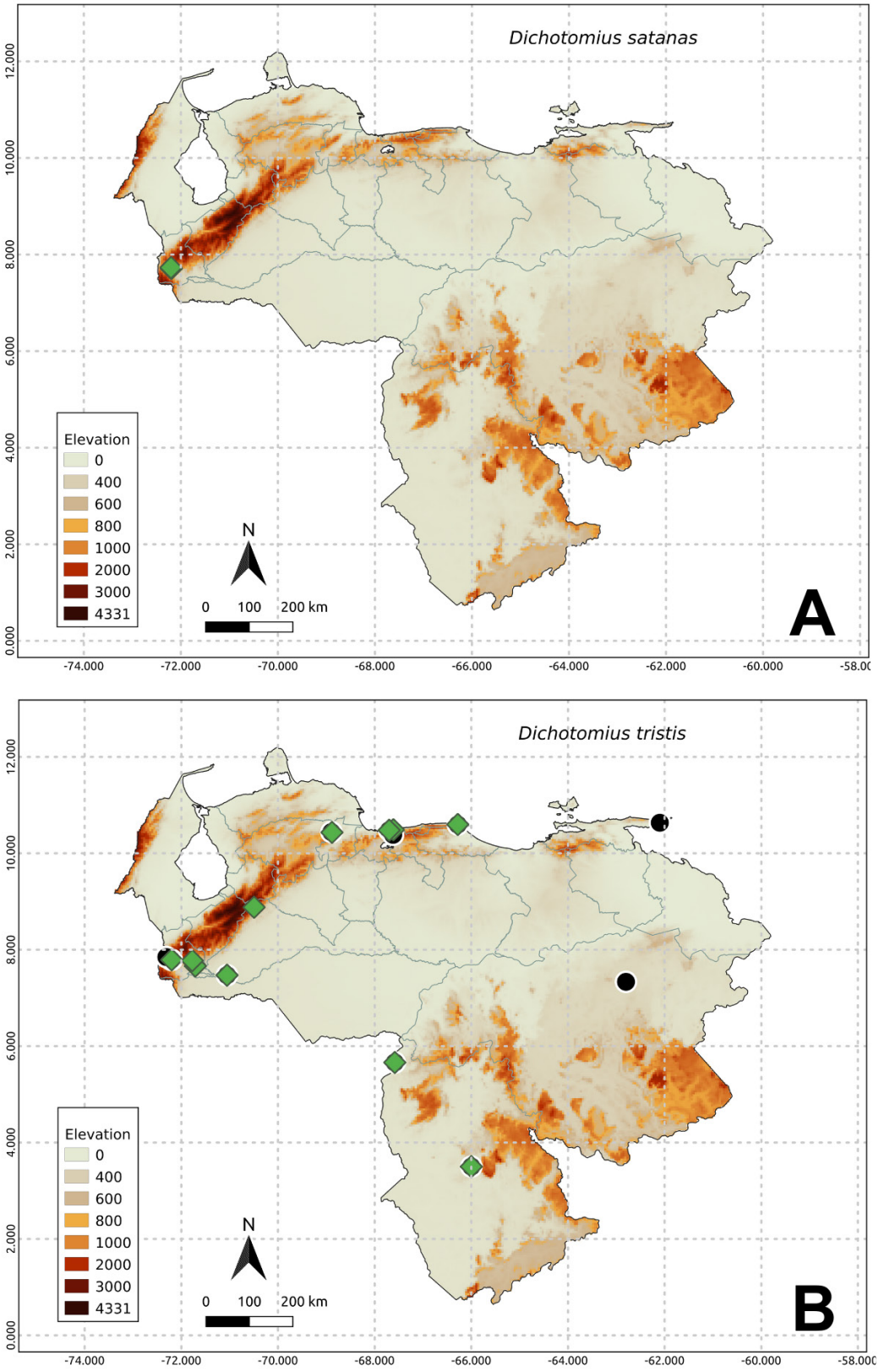


**Fig. 43.** Species distribution. **A**. *Dichotomius satanas* (Harold, 1867). **B**. *Dichotomius tristis* (Luederwaldt, 1923). Green diamond = CEMT collection data; black circle = literature data.

**Subregions of Venezuela**

Coastal mainland, Plains, Peneplain of the Casiquiare River–Upper Orinoco, System of hills and low piedmont mountains of the Guiana Shield, Andes mountains, Central Coast Mountain Range, and Oriental Coast Range.

**Literature records**

Luederwaldt 1923: 12 (Venezuela); 1929: 98 (Venezuela). — Blackwelder 1944: 208 (Venezuela). — Roze 1955: 44 (Venezuela: Sucre). — Vulcano & Pereira 1967: 585 (Venezuela). — Larsen *et al*. 2008: 1294 (Venezuela: Bolívar: Lago Guri). — Krajcik 2012: 91 (Venezuela). — Montoya-Molina & Vaz-de-Mello 2021: 8, 50 (Venezuela: Amazonas, Aragua, Barinas, La Guaira, Táchira and Yaracuy).

***Dichotomius validipilosus*** (Luederwaldt, 1931)
Fig. 44A

*Pinotus validipilosus* Luederwaldt, 1931b: 303 (original description). Type locality: Venezuela: Distrito Capital: Caracas. Name-bearing type: holotype (MNHN), examined by FZVM.

*Pinotus validipilosus* – Blackwelder 1944: 208 (list).
*Dichotomius validipilosus* – Roze 1955: 44 (cited, checklist for Venezuela). — Blanco 1988: 40–41 (catalogue). — Havranek 1989: 61, 62 (list, comments). — Ferrer-Paris *et al.* 2013: 109 (list). — Montoya-Molina & Vaz-de-Mello 2021: 53 (diagnosis, distribution).

**Material examined**

VENEZUELA – **Aragua** • 2 specs; Cuyagua; 50 m a.s.l.; 6 Jul. 2004; D. García leg.; CEMT. – **Mérida** • 4 specs; Arzobispo Chacón, Mucutuy environs; 08°14′18″ N, 71°17′12″ W; 1380 m a.s.l.; 13 Mar. 2015; R. Acconcia leg.; light; CEMT. – **Táchira** • 2 ♂♂; "La Flautera Palmira" (?); 15 Jul. 1985; Joffre B. leg.; CEMT.

**Distribution**

Colombia and Venezuela.

**Subregions of Venezuela**

Coastal mainland, Andes mountains, and Central Coast Mountain Range.

**Literature records**

Luederwaldt 1931b: 303 (Venezuela: Caracas). — Blackwelder 1944: 208 (Venezuela). — Blanco 1988: 40, 41 (Venezuela: Táchira). — Havranek 1989: 61 (Venezuela: Mérida). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Mérida: La Azulita-Jají). — Montoya-Molina & Vaz-de-Mello 2021: 8, 53 (Venezuela: Aragua, Mérida and Táchira).

***Dichotomius worontzowi*** (Pereira, 1942)
Fig. 44B

*Pinotus worontzowi* Pereira, 1942: 44 (original description). Type locality: Brazil: Amazonas: Maués: Parauarí and Maués Rivers area. Name-bearing type: holotype by original designation (MZSP), not examined.

*Dichotomius* (*Dichotomius*) *worontzowi* – Amézquita *et al.* 1999: 119 (biodiversity). — Escobar 2000: 208 (checklist for Colombia). — Vaz-de-Mello 2000: 193 (checklist for Brazil). — Medina *et al.*

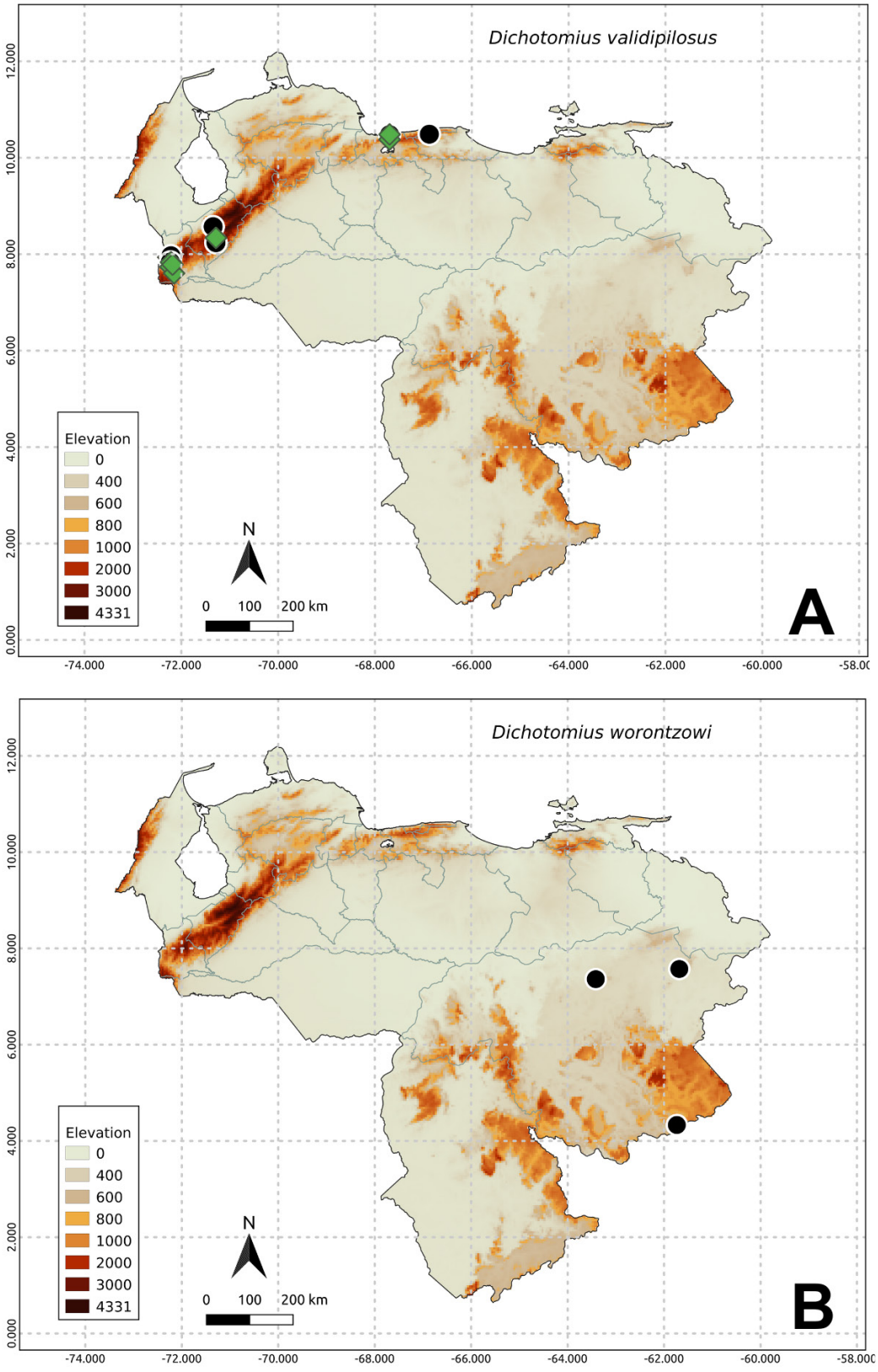


**Fig. 44.** Species distribution. **A**. *Dichotomius validipilosus* (Luederwaldt, 1931). **B**. *Dichotomius worontzowi* (Pereira, 1942). Green diamond = CEMT collection data; black circle = literature data.

2001: 138 (checklist for Colombia). — Pulido-Herrera *et al.* 2003: 54 (list for Caqueta, Colombia); 2007: 307 (list for Andean region, Colombia). — Celi *et al.* 2004: 44 (diversity). — Noriega-Alvarado 2004: 39 (list for La Macarena, Colombia). — Hamel-Leigue *et al.* 2006: 16 (catalogue for Bolivia). — Medina & Pulido-Herrera 2009: 60 (list for Orinoquia, Colombia). — Sarmiento-Garcés & Amat-García 2009: 287, 291, 294 (diagnosis, key). — Quintero & Halffter 2009: 649 (ecology, list). — Larsen 2013: 96, 100 (list for Suriname). — Nunes *et al.* 2014: 408–411 (cited, list). — Silva *et al.* 2014: 349 (ecology); 2016: 555 (ecology, biogeography, list); 2017: 490 (list). — Feer & Boissier 2015: 169 (list). — Ratcliffe *et al.* 2015: 196 (checklist for Peru). — Silva *et al.* 2015: 611 (list for Mato Grosso, Brazil).

**Distribution**

Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, Peru, and Bolivia.

**Subregions of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield, and Guiana Shield.

**Literature record**

Rossini & Vaz-de-Mello 2020: 65 (Venezuela: Bolívar).

Genus ***Digitonthophagus*** Balthasar, 1959

*Onthophagus* (*Digitonthophagus*) Balthasar, 1959: 464 (original description). Type species: *Scarabaeus bonasus* Fabricius, 1775, by original designation.

*Digitonthophagus* — Zunino 1981: 413 (new status). — Huchet 1992: 300 (key). — Kohlmann 1994: 35–41 (distribution for Mexico). — Ripa *et al.* 1995: 429 (list). — Lobo & Montes de Oca 1997: 17–32 (comments). — Montes de Oca & Halffter 1998: 37–45 (comments, distribution). — Koller *et al.* 1999: 403–404 (comments); 2007: 84 (comments). — Aidar *et al.* 2000: 817 (comments). — Vaz-de-Mello 2000: 193 (checklist for Brazil). — Marchiori *et al.* 2003: 174–175 (comments, list). — Noriega *et al.* 2006: 379–381 (continental record for Colombia); 2007: 80 (list for Colombia); 2010: 451–456 (cited for Peru); 2011: 35–40 (revision); 2017: 371 (distribution); 2020: 3 (distribution). — Matavelli & Louzada 2008: 153–158 (intra-Amazonian distribution). — Álvarez *et al.* 2009: 373–376 (cited for Argentina). — Lozano 2010: 86 (list). — Arias-Buriticá *et al.* 2011: 875–878 (cited). — Vaz-de-Mello *et al.* 2011a: 5, 9, 16, 23, 31, 38, 58 (key). — Ferrer-Paris 2014: 41–46 (distribution for Venezuela, comments). — Génier & Krell 2017: 79 (nomenclature). — Hielkema & Hielkema 2019: 89 (catalogue for the Guianas). — Gámez *et al.* 2021: 46–50 (short note).

***Digitonthophagus gazella*** (Fabricius, 1787)
Fig. 45A

*Scarabaeus gazella* Fabricius, 1787b: 377 (original description). Type locality: Zimbabwe: Manicaland: Mutare: Mutare (formerly, Umtali). Name-bearing type: neotype (ZMUK), designated by ICZN (2020), not examined.

*Scarabaeus dorcas* Olivier, 1789: 121 (original description). Type locality: Madagascar: Diana: Antsiranana (formerly, Diego-Suárez). Name-bearing type: neotype (MNHN), designated by Génier & Moretto (2017), not examined.

*Scarabaeus gazella* – Fabricius 1792: 56 (list, characteristics).
*Copris gazella* – Fabricius 1801: 47 (list).

*Onthophagus gazella* – Dejean 1821: 53 (catalogue). — Blume & Aga 1978: 190–191 (comments). — Fincher *et al.* 1983: 159–162 (distribution). — Nascimento *et al.* 1990: 1–5 (cited). — Ripa *et al.* 1995: 429 (list). — Maes 1998: 654 (list for Nicaragua). — Miranda *et al.* 1998: 681–685 (contribution). — Koller *et al.* 1999: 404, 405 (comments). — Larsen *et al.* 2008: 1294 (list). — Génier & Krell 2017: 78 (nomenclature).

*Onthophagus* (*Digitonthophagus*) *gazella* – Zunino 1979: 292 (cited for Saudi Arabia). — Maes *et al.* 1997: 44 (list for Nicaragua). — Bianchin *et al.* 1998: 276–278 (comments).

*Digitonthophagus gazella* – Zunino 1981: 413–414 (comments). — Barbero & López-Guerrero 1992: 115–120 (contribution). — Deloya 1992: 2 (list). — Huchet 1992: 300–302 (cited for Antillas). — Kohlmann 1994: 35–41 (distribution for Mexico). — Montes de Oca & Halffter 1995: 167 (ecology); 1998: 37–45 (comments, distribution). — Lobo & Montes de Oca 1997: 17–32 (comments). — Koller *et al.* 1999: 405–407 (list); 2007: 81–83, 85–86 (comments, list). — Aidar *et al.* 2000: 818–819 (comments). — Vaz-de-Mello 2000: 193 (checklist for Brazil). — Navarrete-Heredia *et al.* 2001: 56 (list). — Estrada & Coates-Estrada 2002: 1911 (ecology). — Noriega 2002b: 213–215 (cited for Colombia). — Marchiori *et al.* 2003: 174–175 (comments, list). — Noriega *et al.* 2006: 379–381 (cited for Colombia); 2007: 82 (list for Colombia); 2010: 451–456 (cited for Peru); 2011: 35–40 (revision); 2017: 371 (distribution); 2020: 3 (distribution). — Matavelli & Louzada 2008: 153–158 (distribution intra-Amazonian). — Vidaurre *et al.* 2008: 217–220 (cited for Bolivia). — Álvarez *et al.* 2009: 373–376 (cited for Argentina). — Medina & Pulido-Herrera 2009: 61 (diversity). — Lozano 2010: 86 (list). — Arias-Buriticá *et al.* 2011: 875–878 (cited). — Vaz-de-Mello *et al.* 2011b: 88 (list). — Delgado *et al.* 2012: 327 (list). — Ferrer-Paris 2014: 42, 45 (distribution for Venezuela). — Peck *et al.* 2014: 43 (diversity). — Silva *et al.* 2014: 349 (diversity); 2017: 490 (list). — Génier & Moretto 2017: 39 (taxonomy, systematics, phylogeny). — Génier & Davis 2017: 497–500 (revision). — Génier & Krell 2017: 78–82 (revision, diagnosis). — Giraldo *et al.* 2018: 36 (guide). — Hielkema & Hielkema 2019: 89 (catalogue for the Guianas). — Gámez *et al.* 2021: 46–50 (distribution). — Nieto *et al.* 2020: 136 (report).

**Material examined**

VENEZUELA – **Yaracuy** • 1 spec.; Bolívar, Aroa; 10°0′0″ N, 68°0′0″ W; 459 m a.s.l.; 19 Aug. 2009; M. Asmüssen, P. Colmenares and H. Martínez leg.; human faeces; CEMT. – **Zulia** • 1 spec.; Rosario de Perijá; 20 Jul. 2006; curso NM2006 leg.; faeces, 00:00, 14h; CEMT.

**Distribution**

Native to continental Africa. Introduced and naturalized all over the the Americas, in Australia, and on several islands worldwide (Génier & Moretto 2017).

**Subregions of Venezuela**

Maracaibo Depression, Plains, System of low mountains and hills Imataca-Cuyuní of Northeast Guiana Shield, Andes mountains, and Central Coast Mountain Range.

**Literature records**

Larsen *et al*. 2008 (Venezuela: Bolívar: Lago Guri). — Lozano 2010: 86 (Venezuela: Zulia). — Noriega *et al*. 2010: 452 (Venezuela); 2011: 34–36 (Venezuela). — Ferrer-Paris *et al*. 2013: 109 (Venezuela: Aragua [Guárico]: Altagracia de Orituco and Zulia: Rosario de Perijá). — Ferrer-Paris 2014: 41–46 (Venezuela: Aragua and Zulia). — Génier & Davis 2017b: 497 (Venezuela). — Génier & Krell 2017: 79 (Venezuela: Ferrer-Paris 2014). — Noriega *et al*. 2017: 371 (Venezuela: Apure; Bolívar; Cojedes; Guárico; and Táchira); 2020: 3 (Venezuela). — Gámez *et al*. 2021: 46–50 (Venezuela: Apure; Barinas; Mérida; and Zulia).

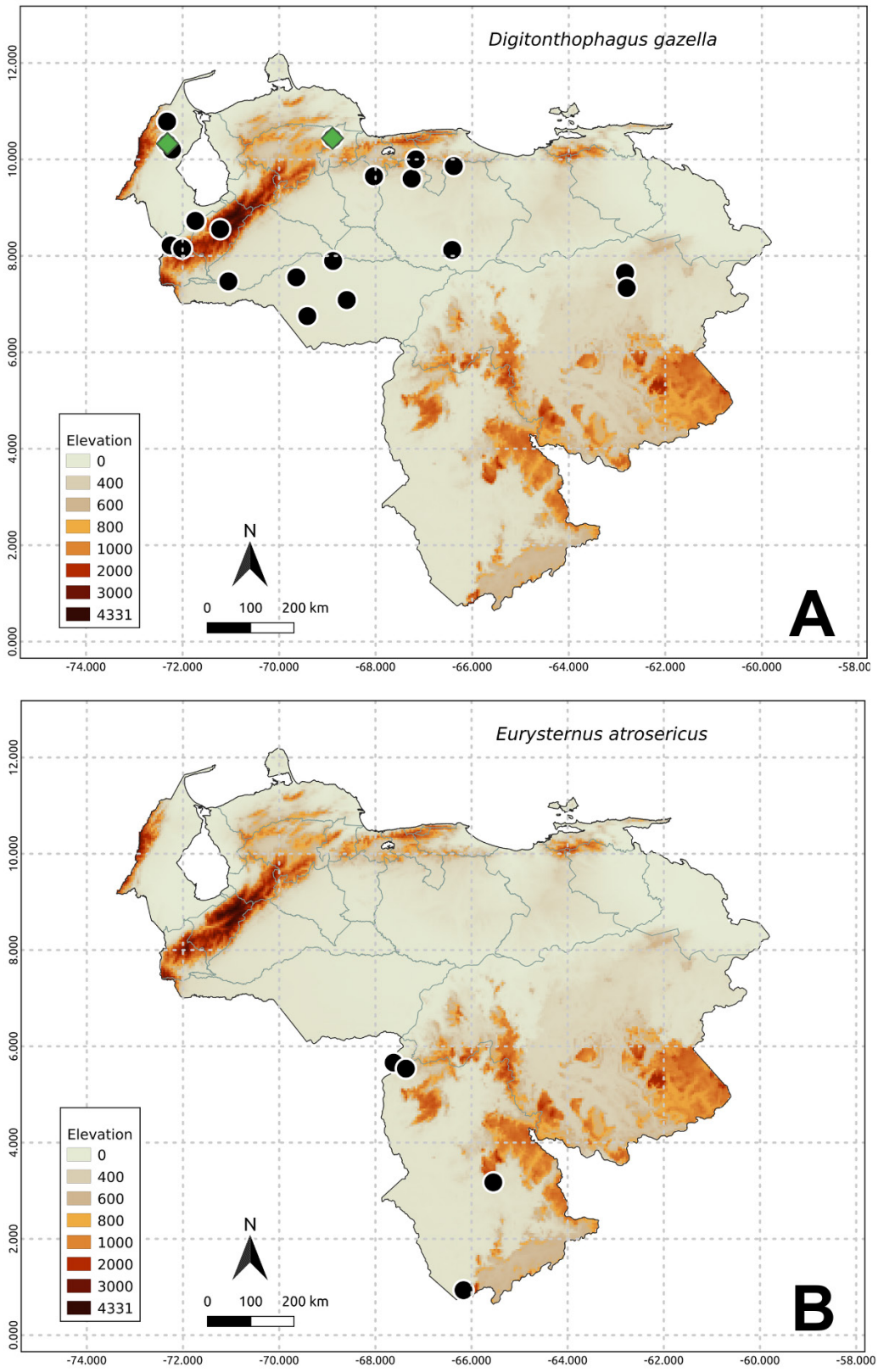


**Fig. 45.** Species distribution. **A**. *Digitonthophagus gazella* (Fabricius, 1787). **B**. *Eurysternus atrosericus* Génier, 2009. Green diamond = CEMT collection data; black circle = literature data.

## Genus ***Eurysternus*** Dalman, 1824

*Eurysternus* Dalman, 1824: 8 (original description). Type species: *Eurysternus planus* Dalman, 1854, by subsequent designation of Jessop (1985).

*Aeschrotes* Le Peletier de Saint-Fargeau & Audinet-Serville, 1828: 357 (original description). Type species: *Aeschrotes planus* Dalman, 1824, by subsequent designation of Jessop (1985).

*Eurysternodes* Martínez, 1988b: 281 (original description), junior homonym of *Eurysternodes* Schuster & Summers, 1978 (Acari: Diarthrophallidae). Type species: *Eurysternus velutinus* Bates, 1887, by original designation.

*Pareurysternus* Martínez, 1988b: 282 (original description). Type species: *Eurysternus navajasi* Martínez, 1988, by original designation.

*Tropicalia* Koçak & Kemal, 2008: 7 (new replacement name for *Eurysternodes* Martínez). Type species: *Eurysternus velutinus* Bates, 1887, in accordance with Article 72.7 of the Code (ICZN 1999).

*Amartinezus* Ozdikmen, 2009: 143 (new replacement name for *Eurysternodes* Martínez). Type species: *Eurysternus velutinus* Bates, 1887, in accordance with Article 72.7 of the Code (ICZN 1999).

*Eurysternus* – Latreille 1829: 535 (redescription). — Castelnau 1840: 92 (redescription). — Agassiz 1846: 436 (catalogue). — Lacordaire 1855: 106 (redescription). — Harold 1869d: 1023 (catalogue). — Bruch 1911: 182 (list). — Gillet 1911b: 25 (catalogue). — Lucas 1920: 289 (catalogue, distribution). — Paulian 1938: 232 (key). — Pessôa & Lane 1941: 406 (redescription). — Blackwelder 1944: 197 (list). — Martínez 1959: 19 (catalogue for Argentina); 1988a: 281 (key). — Halffter & Matthews 1966: 259 (catalogue, distribution). — Halffter & Halffter 1976: 47 (redescription). — Howden & Young 1981: 11, 14 (key, redescription). — Halffter & Edmonds 1982: 137 (catalogue, distribution). — Jessop 1985: 1089 (redescription). — López-Guerrero & Halffter 2000: 244 (monograph). — Medina & Lopera-Toro 2000: 301 (key). — Vaz-de-Mello 2000: 193 (checklist for Brazil). — Medina *et al.* 2001: 135 (checklist for Colombia). — Ratcliffe 2002: 11 (checklist for Panama). — Morón 2003: 44 (list). — Huerta *et al.* 2003: 6 (biology). — Hamel-Leigue *et al.* 2006: 16 (list). — Génier 2009: 22 (revision). — Camero 2010: 149 (distribution for Colombia). — Vaz-de-Mello *et al.* 2011a: 21 (key). — Carvajal *et al.* 2011: 111, 314 (diagnosis, list). — Krajcik 2012: 107 (list). — Solís & Kohlmann 2012: 7 (checklist for Costa Rica). — Boilly & Vaz-de-Mello 2013: 106 (key). — Chamorro *et al.* 2018: 73, 95 (list for Ecuador); 2019: 133 (catalogue). — Hielkema & Hielkema 2019: 85 (catalogue for the Guianas).

*Aeschrotes* – Castelnau 1840: 92 (cited as synonym). — Agassiz 1846: 26 (catalogue). — Lacordaire 1855: 106 (synonym of *Eurysternus*, see footnote). — Harold 1869d: 1023 (synonym of *Eurysternus*). — Gillet 1911b: 25 (synonym of *Eurysternus*). — Pessôa & Lane 1941: 406 (cited as synonym of *Eurysternus*). — Blackwelder 1944: 197 (cited as synonym of *Eurysternus*). — Martínez 1959: 19 (cited as synonym of *Eurysternus*). — Howden & Young 1981: 14 (synonym of *Eurysternus*). — Jessop 1985: 1089 (synonym of *Eurysternus*). — Ratcliffe 2002: 11 (synonym of *Eurysternus*). — Génier 2009: 23 (synonym of *Eurysternus*). — Solís & Kohlmann 2012: 7 (synonym of *Eurysternus*).

*Eurysternodes* – Vaz-de-Mello 2000: 193 (checklist for Brazil, cited as subgenus of *Eurysternus*). — Génier 2009: 23 (synonym of *Eurysternus*). — Solís & Kohlmann 2012: 7 (cited as synonym of *Eurysternus*).

*Pareurysternus* – Vaz-de-Mello 2000: 193 (checklist for Brazil; cited as subgenus of *Eurysternus*). — Génier 2009: 23 (synonym of *Eurysternus*). — Solís & Kohlmann 2012: 7 (cited as synonym of *Eurysternus*). — Krajcik 2012: 107 (cited as synonym of *Eurysternus*).

*AMartínezus* – Génier 2009: 23 (synonym of *Eurysternus*). — Carvajal *et al.* 2011: 110 (description). — Solís & Kohlmann 2012: 7 (cited as synonym of *Eurysternus*).

### ***Eurysternus atrosericus*** Génier, 2009
Fig. 45B

*Eurysternus atrosericus* Génier, 2009: 88 (original description). Type locality: Brazil: Pará: Óbidos. Name-bearing type: holotype (MZSP), not examined.

*Eurysternus atrosericus* – Camero 2010: 149, 153 (key, diagnosis). — Larsen 2011: 98 (list for Suriname); 2013: 97 (list). — Vaz-de-Mello *et al.* 2011b: 88 (list). — Krajcik 2012: 107 (checklist of species). — Ratcliffe 2013: 493 (pitfall trap study). — Bicknell *et al.* 2014: supp. file. — Silva *et al.* 2014: 348 (diversity); 2015: 611 (list for Mato Grosso state, Brazil); 2016: 7 (ecology, biogeography). — Nunes *et al.* 2014: 408–410 (list). — Chamorro *et al.* 2018: 95 (cited for Ecuador); 2019: 135 (catalogue). — Hielkema & Hielkema 2019: 85 (catalogue for the Guianas).

**Distribution**

Venezuela, Guyana, Suriname, Brazil, and Ecuador.

**Subregions of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco, and System of hills and low piedmont mountains of the Guiana Shield.

**Literature records**

Génier 2009: 86 (Venezuela: Amazonas: La Esmeralda, Puerto Ayacucho, Atunes, Río Negro and Río Baria). — Chamorro *et al.* 2019: 135 (Venezuela).

***Eurysternus balachowskyi*** Halffter & Halffter, 1976
Fig. 46A

*Eurysternus balachowskyi* Halffter & Halffter 1976: 65 (original description). Type locality: French Guiana: Cayenne: Camopi, Oyapock River, Îlet Massikiri. Name-bearing type: holotype (MNHN) (Génier 2009), not examined.

*Eurysternus* (*Eurysternus*) *balthasari* Martínez, 1988b: 294 (original description). Type locality: Brazil: Amapá: Serra do Navío. Name-bearing type: holotype (MACN), examined by MC.

*Eurysternus balachowskyi* – Halffter *et al.* 1980: 613 (biology, cited for "Guiana"). — Halffter & Edmonds 1982: 46 (biology). — Huerta *et al.* 2003: 15 (biology). — Quintero & Roslin 2005: appendix A (ecology). — Feer 2008: 62 (ecology, list); 2013: 767 (list for French Guiana). — Génier 2009: 103 (revision). — Krajcik 2012: 63 (list). — Ferrer-Paris *et al.* 2013: 109 (list). — Ratcliffe 2013: 493 (list, cited for Brazil). — Feer & Boissier 2015: 169 (list). — Boilly 2018: 36, 37 (key, distribution). — Hielkema & Hielkema 2019: 85 (catalogue for the Guianas). — Storck-Tonon *et al.* 2020: 2426 (diversity).

*Eurysternus* (*Eurysternus*) *balthasari* – Génier 2009: 103 (cited as synonym).

**Material examined**

VENEZUELA – **Bolívar** • 2 specs; Isla de Anacoco; 9 Aug. 2006; curso. NM2006 leg.; faeces, 52h, 13:02; CEMT.

**Subregions of Venezuela**

Peneplain of the Caura and Paragua rivers, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Guiana Shield.

**Distribution**

Venezuela, Guyana, Suriname, French Guiana, and Brazil (Génier 2009).

**Literature records**

Génier 2009: 103 (Venezuela: Bolívar). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Bolívar: Isla de Anacoco). — Boilly 2018: 37 (Venezuela).

***Eurysternus caribaeus*** (Herbst, 1789)
Fig. 46B

*Scarabaeus caribaeus* Herbst, 1789: 300 (original description). Type locality: French Guiana. Name-bearing type: neotype (MFNB), designated by Jessop (1985), not examined. Note: see Iannuzzi *et al.* (2023) for a discussion on the authorship of the name.

*Eurysternus planus* Dalman, 1824: 10 (original description). Type locality: French Guiana. Name-bearing type: holotype (NHRS) (Génier 2009), not examined.

*Eurysternus nebulosus* Kirsch, 1871: 361 (original description). Type locality: Colombia: Cundinamarca: Bogotá. Name-bearing type: lectotype (SMTD), designated by Jessop (1985), not examined.

*Eurysternus peruanus* Harold, 1875a: 137 (original description). Type locality: Peru. Name-bearing type: lectotype (MNHN), designated by Jessop (1985), not examined.

*Eurysternus planus* – Dejean 1836: 160 (catalogue, cited as "*Eurysternus planus* Dej"). — Castelnau 1840: 92 (redescription). — Harold 1869d: 1023 (synonym of *Eurysternus caribaeus*, catalogue). — Bruch 1911:182 (cited as synonym of *E. caribaeus*). — Gillet 1911b: 25 (cited as synonym of *E. caribaeus*). — Blackwelder 1944: 197 (cited as synonym of *E. caribaeus*). — Martínez 1959: 20 (cited as synonym of *E. caribaeus*). — Jessop 1985: 1102 (cited as synonym of *E. caribaeus*). — Génier 2009: 214 (cited as synonym of *E. caribaeus*). — Camero 2010: 164 (cited as synonym of *E. caribaeus*). — Solís & Kohlmann 2012: 7 (cited as synonym of *E. caribaeus*).

*Eurysternus caribaeus* – Harold 1869d: 1023 (catalogue, distribution); 1880: 13 (distribution). — Bruch 1911: 182 (cited for Argentina). — Gillet 1911b: 25 (catalogue). — Boucomont 1928b: 1 (list). — Blackwelder 1944: 197 (list). — Guérin 1953: 256 (diagnosis). — Roze 1955: 41 (checklist for Venezuela). — Martínez 1959: 20 (catalogue for Argentina). — Vulcano & Pereira 1967: 547 (key for the Amazon). — Halffter & Halffter 1976: 57 (redescription). — Halffter *et al.* 1980: 600 (biology). — Howden & Young 1981: 14, 17 (key, characteristics, redescription). — Jessop 1985: 1093, 1102 (key, distribution). — Deloya 1992: 2 (list). — Amézquita *et al.* 1999: 119 (biodiversity). — Forsyth & Gill 1993: 70 (list). — Forsyth *et al.* 1998: 370 (conservation, list). — Escobar 2000: 208 (checklist for Colombia). — Vaz-de-Mello 2000: 193 (checklist for Brazil). — Medina *et al.* 2001: 135 (cited for Colombia). — Estrada & Coates-Estrada 2002: 1911 (ecology). — Ratcliffe 2002: 11 (checklist for Panama). — Kohlmann 2003: 45 (cited for Mexico). — Huerta *et al.* 2003: 16 (biology). — Pulido-Herrera *et al.* 2003: 54 (list for Caquetá, Colombia); 2007: 307 (cited for Andean region of Colombia). — Noriega 2004: 40 (checklist for Tinigua Park, Colombia). — Hamel-Leigue *et al.* 2006: 16 (cited for Bolivia); 43 (diversity). — Kohlmann *et al.* 2007: 29 (checklist). — Noriega *et al.* 2007: 82 (list for Colombia). — Feer 2008: 56, 62 (ecology); 2013: 767 (list for French Guiana). — Orozco & Pérez 2008: 38–39 (list for Colombia). — Carpio *et al.* 2009: 469 (ecology). — Génier 2009: 215, 219 (redescription, key). — Medina & Pulido-Herrera 2009: 60 (diversity). — Camero 2010: 150, 164 (key, diagnosis). — Brûlé *et al.* 2011a: 193 (list, cited for French Guiana). — Carvajal *et al.* 2011: 314 (cited for Ecuador). — Vaz-de-Mello *et al.* 2011b: 88 (list). — Krajcik 2012: 107 (list). — Solís & Kohlmann 2012: 7 (checklist for Costa Rica). — Ratcliffe 2013: 493 (list, cited for Brazil). — Nunes *et al.* 2014: 408–410 (list). — Silva *et al.* 2014: 348 (diversity); 2016: 554 (ecology, biogeography); 2017: 490 (list). — Feer & Boissier 2015: 169 (list). — Ratcliffe *et al.* 2015: 195 (checklist for Peru). — Boilly 2018: 36, 39 (key). — Chamorro *et al.* 2018: 95 (list for Ecuador); 2019: 135 (catalogue). — Giraldo *et al.* 2018: 72 (guide). — Santos *et al.* 2018: 46 (list for Acre, Brazil). — Hielkema & Hielkema 2019: 86 (catalogue for the Guianas). — Nieto *et al.* 2020: 136 (report). — Storck-Tonon *et al.* 2020: 2426 (diversity).

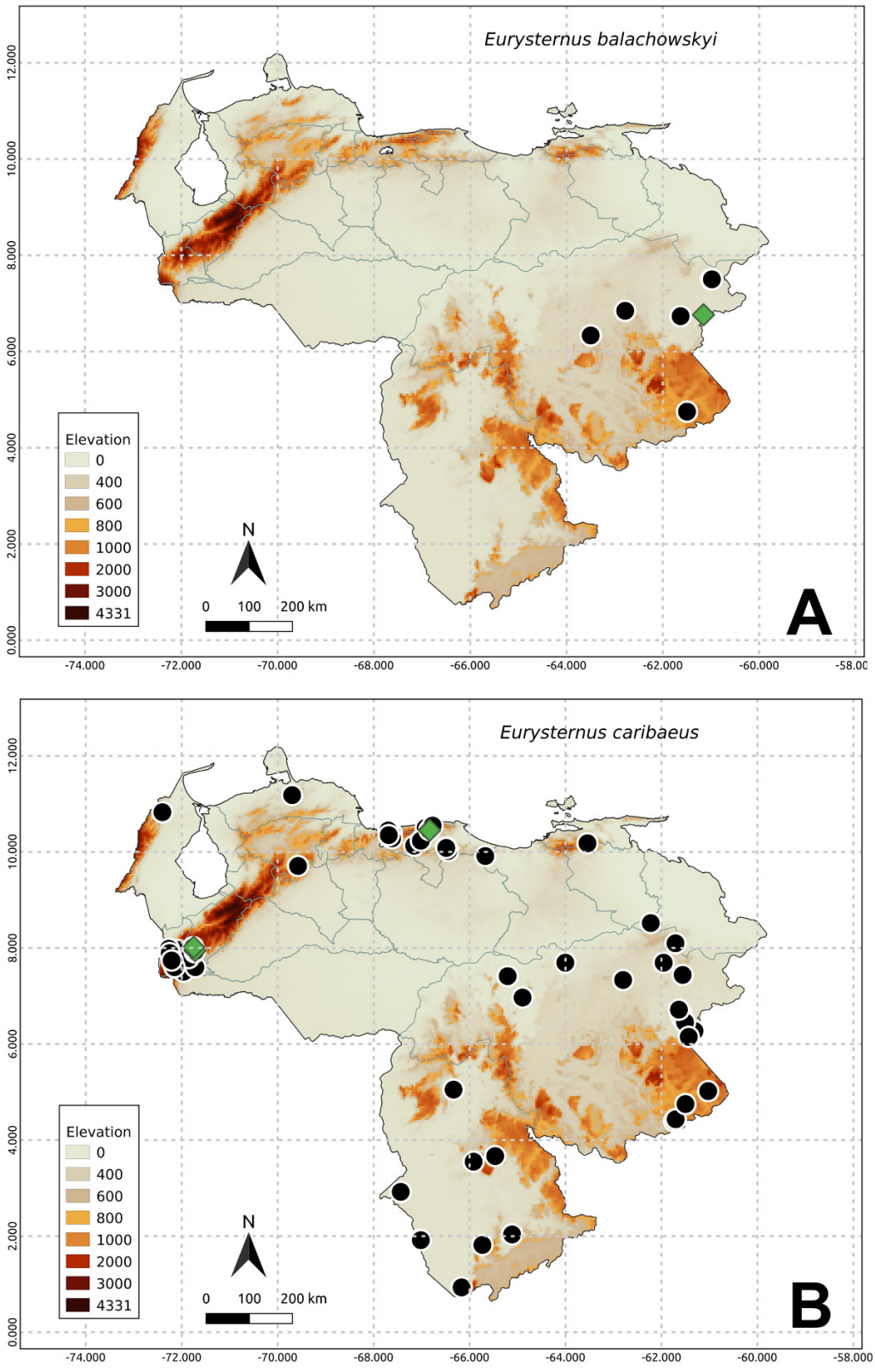


**Fig. 46.** Species distribution. **A**. *Eurysternus balachowskyi* Halffter & Halffter, 1976. **B**. *Eurysternus caribaeus* (Herbst, 1789). Green diamond = CEMT collection data; black circle = literature data.

*Eurysternus nebulosus* – Harold 1880: 13 (synonym of *E. caribaeus*). — Bates 1887: 40 (comments, distribution). — Gillet 1911b: 25 (cited as synonym of *E. caribaeus*). — Blackwelder 1944: 197 (cited as synonym of *E. caribaeus*). — Martínez 1959: 20 (cited as synonym of *E. caribaeus*). — Jessop 1985: 1102 (cited as synonym of *E. caribaeus*). — Génier 2009: 214 (cited as synonym of *E. caribaeus*). — Camero 2010: 164 (cited as synonym of *E. caribaeus*). — Solís & Kohlmann 2012: 7 (cited as synonym of *E. caribaeus*).

*Eurysternus peruanus* – Balthasar 1941: 340 (cited for Peru); 1951: 325 (cited for Peru). — Blackwelder 1944: 197 (list). — Jessop 1985: 1102 (synonym of *E. caribaeus*). — Génier 2009: 213 (cited as synonym of *E. caribaeus*). — Camero 2010: 164 (cited as synonym of *E. caribaeus*). — Solís & Kohlmann 2012: 7 (cited as synonym of *E. caribaeus*).

**Material examined**

VENEZUELA – 2 specs; Caracas, Cerro Verde; 1100 m a.s.l.; 15 Apr. 2004; D. García leg.; CEMT. – **Táchira** • 1 spec.; near Pregonero, Presa La Honda (Trampita); 1100 m a.s.l.; 21 Dec. 1988; D. Havranek leg.; mini-cup trap; CEMT.

**Distribution**

Mexico, Belize, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad and Tobago, Guyana, Suriname, French Guiana, Brazil, Ecuador, Peru, Bolivia, Paraguay, and Argentina (Génier 2009).

**Subregions of Venezuela**

Plains, Delta plain of the Orinoco River and coastal swamp of the San Juan River, Peneplain of the Casiquiare River–Upper Orinoco, system of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní del Escudo Northeast Guiana, Serrania de Perija, Andes mountains, Sierra de San Luis and Cerro Santa Ana, Central Coast Mountain Range, Oriental Coast Range, and Guiana Shield.

**Literature records**

Roze 1955: 41 (Venezuela: Aragua: Parque Nacional Henri Pittier, Estación Biológica Rancho Grande). — Jessop 1985: 1103 (Venezuela). — Blanco 1987: 41 (Venezuela: Táchira). — Havranek 1989: 61 (Venezuela: Táchira). — Barbero 2001: 5 (Venezuela). — Larsen *et al*. 2008: 1294 (Venezuela: Bolívar). — Génier 2009: 214 (Venezuela: Amazonas, Anzoátegui, Aragua, Bolívar, Delta Amacuro, Distrito Capital, Falcón, Lara, Miranda, Monagas, Táchira and Zulia). — Ferrer-Paris *et al*. 2013: 109 (Venezuela: Bolívar: Isla de Anacoco, Miranda: Altos de Pipe and Yaracuy: Hacienda Guáquira). — Boilly 2018: 39 (Venezuela). — Chamorro *et al*. 2019: 135 (Venezuela).

***Eurysternus cayennensis*** Castelnau, 1840
Fig. 47A

*Eurysternus cayennensis* Castelnau 1840: 93 (original description). Type locality: French Guiana: Cayenne: Mont Paramana. Name-bearing type: neotype (MNHN), designated by Jessop (1985), not examined.

*Eurysternus confusus* Jessop, 1985: 1106 (original description). Type locality: Ecuador: Sucumbíos: Dureno, Aguarico River. Name-bearing type: holotype (CMNC), not examined.

*Eurysternus cayennensis* – Harold 1869d: 1023 (catalogue); 1880: 15 (comment). — Gillet 1911b: 25 (catalogue). — Blackwelder 1944: 197 (checklist). — Halffter & Halffter 1976: 73 (redescription). — Jessop 1985: 1095, 1104 (identification guide, designation of lectotype). — Feer 2000: 32 (list for

French Guiana). — Vaz-de-Mello 2000: 193 (checklist for Brazil). — Medina *et al.* 2001: 135 (checklist for Colombia). — Celi *et al.* 2004: 39 (diversity). — Feer & Pincebourde 2005: 30 (list). — Génier 2009: 25 (revision). — Brûlé & Dalens 2012: 37 (inventory). — Price & Feer 2012: 327 (list for French Guiana). — Bicknell *et al.* 2014: supp. 1 (ecology). — Boilly 2018: 34, 37 (key for French Guiana, comment). — Hielkema & Hielkema 2019: 86 (catalogue for the Guianas).

*Eurysternus* (*Eurysternus*) *cayennensis* – Martínez 1988b: 283 (comment).

*Eurysternus* (*Eurysternus*) *confusus* – Martínez 1988b: 283 (comments).

*Eurysternus confusus* – Medina *et al.* 2001: 135 (checklist for Colombia). — Feer & Pincebourde 2005: 30 (list). — Génier 2009: 25 (cited as synonym of *E. cayennensis*). — Hielkema & Hielkema 2019: 86 (cited as synonym of *E. cayennensis* Castelnau, 1840).

**Distribution**

Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, Ecuador, Peru, and Bolivia.

**Subregions of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco, System of hills and low piedmont mountains of the Guiana Shield, and Guiana Shield.

**Literature records**

Halffter & Halffter 1976: 73 (Venezuela). — Martínez 1988b: 283 (Venezuela). — Génier 2009: 25 (Venezuela: Amazonas and Bolivar).

***Eurysternus foedus*** Guérin-Méneville, 1830
Fig. 47B

*Eurysternus foedus* Guérin-Méneville, 1830: pl. 21 fig. 5, 5.a (species-group name made available by being accompanied by an illustration of a member of the taxon, an indication in the sense of Article 12.2.7 of the Code [ICZN 1999]). Type locality: Brazil: Mato Grosso: 264 km N of Xavantina, Serra do Roncador. Name-bearing type: neotype (BMNH), designated by Jessop (1985), not examined.

*Eurysternus claudicans* Kirsch, 1871: 360 (original description). Type locality: Colombia: Cundinamarca: Bogotá. Name-bearing type: holotype (SMTD), not examined.

*Eurysternus foedus* – Castelnau 1840: 93 (comments). — Guérin-Méneville 1844: 76 (redescription). — Harold 1869d: 1024 (catalogue). — Ohaus 1909: 94 (cited for Ecuador). — Gillet 1911b: 25 (catalogue). — Pessôa & Lane 1941: 409 (redescription). — Blackwelder 1944: 197 (list). — Vulcano & Pereira 1967: 547 (key). — Halffter & Halffter 1976: 78 (redescription). — Jessop 1985: 1093, 1102 (key, distribution, neotype). — Forsyth *et al.* 1998: 370 (conservation, list). — Maes 1998: 654 (list for Nicaragua). — Escobar 2000: 208 (checklist for Colombia). — Barbero 2001: 4 (cited for Nicaragua). — Medina *et al.* 2001: 135 (cited for Colombia). — Ratcliffe 2002: 11 (checklist for Panama). — Kohlmann 2003: 45 (cited for Mexico). — Huerta *et al.* 2003: 24 (biology). — Noriega 2004: 40 (checklist for Tinigua Park, Colombia). — Hamel-Leigue *et al.* 2006: 16 (cited for Bolivia). — Kohlmann *et al.* 2007: 29 (checklist). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Feer 2008: 62 (ecology, list); 2013: 767 (list for French Guiana). — Génier 2009: 146, 288 (diagnosis, key). — Medina & Pulido-Herrera 2009: 60 (diversity). — Camero 2010: 149, 153 (key, diagnosis). — Brûlé *et al.* 2011a: 193 (list, cited for French Guiana). — Carvajal *et al.* 2011: 314–315 (cited for Ecuador). — Larsen 2011: 99 (cited for Suriname). — Cultid-Medina *et al.* 2012: 63 (guide). — Vaz-de-Mello *et al.* 2011b: 88 (list). — Krajcik 2012: 107 (checklist). — Noriega *et al.* 2012: 47 (list for Antioquia, Colombia). — Solís & Kohlmann 2012: 7 (checklist for Costa Rica). — Pardo-Locarno & Camero 2014: 210, 211–212 (list for Chocó, Colombia). — Cultid-Medina & Medina 2015: 119–133, 201 (Appendix 11

(list). — Feer & Boissier 2015: 169 (list). — Ratcliffe *et al.* 2015: 195 (checklist for Peru). — Silva *et al.* 2017: 490 (list). — Villada-Bedoya *et al.* 2017: 197 (ecology). — Boilly 2018: 35, 37 (key, distribution). — Chamorro *et al.* 2018: 95 (list for Ecuador); 2019: 141 (catalogue). — Giraldo *et al.* 2018: 84 (guide). — Hielkema & Hielkema 2019: 87 (catalogue for the Guianas). — Nieto *et al.* 2020: 136 (report).

*Eurysternus claudicans* – Harold 1880: 13 (distribution). — Bates 1887: 39 (distribution). — Gillet 1911b: 25 (catalogue). — Campos 1921: 57 (cited for Ecuador). — Blackwelder 1944: 197 (list). — Howden & Young 1981: 14, 15 (key, redescription). — Jessop 1985: 1102 (synonym of *E. foedus*). — Ratcliffe 2002: 11 (cited as synonym of *E. foedus*). — Génier 2009: 145 (cited as synonym of *E. foedus*). — Camero 2010: 153 (cited as synonym of *E. foedus*). — Carvajal *et al.* 2011: 314–315 (cited for Ecuador). — Solís & Kohlmann 2012: 7 (cited as synonym of *E. foedus*).

*Eurysternus* (*Eurysternus*) *foedus* – Vaz-de-Mello 2000: 193 (checklist for Brazil).

**Material examined**

VENEZUELA — **Amazonas** • 1 spec.; Caño Piojo; Apr 2006; D. Garcia leg.; CEMT.

**Distribution**

Mexico, Belize, Guatemala, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Suriname, French Guiana, Brazil, Ecuador, Peru, and Bolivia.

**Subregions of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco, System of low mountains and hills Imataca-Cuyuní del Escudo Northeast Guiana, and Andes mountains.

**Literature records**

Jessop 1985: 1103 (Venezuela). — Barbero 2001: 4 (Venezuela). — Genier 2009: 145 (Venezuela: Amazonas, Bolívar and Táchira). — Boilly 2018: 37 (Venezuela). — Chamorro *et al*. 2019: 141 (Venezuela).

### ***Eurysternus hamaticollis*** Balthasar, 1939
Fig. 48A

*Eurysternus hamaticollis* Balthasar, 1939e: 113 (original description). Type locality: French Guiana: Saint-Laurent-du-Maroni: Godebert. Name-bearing type: lectotype (SMF), designated by Jessop (1985), not examined.

*Eurysternus hamaticollis* – Blackwelder 1944: 197 (checklist). — Jessop 1985: 1101 (identification guide, designation of lectotype). — Martínez 1988b: 283 (comments). — Vulcano & Pereira 1967: 547 (key). — Amézquita *et al.* 1999: 119 (biodiversity). — Feer 2000: 32 (list for French Guiana); 2008: 62 (ecology, list); 2013: 767 (list for French Guiana). — Vaz-de-Mello 2000: 193 (checklist for Brazil). — Medina *et al.* 2001: 135 (checklist for Colombia). — Pulido-Herrera *et al.* 2003: 54 (list for Caquetá, Colombia). — Feer & Pincebourde 2005: 30 (list). — Hamel-Leigue *et al.* 2006: 16 (inventory for Bolivia). — Carpio *et al.* 2009: 469 (ecology). — Génier 2009: 240 (revision, distribution). — Camero 2010: 150, 166 (key, diagnosis). — Brûlé *et al.* 2011a: 193 (inventory). — Carvajal *et al.* 2011: 314–315 (cited for Ecuador). — Larsen 2011: 99 (list for Suriname); 2013: 97 (list for Suriname). — Vaz-de-Mello *et al.* 2011b: 88 (list). — Bezdek & Hajek 2012: 316 (catalogue of type). — Krajcik 2012: 107 (checklist). — Price & Feer 2012: 327 (list for French Guiana). — Solís & Kohlmann 2012: 7 (checklist for Costa Rica). — Ferrer-Paris *et al.* 2013: 109 (list). — Nunes *et al.* 2014: 408–410 (cited, list). — Silva *et al.* 2014: 348 (diversity). — Ratcliffe *et al* 2015: 195

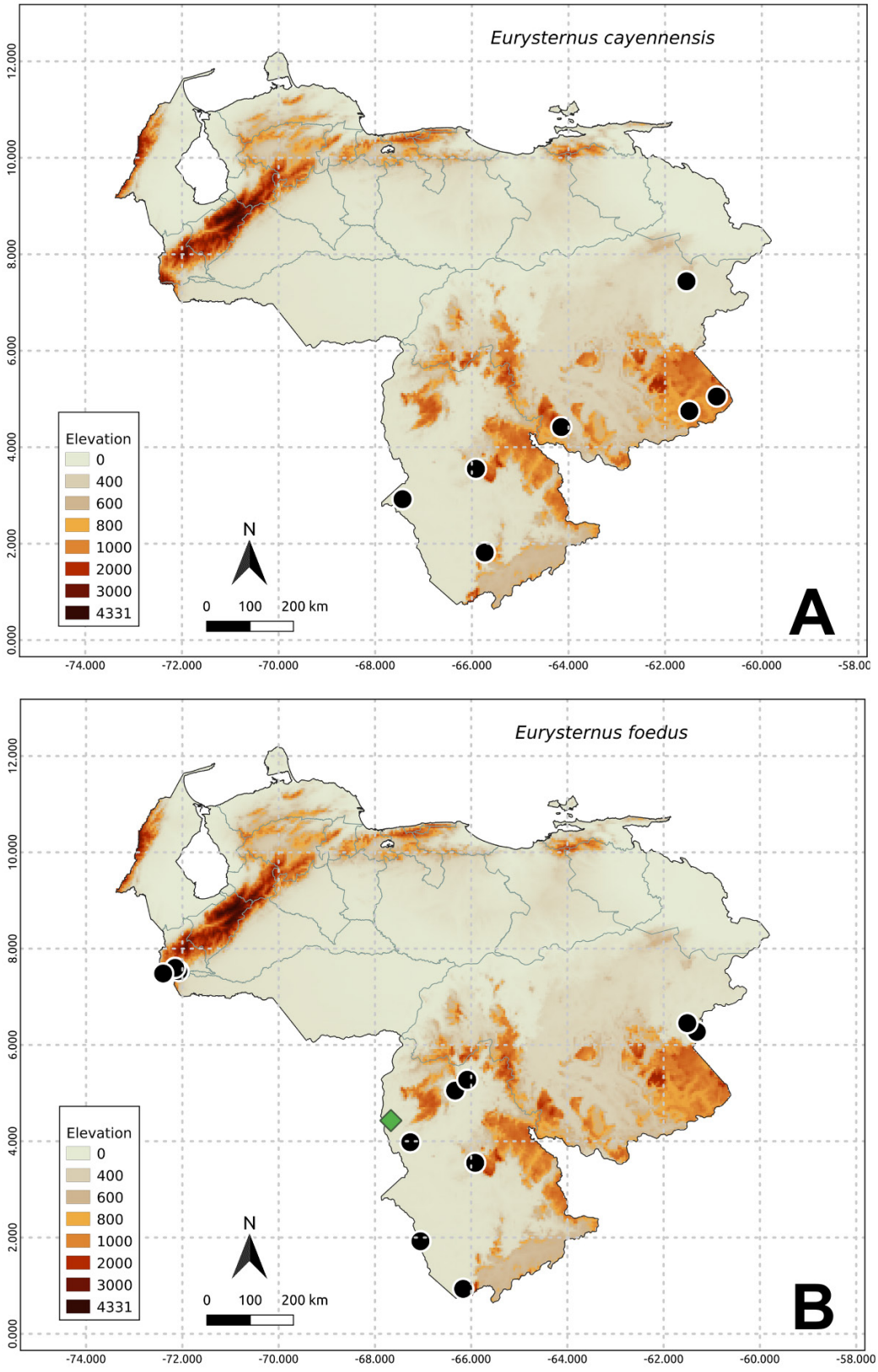


**Fig. 47.** Species distribution. **A**. *Eurysternus cayennensis* Castelnau, 1840. **B**. *Eurysternus foedus* Guérin-Méneville, 1830. Green diamond = CEMT collection data; black circle = literature data.

(checklist for Peru). — Boilly 2018: 37 (list for French Guiana). — Chamorro *et al.* 2018: 95 (list for Ecuador); 2019: 144 (catalogue). — Hielkema & Hielkema 2019: 87 (catalogue for the Guianas).

**Distribution**

Costa Rica, Colombia, Venezuela, Guyana, French Guiana, Brazil, Peru, Ecuador, and Bolivia.

**Subregions of Venezuela**

Plains, Peneplain of the Casiquiare River–Upper Orinoco, System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Guiana Shield.

**Literature records**

Martínez 1988b: 283 (Venezuela). — Génier 2009: 240 (Venezuela: Amazonas, Bolívar and Monagas). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Bolívar: Isla de Anacoco). — Boilly 2018: 37 (Venezuela). — Chamorro *et al.* 2019:144 (Venezuela).

***Eurysternus hypocrita*** Balthasar, 1939
Fig. 48B

*Eurysternus hypocrita* Balthasar 1939e: 114 (original description). Type locality: French Guiana: Cayenne. Name-bearing type: lectotype (SMF), designated by Jessop (1985), not examined.

*Eurysternus hypocrita* – Balthasar 1941: 340 (cited for Peru); 1951: 325 (cited for Peru). — Blackwelder 1944: 197 (checklist). — Halffter & Halffter 1976: 55 (comments). — Jessop 1985: 1101 (identification guide, cited as synonym of *E. velutinus*, designation of lectotype). — Génier 2009: 134, 287 (redescription, key). — Camero 2010: 149, 156 (key, diagnosis). — Brûlé *et al.* 2011a: 193 (inventory). — Carvajal *et al.* 2011: 314–315 (list, cited for Ecuador). — Larsen 2011: 99 (list for Suriname); 2013: 97 (list for Suriname). — Vaz-de-Mello *et al.* 2011b: 88 (list). — Bezděk & Hajek 2012: 316, 317 (catalogue of type specs). — Krajcik 2012: 107 (checklist). — Price & Feer 2012: 327 (list for French Guiana). — Ratcliffe 2013: 493 (list). — Bicknell *et al.* 2014: supp. (cited as *E. hypocrite* [sic]). — Silva *et al.* 2014: 348 (diversity). — Feer & Boissier 2015: 169 (list). — Ratcliffe *et al.* 2015: 195 (checklist for Peru). — Boilly 2018: 36–37 (key, comments). — Chamorro *et al.* 2018: 95 (cited for Ecuador); 2019: 144 (catalogue). — Hielkema & Hielkema 2019: 88 (catalogue for the Guianas).

**Distribution**

Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, Ecuador, Peru, and Bolivia.

**Subregions of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco, System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Guiana Shield.

**Literature records**

Génier 2009: 134 (Venezuela: Amazonas and Bolívar). — Chamorro *et al.* 2019: 145 (Venezuela). — Boilly 2018: 379 (Venezuela).

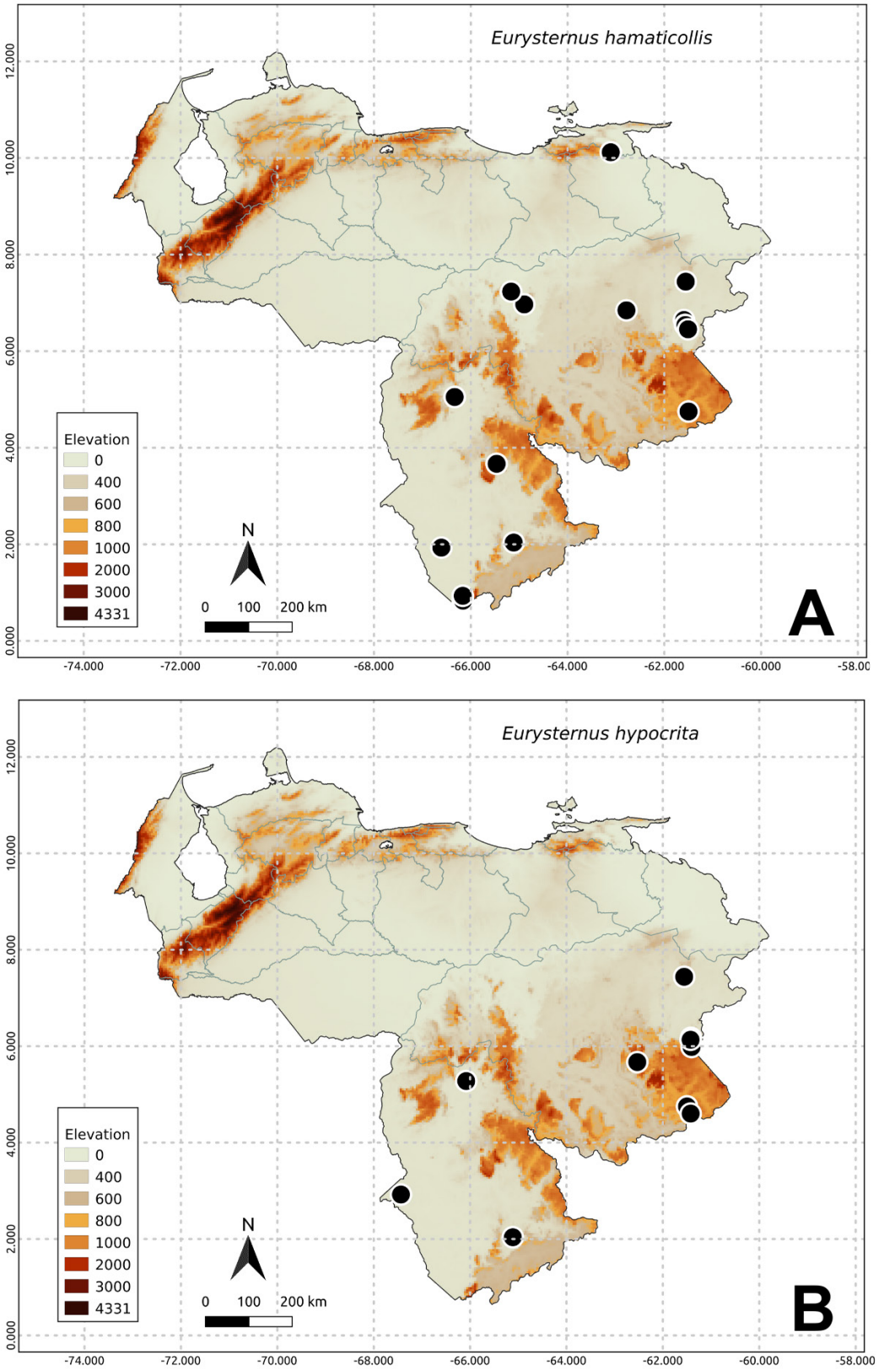


**Fig. 48.** Species distribution. **A**. *Eurysternus hamaticollis* Balthasar, 1939. **B**. *Eurysternus hypocrita* Balthasar, 1939. Black circle = literature data.

***Eurysternus impressicollis*** Castelnau, 1840
Fig. 49A–B

*Eurysternus impressicollis* Castelnau, 1840: 93 (original description). Type locality: Colombia: Bolívar: Cartagena de Indias. Name-bearing type: neotype (MNHN), designated by Jessop (1985), not examined.

*Eurysternus impressicollis* – Harold 1869d: 1024 (catalogue, cited for Colombia). — Gillet 1911b: 25 (catalogue, cited for Colombia). — Luederwaldt 1911: 420 (biology). — Pessôa & Lane 1941: 409 (redescription). — Blackwelder 1944: 197 (list, cited for Colombia). — Halffter & Matthews 1966: 26 (comments). — Jessop 1985: 1100 (designation of neotype). — Escobar 2000: 208 (checklist for Colombia). — Noriega *et al.* 2007: 82 (list for Colombia). — Génier 2009: 169 (diagnosis, distribution). — Lozano 2010: 89 (list). — Ferrer-Paris *et al.* 2013: 109 (list). — Giraldo *et al.* 2018: 42 (guide). — Nieto *et al.* 2020: 136 (report).

**Material examined**

VENEZUELA – **Zulia** • 2 specs; Rosario de Perijá; Jul. 2006; Curso NM2006 leg.; faeces, 13h; CEMT.

**Distribution**

Colombia and Venezuela (Génier 2009).

**Subregions of Venezuela**

Maracaibo Depression and Serrania of Perijá.

**Literature records**

Lozano 2010: 86 (Venezuela: Zulia). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Zulia: Rosario de Perijá).

***Eurysternus marmoreus*** Castelnau, 1840
Fig. 49C

*Eurysternus marmoreus* Castelnau, 1840: 93 (original description). Type locality: Colombia: Cundinamarca: Fusagasugá. Name-bearing type: neotype (MNHN), designated by Jessop (1985), not examined.

*Eurysternus pectoralis* Guérin-Méneville, 1855: 590 (original description). Type locality: Ecuador: "E. de Ville" (unknown locality). Name-bearing type: neotype (MNHN), designated by Génier (2009), not examined.

*Eurysternus marmoreus* – Guérin-Méneville 1855: 590 (catalogue, redescription). — Harold 1869d: 1024 (catalogue); 1880: 13 (distribution for Colombia). — Heyne & Taschenberg 1908: 68 (list). — Gillet 1911b: 25 (catalogue, cited for Colombia). — Blackwelder 1944: 197 (catalogue, cited for Colombia). — Vulcano & Pereira 1967: 547 (key). — Jessop 1985: 1100 (designation of type). — Escobar 2000: 208 (checklist for Colombia). — López-Guerrero & Halffter 2000: 245 (morphology). — Medina *et al.* 2001: 135 (checklist for Colombia). — Huerta *et al.* 2003: 17 (biology). — Noriega *et al.* 2007: 82 (list for Colombia). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Hamel-Leigue *et al.* 2008: 42 (diversity). — Orozco & Pérez 2008: 38–39 (list for Colombia). — Génier 2009: 193, 261, 275, 290, 305 (diagnosis, distribution, key, characteristics). — Camero 2010: 150, 171 (key, diagnosis). — Concha-Lozada *et al.* 2010: 47 (list for Popayán, Colombia). — Carvajal *et al.* 2011: 314–315 (list for Ecuador). — Cultid-Medina *et al.* 2012: 64 (guide). — Krajcik 2012: 107 (list). — Ferrer-Paris *et al.* 2013: 109 (list). — Cultid-Medina & Medina 2015: 201 (Appendix 11). — Ratcliffe *et al.* 2015: 195 (checklist for Peru). —

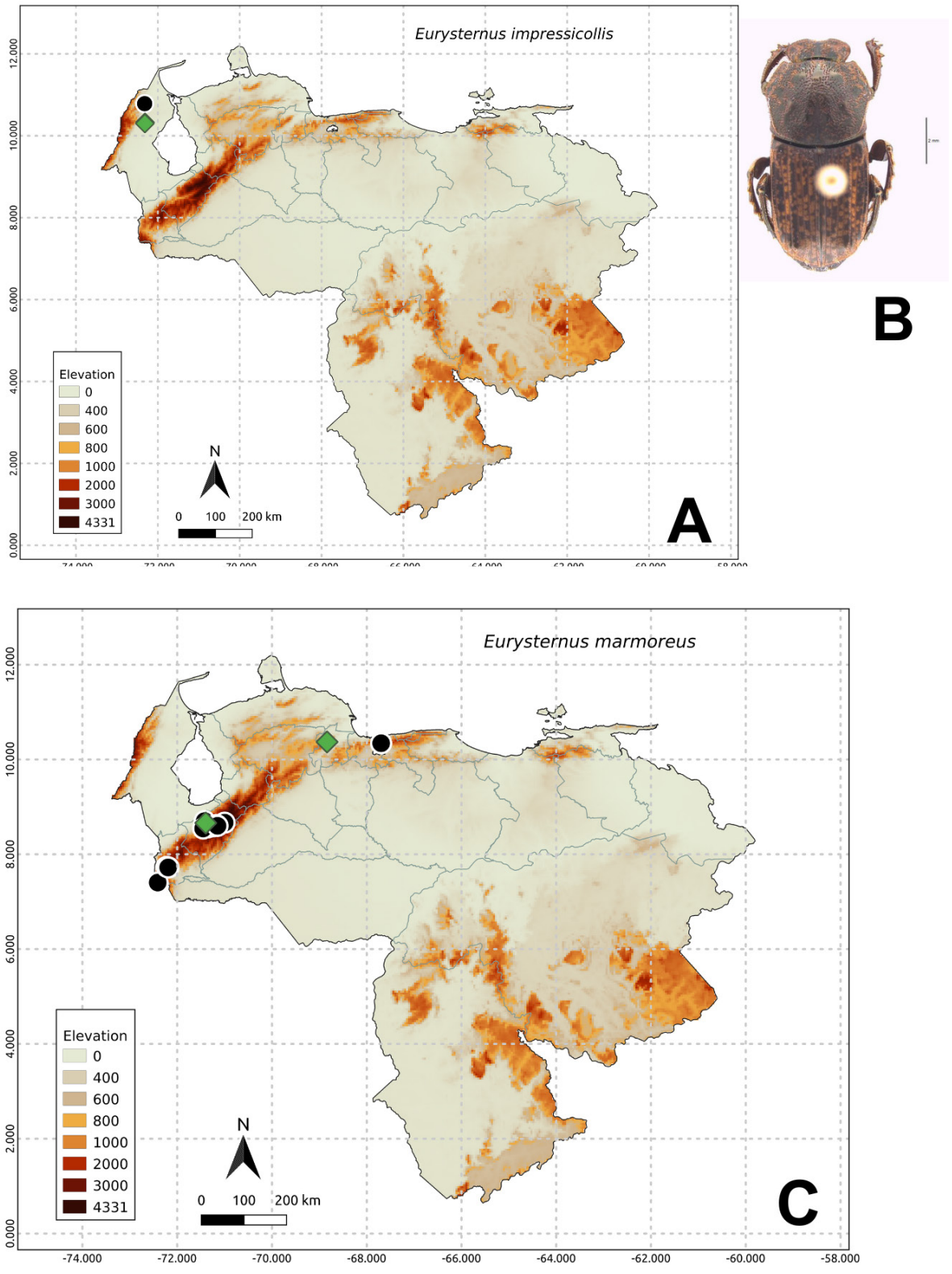


**Fig. 49.** Species distribution. **A**. *Eurysternus impressicollis* Castelnau, 1840. **B**. Dorsal view of *E. impressicollis*. **C**. *Eurysternus marmoreus* Castelnau, 1840. Green diamond = CEMT collection data; black circle = literature data.

Torres *et al.* 2017: 48–49, 67 (cited for Boyaca, Colombia). — Villada-Bedoya *et al.* 2017: 197 (ecology). — Chamorro *et al.* 2018: 78, 95 (fig. 1A, 1E, list for Ecuador); 2019: 148 (catalogue). — Nieto *et al.* 2020: 136 (report).

*Eurysternus pectoralis* – Harold 1869d: 1024 (catalogue). — Gillet 1911b: 25 (catalogue, cited for Colombia). — Blackwelder 1944: 197 (catalogue, cited for Brazil). — Jessop 1985: 1106 (comments). — Génier 2009: 194 (synonym of *E. marmoreus*). — Camero 2010: 171 (cited as synonym of *E. marmoreus*).

*Eurysternus* (*Eurysternus*) *pectoralis* – Vaz-de-Mello 2000: 193 (checklist for Brazil).

**Material examined**

VENEZUELA – **Mérida** • 1 spec.; Sucre, Jaji; 8°39′36.75″ N, 71°23′52.69″ W; 2235 m a.s.l.; 8 Jul. 2009; D. Mora, P. Colmenares, M. Córdova and M. Nuñez leg.; CEMT. – **Yaracuy** • 2 specs; Bolívar, Aroa; 10°22′10.56″ N, 68°50′16.94″ W; 1639 m a.s.l.; 21 Jul. 2009; M. Asmüssen, P. Colmenares and H. Martínez leg.; CEMT • 1 spec.; same data as for the preceding except for the coordinates and elevation; 10°22′8.21″ N, 68°50′18.52″W; 1626 m a.s.l.; CEMT.

**Distribution**

Colombia, Venezuela, Ecuador, Peru, and Bolivia (Génier 2009).

**Subregions of Venezuela**

Andes mountains and Central Coast Mountain Range

**Literature records**

Harold 1869d: 1024 (Venezuela). — Heyne & Taschenberg 1908: 68 (Venezuela). — Huerta *et al.* 2003: 5 (Venezuela: Mérida). — Génier 2009: 194 (Venezuela: Aragua, Mérida and Táchira). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Mérida: La Azulita-Jají). — Chamorro *et al.* 2019: 148 (Venezuela).

***Eurysternus mexicanus*** Harold, 1869
Fig. 50A

*Eurysternus mexicanus* Harold 1869a: 505 (original description). Type locality: Mexico. Name-bearing type: lectotype (MNHN), designated by Jessop (1985), not examined.

*Eurysternus mexicanus* – Harold 1880: 14 (comment). — Bates 1887: 41 (distribution). — Candèze 1891: 330 (list). — Gillet 1911b: 26 (catalogue). — Blackwelder 1944: 197 (list). — Roze 1955: 41 (checklist for Venezuela). — Halffter & Matthews 1966: 73 (biology). — Vulcano & Pereira 1967: 547 (key). — Howden & Young 1981: 17 (diagnosis). — Halffter & Edmonds 1982: 46 (biology). — Jessop 1985: 1100 (designation of lectotype). — Blanco 1987: 41 (catalogue). — Deloya 1992: 2 (list). — López-Guerrero & Morón 1994: 347 (biology). — Montes de Oca & Halffter 1995: 167 (ecology). — Maes 1998: 654 (list for Nicaragua). — Amézquita *et al.* 1999: 119 (biodiversity). — Escobar 2000: 208 (checklist for Colombia). — López-Guerrero & Halffter 2000: 245 (morphology). — Estrada & Coates-Estrada 2002: 1911 (ecology). — Huerta *et al.* 2003: 19 (biology). — Morón 2003: 44 (diagnosis). — Kohlmann *et al.* 2007: 29 (checklist). — Noriega *et al.* 2007: 82 (list for Colombia). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Huerta & Martínez 2008: 123–132 (biology). — Larsen *et al.* 2008: 1294 (list). — Génier 2009: 198, 261, 326, 427 (diagnosis, distribution, key). — Medina & Pulido-Herrera 2009: 60 (diversity). — Camero 2010: 169 (cited of Colombia). — Lozano 2010: 86 (list). — Cultid-Medina *et al.* 2012: 64 (guide). — Delgado *et al.* 2012: 329 (list). — Solís & Kohlmann 2012: 7 (checklist for Costa Rica). — Ferrer-Paris *et al.* 2013: 109 (list). — Pardo-Locarno & Camero 2014:

210, 212, 215 (list for Chocó, Colombia). — Molina *et al.* 2016: 128–130 (cited for Valle del Cauca, Colombia). — Giraldo *et al.* 2018: 50 (guide). — Nieto *et al.* 2020: 136 (report).

**Material examined**

VENEZUELA – **Bolívar** • 1 spec.; Isla de Anacoco; 6 Aug. 2006; Curso NM2006 leg.; faeces, 23h -16:22, NM; CEMT. – **Táchira** • 2 specs; Jun. 1989; J. Blanco leg.; CEMT • 1 spec.; San Cristóbal, Coloncito; 9 Apr. 1995; O. Hillert leg.; CEMT. – **Yaracuy** • 1 spec.; Bolívar, Aroa; 10°0′0″ N, 68°0′0″ W; 468 m a.s.l.; 21 Aug. 2009; M. Assmüssen, P. Colmenares and H. Martínez leg.; human faeces; CEMT.

**Distribution**

Mexico, Belize, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Trinidad and Tobago, and Guyana (Génier 2009).

**Subregions of Venezuela**

Maracaibo Depression, Plains, Delta plain of the Orinoco River and coastal swamp of the San Juan River, Peneplain of the Caura and Paragua rivers, System of hills and low sierras Lara-Falcón, System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, Serrania de Perija, Andes mountains, Central Coast Mountain Range, Oriental Coast Range, and Guiana Shield.

**Literature records**

Harold 1880: 14 (Venezuela). — Candèze 1891: 330 (Venezuela: Carabobo: San Esteban). — Gillet 1911b: 26 (Venezuela). — Blackwelder 1944: 197 (Venezuela). — Roze 1955: 41 (Venezuela). — Vulcano & Pereira 1967: 547 (Venezuela). — Jessop 1985: 1101 (Venezuela). — Blanco 1987: 41 (Venezuela: Táchira). — Larsen *et al.* 2008: 1294 (Venezuela: Bolívar). — Génier 2009: 199 (Venezuela: Aragua; Bolívar; Lara; Mérida; Miranda; Monagas; Sucre; Táchira; Zulia and Distrito Capital). — Lozano 2010: 86 (Venezuela: Zulia). — Ferrer-Paris *et al.* 2013: 109 (Aragua [Guárico]: Altagracia de Orituco, Bolívar: Isla de Anacoco, Mérida: La Azulita-Jají, Yaracuy: Hacienda Guáquira and Zulia: Rosario de Perijá).

### ***Eurysternus plebejus*** Harold, 1880
Fig. 50B

*Eurysternus plebejus* Harold, 1880: 14 (original description). Type locality: Colombia: Boyacá: Muzo. Name-bearing type: lectotype (MNHN), designated by Jessop (1985), not examined.

*Eurysternus* (*Eurysternus*) *joffrei* Martínez, 1988b: 290 (original description). Type locality: Peru: Huánuco: Leoncio Prado: Tingo María: Universidad Nacional Agraria de la Selva. Name-bearing type: holotype (MACN), examined by MC.

*Eurysternus plebejus* – Ohaus 1909: 94 (cited for Ecuador). — Gillet 1911b: 26 (catalogue). — Blackwelder 1944: 197 (list). — Roze 1955: 41 (checklist for Venezuela). — Halffter & Matthews 1966: 146 (cited for Ecuador). — Vulcano & Pereira 1967: 547 (key). — Howden & Young 1981: 14, 15 (key, redescription). — Jessop 1985: 1093, 1100 (key, distribution). — Escobar 1997: 422, 423 (diversity); 2000: 208 (checklist for Colombia). — Maes 1998: 654 (list for Nicaragua). — Barbero 2001: 5 (cited for Nicaragua). — Medina *et al.* 2001: 135 (cited for Colombia). — Ratcliffe 2002: 11 (checklist for Panama). — Bustos-Gómez & Lopera-Toro 2003: 61 (diet). — Morón 2003: 44 (cited for Mexico). — Noriega 2004: 40 (checklist for Tinigua Park, Colombia). — Hamel-Leigue *et al.* 2006: 16 (cited for Bolivia). — Kohlmann *et al.* 2007: 29 (checklist). — Noriega *et al.* 2007: 82 (list for Colombia). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Génier 2009: 172, 289 (diagnosis, key). — Medina & Pulido-Herrera 2009: 61

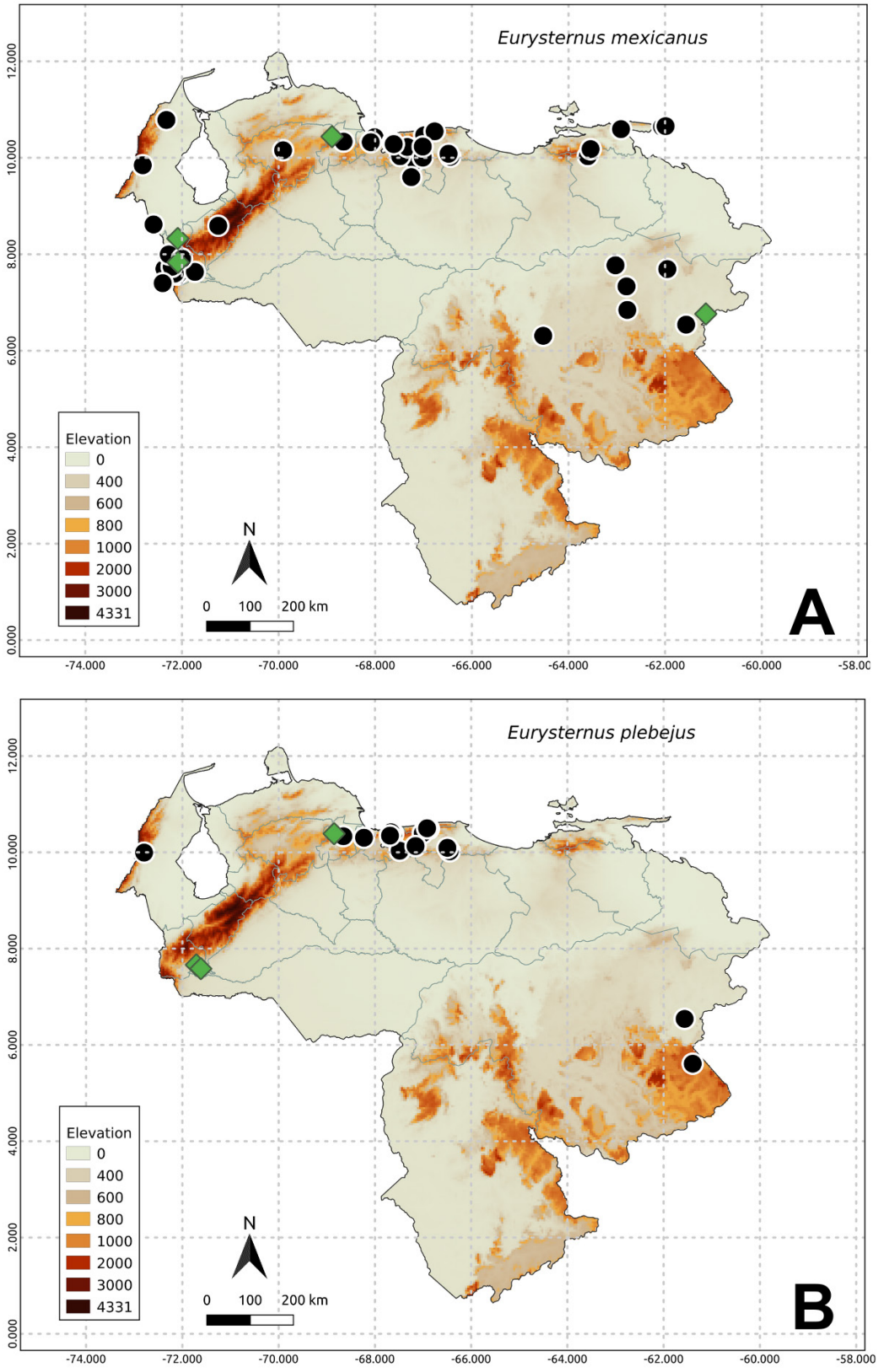


**Fig. 50.** Species distribution. **A**. *Eurysternus mexicanus* Harold, 1869. **B**. *Eurysternus plebejus* Harold, 1880. Green diamond = CEMT collection data; black circle = literature data.

(diversity). — Camero 2010: 150, 168 (key, diagnosis). — Carvajal *et al.* 2011: 314–315 (cited for Ecuador). — Cultid-Medina *et al.* 2012: 65 (guide). — Krajcik 2012: 107 (list). — Silva *et al.* 2016: 7 (ecology, biogeography). — Solís & Kohlmann 2012: 7 (checklist for Costa Rica). — Ferrer-Paris *et al.* 2013: 109 (list). — Ratcliffe *et al.* 2015: 195 (checklist for Peru). — Boilly 2018: 36–37 (key, distribution). — Chamorro *et al.* 2018: 95 (list for Ecuador); 2019: 149 (catalogue). — Hielkema & Hielkema 2019: 88 (catalogue for the Guianas). — Nieto *et al.* 2020: 136 (report).

*Eurysternus* (*Eurysternus*) *plebejus* – Vaz-de-Mello 2000: 193 (checklist for Brazil).

*Eurysternus* (*Eurysternus*) *joffrei* – Génier 2009: 172 (synonym of *E. plebejus*). — Camero 2010: 168 (cited as synonym of *E. plebejus*). — Solís & Kohlmann 2012: 7 (cited as synonym of *E. plebejus*).

**Material examined**

VENEZUELA – **Táchira** • 1 spec.; Libertador, San Joaquín de Navay; 200 m a.s.l.; Aug. 2006; T. Good leg.; CEMT. – **Yaracuy** • 1 spec.; Bolívar, Aroa; 10°23′11.9″ N, 68°50′49.41″ W; 1380 m a.s.l.; 19 Jul. 2009; M. Assmüssen, P. Colmenares and H. Martínez leg.; human faeces; CEMT.

**Distribution**

Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, Ecuador, Peru, and Bolivia.

**Subregions of Venezuela**

Plains, System of hills and low sierras Lara-Falcón, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, Serrania de Perija, Central Coast Mountain Range, and Guiana Shield.

**Literature records**

Roze 1955: 41 (Venezuela: Aragua and Zulia). — Howden & Young, 1981: 15 (Venezuela). — Jessop 1985: 1101 (Venezuela). — Martínez 1988b: 290 (Venezuela: Aragua). — Barbero 2001: 5 (Venezuela). — Génier 2009: 172 (Venezuela: Aragua; Bolívar; Carabobo; Distrito Capital and Miranda). — Ferrer-Paris *et al.* 2013: 109 (Miranda: Altos de Pipe and Yaracuy: Hacienda Guáquira). — Boilly 2018: 36, 37 (Venezuela). — Chamorro *et al.* 2019: 149 (Venezuela).

### ***Eurysternus sanbornei*** Gill, 1990
Fig. 51A

*Eurysternus sanbornei* Gill, 1990: 355 (original description). Type locality: Venezuela: Bolivar: 15 km E of Kavanayen. Name-bearing type: holotype (MIZA), not examined.

*Eurysternus sanbornei* – Génier 2009: 144 (revision). — Hielkema & Hielkema 2019: 89 (catalogue for the Guianas).

**Distribution**

Venezuela and Guyana (Génier 2009).

**Subregions of Venezuela**

System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Guiana Shield.

**Literature records**

Gill 1990: 355 (Venezuela: Bolívar). — Génier 2009: 144 (Venezuela: Bolívar).

***Eurysternus superbus*** Génier, 2009
Fig. 51B–C

*Eurysternus superbus* Génier, 2009: 113 (original description). Type locality: Venezuela: Aragua: Parque Nacional Henri Pittier, Estación Biológica Rancho Grande, 1100 m a.s.l. Name-bearing type: holotype (CMNC), not examined.

*Eurysternus superbus* — Ferrer-Paris *et al.* 2013: 109 (list).

**Material examined**

VENEZUELA – **Aragua** • 3 specs; Maracay, "La cumbre"; 1500 m; 14 Jun. 1993; O. Hillert leg.; CEMT • 1 spec.; same data as for preceding except for the date; 27 Jul. 1993; CEMT. – **Miranda** • 3 specs; Altos de Pipe, Instituto Venezolano de Investigaciones Científicas ("Campus IVIC"); 10°23′51″ N, 66°58′15″ W; 1500 m a.s.l.; Jul. 2009; F.Z. Vaz-de-Mello leg.; CEMT. – **Yaracuy** • 2 specs; Bolívar, Aroa; 10°22′10.56″ N, 68°50′16.94″ W; 1639 m a.s.l.; 21 Jul. 2009; M.Asmüssen, P. Colmenares and H. Martínez leg.; CEMT.

**Distribution**

Venezuela (endemic, Génier 2009).

**Subregions of Venezuela**

Andes mountains and Central Coast Mountain Range.

**Literature records**

Génier 2009: 113 (Venezuela: Aragua, Carabobo and Lara). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Miranda: Altos de Pipe).

***Eurysternus truncus*** Génier, 2009
Fig. 52A

*Eurysternus truncus* Génier, 2009: 166 (original description). Type locality: Venezuela: Bolívar: 120 km S of El Dorado. Name-bearing type: holotype (CMNC), not examined.

*Eurysternus truncus* – Hielkema & Hielkema 2019: 89 (catalogue for the Guianas).

**Distribution**

Venezuela and Guyana (Génier 2009).

**Subregions of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Guiana Shield.

**Literature records**

Génier 2009: 167 (Venezuela: Bolívar).

***Eurysternus ventricosus*** Gill, 1990
Fig. 52B

*Eurysternus ventricosus* Gill, 1990: 358 (original description). Type locality: Venezuela: Bolívar: 120 km S of El Dorado. Name-bearing type: holotype (MIZA), not examined.

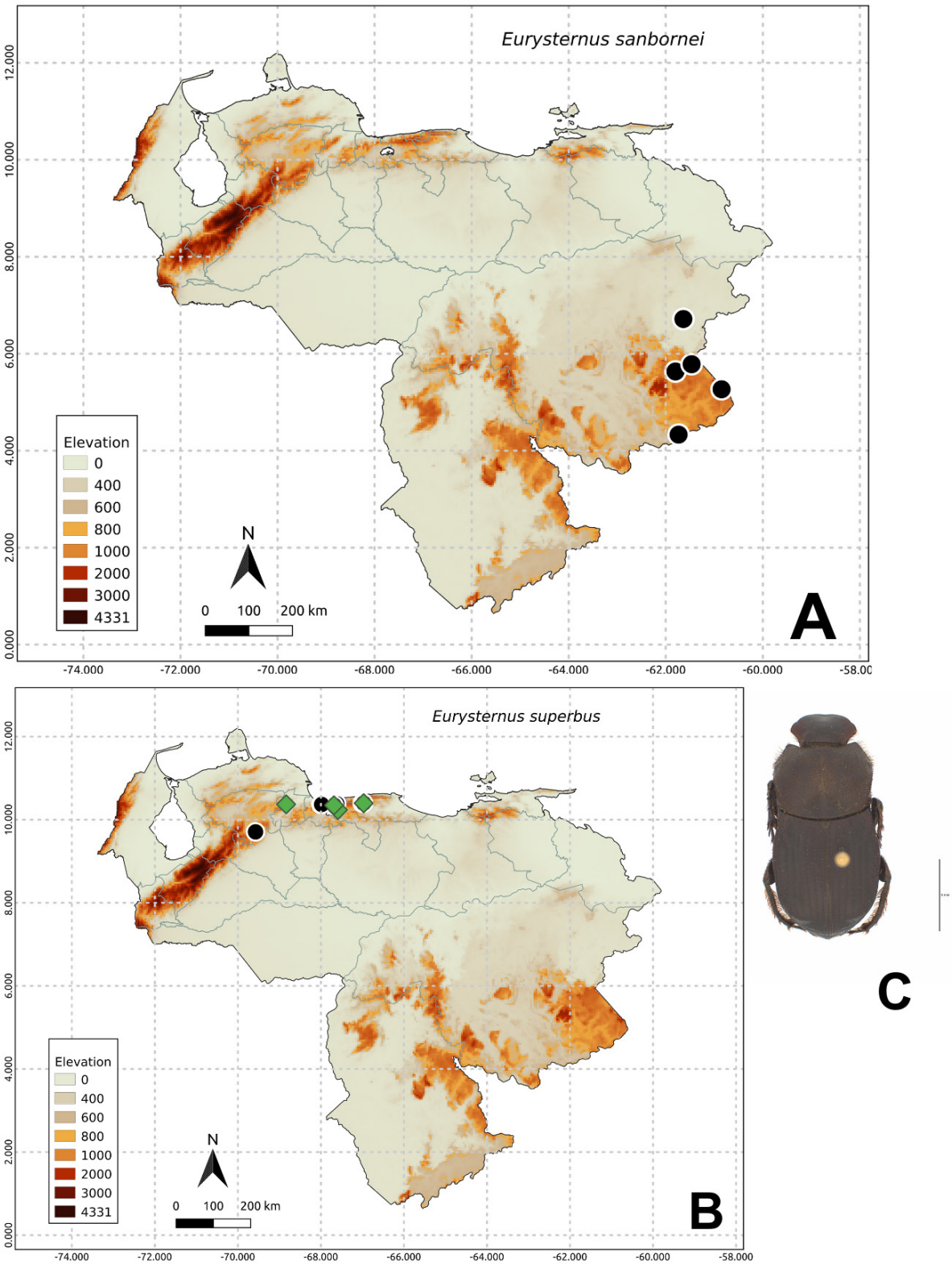


**Fig. 51.** Species distribution. **A**. *Eurysternus sanbornei* Gill, 1990. **B**. *Eurysternus superbus* Génier, 2009. **C**. Dorsal view of *E. superbus*. Green diamond = CEMT collection data; black circle = literature data.

*Eurysternus ventricosus* – Génier 2009: 44 (revision). — Boilly 2018: 34, 37 (key, distribution). — Larsen 2011: 99 (list, cited for Suriname); 2013: 97 (list). — Ferrer-Paris *et al.* 2013: 109 (list). — Ratcliffe 2013: 493 (list, ecology). — Hielkema & Hielkema 2019: 89, 290 (catalogue for the Guianas). — Storck-Tonon *et al.* 2020: 2426 (diversity).
*Eurysternus* (*Eurysternus*) *ventricosus* – Vaz-de-Mello 2000: 193 (list, cited for Brazil).

**Distribution**

Venezuela, Guyana, Suriname, French Guiana, Brazil, and Bolivia.

**Subregions of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Guiana Shield.

**Literature records**

Gill 1990: 355, 358 (Venezuela: Bolívar). — Génier 2009: 44 (Venezuela: Amazonas and Bolívar). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Bolívar: Isla de Anacoco). — Boilly 2018: 37 (Venezuela).

Genus ***Genieridium*** Vaz-de-Mello, 2008

*Genieridium* Vaz-de-Mello, 2008: 26 (original description). Type species: *Pedaridium bidens* Balthasar, 1942, by original designation.

*Genieridium* – Krajcik 2012: 111 (list). — Hielkema & Hielkema 2019: 45 (catalogue for the Guianas).

***Genieridium bordoni*** (Martínez, 1992)
Fig. 53A–B

*Pedaridium bordoni* Martínez 1992: 22 (original description). Type locality: Venezuela: Barinas: Santa Bárbara. Name-bearing type: holotype (MACN), examined by FZVM.

*Pedaridium bordoni* – Vaz-de-Mello & Canhedo 1998: 100 (comments, key).
*Genieridium bordoni* – Vaz-de-Mello 2008: 27, 29 (key, distribution, new combination). — Krajcik 2012: 111 (list). — Hielkema & Hielkema 2019: 45 ( catalogue for the Guianas).

**Material examined**

VENEZUELA – **Anzoategui** • 1 spec.; Pariaguan; 13 Aug. 1967; J. and B. Bechyne leg.; CEMT. – **Barinas** • 3 specs; Otopún; 28 Aug 2006; curso NM2006 leg.; faeces, 15:43, 24h; CEMT. – **Bolívar** • 2 specs; 15 km E of Caicara; 12 Jun 1996; H. and A. Howden leg.; CEMT. – **Monagas** • 4 specs; Maturin, 42 km SE of Maturin; 5 Jul. 1958; Arnold Menke leg.; CEMT • 2 specs; Uverito; 23 Jun. 1978; C.J. Rosales and J.A. Gonzales leg.; neon light; CEMT.

**Distribution**

Venezuela (endemic).

**Subregions of Venezuela**

Plains, Delta plain of the Orinoco River and coastal swamp of the San Juan River, Peneplain of the Caura and Paragua rivers, System of hills and low piedmont mountains of the Guiana Shield, and Central Coast Mountain Range.

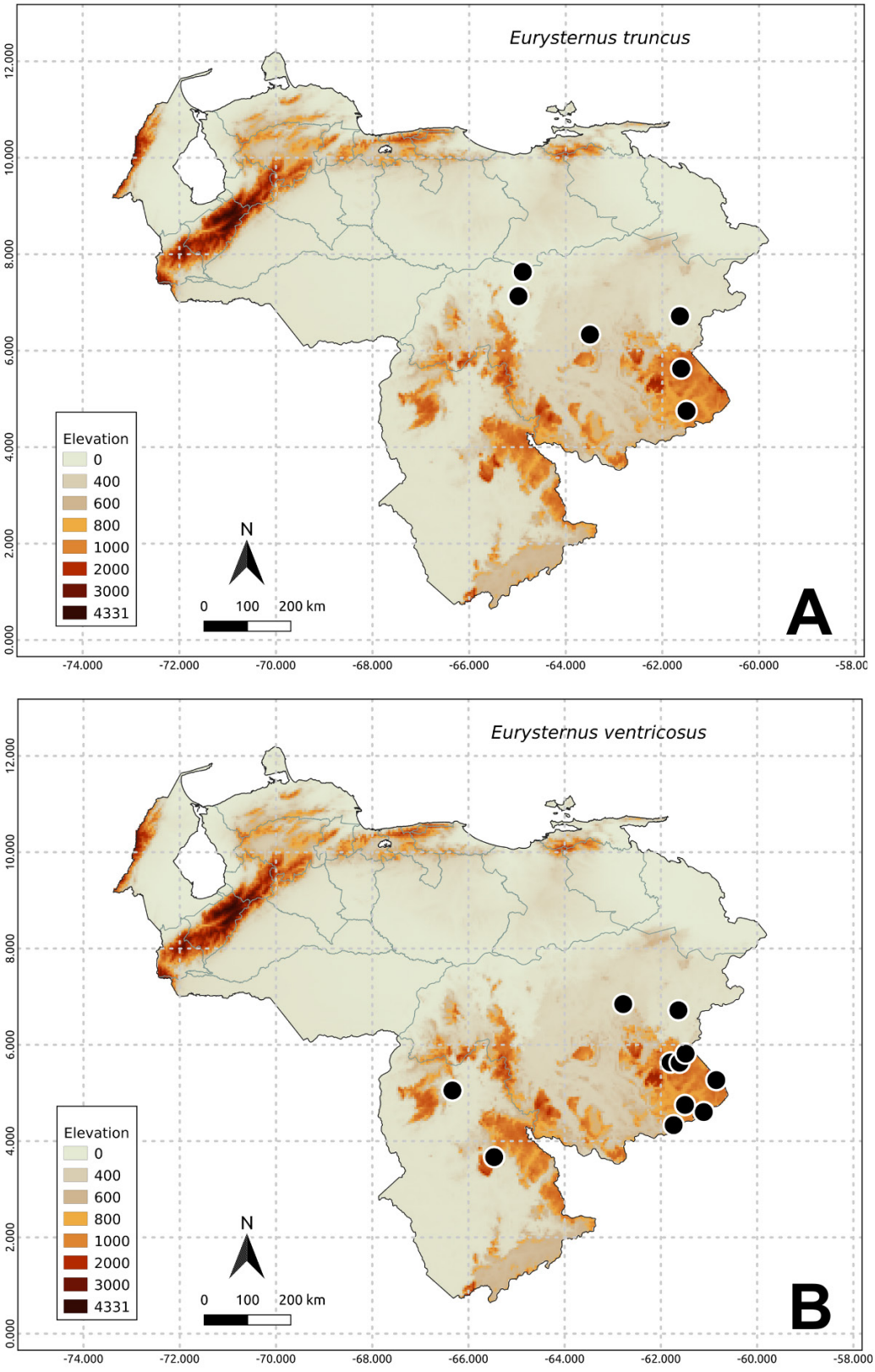


**Fig. 52.** Species distribution. **A**. *Eurysternus truncus* Génier, 2009. **B**. *Eurysternus ventricosus* Gill, 1990. Black circle = literature data.

**Literature records**

Vaz-de-Mello & Canhedo 1998: 100 (Venezuela: Guárico, Barinas, Monagas, Anzoátegui and Aragua). — Vaz-de-Mello 2008: 29 (Anzoátegui, Barinas; Bolívar; Delta Amacuro; Guárico and Monagas). — Krajcik 2012: 111 (Venezuela: Guárico).

Genus ***Gromphas*** Dejean, 1836

*Gromphas* Dejean, 1836: 159 (genus-group name made available by being accompanied by an available species-group name, an indication as defined in Art. 12.2.5 of the Code [ICZN 1999]; see Cupello [2024] for details). Type species: *Coprobius lacordairii* Oken, 1834, by original monotypy; see Cupello (2024).

*Copris* (*Gromphas*) – Brullé 1838: 283, 298, 304 (first description of the genus).

*Gromphas* – Sturm 1843: 108 (catalogue). — Agassiz 1846: 481 (catalogue). — Blanchard 1846: 181 (description of new species). — Erichson 1847b: 760 (comment). — Lacordaire 1855: 100 (redescription). — Harold 1868e: 81 (characteristics); Harold 1869d: 1016 (catalogue). — Bates 1870: 175 (comments). — Chapuis 1876: 276 (catalogue). — Karsch 1887: 1 (cited). — Kolbe 1905: 550 (comments). — Gillet 1911b: 80 (catalogue). — Fabre 1919: 244, 247, 256 (comments). — Lucas 1920: 309 (catalogue, distribution). — d'Olsoufieff 1924: 17 (key, redescription). — Luederwaldt 1929: 614 [12] (characteristics, diagnosis). — Pessoa 1934: 282 (comments). — Pessôa & Lane 1941: 470 (key). — Blackwelder 1944: 208 (list). — Roze 1955: 45 (checklist for Venezuela). — Martínez 1959: 95 (catalogue for Argentina). — Barattini & Sáenz 1961: 21 (contribution); 1964: 173 (comments). — Halffter & Matthews 1966: 257 (catalogue, distribution). — Vulcano & Pereira 1967: 565 (key). — Edmonds 1972: 816 (comment). — Halffter & Edmonds 1982: 137 (catalogue, distribution). — Zunino 1983: 22 (comments); 1985: 104 (comment). — Martínez 1989: 50, 67 (list, distribution). — Hanski & Cambefort 1991: 468 (ecology). — Walsh & Gandolfo 1996: 587 (biology). — Medina & Lopera-Toro 2000: 305 (key). — Vaz-de-Mello 2000: 193 (checklist for Brazil). — Medina *et al.* 2001: 138 (checklist for Colombia). — Davis *et al.* 2002: 1240 (biogeography, list). — Philips *et al.* 2004a: 55–56 (phylogeny); 2004b: 43, 51–54, 58 (phylogeny). — Hamel-Leigue *et al.* 2006: 17 (list). — Ocampo & Hawks 2006: 558 (phylogeny). — Noriega *et al.* 2008a: 131 (cited); 2010: 454 (comments). — Scholtz *et al.* 2009: 246 (history). — Gillet *et al.* 2010: 4 (distribution). — Bouchard *et al.* 2011: 245 (nomenclator). — Vaz-de-Mello *et al.* 2011a: 24 (key). — Figueroa *et al.* 2012: 2 (redescription); 2014: 137 (distribution for Peru). — Gatty *et al.* 2012: 1 (comments). — Krajcik 2012: 117 (list). — Korasaki *et al.* 2012: 427 (distribution). — Cupello 2013: 15–16. — Cupello & Vaz-de-Mello 2013b: 443 (revision); 2014: 399 (comments); 2015: 3, 11 (key, distribution, phylogeny). — Chamorro *et al.* 2018: 75 95 (list for Ecuador); 2019: 156 (catalogue). — Hielkema & Hielkema 2019: 93 (catalogue for the Guianas). — Cupello 2024: 23–51.

***Gromphas lemoinei*** Waterhouse, 1891
Fig. 53C

*Gromphas lemoinei* Waterhouse, 1891b: 60 (original description). Type locality: Venezuela: La Guaira: La Guaira. Name-bearing type: holotype (BMNH), examined by MC.

*Gromphas aeruginosa* var. *lemoinei* – Gillet 1911b: 80 (catalogue). — d'Olsoufieff 1924: 138 (catalogue). — Blackwelder 1944: 208 (list). — Roze 1955: 45 (cited, checklist for Venezuela). — Barattini & Sáenz 1961: 23 (contribution); 1964: 177 (description).

*Gromphas lemoinei* – Cupello & Vaz-de-Mello 2013b: 447, 454 (key, revision, redescription); 2015: 12 (phylogeny). — Gámez & Acconcia 2018: 71, 73 (list). — Giraldo *et al.* 2018: 78 (guide).

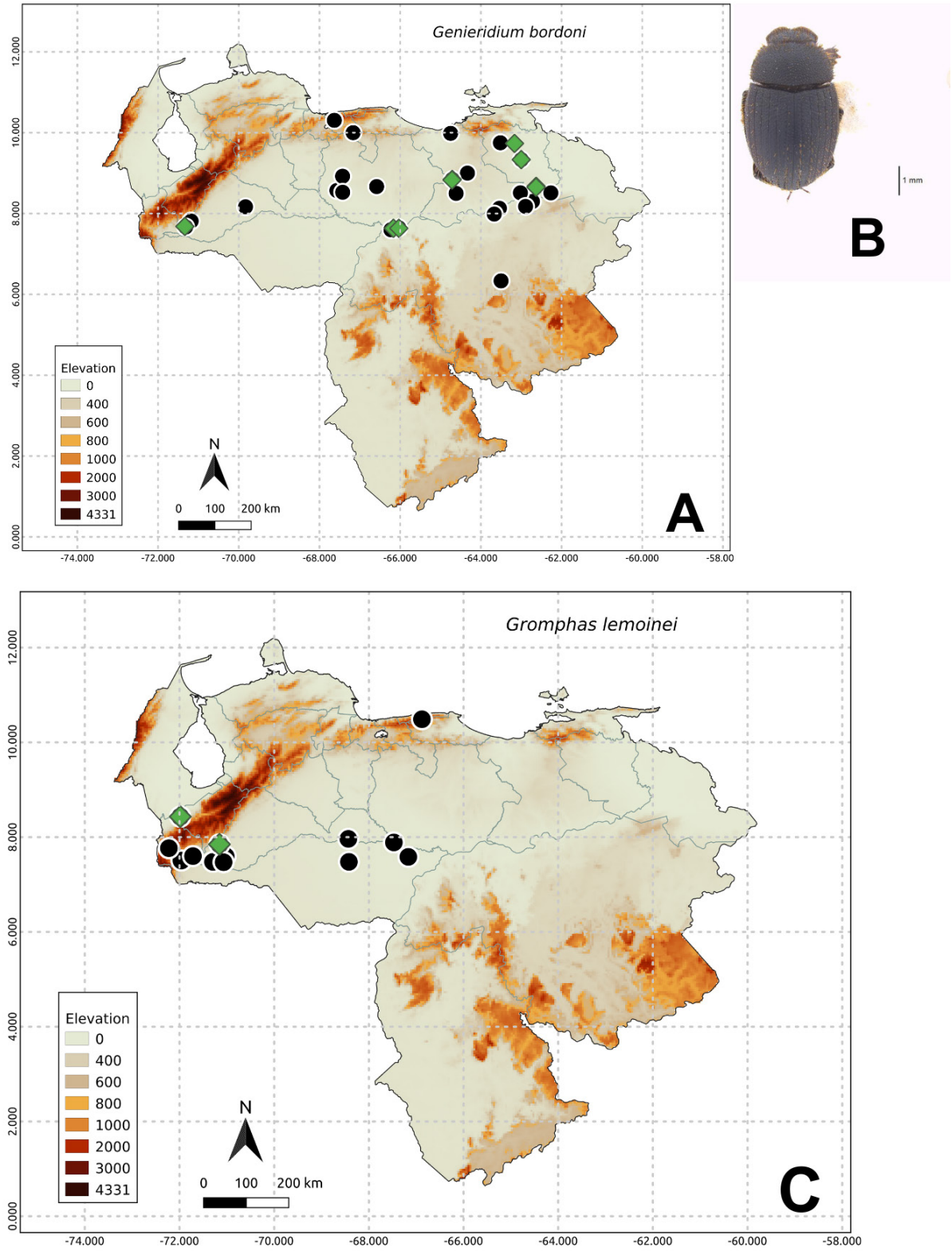


**Fig. 53.** Species distribution. **A**. *Genieridium bordoni* (Martínez, 1992). **B**. Dorsal view of *G. bordoni.* **C**. *Gromphas lemoinei* Waterhouse, 1891. Green diamond = CEMT collection data; black circle = literature data.

**Material examined**

VENEZUELA – **Barinas** • 2 specs; San Antonio de Pagen; Jul. 1989; CEMT. – **Táchira** • 4 specs; Vía Santo Domingo, Hacienda Santa Rosa; Jun. 1992; J. Blanco leg.; CEMT.

**Distribution**

Colombia and Venezuela.

**Subregions of Venezuela**

Plains, Andes mountains, and Central Coast Mountain Range.

**Literature records**

Gillet 1911b: 80 (Venezuela). — d'Olsoufieff 1924: 20, 58, 135, 138 (Venezuela). — Boucomont 1928b: 6 (Venezuela). — Balthasar 1941: 350; 1951: 335 (Venezuela). — Blackwelder 1944: 208 (Venezuela). — Barattini & Sáenz 1961: 23 (Venezuela: San Fernando Apure); 1964: 177 (Venezuela: San Fernando Apure). — Vulcano & Pereira 1967: 566 (Venezuela). — Blanco 1988: 42 (Venezuela: Táchira state). — Hamel-Leigue *et al.* 2009: 61 (Venezuela). — Cupello & Vaz-de-Mello 2013b: 447, 454 (Venezuela: Apure: San Fernando de Apure; Barinas; Distrito Capital; Táchira); 2015: 12 (Venezuela: Táchira). — Gámez & Acconcia 2018: 71, 73 (Venezuela: Barinas: Andrés Eloy Blanco). — Cupello 2024: 30, 32–33, 35, fig. 5 (Venezuela).

Genus ***Hansreia*** Halffter & Martínez, 1977

*Hansreia* Halffter & Martínez 1977: 64 (original description). Type species: *Ateuchus affinis* Fabricius 1801, by original designation.

*Hansreia* – Vaz-de-Mello 2000: 193 (checklist for Brazil). — Medina *et al.* 2001: 133 (checklist for Colombia). — Vaz-de-Mello *et al.* 2011: 11, 19, 26, 34, 41, fig. 96 (key). — Valois *et al.* 2015: 205–226 (revision). — Hielkema & Hielkema 2019: 80 (catalogue for the Guianas).

***Hansreia affinis*** (Fabricius, 1801)
Fig. 54A

*Ateuchus affinis* Fabricius, 1801: 64 (original description). Type locality: Guyana. Name-bearing type: lectotype (ZMUK), designated by Valois *et al.* (2015), examined by FZVM.

*Ateuchus affinis* – Schönherr 1806: 64 (catalogue). — Harold 1868a: 11, 25 (monograph). — Vulcano & Pereira 1964: 603 (catalogue).

*Coprobius affinis* – Dejean 1836: 152 (catalogue). — Vulcano & Pereira 1964: 603 (catalogue).

*Canthon affinis* – Castelnau 1840: 69 (description). — Harold 1868a: 11, 25 (monograph); 1869d: 989 (catalogue). — Gillet 1911b: 27 (catalogue). — Schmidt 1922: 68, 72 (distribution). — Balthasar 1939a: 194 (key). — Blackwelder 1944: 198 (checklist, cited as *Canthon affine*). — Gacharná 1951: 221 (catalogue, cited as *Canthon affine*). — Vulcano & Pereira 1964: 603 (catalogue).

*Hansreia affinis* – Halffter & Martínez 1977: 36, 64–65 (redescription). — Forsyth & Gill 1993: 70 (list for Guyana). — Bicknell *et al.* 2014: supp. 1 (ecology). — Valois *et al.* 2015: 208 (revision, lectotype designation). — Larsen 2011: 99 (list for Suriname); 2013: 97 (list for Suriname). — Feer 2000: 32 (list for French Guiana); 2008: 62 (ecology, list). — Feer & Pincebourde 2005: 30 (list, ecology). — Brûlé *et al.* 2011a: 193 (list). — Price & Feer 2012: 327 (list for French Guiana). — Boilly & Vaz-de-Mello 2013: 105 (fig. 31, cited for Guyane). — Hielkema & Hielkema 2019: 80 (catalogue for the Guianas).

**Distribution**

Venezuela, Guyana, Suriname, French Guiana, and Brazil.

**Subregion of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield.

**Literature records**

Halffter & Martínez 1977: 64 (Venezuela). — Valois *et al.* 2015: 208 (Venezuela: Bolívar).

Genus ***Malagoniella*** Martínez, 1961

*Malagoniella* Martínez, 1961: 82 (original description). Type species: *Megatopha argentina* Gillet, 1911, by original designation.

*Malagoniella* – Vulcano & Pereira 1964: 574 (catalogue). — Halffter & Matthews 1966: 260 (catalogue, distribution). — Halffter & Martínez 1966: 114 (diagnosis); 1977: 33 (key). — Vulcano & Pereira 1967: 547 (key for the Amazon). — Halffter & Edmonds 1982: 139 (catalogue, distribution). — Medina & Lopera-Toro 2000: 301 (key). — Vaz-de-Mello 2000: 194 (checklist for Brazil). — Medina *et al.* 2001: 37 (checklist for Colombia). — Ratcliffe *et al.* 2002: 49 (key). — Halffter 2003: 23 (redescription). — Hamel-Leigue *et al.* 2006: 14 (list for Bolivia). — Vaz-de-Mello *et al.* 2011a: 21 (key). — Carvajal *et al.* 2011: 120 (diagnosis). — Krajcik 2012: 156 (list). — Solís & Kohlmann 2012: 4 (checklist for Costa Rica). — Chamorro *et al.* 2018: 73, 96 (list for Ecuador); 2019: 160 (catalogue). — Hielkema & Hielkema 2019: 80 (catalogue for the Guianas).

***Malagoniella astyanax astyanax*** (Olivier, 1789)
Fig. 54B

*Scarabaeus astyanax* Olivier, 1789: 188, pl. 27 fig. 233 (original description). Type locality: unknown (not given in the original description). Name-bearing type: unknown typification status and whereabouts.

*Megathopa astyanax* – Gillet 1911b: 26 (catalogue). — Halffter *et al.* 1960: 202 (redescription).
*Megathopa astyanax astyanax* – Halffter *et al.* 1960: 202–203 (redescription).
*Malagoniella astyanax* – Martínez 1961:82 (new combination). — Vulcano & Pereira 1964: 574 (catalogue). — Blanco 1987: 41 (catalogue). — Escobar 1997: 422 (diversity). — Medina *et al.* 2001: 137 (checklist for Colombia). — Bustos-Gómez & Lopera-Toro 2003: 61 (diet). — Hernández *et al.* 2003: 96 (diversity). — Larsen *et al.* 2008: 1294 (list). — Ferrer-Paris *et al.* 2013: 109 (list for Venezuela) — França *et al.* 2016: 3 (report).
*Malagoniella astyanax astyanax* – Halffter & Martínez 1966: 122 (diagnosis).

**Material examined**

VENEZUELA – **Bolívar** • 1 spec.; El Manteco; 2 Aug. 2006; curso NM2006 leg.; faeces, 43h, 09:05; CEMT.

**Distribution**

Colombia, Venezuela, Suriname, French Guiana, Brazil, and Peru.

**Subregions of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, Andes mountains, and Central Coast Mountain Range.

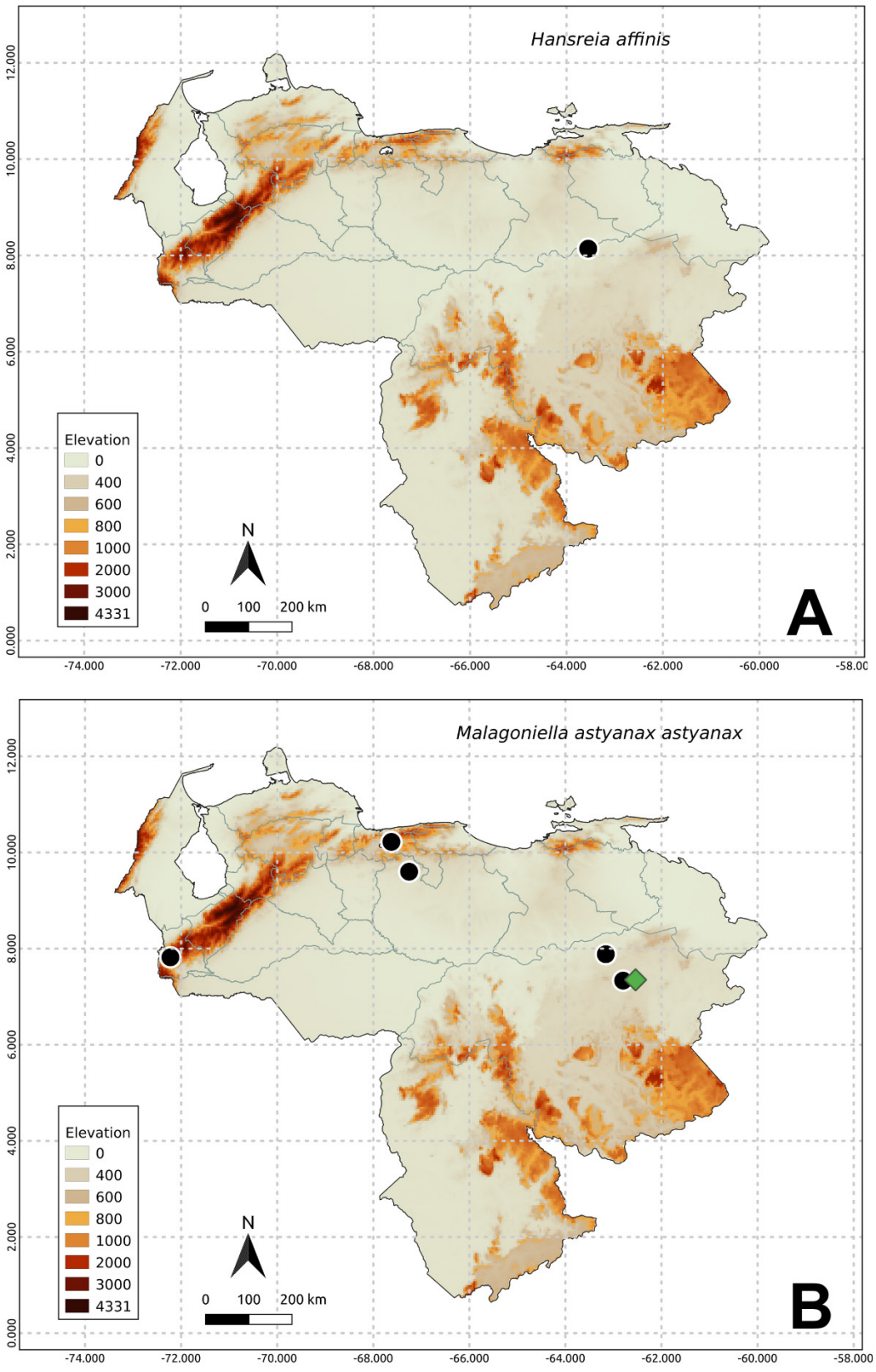


**Fig. 54.** Species distribution. **A**. *Hansreia affinis* (Fabricius, 1801). **B**. *Malagoniella astyanax astyanax* (Olivier, 1789). Green diamond = CEMT collection data; black circle = literature data.

**Literature records**

Martínez 1961: 82 (Venezuela). — Vulcano & Pereira 1964: 574 (Venezuela). — Blanco 1987:41 (Táchira, Falcón and Aragua). — Larsen *et al.* 2008: 1294 (Venezuela: Bolívar). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Aragua [Guárico]: Altagracia de Orituco, Bolívar: Sabanas de Guri and Zulia Rosario de Perijá). — Franca *et al.* 2016: 3 (Venezuela).

Genus ***Ontherus*** Erichson, 1847

*Ontherus* Erichson, 1847a: 107 (original description). Type species: *Scarabaeus sulcator* Fabricius, 1775, by subsequent designation of Lacordaire (1855: 98, footnote 1), not Luederwaldt (1931a) as stated by Génier (1996).

*Ontherus* – Lacordaire 1855: 98 (type species designation, redescription). — Harold 1869d: 1008 (catalogue). — Burmeister 1874: 126 (redescription). — Bruch 1911: 186 (list for Argentina). — Gillet 1911b: 57 (catalogue). — Lucas 1920: 459 (catalogue, distribution). — Luederwaldt 1929: 10 (key); 1931a: 364, 368 (redescription, key). — Paulian 1938: 233 (key). — Pessôa & Lane 1941: 437, 454 (key, redescription). — Blackwelder 1944: 206 (list). — Pereira 1954a: 57 (key). — Roze 1955: 44 (checklist for Venezuela). — Martínez 1959: 69 (catalogue for Argentina). — Halffter & Matthews 1966: 257 (catalogue, distribution). — Vulcano & Pereira 1967: 577 (key for the Amazon). — Howden & Young 1981: 12, 121 (key, diagnosis). — Halffter & Edmonds 1982: 137 (catalogue, distribution). — Génier 1996: 22 (revision). — Medina & Lopera-Toro 2000: 306 (key). — Vaz-de-Mello 2000: 194 (checklist for Brazil). — Medina *et al.* 2001: 138 (checklist for Colombia). — Ratcliffe *et al.* 2002: 49 (key). — Ratcliffe 2002: 16 (checklist for Panama). — Kohlmann 2003: 55 (list for Mexico). — Hamel-Leigue *et al.* 2006: 16 (list for Bolivia). — Vaz-de-Mello *et al.* 2011a: 27 (key). — Carvajal *et al.* 2011: 130, 318 (diagnosis, cited for Ecuador). — Krajcik 2012: 174 (list). — Solís & Kohlmann 2012: 6 (checklist for Costa Rica). — Chamorro *et al.* 2018: 77, 96 (list for Ecuador); 2019: 165 (catalogue). — Hielkema & Hielkema 2019: 56 (catalogue for the Guianas).

***Ontherus aphodioides*** Burmeister, 1874
Fig. 55A

*Ontherus aphodioides* Burmeister, 1874: 126 (original description). Type locality: Uruguay: Montevideo. Name-bearing type: syntypes, unknown whereabouts (Génier 1996). Described after Burmeister moved to Argentina in 1861 (Ulrich 1972), the type specimens would now be expected to be among the material of the Burmeister collection preserved in the MACN, but they were not found there by MC in 2014.

*Ontherus convexus* Luederwaldt, 1930: 105 (original description). Type locality: Brazil: Espírito Santo: "Guandú" (possibly the river of this name crossing the state). Name-bearing type: holotype (MNRJ) (Génier 1996), presumably destroyed in the 2018 fire that consumed the museum's Coleoptera holdings (see Mega 2019).

*Ontherus aphodioides* – Gillet 1911b: 57 (catalogue). — Luederwaldt 1931a: 371, 384 (key, redescription). — Pessôa & Lane 1941: 456 (key). — Blackwelder 1944: 206 (list, cited for Uruguay). — Lange 1947: 310 (list). — Martínez 1959: 69 (catalogue for Argentina). — Martínez & Pereira 1960: 79, 80 (contribution). — Forsyth *et al.* 1998: 370 (conservation, list). — Escobar 2000: 208 (checklist for Colombia). — Medina *et al.* 2001: 138 (checklist for Colombia). — Medina & Pulido-Herrera 2009: 60 (diversity). — Hielkema & Hielkema 2019: 56 (catalogue for the Guianas).

*Ontherus convexus* – Luederwaldt 1931a: 371–372, 386 (key, redescription). — Pessôa & Lane 1941: 457 (key). — Blackwelder 1944: 206 (list, cited for Brazil). — Martínez & Pereira 1960: 79–80 (comments).

*Ontherus* (*Ontherus*) *aphodioides* – Génier 1996: 117 (revision). — Vaz-de-Mello 2000: 194 (checklist for Brazil).

*Ontherus* (*Ontherus*) *aphodioides* – Génier 1996: 117 (revision, new combination). — Vaz-de-Mello 2000: 194 (checklist for Brazil).

**Material examined**

VENEZUELA – **Bolívar** • 1 spec.; Juruani; 15 Aug. 1992; O. Hillert leg.; CEMT.

**Distribution**

Colombia, Venezuela, Brazil, Peru, Bolivia, Paraguay, and Argentina.

**Subregions of Venezuela**

Peneplain of the Caura and Paragua rivers, and Guiana Shield.

**Literature record**

Génier 1996: 117 (Venezuela: Bolívar).

***Ontherus appendiculatus*** (Mannerheim, 1829)
Fig. 55B

*Copris appendiculatus* Mannerheim, 1829: 43 (original description). Type locality: Brazil. Name-bearing type: holotype (ZMAS) (Génier 1996), not examined.

*Copris rotundatus* Blanchard, 1846: 181 (original description). Type locality: Argentina: Corrientes, and Uruguay: Montevideo. Name-bearing type: syntypes (MNHN), not examined. Génier (1996) indicated an MNHN specimen from Corrientes as the holotype, but this is incorrect. Blanchard (1846) clearly had more than one specimen in front of him for the description of *C. rotundatus* – he gave a length range instead of a precise figure ("Long. 9 à 10 millim.") and cited the examination of material from both Corrientes and Montevideo – and, hence, the name-bearing type cannot be a holotype by monotypy. A holotype by original designation is not the case either, for Blanchard, in the spirit of the time, did not designate a sole specimen as the name-bearing type. Instead of a holotype, the name-bearing type is a series of at least two syntypes, one from each of the two localities mentioned in the original description.

*Copris polynice* Blanchard, 1846: 181 (original description). Type locality: Bolivia: Santa Cruz. Name-bearing type: lectotype (MNHN), designated by Génier (1996), not examined.

*Copris quadratus* Erichson, 1848: 564 (original description). Type locality: Guyana. Name-bearing type: lectotype (MFNB), designated by Génier (1996), not examined.

*Ontherus contractus* Burmeister, 1874: 127 (original description). Type locality: Argentina: Tucumán. Name-bearing type: lectotype (MACN), designated by Génier (1996), examined by MC.

*Ontherus appendiculatus* – Harold 1869d: 1008 (catalogue, cited for Tijuco). — Bruch 1911: 186 (catalogue, cited for Chaco, Santa Fe, Tucumán); 1915: 541 (catalogue). — Gillet 1911b: 57 (catalogue, cited for Brazil). — Lucas 1920: 459 (catalogue). — Boucomont 1928b: 6 (list). — Luederwaldt 1930: 107 (comments); 1931a: 371–372, 381–391 (key, distribution, redescription). — Pessôa & Lane 1941: 457, 458 (key, redescription, distribution). — Blackwelder 1944: 206 (list, cited for Brazil). — Blanco 1987: 44 (catalogue). — Génier 1996: 78 (revision, cited as synonym of *O. appendiculatus*). — Escobar 2000: 208 (checklist for Colombia). — Medina *et al.* 2001:

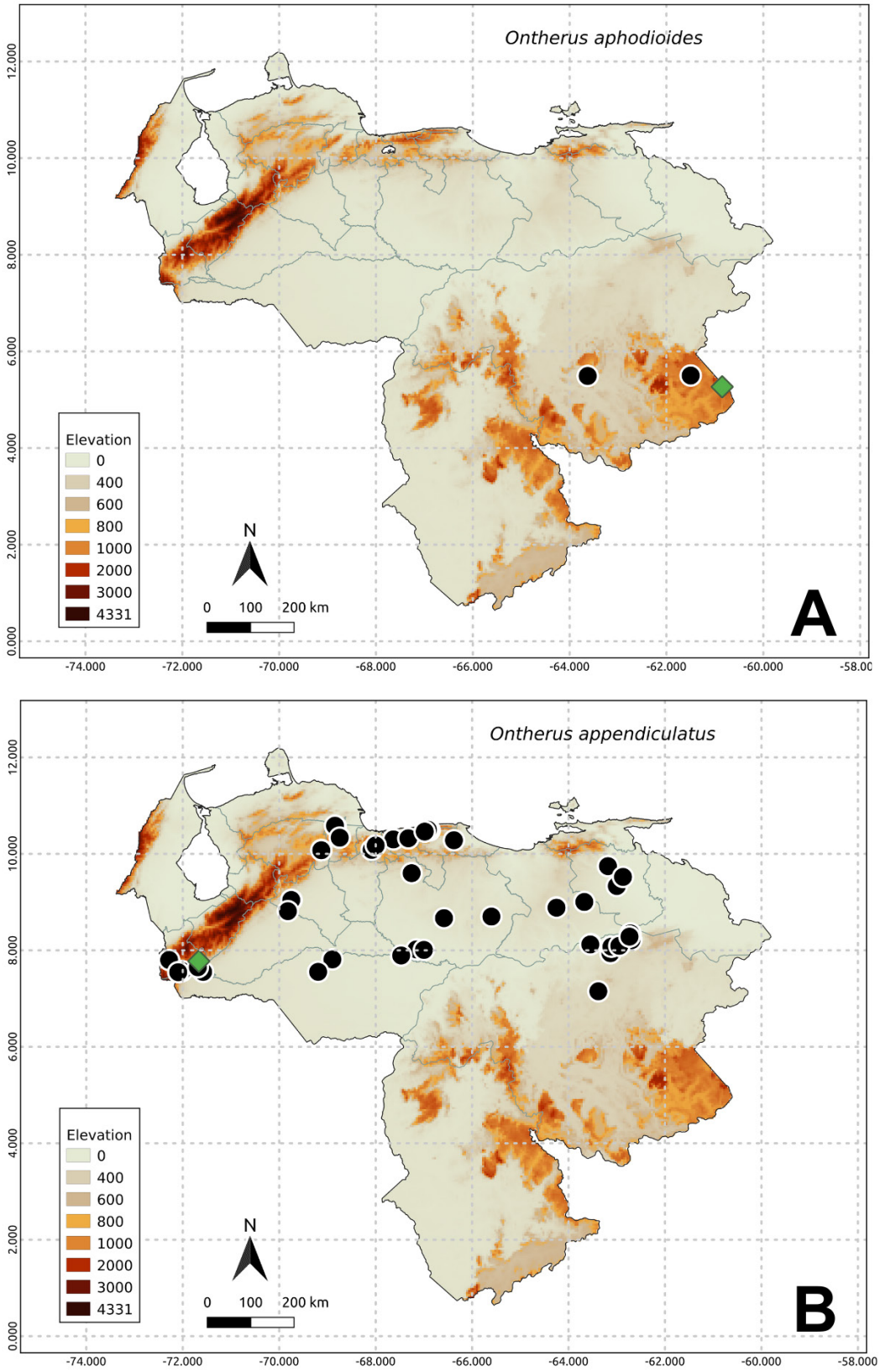


**Fig. 55.** Species distribution. **A**. *Ontherus aphodioides* Burmeister, 1874. **B**. *Ontherus appendiculatus* (Mannerheim, 1829). Green diamond = CEMT collection data; black circle = literature data.

138 (checklist for Colombia). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Medina & Pulido-Herrera 2009: 60 (diversity). — Ferrer-Paris *et al.* 2013: 109 (list). — França *et al.* 2016: 3 (report). — Giraldo *et al.* 2018: 62 (guide). — Nieto *et al.* 2020: 136 (report).

*Ontherus polynice* – Harold 1869c: 59 (comments); 1869d: 1008 (catalogue, cited for Bolivia). — Gillet 1911a: 57 (catalogue, cited as synonym of *O. appendiculatus*). — Luederwaldt 1931b: 389 (revision, cited as synonym of *O. appendiculatus*). — Pessôa & Lane 1941: 458 (monograph, cited as synonym of *O. appendiculatus*). — Blackwelder 1944: 206 (list, cited as synonym of *O. appendiculatus*). — Génier 1996: 78 (revision, cited as synonym of *O. appendiculatus*).

*Ontherus* (*Copris*) *polynice* – Harold 1869c: 59 (comments).

*Ontherus quadratus* – Harold 1869c: 59 (comments); 1869d: 1008 (catalogue, cited for Brazil); 1875b: 181 (comments). — Bruch 1911: 187 (catalogue, cited as synonym of *Ontherus rotundatus*). — Gillet 1911a: 57 (catalogue, cited as synonym of *Ontherus appendiculatus*). — Luederwaldt 1931a: 389 (revision, cited as synonym of *O. appendiculatus*). — Pessôa & Lane 1941: 458 (monograph, cited as synonym of *O. appendiculatus*). — Blackwelder 1944: 206 (list, cited as synonym of *O. appendiculatus*). — Génier 1996: 78 (revision, cited as synonym of *O. appendiculatus*).

*Ontherus rotundatus* – Harold 1869c: 59 (comments); 1869d: 1008 (catalogue, cited for Corrientes); 1875b: 181 (comments). — Bruch 1911: 187 (catalogue, cited for Corrientes). — Gillet 1911a: 57 (catalogue, cited as synonym of *Ontherus appendiculatus*). — Luederwaldt 1931a: 389 (revision, cited as synonym of *O. appendiculatus*). — Pessôa & Lane 1941: 458 (monograph, cited as synonym of *O. appendiculatus*). — Blackwelder 1944: 206 (list, cited as synonym of *O. appendiculatus*). — Génier 1996: 78 (revision, cited as synonym of *O. appendiculatus*).

*Copris rotundatus* – Burmeister 1874: 127 (comments, cited as *Copris rotundata*). — Bruch 1911: 187 (catalogue, cited as synonym of *Ontherus rotundatus*). — Génier 1996: 78 (revision, cited as synonym of *O. appendiculatus*).

*Copris polynice* – Bruch 1911: 187 (catalogue, cited as synonym of *Ontherus rotundatus*). — Génier 1996: 78 (revision, cited as synonym of *O. appendiculatus*).

*Ontherus contractus* – Bruch 1911: 187 (catalogue, cited for Tucumán). — Luederwaldt 1931a: 389 (revision, cited as synonym of *O. appendiculatus*). — Blackwelder 1944: 206 (list, cited for Argentina). — Génier 1996: 78 (revision, cited as synonym of *O. appendiculatus*).

*Copris appendiculatus* – Génier 1996: 78 (revision).

*Ontherus* (*Ontherus*) *appendiculatus* – Génier 1996: 78 (revision). — Vaz-de-Mello 2000: 194 (checklist for Brazil). — Vaz-de-Mello *et al.* 2011b: 88 (list). — Hielkema & Hielkema 2019: 56 (catalogue for the Guianas).

**Material examined**

VENEZUELA – **Táchira** • 1 spec.; Libertador, San Joaquín de Navay; 7.7741° N, 71.6675° W; 550 m a.s.l.; Aug 2006; T. Good leg.; CEMT.

**Distribution**

Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, Ecuador, Bolivia, Paraguay, Argentina, and Uruguay.

**Subregions of Venezuela**

Plains, System of hills and low sierras Lara-Falcón, System of hills and low piedmont mountains of the Guiana Shield, Andes mountains, and Central Coast Mountain Range.

**Literature records**

Blanco 1987: 44 (Venezuela: Táchira). — Génier 1996: 78 (Venezuela: Anzoategui, Apure, Aragua, Bolívar, Carabobo, Distrito Capital, Guárico, Miranda, Monagas, Portuguesa, Tachira and Yaracuy). — França *et al.* 2016: 4–5 (Venezuela). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Aragua [Guárico]: Altagracia de Orituco).

***Ontherus brevicollis*** Kirsch, 1871
Fig. 56A

*Ontherus brevicollis* Kirsch, 1871: 356 [340] (original description). Type locality: Colombia: Cundinamarca: Bogotá. Name-bearing type: holotype (SMTD), not examined.

*Ontherus brevicollis* – Harold 1880: 23 (list, comments, cited for Nueva Granada [Colombia]). — Gillet 1911b: 57 (catalog, cited for Colombia). — Luederwaldt 1931a: 393 (key). — Blackwelder 1944: 206 (list, cited for Colombia). — Gacharná 1951: 222 (list for Colombia). — Vulcano & Pereira 1967: 583 (key). — Escobar 2000: 209 (checklist for Colombia). — Medina *et al.* 2001: 138 (checklist for Colombia); 2002: 182–185 (ecology). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Medina & Pulido-Herrera 2009: 60 (diversity). — Cultid-Medina *et al.* 2012: 44 (guide). — Krajcik 2012: 174 (list). — Martínez-Revelo & Lopera-Toro 2014: 65–68 (cited for Nariño department, Colombia). — Cultid-Medina & Medina 2015: 119–133, 203 (Appendix 13). — Giraldo *et al.* 2018: 116 (guide).

*Ontherus* (*Caelontherus*) *brevicollis* – Génier 1996: 31 (revision, redescription). — Vaz-de-Mello 2000: 194 (checklist for Brazil). — Carvajal *et al.* 2011: 318–319 (list for Ecuador). — Chamorro *et al.* 2018: 96 (list for Ecuador); 2019: 167 (catalogue).

**Material examined**

VENEZUELA – **Mérida** • 1 spec.; no further data; CEMT • 3 specs; La Mukuy; 2500 m a.s.l.; 14 Apr. 1995; O. Hillert leg.; CEMT • 4 specs; Monte Zerpa; 2400 m a.s.l.; Jul. 1995; A. de Ascençao leg.; dung; CMET • 1 spec.; Mérida; 2200 m a.s.l.; 11 Apr. 1995; Hornburg and, Krause leg.; CEMT.

**Distribution**

Colombia, Venezuela, Brazil, Ecuador, and Bolivia.

**Subregion of Venezuela**

Andes mountains.

**Literature records**

Vulcano & Pereira 1967: 583 (Venezuela). — Génier 1996: 31 (Venezuela: Mérida and Táchira). — Chamorro *et al.* 2019: 167 (Venezuela).

***Ontherus gilli*** Génier, 1996
Fig. 56B–C

*Ontherus* (*Caelontherus*) *gilli* Génier, 1996: 28 (original description). Type locality: Venezuela: Táchira: San Cristóbal. Name-bearing type: holotype (CMNC), not examined.

*Ontherus gilli* – Krajcik 2012: 174 (list). — Ferrer-Paris *et al.* 2013: 109 (list). — Gonzáles & Medina 2015: 80–90 (new record for Colombia).

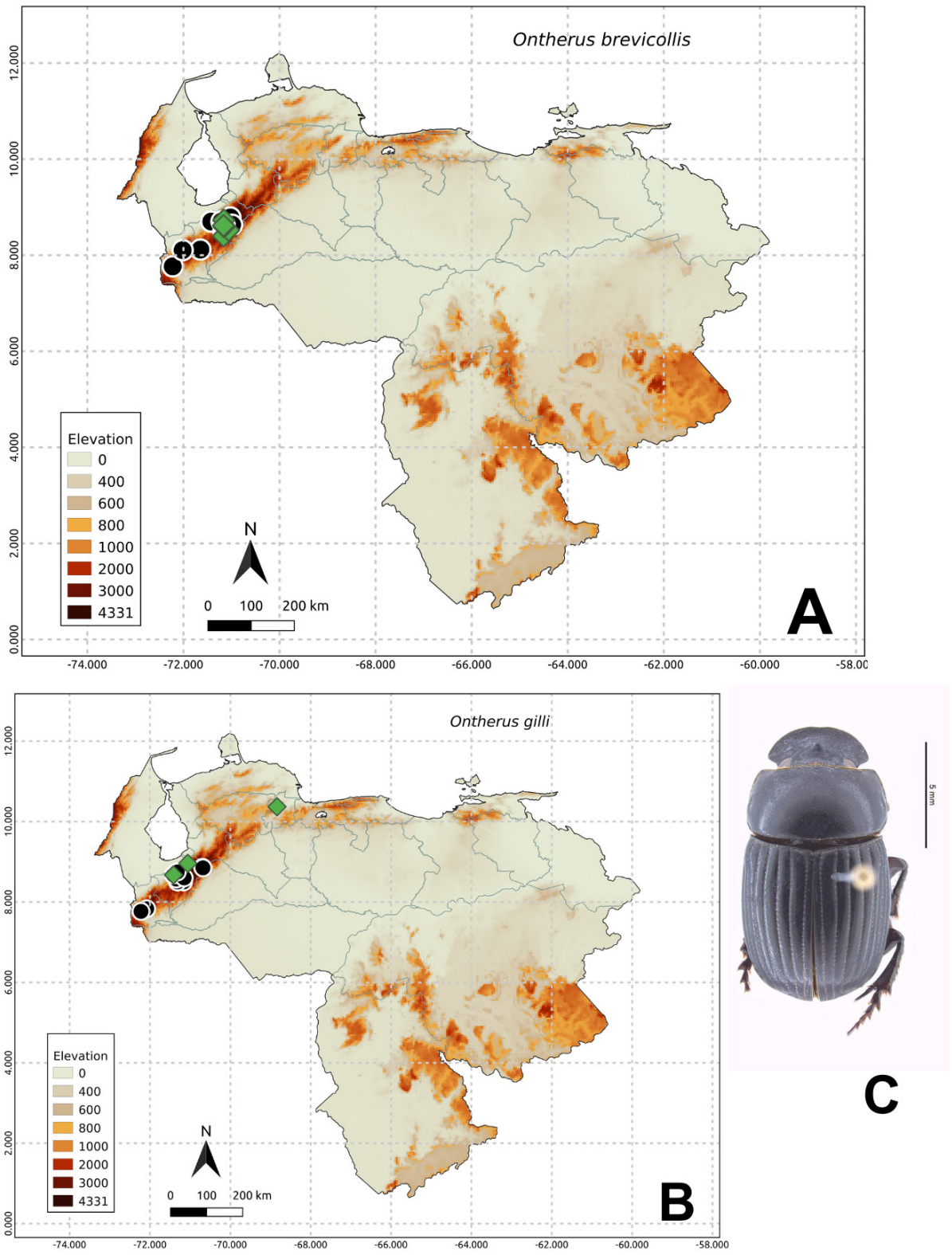


**Fig. 56.** Species distribution. **A**. *Ontherus brevicollis* Kirsch, 1871. **B**. *Ontherus gilli* Génier, 1996. **C**. Dorsal view of *O. gilli*. Green diamond = CEMT collection data; black circle = literature data.

**Material examined**

VENEZUELA • 1 spec.; no further data; CEMT. – **Mérida** • 1 spec.; Santo Domingo, NM27-T078; 13 Jul. 2006; curso NM2006 leg.; faeces, 22h-07:41; CEMT • 2 specs; Sucre, Jají; 8°40′27.98″ N, 71°25′3.53″ W; 1849 m a.s.l.; 7 Jul. 2009; D. Mora, P. Colmenares, M. Córdova and M. Nuñez leg.; minced meat; CEMT • 4 specs; same data as for preceding except for the elevation and date; 1864 m a.s.l.; 8 Jul. 2009; CEMT. – **Yaracuy** • 1 spec.; Bolívar, Aroa; 10°22′9.37″ N, 68°50′19.35″ W; 1624 m a.s.l.; 19 Jul. 2009; M. Asmüssen, P. Colmenares and H. Martínez leg.; human faeces; CEMT.

**Distribution**

Colombia and Venezuela.

**Subregions of Venezuela**

Andes mountains and Central Coast Mountain Range.

**Literature records**

Génier 1996: 28 (Venezuela: Mérida and Táchira). — Krajcik 2012: 174 (Venezuela). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Mérida: La Azulita-Jají).

***Ontherus kirschii*** Harold, 1867
Fig. 57A

*Ontherus kirschii* Harold, 1867d: 96 (original description). Type locality: Colombia: Cundinamarca: Bogotá. Name-bearing type: lectotype (MNHN), designated by Génier (1996), not examined.
*Ontherus elongatus* Waterhouse, 1891a: 357 (original description). Type locality: Venezuela. Name-bearing type: holotype (BMNH), not examined.

*Ontherus kirschii* – Harold 1869a: 503 (comments); 1869c: 59 (comments); 1869d: 1008 (catalogues, cited for "Bogota"); 1880: 21 (distribution, comments). — Kirsch 1871: 357 (comments). — Gillet 1911b: 58 (catalog, cited for Colombia). — Luederwaldt 1931a: 396, 399 (key, cited Colombia). — Blackwelder 1944: 206 (list, cited for Colombia). — Escobar 2000: 209 (checklist for Colombia). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Orozco & Pérez 2008: 38–39 (list for Colombia). — Medina & Pulido-Herrera 2009: 60 (diversity).
*Ontherus elongatus* – Luederwaldt 1931a: 364, 396, 399 (comments, key). — Blackwelder 1944: 206 (list). — Roze 1955: 44 (cited, checklist for Venezuela). — Havranek 1989: 61 (list). — Génier 1996: 35 (revision, redescription, cited as synonym of *O. kirschii*).
*Ontherus* (*Caelontherus*) *kirschii* – Génier 1996: 35 (revision, redescription).

**Material examined**

VENEZUELA – **Aragua** • 1 spec.; Choroni bei Maracay; 1500 m a.s.l.; 26 Mar. 1995; O. Hillert leg.; CEMT. – **Táchira** • 2 specs; May 1999; CEMT. – **Yaracuy** • 2 specs; Bolívar, Aroa; 10°22′9.37″ N, 68°50′19.35″ W; 1624 m a.s.l.; 19 Jul. 2009; M. Asmüssen, P. Colmenares and H. Martínez leg.; human faeces; CEMT.

**Distribution**

Colombia and Venezuela.

**Subregions of Venezuela**

Coastal mainland, Plains, Andes mountains, and Central Coast Mountain Range.

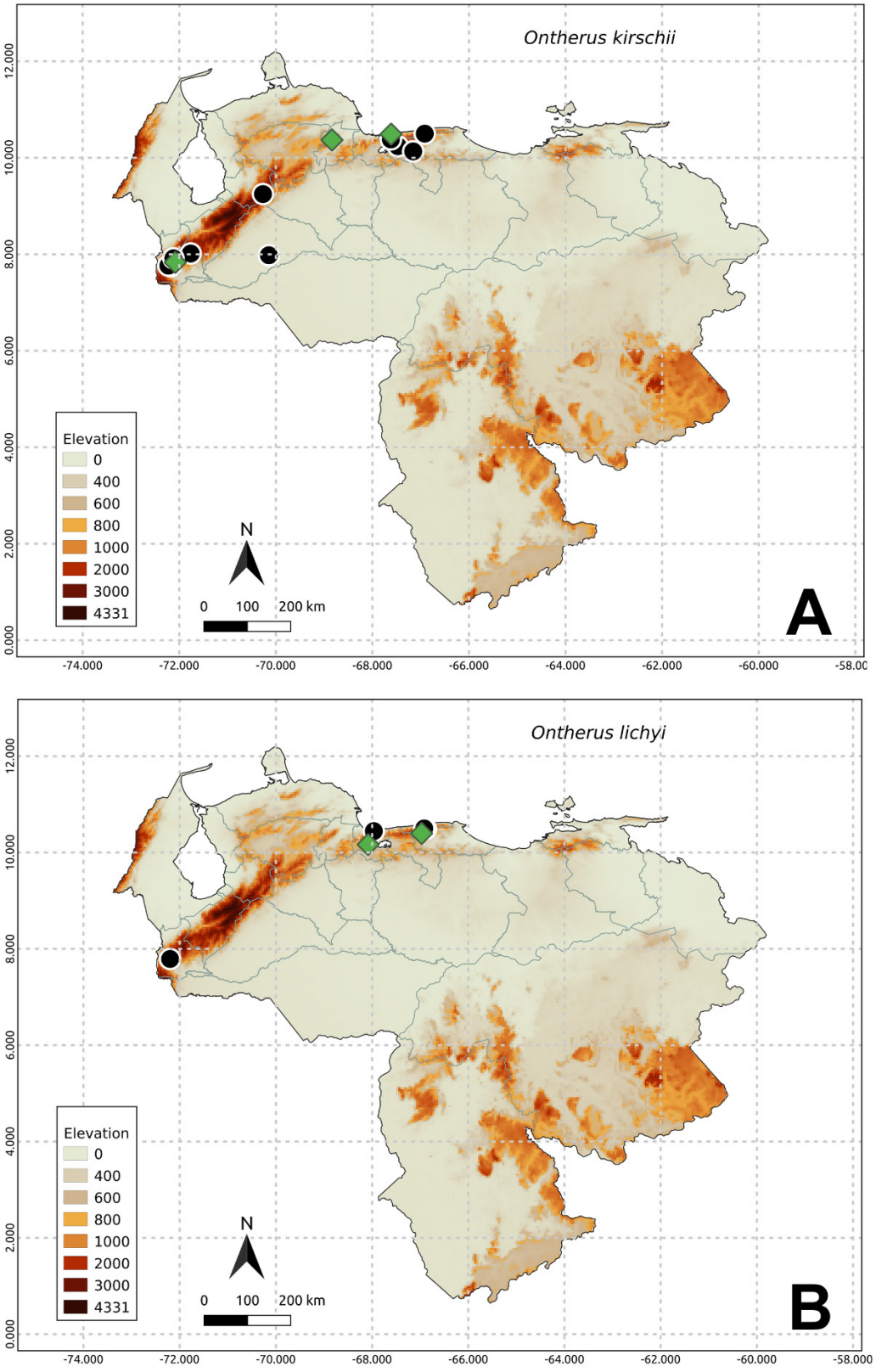


**Fig. 57.** Species distribution. **A**. *Ontherus kirschii* Harold, 1867. **B**. *Ontherus lichyi* Martínez, 1947. Green diamond = CEMT collection data; black circle = literature data.

**Literature records**

Gillet 1911b: 58 (Venezuela). — Luederwaldt 1931a: 396, 399, 414, 416 (Venezuela). — Blackwelder 1944: 206 (Venezuela). — Havranek 1989: 61 (Venezuela: Táchira). — Génier 1996: 35 (Venezuela: Aragua, Barinas, Distrito Capital, Táchira and Trujillo).

***Ontherus lichyi*** Martínez, 1947
Fig. 57B

*Ontherus lichyi* Martínez, 1947c: 45 (original description). Type locality: Venezuela: Carabobo: Borburata River valley, 675 m a.s.l. Name-bearing type: holotype (MACN), examined by MC.
*Ontherus mirandai* Pereira, 1954b: 461 (original description). Type locality: Brazil: Amazonas: Rio Negro. Name-bearing type: holotype (MZSP), not examined.

*Ontherus lichyi* – Roze 1955: 44 (cited, checklist for Venezuela). — Pereira & Martínez 1960: 49 (distribution). — Vulcano & Pereira 1967: 582 (key). — Blanco 1987: 44 (catalogue). — Escobar 2000: 209 (checklist for Colombia). — Medina *et al.* 2001: 139 (checklist for Colombia). — Noriega *et al.* 2007: 81 (list for Colombia). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Medina & Pulido-Herrera 2009: 60 (diversity). — Krajcik 2012: 174 (list).
*Ontherus mirandai* – Pereira & Martínez 1960: 49 (cited as synonym of *Ontherus lichyi*).
*Ontherus* (*Ontherus*) *lichyi* – Génier 1996: 100 (revision, redescription). — Vaz-de-Mello 2000: 194 (checklist for Brazil). — Hielkema & Hielkema 2019: 57 (catalogue for the Guianas).

**Material examined**

**Paratype**
VENEZUELA – 1 ♂; "VENEZUELA/ E° CARABOBO/ Valle Rio Borhu_/ rata, 670 m. alt./ R. Lichy-legit:/ Jul-941"; "*Ontherus*/ *lichyi*/ sp. n./ A. Martínez-DET.1946/ ♂"; "PARATIPO"; CEMT/ CUIABÁ/ 00078190.

**Additional material**
VENEZUELA – **Miranda** • 1 spec.; Altos de Pipe, Instituto Venezolano de Investigaciones Científicas ("Campus IVIC"); 10°23′51″ N, 66°58′15″ W; 1500 m a.s.l.; Jul. 2009; F.Z. Vaz-de-Mello leg.; CEMT.

**Distribution**

Colombia, Venezuela, Suriname, French Guiana, and Brazil.

**Subregion of Venezuela**

Central Coast Mountain Range.

**Literature records**

Vulcano & Pereira 1967: 582 (Venezuela). — Blanco 1987: 44 (Venezuela: Táchira). — Génier 1996: 100 (Venezuela: Carabobo and Distrito Capital). — Krajcik 2012: 174 (Venezuela).

***Ontherus pubens*** Génier, 1996
Fig. 58A

*Ontherus* (*Ontherus*) *pubens* Génier, 1996: 71 (original description). Type locality: Ecuador: Napo: Puerto Misahuallí: Reserva Biológica Jatun Sacha, 21 km E of Puerto Napo, 400 m. Name-bearing type: holotype (CMNC), not examined.

*Ontherus pubens* – Amézquita *et al.* 1999: 119 (diversity). — Escobar 2000: 209 (list). — Medina *et al.* 2001: 139 (checklist for Colombia). — Hamel-Leigue *et al.* 2006: 16 (inventory, cited for Bolivia). — Pulido-Herrera *et al.* 2007: 307 (list for Andean region, Colombia). — Donoso *et al.* 2009: Appendix II, 17 (catalogue of types specs at the MQCAZ). — Krajcik 2012: 174 (checklist, cited for Ecuador). — Bezděk & Hájek 2012: 313 (catalogue of type specs). — Ratcliffe *et al.* 2015: 197 (checklist, cited for Peru).

*Ontherus* (*Ontherus*) *pubens* – Vaz-de-Mello 2000: 194 (checklist for Brazil). — Morón 2006: 121 (catalogue of MXAL types). — Carvajal *et al.* 2011: 318–319 (cited for Ecuador). — Chamorro *et al.* 2018: 90, 96, fig. 13e (key, cited for Ecuador); 2019: 177 (catalogue). — Hielkema & Hielkema 2019: 57 (catalogue for the Guianas).

**Distribution**

Colombia, Venezuela, Brazil, Ecuador, Peru, Bolivia, and Argentina.

**Subregions of Venezuela**

Plains and Andes mountains.

**Literature records**

Génier 1996: 71 (Venezuela: Apure and Táchira). — Bezděk & Hájek 2012: 313 (Venezuela: Apure).

***Ontherus sulcator*** (Fabricius, 1775)
Fig. 58B

*Scarabaeus sulcator* Fabricius, 1775: 27 (original description). Type locality: French Guiana. Name-bearing type: according to Zimsen (1964), three syntypes in ZMUK, but deemed lost without further explanation by Génier (1996). We ourselves have made no attempt to locate them, and so they may well be in ZMUK as Zimsen said.

*Copris nisus* Castelnau, 1840: 79 (original description). Type locality: French Guiana. Name-bearing type: lectotype (MVMA), designated by Génier (1996), not examined.

*Copris ovalipennis* Blanchard, 1846: 180 (original description). Type locality: Argentina: Corrientes. Name-bearing type: lectotype (MNHN), designated by Génier (1996), not examined.

*Copris senegalensis* Gillet, 1910: 15 (original description). Type locality: Unknown. Originally said to be Senegal ("Sénégal"), but this is incorrect (Gillet 1911a). Name-bearing type: syntypes (RBINS) (Gillet 1910), not examined.

*Scarabaeus sulcator* – Olivier 1789: 142 (redescription). — Fabricius 1792: 61 (redescription).

*Copris sulcator* – Fabricius 1801: 53 (redescription). — Olivier, 1790: 168 (redescription). — Martínez 1959: 71 (cited).

*Copris nisus* – Blanchard, 1846: 180 (comments). — Burmeister 1874: 126 (list for Argentina). — Martínez 1959: 71 (cited as synonym of *Ontherus sulcator*).

*Ontherus sulcator* – Erichson 1847b: 761 (comments). — Harold 1869c: 59 (comments); 1869d: 1008 (catalogue). — Burmeister 1874: 126 (list for Argentina). — Gillet 1911a: 319 (list); 1911b: 58 (catalogue). — Bruch 1915: 541 (list). — Lucas 1920: 459 (catalogue). — Luederwaldt 1930: 106 (comments); 1931a: 371, 385, 389, 392, 408, 411, 416 (key, synonymy). — Pessôa & Lane 1941: 456, 458 (key). — Blackwelder 1944: 206 (checklist). — Martínez 1959: 71 (catalogue). — Vulcano & Pereira, 1967: 583 (key). — Forsyth & Gill 1993: 70 (as *O. suclator* [sic], cited for Guyana). — Escobar 2000: 209 (list). — Vaz-de-Mello 2000: 194 (checklist for Brazil). — Medina *et al.* 2001: 139 (checklist for Colombia). — Hamel-Leigue *et al.* 2006: 16 (inventory, cited for Bolivia). — Feer 2008: 62 (ecology, list). — Larsen *et al.* 2008: 1294 (list). — Krajcik 2012: 174

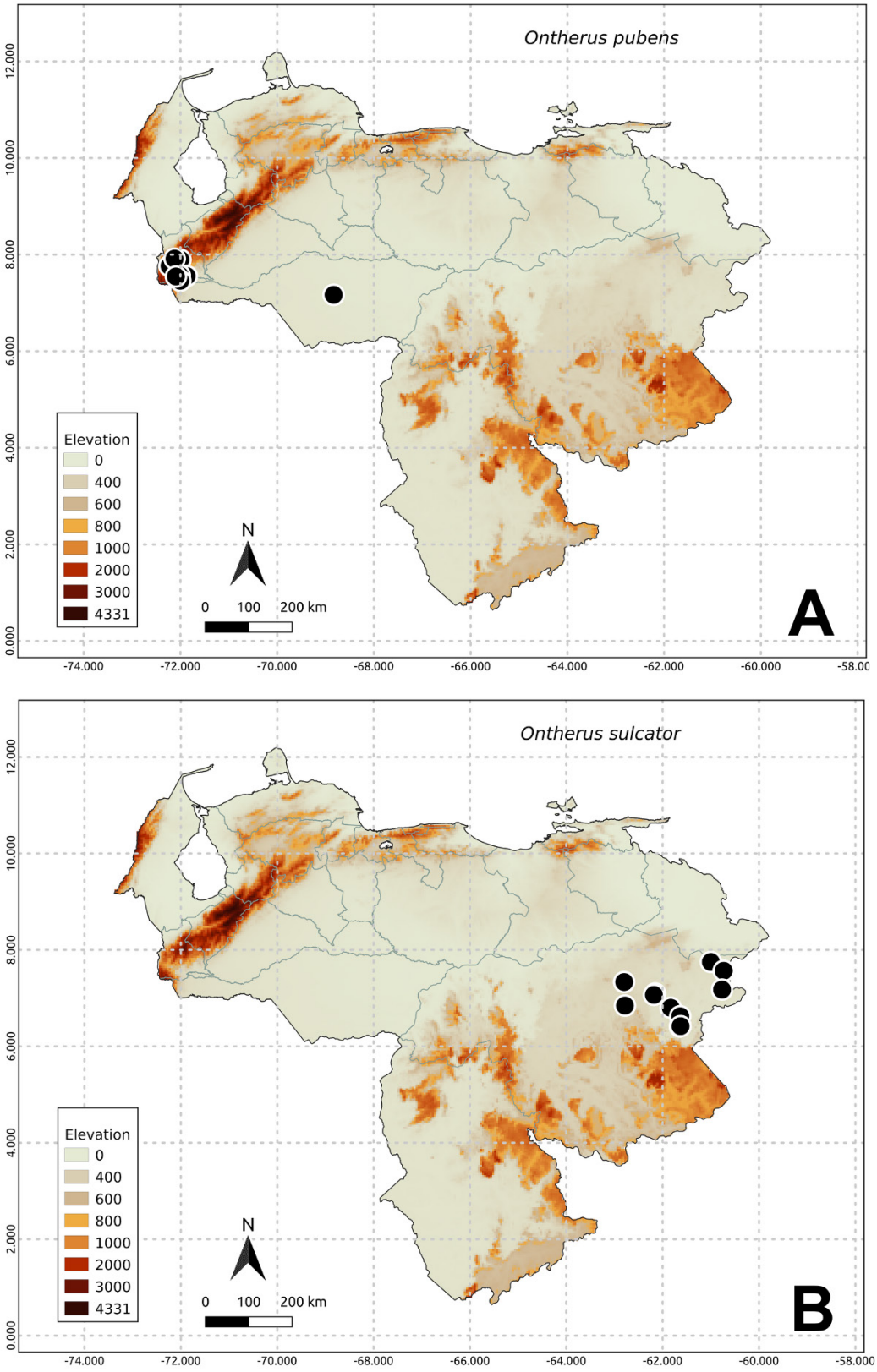


**Fig. 58.** Species distribution. **A**. *Ontherus pubens* Génier, 1996. **B**. *Ontherus sulcator* (Fabricius, 1775). Black circle = literature data.

(checklist, cited for Cayenne). — Boilly & Vaz-de-Mello 2013: 112 (Fig. 43, key). — Ferrer-Paris *et al.* 2013: 109 (list). — Ratcliffe *et al.* 2015: 197 (checklist, cited for Peru).

*Copris ovalipennis* – Harold 1869a: 503 (comments); 1869c: 59 (comments). — Burmeister 1874: 126 (list for Argentina). — Luederwaldt 1931a: 386 (cited as synonym of *Ontherus nisus*). — Martínez 1959: 71 (cited as synonym of *Ontherus sulcator*).

*Ontherus nisus* – Harold 1869d: 1008 (catalogue, cited as synonym of *O. sulcator*). — Gillet 1911b: 58 (catalog, cited as synonym of *O. sulcator*). — Luederwaldt 1931a: 387, 392, 399, 400, 409, 411, 417 (redescription, distribution, key). — Pessôa & Lane 1941: 457, 458 (key, redescription). — Blackwelder 1944: 206 (cited as synonym of *O. sulcator*). — Lange 1947: 310 (list). — Martínez 1959: 71 (cited as synonym of *O. sulcator*).

*Pinotus ovalipennis* – Harold 1869d: 1008 (catalogue, cited for Argentina: Corrientes).

*Ontherus ovalipennis* – Gillet 1911b: 58 (catalog, cited as synonym of *O. sulcator*). — Luederwaldt 1931a: 387 (cited as synonym of *O. nisus*). — Pessôa & Lane 1941: 458 (cited as synonym of *O. nisus*). — Blackwelder 1944: 206 (cited as synonym of *O. sulcator*). — Martínez 1959: 71 (cited as synonym of *O. sulcator*).

*Copris senegalensis* – Gillet 1911a: 319 (cited as synonym of *O. sulcator*); 1911b: 58 (catalog, cited as synonym of *O. sulcator*). — Bruch 1915: 541 (list, cited as synonym of *O. sulcator*). — Martínez 1959: 72 (cited as synonym of *O. sulcator*).

*Ontherus sulcator* – Luederwaldt 1931a: 364 (type species).

*Ontherus senegalensis* – Luederwaldt 1931a: 386, 387 (cited as synonym of *Ontherus nisus*). — Pessôa & Lane 1941: 458 (cited as synonym of *O. nisus*). — Blackwelder 1944: 206 (cited as synonym of *O. sulcator*).

*Ontherus* (*Ontherus*) *sulcator* – Génier 1996: 74–76 (revision). — Hielkema & Hielkema 2019: 57 (catalogue for the Guianas).

**Distribution**

Colombia, Venezuela, Trinidad and Tobago, Guyana, Suriname, French Guiana, Brazil, Ecuador, Peru, Bolivia, Paraguay, Argentina, and Uruguay (Génier 1996).

**Subregions of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Guiana Shield.

**Literature records**

Luederwaldt 1931a: 387, 409, 417 (Venezuela). — Pessôa & Lane 1941: 457–458 (Venezuela). — Vulcano & Pereira 1967: 583 (Venezuela). — Génier 1996: 74 (Venezuela: Bolívar). — Larsen *et al.* 2008: 1294 (Venezuela: Bolívar). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Bolívar: Isla de Anacoco).

## Genus ***Onthophagus*** Latreille, 1802

*Onthophagus* Latreille, 1802: 141 (original description). Type species: *Scarabaeus taurus* Schreber, 1759, by original monotypy.

*Chalcoderus* Erichson, 1847b: 763 (original description). Type species: no fixation known to us.

*Monapus* Erichson, 1847b: 763 (original description). Type species: no fixation known to us; no nominal species seem to have been originally included. Chamorro *et al.* (2019) stated the type species was "probably" *Onthophagus mniszechi* Harold, 1869, but did not explain why they thought so.

*Psilax* Erichson, 1847b: 764 (original description). Type species: *Onthophagus pronus* Erichson, 1842, by original monotypy.

*Macropocopris* Arrow, 1920: 435 (original description). Type species: *Macropocopris prehensilis* Arrow, 1920, by subsequent designation of Matthews (1972).

*Onthophagus* – Le Peletier de Saint-Fargeau & Audinet-Serville 1828: 353 (redescription). — Agassiz 1846: 749 (catalogue). — Latreille 1829: 536 (redescription). — Brullé 1838: 300 (redescription). — Castelnau 1840: 83 (redescription). — Lacordaire 1855: 107 (redescription). — Harold 1869d: 1024 (catalogue). — Gillet 1911b: 118 (catalogue). — Gillet & Boucomont 1927: 205 (catalogue). — Dawson 1922: 61 (key). — Paulian 1938: 232 (key). — Blackwelder 1944: 211 (list). — Roze 1955: 45 (checklist for Venezuela). — Martínez 1959: 108 (catalogue for Argentina). — Howden & Cartwright 1963: 6 (redescription). — Halffter & Matthews 1966: 254 (catalog, distribution). — Vulcano & Pereira 1967: 562 (key). — Howden & Young 1981: 11, 93 (key, redescription). — Halffter & Edmonds 1982: 135 (catalog, distribution). — Huchet 1992: 300 (key). — Medina & Lopera-Toro 2000: 301 (key). — Vaz-de-Mello 2000: 194 (checklist for Brazil). — Medina *et al.* 2001: 139 (list for Colombia). — Kohlmann & Solís 2001: 160 (redescription). — Ratcliffe 2002: 17 (checklist for Panama). — Ratcliffe *et al.* 2002: 49 (key). — Hamel-Leigue *et al.* 2006: 16 (list for Bolivia). — Pulido-Herrera & Zunino 2007: 94 (catalogue). — Vaz-de-Mello *et al.* 2011a: 23 (key). — Carvajal *et al.* 2011: 145, 322 (diagnosis, list). — Krajcik 2012: 174 (list). — Solís & Kohlmann 2012: 8 (checklist for Costa Rica). — Chamorro *et al.* 2018: 74, 96–97 (list for Ecuador); 2019: 179 (catalogue). — Hielkema & Hielkema 2019: 90 (catalogue for the Guianas).

*Chalcoderus* – Lacordaire 1855: 109 (comments). — Harold 1869d: 1024 (cited as synonym of *Onthophagus*). — Gillet 1911b: 118 (cited as synonym of *Onthophagus*). — Blackwelder 1944: 211 (cited as synonym of *Onthophagus*). — Solís & Kohlmann 2012: 8 (cited as synonym of *Onthophagus*).

*Monapus* – Lacordaire 1855: 109 (comments). — Harold 1869d: 1024 (cited as synonym of *Onthophagus*). — Gillet 1911b: 118 (cited as synonym of *Onthophagus*). — Blackwelder 1944: 211 (cited as synonym of *Onthophagus*). — Solís & Kohlmann 2012: 8 (cited as synonym of *Onthophagus*).

*Psilax* – Lacordaire 1855: 109 (comments). — Harold 1869d: 1024 (cited as synonym of *Onthophagus*). — Gillet 1911b: 118 (cited as synonym of *Onthophagus*). — Blackwelder 1944: 211 (cited as synonym of *Onthophagus*). — Solís & Kohlmann 2012: 8 (cited as synonym of *Onthophagus*).

*Macropocopris* – Halffter & Matthews 1966: 254 (cited as genus). — Halffter & Edmonds 1982: 135 (cited as synonym of *Onthophagus*). — Solís & Kohlmann 2012: 8 (cited as synonym of *Onthophagus*).

### ***Onthophagus bidentatus*** Drapiez, 1819
Fig. 59A

*Onthophagus bidentatus* Drapiez, 1819: 134 (original description). Type locality: French Guiana. Name-bearing type: lectotype (MNHN), designated by Rossini *et al.* (2016), examined by FZVM.

*Onthophagus bicornis* Castelnau, 1840: 87 (original description). Type locality: French Guiana. Name-bearing type: lectotype (MNHN), designated by Rossini *et al.* (2016), examined by FZVM.

*Onthophagus femoralis* Kirsch, 1871: 362 (original description). Type locality: Colombia: Cundinamarca: Bogotá. Name-bearing type: unknown to us.

*Onthophagus semichalcites* d'Orbigny, 1902: 149 (original description). Type locality: unknown; the lectotype is mislabelled as though coming from Benin (Rossini *et al.* 2016). Name-bearing type: lectotype (MNHN), designated by Rossini *et al.* (2016), examined by FZVM.

*Onthophagus bidentatus* – Harold 1869d: 1026 (catalogue); 1880: 33 (redescription, distribution). — Gillet 1911b: 204 (catalogue). — Bruch 1911: 190 (cited for Argentina). — Gillet & Boucomont 1927: 204 (catalogue of species). — Boucomont 1932: 304, 321 (key, distribution). — Balthasar

1941: 352 (cited for Peru); 1951: 337 (cited for Peru). — Blackwelder 1944: 211 (list of species from Latin America). — Roze 1955: 45 (cited for Venezuela). — Vulcano & Pereira 1967: 564 (key). — Zunino & Halffter 1997: 161 (list). — Medina *et al.* 2001: 139 (checklist). — Pulido-Herrera & Zunino 2007: 97 (catalogue). — Ratcliffe *et al.* 2015: 195 (checklist for Peru). — Rossini *et al.* 2016: 496, 497 (comments, fig. 1a); 2018b: 9 (list of species of the *hircus* complex).

*Onthophagus bicornis* – Harold 1869d: 1026 (cited as synonym of *Onthophagus bidentatus*); 1880: 33 (cited as synonym of *O. bidentatus*). — Gillet 1911b: 204 (cited as synonym of *O. bidentatus*). — Gillet & Boucomont 1927: 204 (cited as synonym of *O. bidentatus*). — Blackwelder 1944: 211 (cited as synonym of *O. bidentatus*). — Pulido-Herrera & Zunino 2007: 97 (cited as synonym of *O. bidentatus*). — Rossini *et al.* 2016: 496 (cited as synonym of *O. bidentatus*).

*Onthophagus femoralis* – Harold 1880: 33 (cited as synonym of *O. bidentatus*). — Gillet 1911b: 204 (cited as synonym of *O. bidentatus*). — Gillet & Boucomont 1927: 204 (cited as synonym of *O. bidentatus*). — Blackwelder 1944: 211 (cited as synonym of *O. bidentatus*). — Pulido-Herrera & Zunino 2007: 97 (cited as synonym of *O. bidentatus*).

*Onthophagus semichalcites* – Gillet 1911b: 195 (cited for Nigeria). — Gillet & Boucomont 1927: 195 (cited for Nigeria). — Rossini *et al.* 2016: 496 (comments).

*Onthophagus* (*Onthophagus*) *bidentatus* – Vaz-de-Mello 2000: 194 (cited for Brazil). — Chamorro *et al.* 2018: 96 (cited for Ecuador). — Hielkema & Hielkema 2019: 90 (catalogue for the Guianas).

**Material examined**

VENEZUELA – **Aragua** • 3 specs; Maracay, Choroni; 28 Jul. 1993; O. Hillert leg.; CEMT. – **Bolívar** • 3 specs; Río Caura, Maripa; 20 Mar. 1995; Homburg leg.; CEMT • 2 specs; Anacoco; curso NM2006 leg.; CEMT. – **Anzoátegui** • 1 spec.n; Anaco; 8 Aug. 1992; Homburg leg.; CEMT. – **Táchira** • 1 spec.; Libertador, San Joaquín de Navay; 7°47′59.99″ N, 71°40′24.24″ W; 655 m a.s.l.; T. Good *et al.* leg.; human faeces; CEMT.

**Distribution**

Panama, Colombia, Venezuela, Trinidad and Tobago, Guyana, Suriname, Brazil, Ecuador, Peru, and possibly Argentina (Rossini *et al.* 2016).

**Subregions of Venezuela**

Coastal mainland, Plains, System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Central Coast Mountain Range.

**Literature records**

Boucomont 1932: 321 (Venezuela: Distrito Capital: Caracas). — Balthasar 1941: 352 (Venezuela); 1951: 337 (Venezuela). — Roze 1955: 45 (Venezuela: Mérida, doubtful data). — Martínez 1959: 109 (Venezuela). — Blanco 1988: 46–47 (Venezuela: Táchira, doubtful data). — Havranek 1989: 61 (Venezuela: Táchira, doubtful data). — Pulido-Herrera & Zunino 2007: 97 (Venezuela). — Rossini *et al.* 2016: 496 (Venezuela). — Chamorro *et al.* 2019: 182 (Venezuela).

### ***Onthophagus curvicornis*** Latreille, 1809
Fig. 59B

*Onthophagus curvicornis* Latreille, 1809: 220, pl. 23 fig. 2 (original description). Type locality: Ecuador: Cotopaxi: San Francisco de Las Pampas, 1300–1500 m. Name-bearing type: neotype (MZUF), designated by Rossini (2021), not examined.

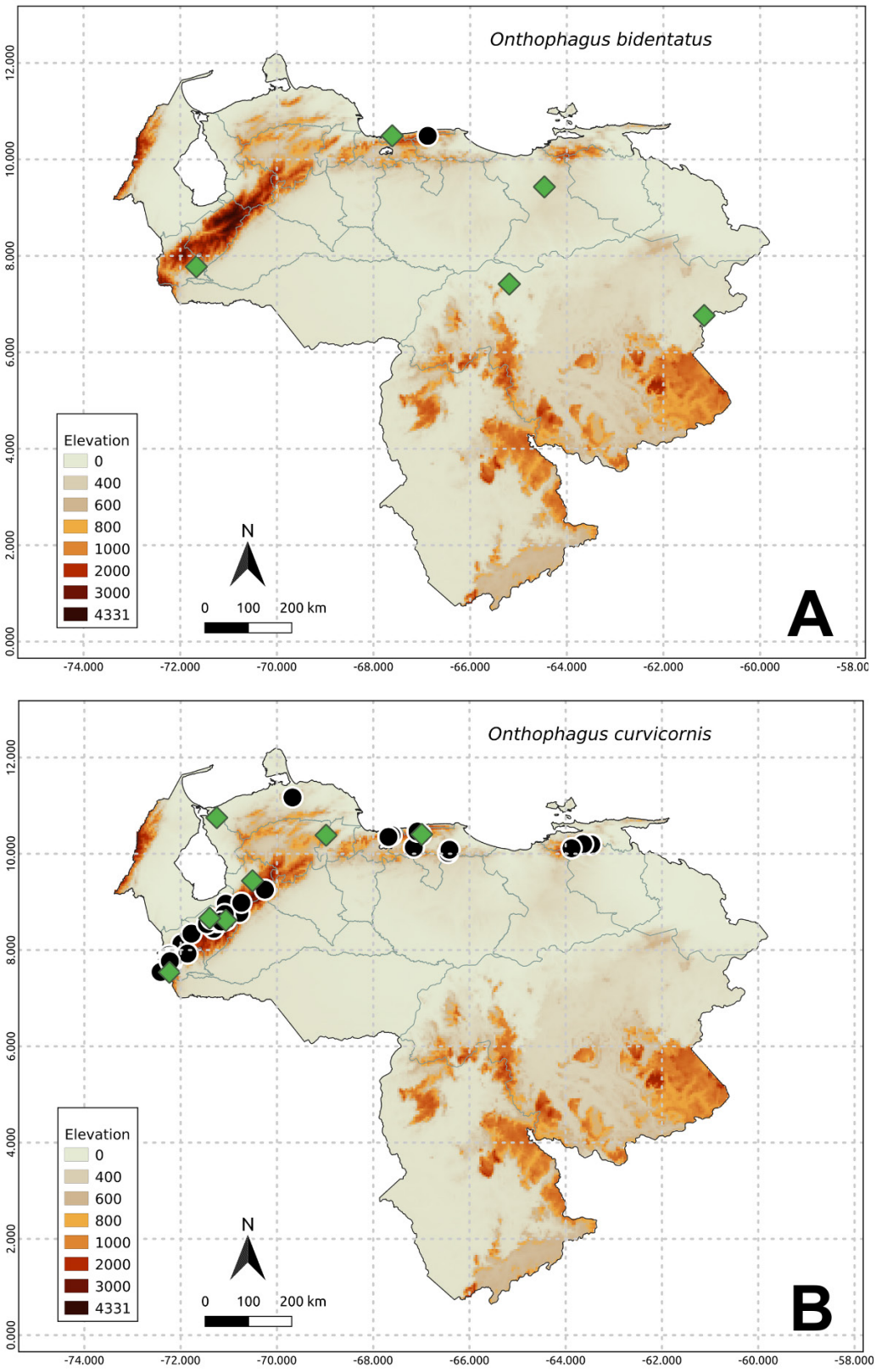


**Fig. 59.** Species distribution. **A**. *Onthophagus bidentatus* Drapiez, 1819. **B**. *Onthophagus curvicornis* Latreille, 1809. Green diamond = CEMT collection data; black circle = literature data.

*Onthophagus minax* Kirsch, 1866: 215 (original description). Type locality: Colombia: Cundinamarca: Bogotá. Name-bearing type: lectotype (SMTD), designated by Rossini (2021).

*Onthophagus laevatus* d'Orbigny, 1902: 69 (original description). Type locality: unknown. The lectotype's provenance label indicates "Delagoa", i.e., Delagoa Bay, or, as the locality is modernly called, Maputo Bay, in Mozambique, but this is certainly incorrect, as the species is exclusively South American (Rossini 2021). Name-bearing type: lectotype (MNHN), designated by Rossini (2021), not examined by us.

*Onthophagus curvicornis* – Harold 1869d: 1028 (catalog, cited for Quito); 1880: 29 (distribution). — Taschenberg 1870: 184 (cited for Loja, Ecuador). — Bates 1886–1890: 66 (distribution). — Campos 1921: 57 (list for Ecuador). — Gillet & Boucomont 1927: 205 (catalogue). — Boucomont 1932: 308, 323 (synopsis, key). — Blackwelder 1944: 211 (list). — Guérin 1953: 262 (list). — Roze 1955: 45 (checklist for Venezuela). — Vulcano & Pereira 1967: 565 (key). — Blanco 1988: 47 (catalogue). — Havranek 1989: 61 (list). — Deloya 1992: 22 (list). — Zunino & Halffter 1997: 161 (classification). — Escobar 2000: 209 (checklist for Colombia). — Vaz-de-Mello 2000: 194 (checklist for Brazil). — Medina *et al.* 2001: 139 (checklist for Colombia); 2002: 182–185 (ecology). — Cancino & Blanco 2002: 120 (list). — Zunino 2003: 71 (cited for Mexico). — Noriega 2004: 40 (checklist for Tinigua Park, Colombia). — Ramírez & Locarno 2004: 61–62 (ecology, list). — Krajcik 2006: 99 (checklist of the world). — Pulido-Herrera & Zunino 2007: 101, 106 (cited as *Onthophagus curvicornis* var. *incensus*). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Orozco & Pérez 2008: 38–39 (list for Colombia). — Concha-Lozada *et al.* 2010: 43–44, 47–49, 52 (list for Popayán, Colombia). — Carvajal *et al.* 2011: 322–323 (checklist for Ecuador). — Deloya 2011: 386 (diversity). — Giraldo *et al.* 2011: 118 (comments). — Cultid-Medina *et al.* 2012: 39 (guide); 2015: 624 (comments). — Delgado *et al.* 2012: 331(list). — Noriega *et al.* 2012: 43, 46–47 (list for Antioquia, Colombia). — Ferrer-Paris *et al.* 2013: 99–100, 109 (list). — Martínez-Revelo & Lopera-Toro 2014: 65–68 (cited for Nariño department, Colombia). — Pardo-Locarno & Camero 2014: 210, 212–213, 215 (list for Chocó, Colombia). — Cultid-Medina & Medina 2015: 119–133, 199, 201, 203 (list, Appendix 8, 11, 13). — Molina *et al.* 2016: 128–130 (cited for Valle del Cauca, Colombia). — Albuquerque *et al.* 2017: 211 (cited for Piura, Peru). — Rodríguez 2017: 20–22, 24–26 (biology). — Torres *et al.* 2017: 48–49, 67 (cited for Boyaca, Colombia). — Villada-Bedoya *et al.* 2017: 197, 200, 203 (ecology). — Chamorro *et al.* 2018: 97 (list for Ecuador); 2019: 186 (catalogue for Ecuador). — Giraldo *et al.* 2018: 104, 111, 132 (guide). — Girón *et al.* 2018: 83 (comments). — Rossini *et al.* 2018b: 9 (revision). — Martínez & Morales 2020: 1689 (checklist for the Eastern Andes, Colombia). — Nieto *et al.* 2020: 136 (report). — Carrión-Paladines *et al.* 2021: 9–10, 14, 16–17 (ecology). — Rossini 2021: 266 (revision).

*Onthophagus minax* – Harold 1869d: 1028 (cited for Bogotá, cited as synonym of *O. curvicornis*). — Gillet & Boucomont 1927: 205 (catalogue). — Blackwelder 1944: 211 (list, cited as synonym of *O. curvicornis*). — Pulido-Herrera & Zunino 2007: 101 (cited as synonym of *O. curvicornis*). — Chamorro *et al.* 2019: 186 (catalogue for Ecuador).

*Onthophagus laevatus* – d'Orbigny 1905: 437 (comments); 1913: 174, 640 (key, list). — Peringuey 1908: 587 (redescription). — Gillet & Boucomont 1927: 177 (catalogue). — Ferreira 1972: 666 (cited for Mozambique). — Daniel & Génier 2019: 28 (checklist for Mozambique).

*Onthophagus* (*Onthophagus*) *curvicornis* – Vaz-de-Mello 2000: 194 (checklist for Brazil).

**Material examined**

VENEZUELA – **Bolívar** • 1 spec.; El Manteco; 2 Aug. 2006; CEMT. – **Mérida** • 1 ♀; La Muchuy, Parque Nacional Sierra Nevada; 2400 m a.s.l.; 13 Apr. 1995; CEMT • 1 ♂, 1 ♀; Sucre, Jají; 08°39′39.05″ N, 71°23′55.85″ W; 2235 m a.s.l.; 8 Apr. 2009; CEMT. – **Táchira** • 1 ♀; Pregonero, La Honda; 1100 m a.s.l.; 13 Feb. 1989; CEMT. – **Trujillo** • 1 ♀; Trujillo; no further data; CEMT. – **Yaracuy** • 1 ♂; Bolívar,

Aroa; 10°23′06.1″ N, 68°58′45.45″ W; 1415 m a.s.l.; 19 Jul. 2009; CEMT. – **Zulia** • 1 ♂; Miranda; 28–30 Nov. 2005; CEMT.

**Distribution**

Colombia, Venezuela, Trinidad and Tobago, Ecuador, and Peru (Rossini 2021).

**Subregions of Venezuela**

System of hills and low sierras Lara-Falcón, Andes mountains, Sierra de San Luis and Cerro Santa Ana, Central Coast Mountain Range, and Oriental Coast Range.

**Literature records**

Harold 1880: 29 (Venezuela). — Bates 1886–1890: 66 (Venezuela). — Boucomont 1932: 308, 323 (Venezuela). — Blackwelder 1944: 211 (Venezuela). — Roze 1955: 45 (Venezuela: Distrito Capital and Mérida). — Blanco 1988: 46–47 (Venezuela: Táchira). — Havranek 1989: 61 (Venezuela: Táchira). — Pulido-Herrera & Zunino 2007: 101 (Venezuela). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Mérida: La Azulita-Jají and Miranda: Altos de Pipe). — Chamorro *et al.* 2019: 186 (Venezuela). — Rossini 2021: 266 (Venezuela: Aragua, Falcón, , La Guaira, Mérida, Monagas, Sucre, Táchira, Trujillo and Zulia).

***Onthophagus landolti*** Harold, 1880
Fig. 60A

*Onthophagus landolti* Harold, 1880: 34 (original description). Type locality: Colombia: Norte de Santander: Ocaña; and Venezuela: La Guaira: La Guaira. Name-bearing type: syntypes (MNHN), examined by FZVM.

*Onthophagus landolti* – Bates 1877: 75 (distribution). — Schaeffer 1914: 293, 299 (key, note). — Boucomont & Gillet 1927: 206 (catalogue). — Boucomont 1932: 314 (synopsis, key). — Blackwelder 1944: 211 (checklist). — Roze 1955: 46 (checklist for Venezuela). — Howden & Cartwright 1963: 8, 94 (list, comments). — Howden & Yound 1981: 112 (contribution). — Gillet 1911b: 206 (catalogue). — Deloya 1992: 22 (list). — Halffter *et al.* 1992: 141, 148 (ecology). — Escobar 1997: 422–423 (diversity, list); 2000: 209 (checklist for Colombia). — Zunino & Halffter 1997: 162 (list). — Maes 1998: 655 (list for Nicaragua). — Kohlmann & Solís 2001: 214 (revision for Costa Rica). — Medina *et al.* 2001: 139 (checklist for Colombia). — Navarrete-Heredia *et al.* 2001: 57 (list). — Estrada & Coates-Estrada 2002: 1911 (ecology). — Bustos-Gómez & Lopera-Toro 2003: 61 (diet). — Hernández *et al.* 2003: 96 (diversity). — Zunino 2003: 71–72 (cited for Mexico). — Krajcik 2006: 114 (checklist). — Kohlmann *et al.* 2007: 32 (atlas). — Pulido-Herrera & Zunino 2007: 107 (synopsis). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Lozano 2010: 86 (list). — Cultid-Medina *et al.* 2012: 54 (guide). — Delgado *et al.* 2012: 327 (list). — Ferrer-Paris *et al.* 2013: 109. — Delgado & Curoe 2014: 64 (key, cited for Panama). — Pérez-Cogollo *et al.* 2017: 119 (biology). — Nieto *et al.* 2020: 136 (report). — Moctezuma 2021: 186 (list, cited for Mexico).

*Onthophagus landolti landolti* – Pulido-Herrera & Zunino 2007: 107 (cited as junior synonym). — Moctezuma 2021: 186 (list, cited for Mexico).

**Distribution**

United States, Mexico, Belize, Guatemala, El Salvador, Nicaragua, Costa Rica, Panama, Colombia and Venezuela (Pulido-Herrera & Zunino 2007).

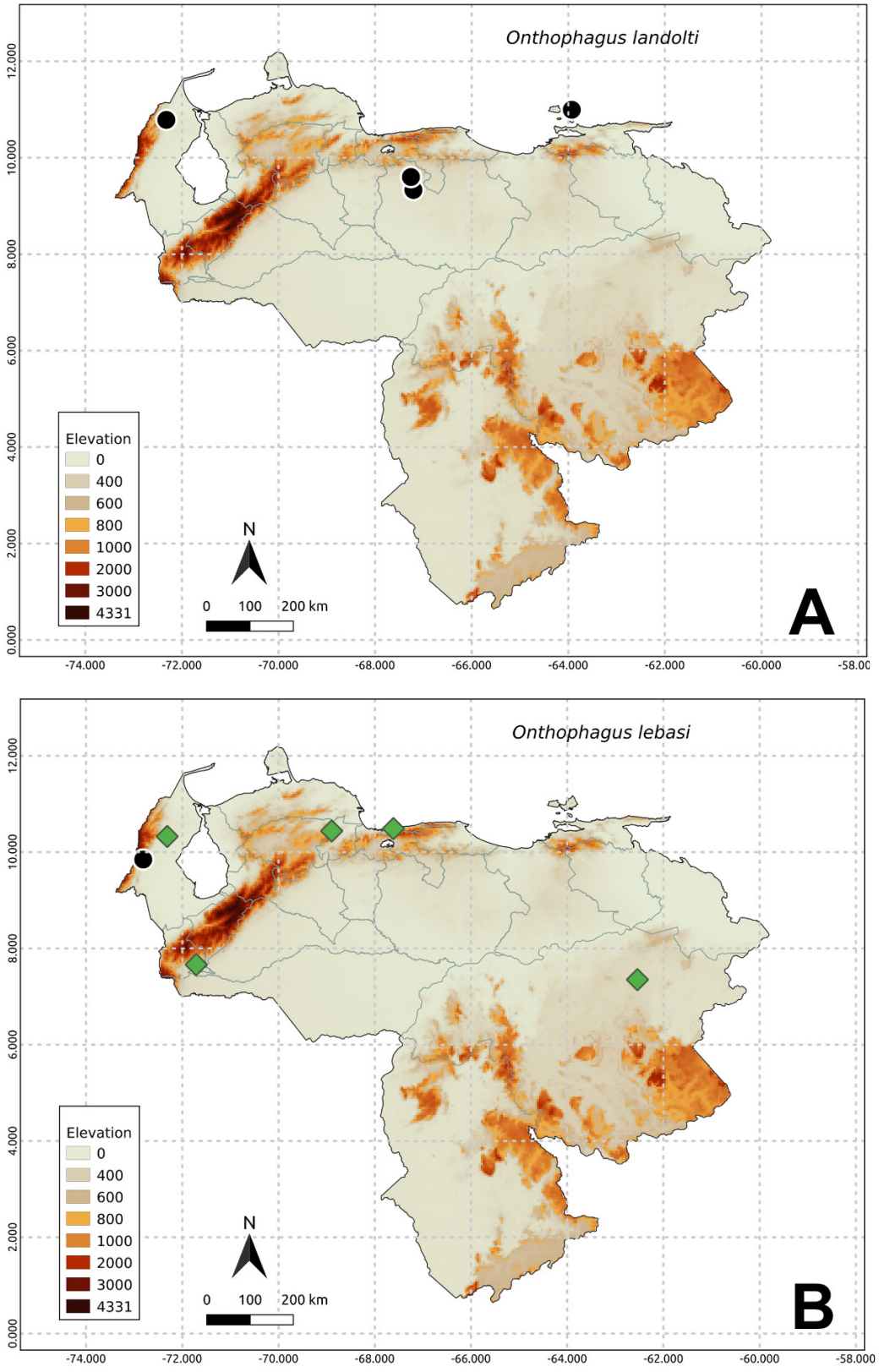


**Fig. 60.** Species distribution. **A**. *Onthophagus landolti* Harold 1880. **B**. *Onthophagus lebasi* Boucomont,1932. Green diamond = CEMT collection data; black circle = literature data.

**Subregions of Venezuela**

Maracaibo Depression, Plains, Central Coast Mountain Range, and Cerro Copey, Margarita Island.

**Literature records**

Harold 1880: 34 (Venezuela: La Guaira). — Bates 1886–1890: 75 (Venezuela). — Boucomont 1932: 326 (Venezuela). — Blackwelder 1944: 211 (Venezuela). — Roze 1955: 46 (Venezuela: Nueva Esparta: Isla Margarita; and Guárico). — Kohlmann & Solís 2001: 214 (Venezuela). — Zunino 2003: 71 (Venezuela). — Pulido-Herrera & Zunino 2007: 107 (Venezuela: La Guaira). — Lozano 2010: 86 (Venezuela: Zulia). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Aragua [Guárico]: Altagracia de Orituco; and Zulia: Rosario de Perijá). — Pérez-Cogollo *et al.* 2017: 119 (Venezuela).

***Onthophagus lebasi*** Boucomont, 1932
Fig. 60B

*Onthophagus lebasi* Boucomont, 1932: 309, 326 (original description). Type locality: Colombia: Bolívar: Cartagena de Indias. Name-bearing type: holotype (MNHN), examined by FZVM.

*Onthophagus lebasi* – Blackwelder 1944: 211 (list, cited for Colombia). — Vulcano & Pereira 1967: 563 (key). — Howden & Young 1981: 109 (contribution, redescription). — Escobar 1997: 423 (ecology, list). — Zunino & Halffter 1997: 162 (classification). — Maes 1998: 655 (list for Nicaragua). — Escobar 2000: 2069 (checklist for Colombia). — Medina *et al.* 2001: 139 (checklist for Colombia). — Bustos-Gómez & Lopera-Toro 2003: 61 (diet). — Krajcik 2006: 114 (list). — Noriega *et al.* 2007: 83 (list). — Pulido-Herrera & Zunino 2007: 107 (catalogue). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Medina & Pulido-Herrera 2009: 61 (diversity). — Cultid-Medina *et al.* 2012: 40 (guide). — Delgado & Curoe 2014: 64 (key, cited for Panama). — Nieto *et al.* 2020: 136 (report).

**Material examined**

VENEZUELA – **Aragua** • 1 spec.; Parque Nacional Henri Pittier, Choroni; 28 Jul. 1992; Homburg leg.; CEMT. – **Bolívar** • 1 spec.; El Manteco; 3 Aug. 2006; curso NM2006 leg.; faeces, 08:28, 32h; CEMT • 1 spec.; **s**ame locality data as for the preceding; 4 Aug. 2006; curso NM2006 leg.; faeces, 07:34, 23h; CEMT. – **Táchira** • 2 specs; Libertador, San Joaquín de Navay; 7.6622° N, 71.7104° W; 200 m a.s.l.; Aug. 2006; T. Good leg.; CEMT. – **Yaracuy** • 2 specs; Bolívar, Aroa; 10°0′0″ N, 68°0′0″ W; 1376 m a.s.l.; 20 Jul. 2009; M. Asmüssen, P. Colmenares and H. Martínez leg.; human faeces; CEMT. – **Zulia** • 1 spec.; Rosario de Perijá; 18 Jul. 2006; curso de NM2006 leg.; faeces, 13:40, 25h; CEMT • 1 spec.; same data as for preceding except for the time; 13:47; CEMT.

**Distribution**

Panama, Colombia, and Venezuela.

**Subregions of Venezuela**

Maracaibo Depression, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, Andes mountains, and Central Coast Mountain Range.

**Literature records**

Zunino & Halffter 1997: 163 (Venezuela: Zulia). — Pulido-Herrera & Zunino 2007: 107 (Venezuela).

***Onthophagus marginicollis*** Harold, 1880
Fig. 61A

*Onthophagus marginicollis* Harold, 1880: 31 (original description). Type locality: Colombia: Tolima: Ambalema. Name-bearing type: syntypes (MNHN), examined by FZVM.

*Onthophagus marginicollis* – Gillet 1911b: 207 (catalogue). — Gillet & Boucomont 1927: 207 (catalogue). — Boucomont 1932: 303, 327 (key, distribution). — Blackwelder 1944: 211 (checklist). — Roze 1955: 46 (checklist for Venezuela). — Vulcano & Pereira 1967: 563 (key). — Blanco 1988: 46–47 (catalogue). — Escobar 1997: 423 (diversity). — Zunino & Halffter 1997: 161 (list). — Amézquita *et al.* 1999: 119 (biodiversity). — Vaz-de-Mello 2000: 194: (checklist for Brazil). — Medina *et al.* 2001: 139 (checklist for Colombia). — Kohlmann & Solís 2001: 214 (revision for Costa Rica). — Pulido-Herrera & Zunino 2007: 108 (catalogue). — Larsen *et al.* 2008: 1294 (list). — Lozano 2010: 86 (list). — Krajcik 2012: 182 (checklist). — Ferrer-Paris *et al.* 2013: 109 (list). — Ratcliffe *et al.* 2015: 195 (checklist for Peru). — Rossini *et al.* 2018b: 9, 11 (list of species of the *hircus* complex, Fig. 3c). — Delgado & Curoe 2014: 65 (key, cited for Panama). — Hielkema & Hielkema 2019: 91 (catalogue for the Guianas).

*Onthophagus* (*Onthophagus*) *marginicollis* – Chamorro *et al.* 2018: 97 (list); 2019: 192 (catalogue).

**Material examined**

VENEZUELA – **Anzoátegui** • 1 spec.; Anaco; 8 Aug. 1992; Hornburg leg.; CEMT. – **Apure** • 4 specs; San Fernando de Apure; 27 Mar. 1995; Horburg and Krause leg.; CEMT. – **Táchira** • 2 specs; Santo Domingo; 26 Jun. 1989; no collector; CEMT.

**Distribution**

Cuba, Mexico, Guatemala, El Salvador, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Guyana, Brazil, Ecuador, Peru, and Bolivia.

**Subregions of Venezuela**

Coastal island, Maracaibo Depression, Plains, System of hills and low sierras Lara-Falcón, System of hills and low piedmont mountains of the Guiana Shield, Serrania de Perija, Central Coast Mountain Range, Oriental Coast Range, and Guiana Shield.

**Literature records**

Boucomont 1932: 327 (Venezuela). — Balthasar 1941: 352 (Venezuela); 1951: 337 (Venezuela). — Roze 1955: 46 (Venezuela: Isla Margarita and Sucre). — Blanco 1988: 46–47 (Venezuela: Táchira). — Pulido-Herrera & Zunino 2007: 108 (Venezuela). — Larsen *et al.* 2008: 1294 (Venezuela: Bolívar). — Lozano 2010: 86 (Venezuela: Zulia). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Aragua [Guárico]: Altagracia de Orituco; Bolívar: Isla de Anacoco; Miranda: Altos de Pipe; Yaracuy: Hacienda Guáquira and Zulia: Rosario de Perijá). — Chamorro *et al.* 2019: 192 (Venezuela).

### ***Onthophagus osculatii*** Guérin-Méneville, 1855
Fig. 61B

*Ontophagus* [sic] *osculatii* Guérin-Méneville, 1855: 589 (original description). Type locality: Brazil: Amazonas: Manicoré, BR-319 highway, Km 350, 05°12′56.4″ S, 61°50′22.6″ W. Name-bearing type: neotype (RBINS), designated by Rossini *et al.* (2018a), not examined.

*Onthophagus osculatii* – Harold 1869d: 1034 (catalogue); 1880: 30 (comments). — Gillet & Boucomont 1927: 207 (catalogue). — Boucomont 1932: 305 (synopsis). — Balthasar 1941: 352 (list); 1951: 338 (list). — Blackwelder 1944: 212 (list). — Vulcano & Pereira 1967: 564 (synopsis). — Martínez 1987: 69 (distribution). — Zunino & Halffter 1997: 161 (classification). — Escobar 2000: 209 (checklist for Colombia). — Medina *et al.* 2001: 140 (checklist for Colombia). — Pulido-Herrera & Zunino 2007: 112 (catalogue). — Hamel-Leigue *et al.* 2008: 43 (diversity). — Medina & Pulido-Herrera 2009: 61 (diversity). — Ratcliffe *et al.* 2015: (list for Peru). — Silva *et al.* 2017: 490

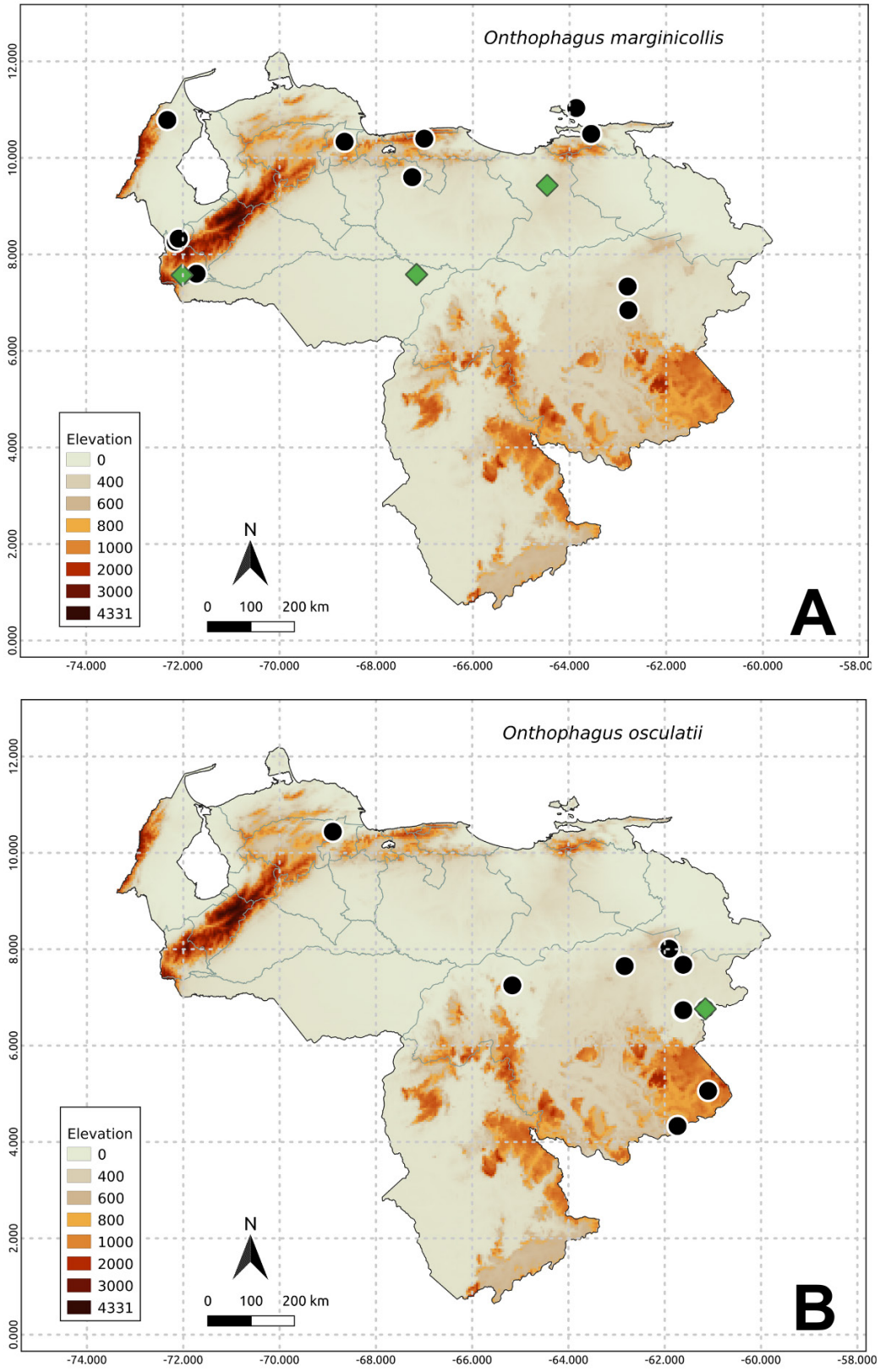


**Fig. 61.** Species distribution. **A**. *Onthophagus marginicollis* Harold, 1880. **B**. *Onthophagus osculatii* Guérin-Méneville, 1855. Green diamond = CEMT collection data; black circle = literature data.

(list). — Rossini *et al.* 2018a: 553 (revision, designation of neotype); 2018b: 10 (list of species of the osculatii complex). — Hielkema & Hielkema 2019: 92 (catalogue for Guianas). — Storck-Tonon *et al.* 2020: 2426, 2432 (biodiversity).

*Onthophagus* (*Onthophagus*) *osculatii* – Vaz-de-Mello 2000: 194 (checklist for Brazil). — Chamorro *et al.* 2018: 97 (cited for Ecuador); 2019: 195 (catalogue for Ecuador).

**Material examined**

VENEZUELA – **Bolívar** • 1 ♂; Isla de Anacoco; 09 Aug. 2005; no collector; CEMT.

**Distribution**

Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, Ecuador, Peru, and Bolivia (Rossini *et al.* 2018a).

**Subregions of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, Central Coast Mountain Range, and Guiana Shield.

**Literature records**

Rossini *et al.* 2018a: 553 (Venezuela: Bolívar and Yaracuy). — Storck-Tonon *et al.* 2020: 2426, 2432 (Venezuela).

***Onthophagus rhinophyllus*** Harold, 1868
Fig. 62A

*Onthophagus rhinophyllus* Harold, 1868e: 84 (original description). Type locality: Venezuela. Name-bearing type: a single known syntype (MNHN), examined by FZVM.

*Onthophagus rhinophyllus* – Harold 1869c (cited); 1880: 31 (comments). — Candèze 1891: 330 (list). — Gillet & Boucomont 1927: 208 (catalogue). — Boucomont 1932: 299 (synopsis, key). — Blackwelder 1944: 212 (list, cited for Colombia). — Roze 1955: 46 (cited, checklist for Colombia). — Medina *et al.* 2001: 140 (checklist for Colombia). — Delgado *et al.* 2006: 6 (comments); 2012: 327 (list). — Pulido-Herrera & Zunino 2007: 114 (catalogue). — Ferrer-Paris *et al.* 2013: 108 (list). — Ratcliffe *et al.* 2015: (list for Peru). — Hielkema & Hielkema 2019: 92 (catalogue for the Guianas).

**Material examined**

VENEZUELA – **Aragua** • 1 spec.; Coyagua; 50 m a.s.l.; 6 Jul. 2004; D García leg.; CEMT. – **Yaracuy** • 4 specs; Bolívar, Aroa; 10°23′11.9″ N, 68°50′49.41″ W; 1380 m a.s.l.; 19 Jul. 2009; M. Asmüssen, P. Colmenares and H. Martínez leg.; human faeces; CEMT • 1 spec.; Bolívar, Aroa; 10°0′0″ N, 68°0′0″ W [incorrect coordinates]; 710 m; 19 Jul. 2009; M. Asmüssen, P. Colmenares and H. Martínez leg.; human faeces; CEMT.

**Distribution**

Colombia, Venezuela, and Peru.

**Subregions of Venezuela**

System of hills and low sierras Lara-Falcón, Central Coast Mountain Range, and Guiana Shield.

**Literature records**

Harold 1868e: 84 (Venezuela). — Candèze 1891 (Venezuela: Carabobo: San-Esteban). — Gillet & Boucomont 1927: 208 (Venezuela). — Boucomont 1932: 329 (Venezuela). — Blackwelder 1944: 212 (Venezuela). — Delgado *et al.* 2006: 6 (Venezuela). — Pulido-Herrera & Zunino 2007: 114 (Venezuela). — Ferrer-Paris *et al.* 2013: 109 (Bolívar: Isla de Anacoco; Miranda: Altos de Pipe and Yaracuy: Hacienda Guáquira).

***Onthophagus transisthmius*** Howden & Young, 1981
Fig. 62B

*Onthophagus transisthmius* Howden & Young, 1981: 106 (original description). Type locality: Panama: Colón: Colón: Gamboa. Name-bearing type: holotype (USNM), not examined.

*Onthophagus* (*Onthophagus*) *transisthmius* — Zunino & Halffter 1997: 161 (list). — Escobar 2000: 209 (list for Colombia). — Medina *et al.* 2001: 140 (checklist for Colombia). — Ratcliffe 2002: 17 (checklist for Panama). — Pulido-Herrera & Zunino 2007: 117 (catalogue). — Delgado & Curoe 2014: 65 (key, cited for Panama). — Chamorro *et al.* 2018: 97 (cited for Ecuador). — Rossini *et al.* 2018a: 547, 552–553, 563–564, figs 2a–d, h–i, 5 (key, diagnosis, redescription, remark); 2018b: 10 (*osculatii* complex). — Chamorro *et al.* 2019: 198 (catalogue).

**Distribution**

Panama, Colombia, Venezuela, Ecuador, Peru, and Bolivia.

**Subregions of Venezuela**

Plains, Serrania de Perija, and Andes mountains.

**Literature records**

Rossini *et al.* 2018a: 552, 563 (Venezuela: Táchira, Portuguesa and Zulia); 2018b: 11 (two species reaching eastern Amazonia). — Chamorro *et al.* 2019: 198 (Venezuela).

Genus ***Oxysternon*** Castelnau, 1840

*Copris* (*Sternaspis*) Hope, 1837: 52 (original description), permanently invalid for being a junior homonym of *Sternaspis* Otto, 1821 (Annelidae: Polychaeta). Type species: *Scarabaeus festivus* Linnaeus, 1767, by subsequent designation of Edmonds (1972).

*Oxysternon* Castelnau, 1840: 82 (original description). Type species: *Scarabaeus festivus* Linnaeus, 1767, by subsequent designation of Martínez & Pereira (1967: 69). Note: although Edmonds (1972: 838) indicated that he was the first to fix a type species for *Oxysternon* – something repeated later in Edmonds & Zídek (2004: 3) –, the first authors to cite *S. festivus* as the type species of *Oxysternon* were actually Martínez & Pereira (1967), who said "El género *Strombodes* Gistl. 1857, tiene como tipo el ***Scarabaeus festivus*** **Linnaeus, que es a su vez el tipo de *Oxysternon* Castelnau, 1840**" (our bold). Following Article 69.1.1 of the Code (ICZN 1999), we interpret Martínez & Pereira's statement as a subsequent type species designation for *Oxysternon*. By preceding Edmonds' by five years, Martínez & Pereira's designation takes precedence and is the valid type species fixation.

*Oxysternum* Agassiz, 1846: 268 (unjustified emendation of *Oxysternon* Castelnau). Type species: *Scarabaeus festivus* Linnaeus, 1767, in accordance with Articles 33.2.3 and 67.8 of the Code (ICZN 1999).

*Strombodes* Gistel, 1857: 602 (original description), permanently invalid for being a junior homonym of *Strombodes* Schweigger, 1819 (Cnidaria: Anthozoa: Chonophyllidae). Type species: *Scarabaeus festivus* Linnaeus, 1767, by original designation.

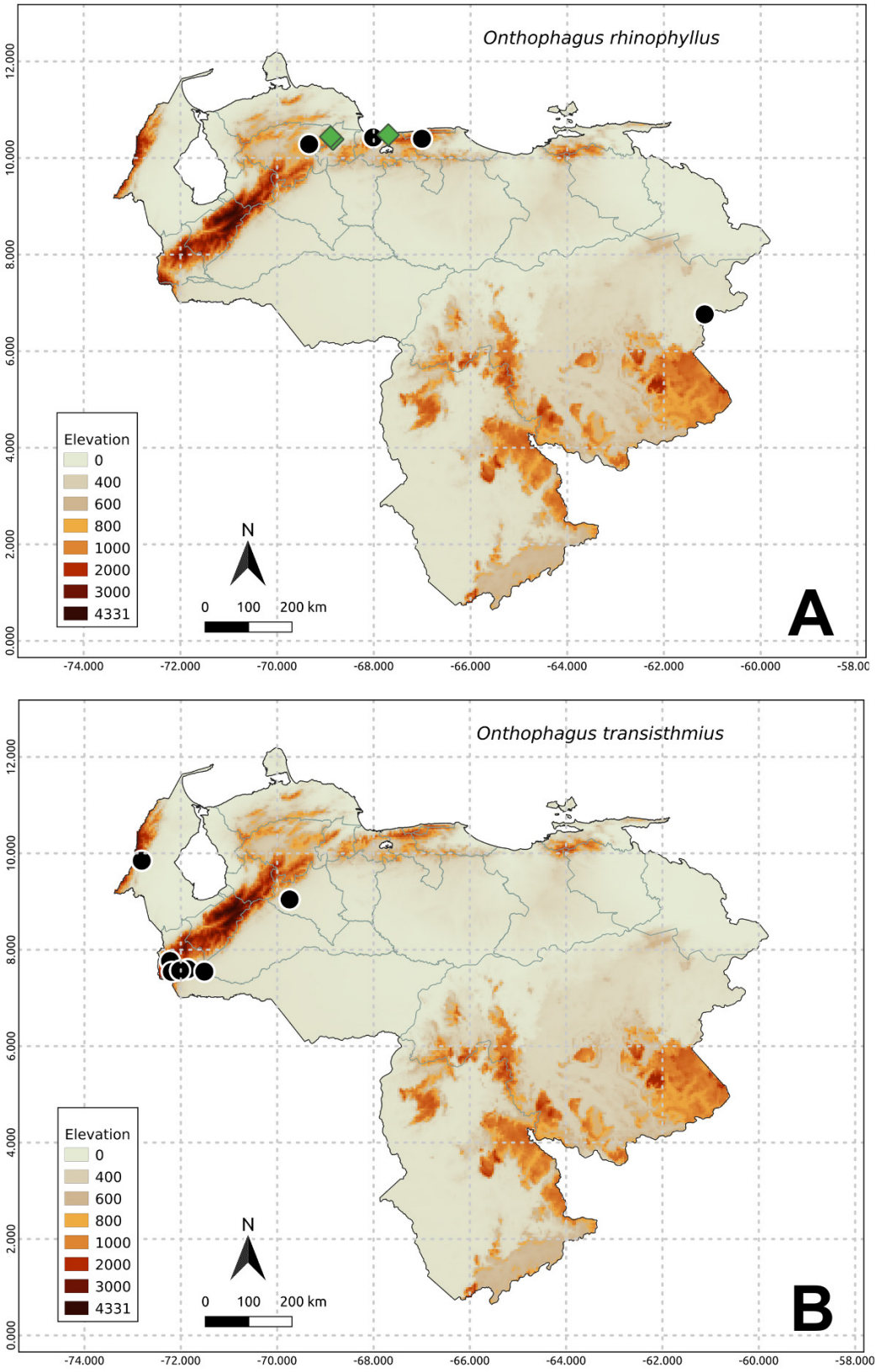


**Fig. 62.** Species distribution. **A**. *Onthophagus rhinophyllus* Harold, 1868. **B**. *Onthophagus transisthmius* Howden & Young, 1981. Green diamond = CEMT collection data; black circle = literature data.

*Gisteliodes* Strand, 1916: 97 (new replacement name for *Strombodes* Gistel). Type species: *Scarabaeus festivus* Linnaeus, 1767, in accordance with Article 67.8 of the Code (ICZN 1999).

*Sternaspis* – Agassiz 1846: 1018 (catalogue). — Lacordaire 1855: 100 (synonym of *Oxysternon*). — Gillet 1911b: 87 (cited as synonym of *Oxysternon*). — Lucas 1920: 612 (cited as synonym of *Oxysternon*). — d'Olsoufieff 1924: 156 (cited as *Sternaspsis,* cited as synonym of *Oxysternon*). — Pessôa & Lane 1941: 486 (cited as synonym of *Oxysternon*). — Blackwelder 1944: 210 (cited as synonym of *Oxysternon*). — Edmonds & Zídek 2004: 3 (synonym of *Oxysternon*). — Vítolo 2004: 287 (cited as synonym of *Oxysternon*). — Solís & Kohlmann 2012: 7 (cited as synonym of *Oxysternon*). — Figueroa *et al.* 2014: 130 (cited as synonym of *Oxysternon*).

*Oxysternon* – Nevinson 1892: 8 (catalog, distribution). — Gillet 1911b: 87 (catalog, distribution). — Lucas 1920: 471 (catalog, distribution). — d'Olsoufieff 1924: 18, 111, 157 (key, redescription, distribution). — Pessôa & Lane 1941: 470 (key). — Blackwelder 1944: 210 (list). — Halffter & Matthews 1966: 258 (catalog, distribution). — Vulcano & Pereira 1967: 566 (key). — Edmonds 1972: 820, 835 (key, redescription). — Howden & Young 1981: 11, 146 (key, redescription). — Halffter & Edmonds 1982: 136 (catalog, distribution); 1994: 17 (key). — Zunino 1985: 104 (comments). — Gámez & Mora 2000: 17 (list). — Medina & Lopera-Toro 2000: 303 (key). — Vítolo 2000: 595 (key); 2004: 287 (diagnosis). — Vaz-de-Mello 2000: 194 (checklist for Brazil). — Medina *et al.* 2001: 140 (list of species from Colombia). — Arnaud 2002a: 13, 61 (key, diagnosis). — Ratcliffe 2002: 16 (checklist for Panama). — Edmonds & Zídek 2004: 3 (revision). — Philips *et al.* 2004b: 50 (comments). — Hamel-Leigue *et al.* 2006: 17 (list for Bolivia); 2009: 62 (distribution for Bolivia). — Vaz-de-Mello *et al.* 2011a: 24 (key). — Carvajal *et al.* 2011: 140, 322 (diagnosis, list). — Solís & Kohlmann 2012: 7 (checklist for Costa Rica). — Krajcik 2012: 191 (list). — Boilly & Vaz-de-Mello 2013: 107 (key). — Figueroa *et al.* 2014: 130 (distribution for Peru). — Boilly *et al.* 2016: 89, 95 (key, list, comments). — Chamorro *et al.* 2018: 75, 97 (list for Ecuador); 2019: 201 (catalogue). — Hielkema & Hielkema 2019: 101 (catalogue for the Guianas).

*Strombodes* – Martínez & Pereira 1967: 69 (synonym of *Oxysternon*, comments). — Edmonds & Zídek 2004: 3 (synonym of *Oxysternon*). — Vítolo 2004: 287 (synonym of *Oxysternon*). — Solís & Kohlmann 2012: 7 (synonym of *Oxysternon*). — Figueroa *et al.* 2014: 130 (cited as synonym of *Oxysternon*).

### ***Oxysternon conspicillatum*** (Weber, 1801)
Fig. 63A

*Copris conspicillata* Weber, 1801: 36 (original description). Type locality: Brazil. Name-bearing type: unknown typification status and whereabouts (Edmonds & Zídek 2004).

*Oxysternon oberthuri* d'Olsoufieff, 1924: 114 (original description). Type locality: Bolivia. Name-bearing type: lectotype (MNHN), designated by Arnaud (1982), not examined.

*Copris conspicillatus* – Fabricius 1801: 32 (redescription). — Schönherr 1806: 35 (cited). — Hope 1837: 51 (comment).

*Phanaeus conspicillatus* – MacLeay 1819: 132 (transferred to *Phanaeus*). — Erichson 1847a: 107 (redescription). — Harold 1869d: 1017 (list, distribution); 1880: 28 (distribution for Colombia).

*Oxysternon conspicillatum* – Nevinson 1892: 8 (transferred to *Oxysternon*). — Gillet 1911a: 87 (list). — d'Olsoufieff 1924: 47, 113 (key, redescription, distribution). — Balthasar 1941: 351 (cited for Peru); 1951: 337 (cited for Peru). — Pessôa & Lane 1941: 486–487 (key, comment). — Blackwelder 1944: 210 (list). — Guérin 1953: 261 (diagnosis). — Vulcano & Pereira 1967: 568 (key). — Howden & Young 1981: 146 (key, redescription). — Blanco 1988: 45 (catalogue). — Vítolo 2000: 599 (key). — Medina *et al.* 2001: 140 (cited for Colombia). — Ratcliffe 2002: 16 (cited for Panama). — Gámez

2004: 48, 59 (cited, comment). — Gámez *et al.* 2006: 102 (cited). — Krajcik 2012: 191 (list). — Gámez & Acconcia 2018: 65, 73 (cited, key). — Ratcliffe *et al.* 2015: 197 (cited for Peru).

*Copris conspicillatum* – Howden & Young 1981: 146 (cited).

*Oxysternon* (*Oxysternon*) *conspicillatum conspicillatum* – Vaz-de-Mello 2000: 194 (checklist). — Arnaud 2002b: 68 (diagnosis). — Hamel-Leigue *et al.* 2006: 17 (cites for Bolivia). — Carvajal *et al.* 2011: 322–323 (cited for Ecuador).

*Oxysternon* (*Oxysternon*) *conspicillatum* – Arnaud 2002a: 67 (diagnosis). — Edmonds & Zídek 2004: 10, 18 (key, diagnosis, distribution). — Vítolo 2004: 287 (diagnosis). — Hamel-Leigue *et al.* 2009: 62 (distributional for Bolivia). — Vaz-de-Mello *et al.* 2011: 64 (cited, fig.137). — Figueroa *et al.* 2014: 131–132 (distribution for Peru). — Chamorro *et al.* 2018: 83–84, 97 (key, cited for Ecuador); 2019: 205 (catalogue). — Hielkema & Hielkema 2019: 102 (cited).

**Distribution**

Panama, Colombia, Venezuela, Brazil, Ecuador, Peru, and Bolivia.

**Subregion of Venezuela:** Maracaibo Depression, Llanos, Peneplain of the Casiquiare River–Upper Orinoco, Andes mountains, and Guiana Shield**.**

**Literature records**

Howden & Young 1981: 146 (Venezuela). — Blanco 1988: 44–45 (Venezuela: Táchira). — Edmonds & Zídek 2004: 21 (Venezuela: Amazonas: Cerro de la Neblina, Río Mawarinuma; Bolívar: km 40 Santa Elena-Icabarú road, Santa Elena; Mérida: Mérida; Táchira: Palo Gordo, Paramillo, Gallardín, San Cristóbal). — Gámez 2004: 48, 59 (Venezuela: Mérida: Guaraque: Mesa de Quintero, Pinto Salinas: hacienda Santa Ana, sector El Chiquero, Braque del Barro, Padre Noguera: sector cuenca del río Caparo: bosque intervenido; Barinas: Ezequiel Zamora: Paso Real, and Barinitas: Miraflores, quebrada Miraflores). — Gámez *et al.* 2006: 102 (Venezuela: Mérida). — Gámez & Acconcia 2018: 65, 73 (Venezuela: Barinas). — Chamorro *et al.* 2019: 205 (Venezuela). — Hielkema & Hielkema 2019: 102 (Venezuela).

***Oxysternon ebeninum*** Nevinson, 1890
Fig. 63B

*Phanaeus ebeninum* Nevinson, 1890: 315 (original description). Type locality: French Guiana. Name-bearing type: lectotype (MNHN), designated by Arnaud (1982), not examined.

*Oxysternon ebeninum* – d'Olsoufieff 1924: 47, 115, 157 (key). — Martínez & Clavijo 1990: 153 (comments). — Gillet 1911b: 87 (catalogue). — Blackwelder 1944: 2010 (list, cited for Guiana). — Vulcano & Pereira 1967: 568 (key, distribution). — Arnaud 1982: 115 (list of MNHN types). — Escobar 2000: 209 (checklist for Colombia). — Vítolo 2000: 597 (key); 2004: 287 (diagnosis, distribution). — Medina *et al.* 2001: 140 (checklist for Colombia). — Medina & Pulido-Herrera 2009: 61 (distribution). — Ferrer-Paris *et al.* 2022: 231–236 (distribution).

*Oxysternon* (*Oxysternon*) *ebeninum* – Gámez & Mora 2000: 17 (list). — Vaz-de-Mello 2000: 194 (checklist for Brazil). — Arnaud 2002b: 67 (key). — Edmonds & Zídek 2004: 10 (key, characteristics, diagnosis, distribution). — Gámez 2004: 57 (list). — Pacheco & Vaz-de-Mello 2015: 2–3, 5, 7 (list, key). — Hielkema & Hielkema 2019: 103 (catalogue for the Guianas).

**Material examined**

VENEZUELA – **Amazonas** • 2 specs; Atabapo, Cano Piojo; 130 m a.s.l.; Apr. 2006; D.G. Fagre leg.; CEMT • 2 specs; Caño Piojo; Apr. 2006; D. García leg.; CEMT.

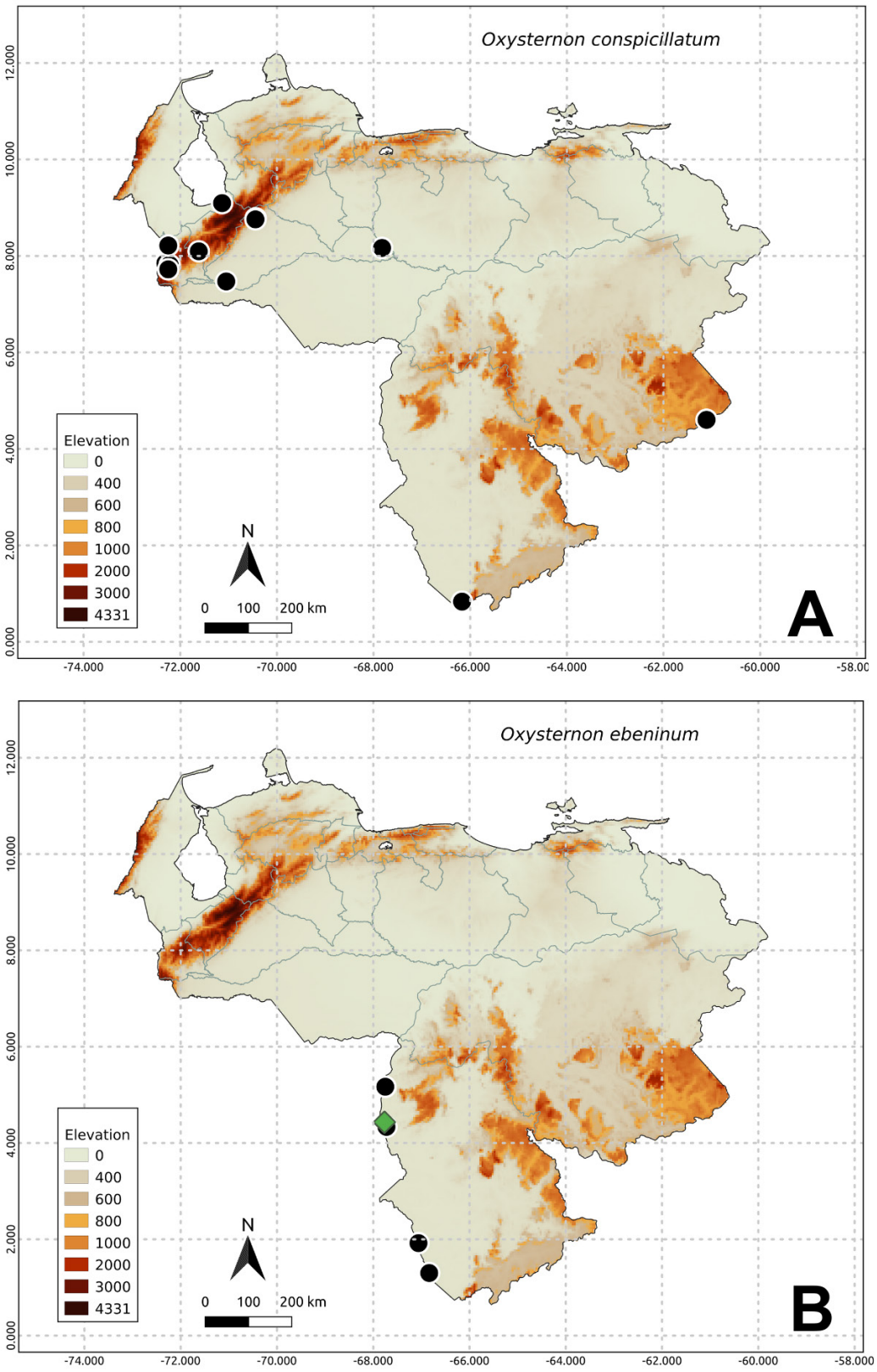


**Fig. 63.** Species distribution. **A**. *Oxysternon conspicillatum* (Weber, 1801). **B**. *Oxysternon ebeninum* Nevinson, 1890. Green diamond = CEMT collection data; black circle = literature data.

**Distribution**

Colombia, Venezuela, and Brazil. Possibly also in French Guiana (Hielkema & Hielkema 2019).

**Subregion of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco.

**Literature records**

Martínez & Clavijo 1990: 7 (Venezuela: Amazonas). — Gámez & Mora 2000: 17 (Venezuela). — Arnaud 2002b: 67 (Venezuela: Amazonas). — Edmonds & Zídek 2004: 10, 25 (Venezuela: Amazonas). — Gámez 2004: 57 (Venezuela). — Vítolo 2004: 287 (Venezuela). — Ferrer-Paris *et al.* 2022: 231–236 (Venezuela: Amazonas).

***Oxysternon festivum festivum*** (Linnaeus, 1758)
Fig. 64A

*Scarabaeus festivus* Linnaeus, 1758: 350 (original description). Type locality: Suriname. Name-bearing type: lectotype (unknown whereabouts), designated by Hielkema (2017) from a female collected by Daniel Rolander and illustrated in De Geer (1774: pl. 18 fig. 15), not the male specimen of unknown collector designated by Edmonds & Zídek (2004) from an illustration depicted in Rösel (1749: pl. Scarabaeorum Terrestrium Praef. Classis I, tab. B, fig. 8) (see Hielkema 2017). Note: although Linnaeus (1758) stated that *Scarabaeus festivus* originates generically from the New World ("Habitat in America"), the name of the collector he mentioned, Rolander, allows us to pinpoint the precise country where the type series was caught. The Swedish naturalist Daniel Rolander (1722–1793) was one of the so-called Apostles of Linnaeus, a group of Linnaeus's pupils who set off across the globe in search of specimens for their teacher's systematic investigations (Dobreff 2010). Linnaeus (1758) informed in the "Ratio Editionis" opening the 10th edition of his *Systema Naturae* that the Rolander material he was going to describe came from two places, Suriname and the Lesser Antillean island of Sint Eustatius. Indeed, these were the only places visited by Rolander in the sole time he went to the Americas, between 1755 and 1756 (Papavero 1971; Dobreff 2010). As *Oxysternon festivus* is not found in the Lesser Antilles, Rolander's series must have been caught in Suriname, where the species is known to occur and be abundant (Edmonds & Zídek 2004; Hielkema & Hielkema 2019). If still needed, this is further confirmed by De Geer (1774: 316), who, writing from the very same material collected by Rolander and studied by Linnaeus, a single female eventually designated as the lectotype by Hielkema (2017), expressly stated that the species lived in Suriname. There is no room for doubt, therefore, that the former Dutch colony is the type locality. As for the status of the De Geer female as the lectotype, it seems to us that it would be more properly regarded as the holotype by monotypy, for Hielkema (2017) himself provided compelling evidence that it was the sole specimen available to Linnaeus for the original description. Whether a lectotype or a holotype, however, it is undoubtedly the name-bearing type, and the kind of typification is of little practical relevance.

*Phanaeus hilaris* MacLeay, 1819: 131 (original description). Type locality: Guyana. Name-bearing type: lectotype (MAMU), designated by Edmonds & Zídek (2004), not examined.

*Scarabaeus festivus* – Linnaeus 1767: 552 (cited). — MacLeay 1819: 131 (cited).

*Phanaeus festivus* – MacLeay 1819: 131 (redescription). — Erichson 1848: 564 (cited for Guyana). — Heyne & Taschenberg 1908: 68 (list). — Bodkin 1919: 213 (cited for Guyana).

*Oxysternon festivum* var. *hilaris* – Nevinson 1892: 8 (list).

*Oxysternon festivum* – Gillet 1911b: 87 (catalogue). — d'Olsoufieff 1924: 112 (diagnosis, distribution). — Blackwelder 1944: 210 (list, distribution). — Martínez & Clavijo 1990: 155 (comments). — Forsyth & Gill 1993: 70 (list). — Feer 2000: 32 (list for French Guiana); 2008: 54, 56, 62 (ecology); 2013:

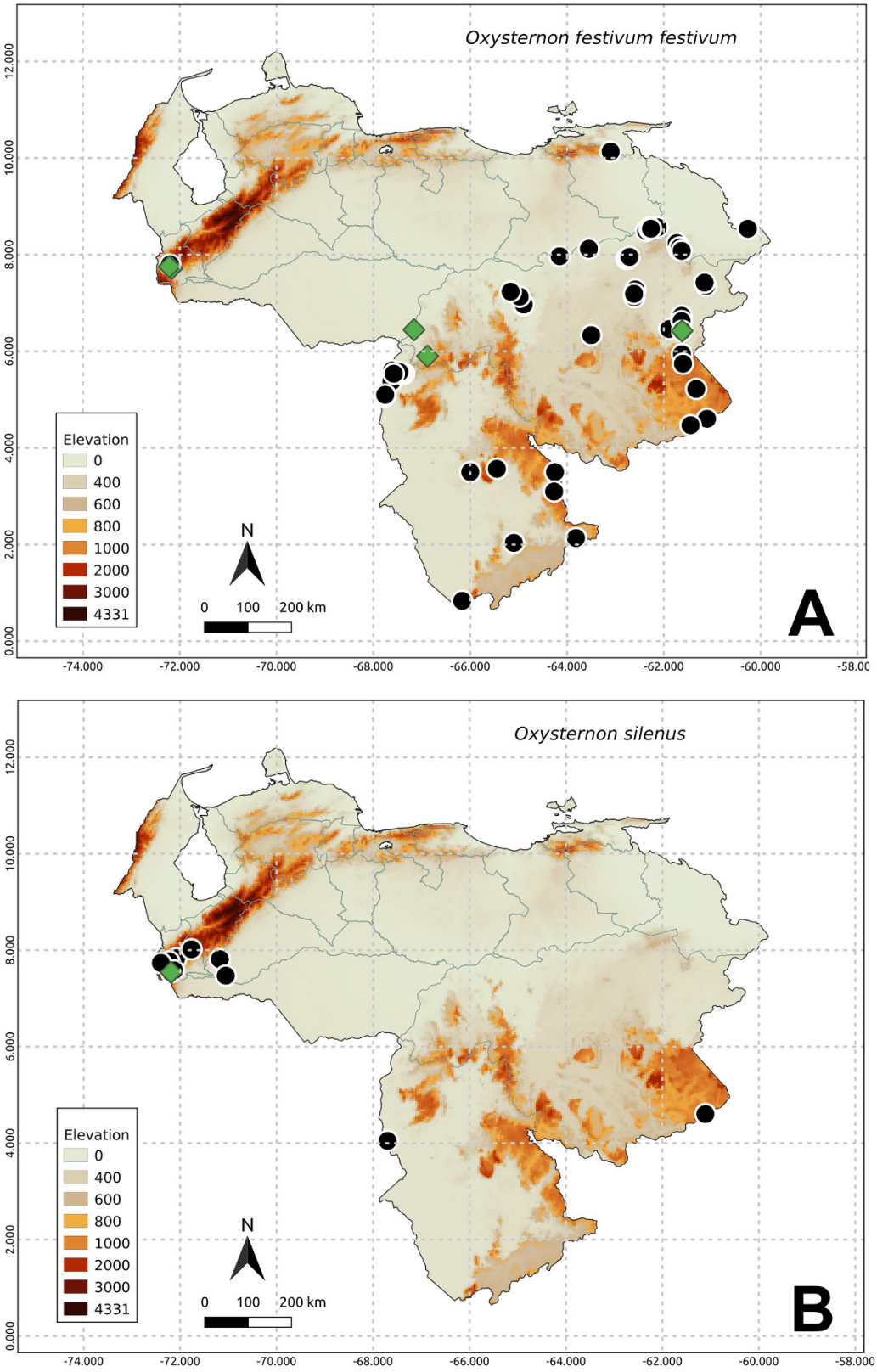


**Fig. 64.** Species distribution. **A**. *Oxysternon festivum festivum* (Linnaeus, 1758). **B**. *Oxysternon silenus* Castelnau, 1840. Green diamond = CEMT collection data; black circle = literature data.

767 (list for French Guiana); 2016: 527–538 (conservation). — Vítolo 2000: 597 (key); 2004: 288 (diagnosis, distribution). — Medina *et al.* 2001: 140 (checklist for Colombia). — Larsen *et al.* 2008: 1294 (ecology, list). — Feer & Pincebourde 2005: 30 (ecology, list). — Quintero & Roslin 2005: appendix A (ecology). — Medina & Pulido-Herrera 2009: 61 (diversity). — Brûlé *et al.* 2011b: 121; 2014: 183 (list for Montagne Pelée). — Larsen 2011: 99 (ecology, list for Suriname); 2013: 97 (list for Suriname). — Price & Feer 2012: 327 (list). — Ferrer-Paris *et al.* 2013: 110 (list). — Bicknell *et al.* 2014: table S1 (ecology). — Feer & Boissier 2015: 169 (list). — Boilly *et al.* 2016: 90 (key).

*Oxysternon* (*Oxysternon*) *festivum* – Gámez & Mora 2000: 17 (list). — Arnaud 2002b: 71 (key). — Edmonds & Zídek 2004: 12 (revision, diagnosis). — Hielkema 2017: 4 (designation of lectotype *Scarabaeus festivus*).

*Oxysternon* (*Oxysternon*) *festivum festivum* – Vaz-de-Mello 2000: 194 (checklist for Brazil). — Arnaud 2002b: 71 (key, distribution). — Edmonds & Zídek 2004: 13 (key). — Boilly *et al.* 2016: 95 (list, comments).

**Material examined**

VENEZUELA – **Bolívar** • 1 specimen; Río Parguaza; 100 m; 15 May 2004; D. García leg.; CEMT. – **Táchira** • 3 specs; San Cristóbal; Sep. 1994; CEMT.

**Distribution**

Colombia, Venezuela, Guyana, Suriname, French Guiana, and Brazil.

**Subregions of Venezuela**

Plains, Delta plain of the Orinoco River and coastal swamp of the San Juan River, Peneplain of the Caura and Paragua rivers, Peneplain of the Casiquiare River–Upper Orinoco, System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, Andes mountains, and Guiana Shield.

**Literature records**

Gámez & Mora 2000: 17 (Venezuela). — Edmonds & Zídek 2004: 10, 12 (Venezuela: Amazonas, Bolívar, Delta Amacuro and Monagas). — Ferrer-Paris *et al*. 2013: 110 (list).

***Oxysternon silenus*** Castelnau, 1840
Fig. 64B

*Oxysternon silenus* Castelnau, 1840: 82 (original description). Type locality: French Guiana. Name-bearing type: lectotype (MVMA), designated by Edmonds & Zídek (2004), not examined.

*Oxysternon aeneum* d'Olsoufieff, 1924: 118 (original description). Type locality: Brazil: Goiás: Jataí. Name-bearing type: lectotype (MNHN), designated by Arnaud (1982), not examined.

*Oxysternon smaragdinum* d'Olsoufieff, 1924: 117 (original description). Type locality: Ecuador: Loja. Name-bearing type: lectotype (MNHN), designated by Arnaud (1982), not examined.

*Oxysternon sericeum* d'Olsoufieff, 1924: 117 (original description). Type locality: Bolivia: Cochabamba. Name-bearing type: lectotype (MNHN), designated by Arnaud (1982), not examined.

*Oxysternon zikani* Pereira, 1943: 109 (original description). Type locality: Brazil: Amazonas: Beruri: Arumã. Name-bearing type: holotype (MZSP), not examined.

*Oxysternon zikani peruanus* Pereira, 1943: 114 (original description). Type locality: Peru: Junín: Huancayo. Name-bearing type: holotype (MZSP), not examined.

*Oxysternon* (*Oxysternon*) *silenus dufouri* Arnaud, 2001: 2 (original description). Type locality: Peru: Huánuco: Leoncio Prado: Rupa-Rupa: Tingo-María. Name-bearing type: holotype (CPFA), not examined.

*Oxysternon* (*Oxysternon*) *silenus jossi* Arnaud, 2001: 3 (original description). Type locality: Brazil: Pará: Santarém. Name-bearing type: holotype (CPFA), not examined.

*Oxysternon silenus chicheryi* Arnaud, 2001: 4 (original description). Type locality: Brazil: Roraima: at the confluence of the Rio Negro and the Rio Branco. Name-bearing type: holotype (CPFA), not examined.

*Oxysternon silenus zagurii* Arnaud, 2001: 3 (original description). Type locality: Brazil: Pará: Tocantins River. Name-bearing type: holotype (CPFA), not examined.

*Oxysternon silenus* – d'Olsoufieff 1924: 112 (characteristics, distribution). — Blackwelder 1944: 210 (list, distribution). — Forsyth *et al.* 1998: 371 (conservation, list). — Escobar 2000: 209 (checklist for Colombia). — Vítolo 2000: 599 (key); 2004: 288 (diagnosis, distribution). — Medina *et al.* 2001: 140 (checklist for Colombia). — Noriega *et al.* 2007: 83 (list). — Pulido-Herrera *et al.* 2007: 307 (Andean region of Colombia). — Carpio *et al.* 2009: 469 (ecology). — Hamel-Leigue *et al.* 2009: 63 (distribution). — Medina & Pulido-Herrera 2009: 61 (diversity). — Brûlé *et al.* 2011a: 193 (list, cited for French Guiana); 2011b: 121 (list); 2014: 183 (list for Montagne Pelée). — Larsen 2011: 99 (ecology, list for Suriname). — Feer 2013: 767 (list for French Guiana). — Pardo-Locarno & Camero 2014: 210, 216 (list for Chocó, Colombia). — Feer & Boissier 2015: 169 (list). — Boilly *et al.* 2016: 89 (key). — Silva *et al.* 2016: 7 (ecology, biogeography); 2017: 490 (list). — Santos *et al.* 2018: 46 (list for Acre, Brazil).

*Oxysternon zikani peruanus* – Pereira 1943: 392 (cited as synonym of *O. silenus*). — Edmonds & Zídek 2004: 29 (cited as synonym of *O. silenus*).

*Oxysternon zikani* – Pereira 1953: 392 (cited as synonym of *O. silenus*). — Edmonds & Zídek 2004: 29 (cited as synonym of *O. silenus*). — Solís & Kohlmann 2012: 7 (checklist for Costa Rica, cited as synonym of *O. silenus*).

*Oxysternon smaragdinum* – Arnaud 1982: 117 (list of MNHN types). — Amézquita *et al.* 1999: 119 (biodiversity). — Escobar 2000: 210 (list for Colombia). — Vítolo 2000: 599 (key); 2004: 288 (diagnosis, distribution for Colombia). — Pulido-Herrera *et al.* 2003: 54 (list for Caquetá, Colombia). — Edmonds & Zídek 2004: 29 (cited as synonym of *O. silenus*). — Gámez 2004: 48, 58 (distribution for Venezuela). — Solís & Kohlmann 2012: 7 (checklist for Costa Rica, cited as synonym of *O. silenus*).

*Oxysternon sericeum* – Arnaud 1982: 117 (list of types of MNHN). — Edmonds & Zídek 2004: 29 (designation as synonym of *O. silenus*). — Solís & Kohlmann 2012: 7 (checklist for Costa Rica, cited as synonym of *O. silenus*).

*Oxysternon* (*Oxysternon*) *aeneum* – Gámez & Mora 2000: 17 (list).

*Oxysternon* (*Oxysternon*) *smaragdinum* – Gámez & Mora 2000: 17 (list). — Vaz-de-Mello 2000: 194 (checklist for Brazil).

*Oxysternon* (*Oxysternon*) *silenus* – Arnaud 2001: 2 (designation of neotype). — Edmonds & Zídek 2004: 7, 29 (key, diagnosis, distribution). — Vaz-de-Mello *et al.* 2011b: 89 (list). — Gámez & Acconcia 2018: 71, (comments, distribution). — Chamorro *et al.* 2019: 208 (key). — Hielkema & Hielkema 2019: 104 (catalogue for the Guianas).

*Oxysternon silenus aeneum* – Arnaud 2002b: 76 (key, new combination).

*Oxysternon silenus zikani* – Arnaud 2002b: 76 (key, new combination). — Edmonds & Zídek 2004: 29 (cited as synonym of *O. silenus*).

*Oxysternon silenus smaragdinum* – Arnaud 2002b: 74 (key, new combination). — Kohlmann *et al.* 2007: 33 (checklist).

*Oxysternon silenus peruanus* – Arnaud 2002b: 77 (key, new combination, cited as synonym of *O. silenus*).

*Oxysternon silenus dufouri* – Arnaud 2002b: 77 (key). — Edmonds & Zídek 2004: 30 (cited as synonym of *O. silenus*).

*Oxysternon silenus chicheryi* – Arnaud 2002b: 78 (key, characteristics). — Edmonds & Zídek 2004: 29 (cited as synonym of *O. silenus*).

*Oxysternon silenus jossi* – Arnaud 2002b: 74 (key, characteristics). — Edmonds & Zídek 2004: 30 (cited as synonym of *O. silenus*).
*Oxysternon silenus smaragdinum* – Arnaud 2002b: 74 (key, new combination). — Kohlmann *et al.* 2007: 33 (checklist).
*Oxysternon aeneum* – Edmonds & Zídek 2004: 29 (cited as synonym of *Oxysternon silenus*). — Solís & Kohlmann 2012: 7 (checklist for Costa Rica, cited as synonym of *O. silenus*).
*Oxysternon silenus zagurii* – Edmonds & Zídek 2004: 30 (cited as synonym of *O. silenus*).

**Material examined**

VENEZUELA – **Táchira** • 2 specs; Média Libra, Parque Nacional El Tamá; Sep. 1990; J. Blanco leg.; CEMT.

**Distribution**

Costa Rica, Panama, Colombia, Venezuela, Suriname, French Guiana, Brazil, Ecuador, Peru, and Bolivia.

**Subregions of Venezuela**

Plains, Peneplain of the Casiquiare River–Upper Orinoco, Andes mountains, and Guiana Shield.

**Literature records**

Gámez & Mora 2000: 17 (Venezuela). — Arnaud 2002b: 74 (Venezuela). — Edmonds & Zídek 2004: 7, 29 (Venezuela: Amazonas, Bolívar, Barinas and Táchira). — Gámez 2004: 48, 58 (Cordillera de Los Andes subregion). — Hamel-Leigue *et al*. 2009: 63 (Venezuela). — Gámez & Acconcia 2018: 71, 73 (Venezuela: Barinas). — Chamorro *et al*. 2019: 208, 213, 217–218, 225 (Venezuela).

***Oxysternon spiniferum*** Castelnau, 1840
Fig. 65A

*Oxysternon spiniferum* Castelnau, 1840: 83 (original description). Type locality: Guyana. Name-bearing type: neotype (MNHN), designated by Arnaud (2003), not examined.
*Oxysternon curvispinum* d'Olsoufieff, 1924: 119 (original description). Type locality: Ecuador: Loja. Name-bearing type: lectotype (MNHN), designated by Arnaud (1982), not examined.

*Oxysternon spiniferum* – d'Olsoufieff 1924: 119, 135, 159 (cited for French Guiana). — Gillet 1911b: 87 (catalogue). — Blackwelder 1944: 210 (list, distribution). — Medina *et al.* 2001: 140 (checklist for Colombia). — Vítolo 2000: 597 (key); 2004: 289 (diagnosis, distribution). — Hamel-Leigue *et al.* 2008: 43 (diversity); 2009: 50, 64 (distribution for Bolivia). — Medina & Pulido-Herrera 2009: 61 (diversity). — Brûlé *et al.* 2011a: 193 (list, cited for French Guiana). — Krajcik 2012: 191 (catalogue). — Feer 2013: 767 (list for French Guiana). — Ratcliffe *et al.* 2015: 197 (checklist for Peru). — Boilly *et al.* 2016: 89, 95 (key, comments).
*Oxysternon curvispinum* – Pessôa & Lane 1941: 486 (key, diagnosis). — Blackwelder 1944: 210 (list). — Vulcano & Pereira 1967: 570 (key). — Arnaud 1982: 117 (list of types of MNHN). — Hamel-Leigue *et al.* 2009: 64 (cited). — Figueroa *et al.* 2014: 130 (cited).
*Oxysternon* (*Mioxysternon*) *spiniferum* – Arnaud 2002b: 62, 65 (key, diagnosis). — Edmonds & Zídek 2004: 10, 35 (key, diagnosis). — Vítolo 2004: 289 (diagnosis). — Figueroa *et al.* 2014: 130 (distribution for Peru). — Pacheco & Vaz-de-Mello 2015: 7 (key). — Boilly *et al.* 2016: 89, 92, 95 (key, characteristics, fig. 19a–c, cited for Guyana). — Chamorro *et al.* 2018: 97 (list for Ecuador); 2019: 203 (catalogue for Ecuador). — Hielkema & Hielkema 2019: 102 (catalogue for the Guianas).

*Oxysternon spiniferum curvispinum* – Arnaud 2002b: 65 (diagnosis). — Edmonds & Zídek 2004: 35 (synonym of *Oxysternon spiniferum*). — Carvajal *et al.* 2011: 322–323 (cited for Ecuador). — Silva *et al*. 2017: 490 (list).
*Oxysternon* (*Mioxysternon*) *spiniferum spiniferum* – Boilly & Vaz-de-Mello 2013: 105 (fig. 19).

**Material examined**

VENEZUELA – **Bolívar** • 1 spec.; 8 km N of Guri; 200 m a.s.l.; 16 Jul.–11 Aug. 1986; B. Gill leg.; CEMT • 1 spec.; Río Sipao; 110 km E of Caicar; 17 Jun.–4 Aug. 1987; S. and J. Peck leg.; flight interception trap, gallery forest; CEMT.

**Distribution**

Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, Ecuador, Peru, and Bolivia.

**Subregions of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Guiana Shield.

**Literature records**

Edmonds & Zídek 2004: 10, 35 (Venezuela: Bolívar). — Hamel-Leigue *et al*. 2009: 64 (Venezuela).

## Genus ***Phanaeus*** MacLeay, 1819

*Phanaeus* MacLeay, 1819: 124 (original description). Type species: *Phanaeus vindex* MacLeay, 1819, by subsequent designation of Bouchard *et al*. (2024).
*Lonchophorus* Germar, 1823: 106 (original description), senior homonym of *Lonchophorus* Lund, 1839 (Rodentia: Echimyidae) (invalid in favour of *Phyllomys* Lund, 1839), *Lonchophorus* Eschscholtz, 1825 (Crustacea) (invalid in favour of *Percnon* Gistel, 1848, new replacement name), *Lonchophorus* Studer, 1881 (Echinodermata) (uncertain status), and *Lonchophorus* Pomel, 1883 (Echinodermata) (uncertain status). Type species: *Scarabaeus carnifex* Linnaeus, 1767 (non 1758), by subsequent designation of Edmonds (1972).
*Onthurgus* Gistel, 1857: 602 (original description). Type species: *Scarabaeus carnifex* Linnaeus, 1767 (*non* 1758), by original designation [see Edmonds' (1972: 827; 2000: 4) discussion on the identity of the type species].
*Palaeocopris* Pierce, 1946: 130 (original description). Type species: *Palaeocopris labreae* Pierce, 1946, by original monotypy.

*Phanaeus* – Brullé 1838: 302 (redescription). — Agassiz 1846: 818 (catalogue). — Lacordaire 1855: 100 (redescription). — Harold 1869d: 1016 (catalogue). — Chapuis 1876: 276 (catalogue). — Nevinson 1892: 1 (catalog, distribution). — Gillet 1911b: 81 (catalog, distribution). — Lucas 1920: 499 (catalog, distribution). — Dawson 1922: 61 (key). — d'Olsoufieff 1924: 22, 63, 140 (key, redescription, distribution). — Pessôa 1934: 282, 284 (description, biology). — Pessôa & Lane 1941: 470 (key, characteristics). — Blackwelder 1944: 209 (list). — Balthasar 1951: 336 (list). — Pereira 1953: 391 (notes). — Roze 1955: 45 (checklist for Venezuela). — Martínez 1959: 97 (catalogue for Argentina). — Halffter & Matthews 1966: 258 (catalog, distribution). — Vulcano & Pereira 1967: 566 (key). — Edmonds 1972: 820, 826 (key, redescription); 1994: 8 (revision); 2003: 60 (redescription). — Howden & Young 1981: 12, 134 (key, redescription). — Halffter & Edmonds 1982: 136 (catalog, distribution). — Zunino 1985: 104 (comment). — Gámez & Mora 2000: 17 (list). — Medina & Lopera-Toro 2000: 303 (key). — Vítolo 2000: 595 (key); 2004: 283 (diagnosis). — Vaz-de-Mello 2000: 194 (checklist for Brazil). — Medina *et al.* 2001: 140 (checklist

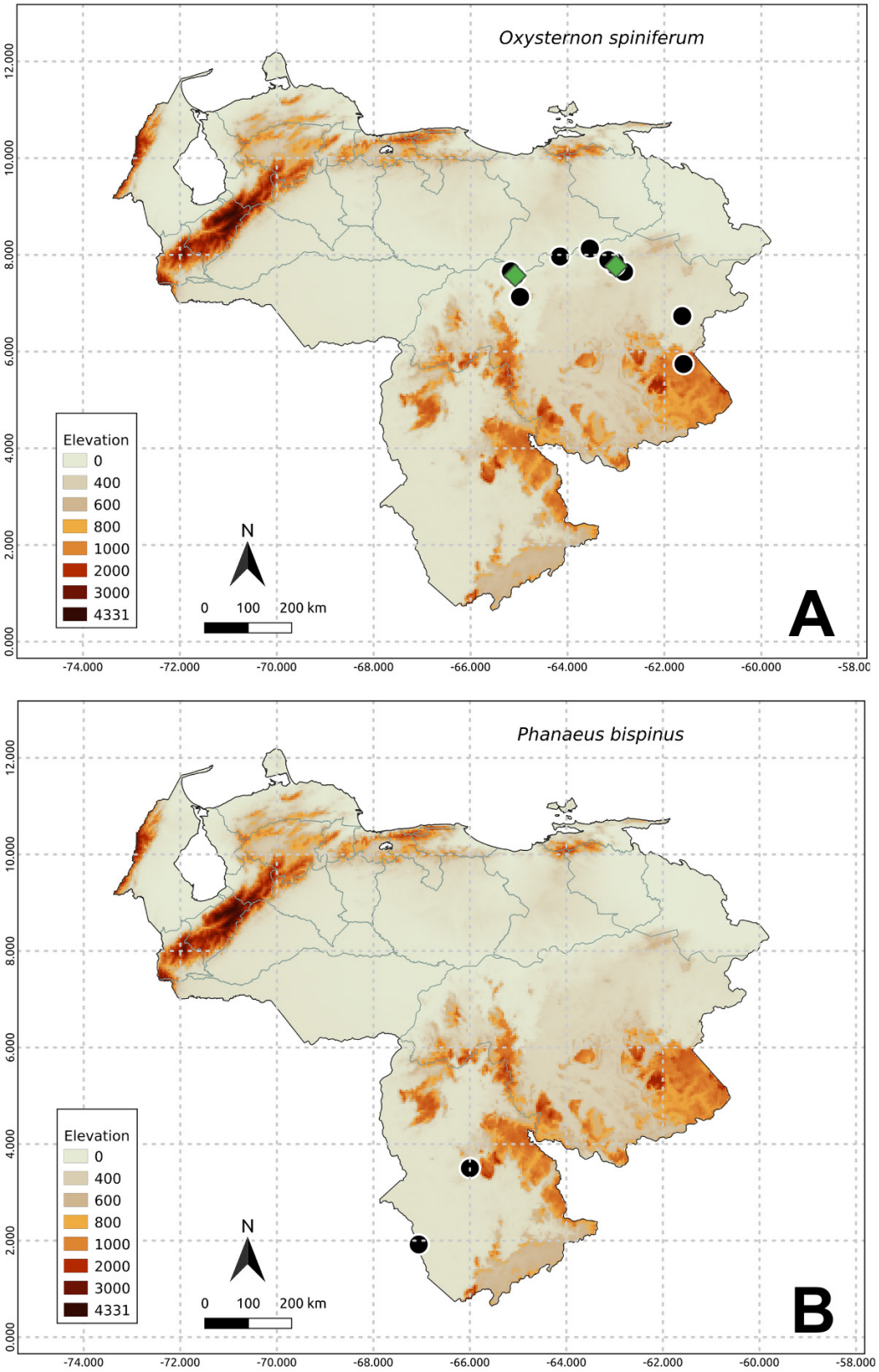


**Fig. 65.** Species distribution. **A**. *Oxysternon spiniferum* Castelnau, 1840. **B**. *Phanaeus bispinus* Bates, 1868. Green diamond = CEMT collection data; black circle = literature data.

for Colombia). — Arnaud 2002b: 13 (key). — Ratcliffe 2002: 16 (checklist for Panama). — Philips *et al.* 2004b: 50 (comments). — Hamel-Leigue *et al.* 2006: 17 (list for Bolivia); 2009: 64 (distribution for Bolivia). — Noriega *et al.* 2007: 80 (list). — Vaz-de-Mello *et al.* 2011a: 25 (key). — Carvajal *et al.* 2011: 137, 318 (diagnosis, list for Ecuador). — Edmonds & Zídek 2012: 2 (revision). — Krajcik 2012: 204 (list). — Solís & Kohlmann 2012: 7 (checklist for Costa Rica). — Figueroa *et al.* 2014: 133 (distribution for Peru). — Boilly *et al.* 2016: 96 (list, comments). — Chamorro *et al.* 2018: 75, 97–98 (list for Ecuador); 2019: 210 (catalogue). — Hielkema & Hielkema 2019: 105 (catalogue for the Guianas).

*Lonchophorus* – Brullé 1838: 302 (synonym of *Phanaeus*). — Agassiz 1846: 620 (catalogue). — Lacordaire 1855: 100 (synonym of *Phanaeus*). — Harold 1869d: 1016 (synonym of *Phanaeus*). — Nevinson 1892: 1 (synonym of *Phanaeus*). — Gillet 1911b: 81 (synonym of *Phanaeus*). — Lucas 1920: 381 (synonym of *Phanaeus*). — d'Olsoufieff 1924: 140 (synonym of *Phanaeus*). — Blackwelder 1944: 209 (synonym of *Phanaeus*). — Martínez 1959: 97 (synonym of *Phanaeus*). — Edmonds 1972: 826 (synonym of *Phanaeus*); 1994: 46 (cited as synonym of *Phanaeus*). — Ratcliffe 2002: 16 (synonym of *Phanaeus*). — Vítolo 2000: 595 (key); 2004: 86 (cited as synonym of *Phanaeus*). — Solís & Kohlmann 2012: 7 (synonym of *Phanaeus*). — Figueroa *et al.* 2014: 133 (synonym of *Phanaeus*).

*Onthurgus* – Edmonds 1972: 827 (synonym of *Phanaeus*); 1994: 46 (cited as synonym of *Phanaeus*). — Ratcliffe 2002: 16 (synonym of *Phanaeus*). — Vítolo 2004: 286 (cited as synonym of *Phanaeus*). — Solís & Kohlmann 2012: 7 (synonym of *Phanaeus*). — Figueroa *et al.* 2014: 133 (synonym of *Phanaeus*).

*Palaeocopris* – Ratcliffe 2002: 16 (synonym of *Phanaeus*). — Edmonds 1994: 46 (cited as synonym of *Phanaeus*). — Vítolo 2004: 286 (cited as synonym of *Phanaeus*). — Solís & Kohlmann 2012: 7 (synonym of *Phanaeus*).

### ***Phanaeus bispinus*** Bates, 1868
Fig. 65B

*Phanaeus bispinus* Bates, 1868: 89 (original description). Type locality: Ecuador: Pastaza: Pastaza: Canelos. Name-bearing type: holotype by monotypy (MNHN), not examined.

*Phanaeus digitalis* d'Olsoufieff, 1924: 34, 84, 147 (original description). Type locality: Guyana. Name-bearing type: holotype by monotypy (MNHN), not examined.

*Phanaeus bispinus* – Harold 1869d: 1017 (catalog, *Phanaeus bispinns* [sic]). — Nevinson 1892: 2 (catalog, distribution). — Gillet 1911b: 81 (catalog, distribution). — d'Olsoufieff 1924: 34, 84, 147 (key, redescription, distribution). — Blackwelder 1944: 209 (checklist). — Frey 1963: 559 (comments). — Vulcano & Pereira 1967: 574 (key). — Arnaud 1982: 114 (list of the MNHN types). — Escobar 2000: 209 (list). — Feer 2000: 32 (list for French Guiana); 2013: 767 (list for French Guiana). — Vítolo 2000: 597 (key); 2004: 283 (diagnosis, distribution). — Medina *et al.* 2001: 140 (checklist). — Pulido-Herrera *et al.* 2003: 54 (list for Caqueta, Colombia). — Gámez 2004: 57 (list). — Hamel-Leigue *et al.* 2006: 17 (inventory for Bolivia); 2006: 66 (distribution). — Brûlé *et al.* 2011a: 193 (list); 2014: 183 (list). — Larsen 2011: 99 (list for Suriname); 2013: 97 (list for Suriname). — Krajcik 2012: 204 (checklist). — Brûlé & Touroult 2013: 41 (list). — Figueroa *et al.* 2014: 133 (distribution for Peru). — Nunes *et al.* 2014: 408–410 (cited, list). — Ratcliffe *et al.* 2015: 197 (list for Peru). — Silva *et al.* 2016: 555 (ecology, biogeography, list).

*Phanaeus* (*Phanaeus*) *bispinus* – Pereira & Martínez 1956b: 237 (notes).

*Phanaeus* (*Notiophanaeus*) *bispinus* – Edmonds 1994: 33, 35, 100 (key, redescription, distribution). — Vaz-de-Mello 2000: 194 (checklist for Brazil). — Arnaud 2002b: 89 (key, diagnosis). — Vítolo 2004: 283 (diagnosis). — Carvajal *et al.* 2011: 320–321 (list, cited for Ecuador). — Edmonds & Zídek 2012: 5, 9 (list, key). — Pacheco & Vaz-de-Mello 2015: 2 (checklist). — Boilly *et al.* 2016:

90, 93, 96 (list for French Guiana, key). — Chamorro *et al.* 2018: 97 (cited for Ecuador); 2019: 213 (catalogue). — Hielkema & Hielkema 2019: 105 (catalogue for the Guiana).
*Phanaeus* (*Phanaeus*) *digitalis* – Pereira & Martínez 1956b: 237 (cited as synonym of *P. bispinus*).

**Distribution**

Colombia, Venezuela, Guyana, French Guiana, Brazil, Ecuador, Peru, and Bolivia.

**Subregion of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco.

**Literature records**

Edmonds 1994: 35, 100 (Venezuela: Amazonas). — Arnaud 2002b: 89 (Venezuela: Amazonas). — Gámez 2004: 57 (Venezuela). — Vítolo 2004: 283 (Venezuela: Edmonds 1994). — Hamel-Leigue *et al.* 2009: 66 (Venezuela). — Chamorro *et al.* 2019: 213 (Venezuela).

***Phanaeus bordoni*** Arnaud, 1997
Fig. 66A

*Phanaeus bordoni* Arnaud, 1997: 6 (original description). Type locality: Venezuela: Bolívar: El Dorado-Santa Elena Road, Km 130, 1400 m. Name-bearing type: holotype by original designation (MIZA), not examined.

*Phanaeus* (*Notiophanaeu*s) *bordoni* – Gámez & Mora 2000: 17 (list). — Arnaud 2002b: 83 (key). — Edmonds & Zídek 2012: 5, 12 (list, key). — Pacheco & Vaz-de-Mello 2015: 2–3, 7 (list, distribution, key). — Hielkema & Hielkema 2019: 105 (catalogue for the Guiana).
*Phanaeus bordoni* – Krajcik 2012: 204 (list).

**Material examined**

VENEZUELA – **Bolívar** • 1 spec.; 135 km S of El Dorado; 1400 m a.s.l.; 20 Jul.–7 Aug. 1986; B. Gill leg.; CEMT.

**Distribution**

Venezuela and Brazil.

**Subregions of Venezuela**

Peneplain of the Casiquiare River–Upper Orinoco, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, Andes mountains, and Guiana Shield.

**Literature records**

Arnaud 1997: 6 (Venezuela: Amazonas, Bolívar and Mérida); 2002b: 83 (Venezuela: Amazonas and Bolívar). — Gámez & Mora 2000: 17 (Venezuela). — Krajcik 2012: 204 (Venezuela: Bolívar). — Edmonds & Zídek 2012: 12 (Venezuela).

***Phanaeus haroldi*** Kirsch, 1871
Fig. 66B

*Phanaeus haroldi* Kirsch, 1871: 342 (original description). Type locality: Colombia: Cundinamarca: Bogotá. Name-bearing type: holotype (SMTD), not examined.

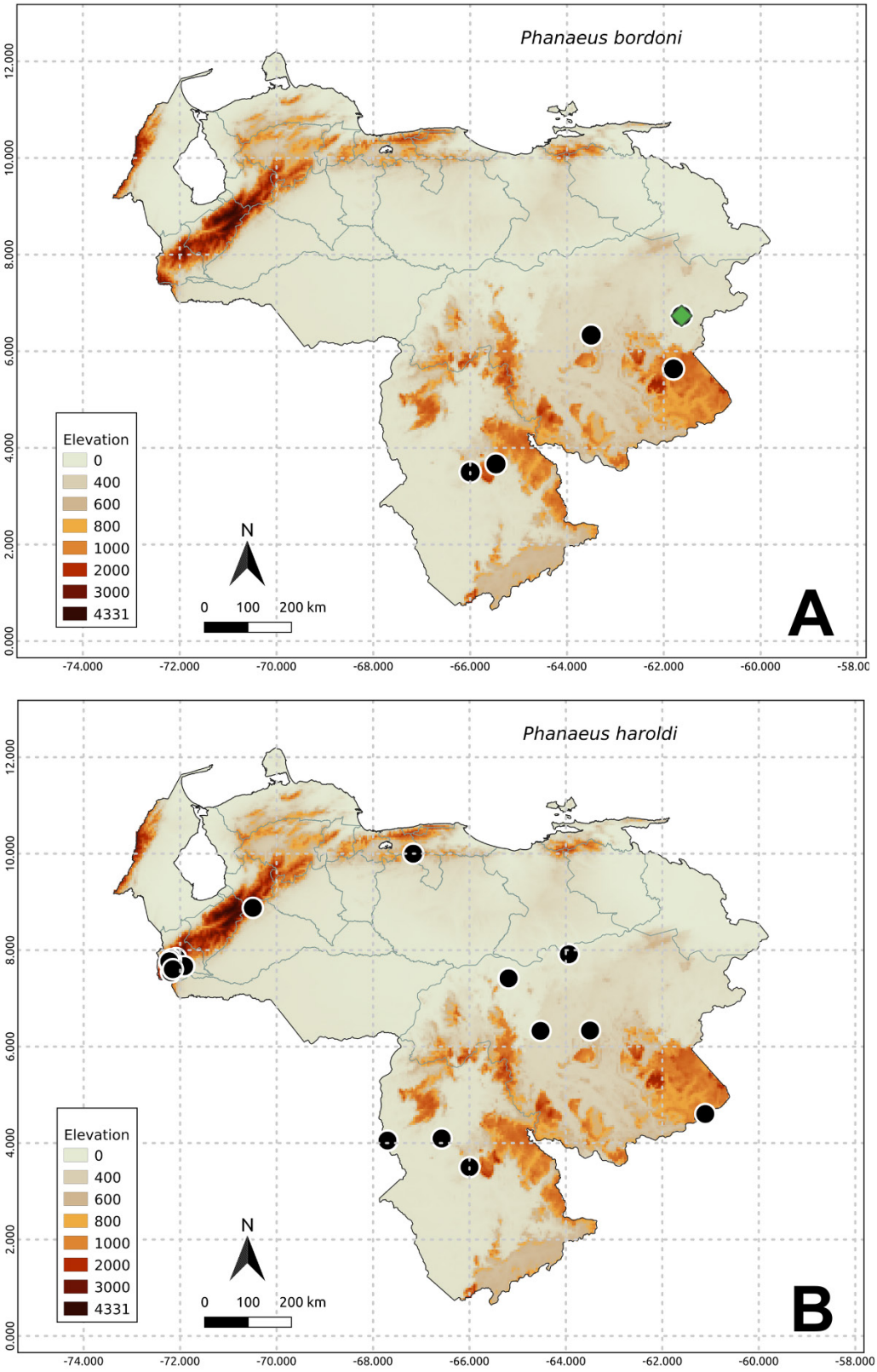


**Fig. 66.** Species distribution. **A**. *Phanaeus bordoni* Arnaud, 1997. **B**. *Phanaeus haroldi* Kirsch, 1871. Green diamond = CEMT collection data; black circle = literature data.

*Phanaeus schneblei* Frey, 1963: 558 (original description). Type locality: Colombia: Cundinamarca: Guayabetal: Monterredondo. Name-bearing type: holotype (NHMB – ex Frey collection), not examined.

*Phanaeus haroldi* – Kirsch 1871: 342 (358) (cited for Bogotá). — Nevinson 1892: 4 (catalogue). — Gillet 1911b: 83 (catalogue). — d'Olsoufieff 1924: 34, 85, 147 (key, redescription, distribution). — Blackwelder 1944: 209 (checklist). — Vulcano & Pereira 1967: 575 (key). — Amézquita *et al.* 1999: 119 (biodiversity). — Escobar 2000: 209 (list). — Vítolo 2000: 597 (key); 2004: 283 (diagnosis). — Medina *et al.* 2001: 140 (checklist for Colombia). — Noriega *et al.* 2009a: 406 (distribution). — Krajcik 2012: 204 (checklist). — Ratcliffe *et al.* 2015: 197 (checklist for Peru).

*Phanaeus schneblei* – Frey 1967: 405 (synonymy with *P. haroldi*). — Arnaud 2002b: 82 (cited as synonym of *P. haroldi*).

*Phanaeus* (*Notiophanaeus*) *haroldi* – Edmonds 1994: 21, 24, 101 (key, redescription, distribution). — Vaz-de-Mello 2000: 194 (cited for Brazil). — Arnaud 2002b: 82 (key, diagnosis). — Carvajal *et al.* 2011: 320–321 (cited for Ecuador). — Edmonds & Zídek 2012: 12 (key). — Figueroa *et al.* 2014: 133 (distribution for Peru). — Chamorro *et al.* 2018: 98 (cited for Ecuador); 2019: 217 (catalogue). — Hielkema & Hielkema 2019: 106 (catalogue for the Guiana).

**Distribution**

Colombia, Venezuela, Brazil, Ecuador, and Peru.

**Subregions of Venezuela**

Peneplain of the Caura and Paragua rivers, Peneplain of the Casiquiare River–Upper Orinoco, System of hills and low piedmont mountains of the Guiana Shield, Andes mountains, Central Coast Mountain Range, and Guiana Shield.

**Literature records**

Blanco 1988: 45 (Venezuela: Táchira). — Martínez & Clavijo 1990: 7 (Venezuela: Territorio Federal de Amazonas). — Edmonds 1994: 21, 24, 101 (Venezuela: Amazonas, Bolívar and Táchira). — Arnaud 2002b: 82 (Venezuela: Amazonas, Aragua, Táchira and Bolívar). — Gámez 2004: 48, 53, 57, 59 (Venezuela: Cordillera de Los Andes, Táchira). — Vítolo 2004: 283 (Venezuela: Edmonds 1994). — Noriega *et al.* 2009: 406 (Venezuela: Amazonas, Aragua, Bolívar and Táchira states). — Edmonds & Zídek 2012: 12 (Venezuela). — Gámez & Acconcia 2018: 65, 73 (Venezuela: Barinas state: Bolívar). — Chamorro *et al.* 2019: 217 (Venezuela).

***Phanaeus hermes*** Harold, 1868
Fig. 67A

*Phanaeus hermes* Harold, 1868e: 82 (original description). Type locality: Colombia. Name-bearing type: lectotype (MNHN), designated by Arnaud (1982), not examined.

*Phanaeus bogotensis* Kirsch, 1871: 359 (original description). Type locality: Colombia: Cundinamarca: Bogotá. Name-bearing type: lectotype (SMTD), designated by Edmonds (1994), not examined.

*Phanaeus hermes* – Harold 1868d: 83 (comments). — Heyne & Taschenberg 1908: 67 (list). — d'Olsoufieff 1924: 98, 135, 152 (comments, distribution). — Vulcano & Pereira 1967: 573 (key for the Amazon). — Arnaud 1982: 115 (list of types, lectotype). — Escobar 1997: 422, 423 (diversity); 2000: 209 (checklist for Colombia). — Vítolo 2000: 597 (key). — Medina *et al.* 2001: 140 (cited for Colombia). — Bustos-Gómez & Lopera-Toro 2003: 61 (diet). — Gámez 2004: 48, 58 (list, distribution). — Noriega 2004: 39 (checklist for Tinigua Park, Colombia). — Gámez *et al.* 2006: 102 (comments). — Kohlmann *et al.* 2007: 33 (checklist). — Noriega *et al.* 2007: 83 (list for

Colombia). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Cultid-Medina *et al.* 2012: 60 (guide). — Solís & Kohlmann 2012: 7 (checklist for Costa Rica). — Ferrer-Paris *et al.* 2013: 110 (list). — Giraldo *et al.* 2018: 48 (guide). — Nieto *et al.* 2020: 136 (report).

*Phanaeus bogotensis* – d'Olsoufieff 1924: 151 (as junior synonym of *Phanaeus prasinus*). — Solís & Kohlmann 2012: 7 (checklist for Costa Rica, cited as synonym of *Phanaeus hermes*).

*Phanaeus* (*Phanaeus*) *hermes* – Edmonds 1994: 48 (description, diagnosis, distribution). — Gámez & Mora 2000: 17 (list). — Arnaud 2002b: 100 (key). — Edmonds & Zídek 2012: 5, 16 (list, key). — Gámez & Acconcia 2020: 4, 8, 13 (comments, distribution, key, characteristics).

**Material examined**

VENEZUELA – **Zulia** • 1 spec.; Colón, Hacienda Santa Ana; Oct. 1996; J. Gamez leg.; CEMT • 1 spec.; Rosario de Perijá; 18 Jul. 2006; curso NM2006 leg.; faeces, 26h, 13:39; CEMT.

**Distribution**

Costa Rica, Panama, Colombia, and Venezuela.

**Subregions of Venezuela**

Maracaibo Depression, Serrania of Perijá, and Andes mountains.

**Literature records**

Edmonds 1994: 48, 102 (Venezuela: Zulia). — Gámez & Mora 2000: 17 (Venezuela). — Arnaud 2002b: 100 (Venezuela: Zulia). — Gámez 2004: 48, 58 (Venezuela: Mérida: Alberto Adriani (Finca Villa Juany) and Zea (Palmarito); Zulia: Colón (Hacienda El amparo). — Gámez *et al.* 2006: 102 (Venezuela: Mérida). — Edmonds & Zídek 2012: 16 (Morrone: Maracaibo Provinces). — Ferrer-Paris *et al.* 2013: 110 (Venezuela: Zulia: Rosario de Perijá). — Gámez & Acconcia 2020: 8 (Venezuela: Lake Maracaibo and Sierra de Perijá).

***Phanaeus meleagris minos*** Erichson, 1847
Fig. 67B

*Phanaeus minos* Erichson, 1847a: 106 (original description). Type locality: Peru: "Peruvian mountains". Name-bearing type: lectotype (MFNB), designated by Edmonds (1994), not examined.

*Phanaeus minos* – Harold 1869d: 1018 (catalog, cited for Peru); 1870: 105 (cited as synonym of *P. meleagris*). — Nevinson 1892: 5 (cited as synonym of *P. meleagris*). — Gillet 1911b: 84 (cited as synonym of *P. meleagris*). — d'Olsoufieff 1924: 152 (synonym of *P. meleagris*). — Pessôa 1934: 312 (cited as synonym of *P. meleagris*). — Blackwelder 1944: 210 (synonym of *P. meleagris*). — Edmonds 1994: 31 (cited as synonym of *P. meleagris*). — Vítolo 2004: 284 (cited as synonym of *P. meleagris*). — Hamel-Leigue *et al.* 2009: 65 (cited as synonym of *P. meleagris*). — Edmonds & Zídek 2012: 3, 6, 11 (cited as synonym of *P. meleagris*).

*Phanaeus* (*Notiophanaeus*) *meleagris minos* – Arnaud 2002b: 85 (key, diagnosis). — Carvajal *et al.* 2011: 322–323 (cited for Ecuador). — Krajcik 2012: 204 (checklist).

**Material examined**

VENEZUELA – **Táchira** • 2 specs; Tanquelnos vía Chorro del Indio; Aug. 1990; J. Blanco leg.; CEMT.

**Distribution**

Colombia, Venezuela, Ecuador, and Peru.

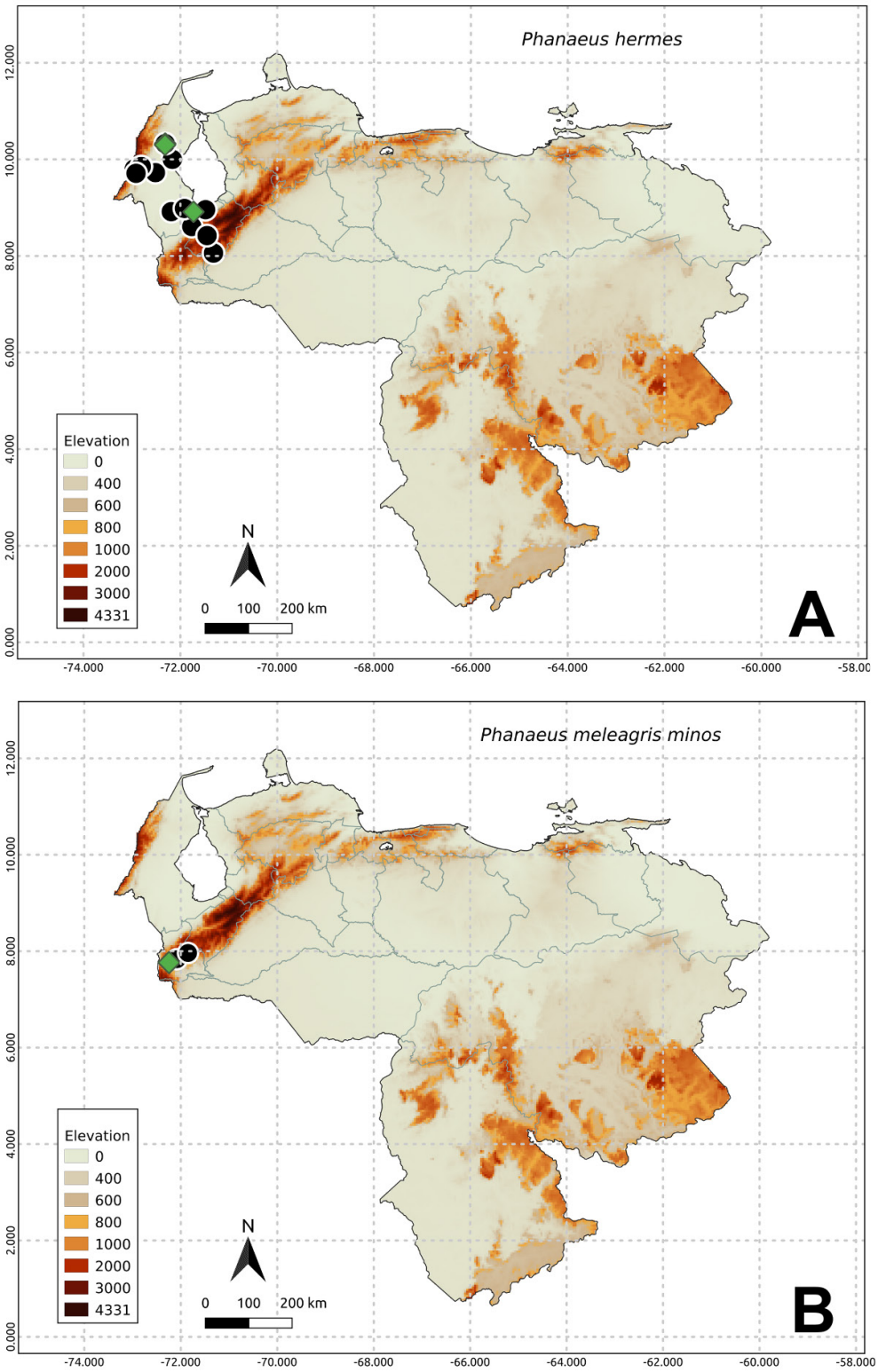


**Fig. 67.** Species distribution. **A**. *Phanaeus hermes* Harold, 1868. **B**. *Phanaeus meleagris minos* Erichson, 1847. Green diamond = CEMT collection data; black circle = literature data.

**Subregion of Venezuela**

Andes mountains.

**Literature record**

Arnaud 2002b: 85 (Venezuela: Táchira).

**Remarks**

The microtaxonomy of *Phanaeus meleagris* Blanchard, 1846 is disputed in the literature. Arnaud (2002b) considered the species to be divided into two subspecies, a northern one, *P. meleagris minos* Erichson, 1846, ranging from Venezuela to Peru and characterised primarily by its olive-brown dorsal colouration with some reddish sheen, and a southern one, *P. meleagris meleagris*, endemic to Bolivia and distinct in its red pronotum and black elytra. Edmonds & Zídek (2012), however, argued that this variation is not "consistent enough" (presumably in geographical terms and in discreteness), and so decided, after vacillating for a time, to treat the species as monotypic and the two names as synonyms. This followed the general view established by Harold (1870) and previously sponsored by d'Olsoufieff (1924) and Edmonds (1994) himself in their respective revisions of the genus. For the present work, we adopt the senior author's, FZVM, preferred taxonomy, Arnaud's (2002b), but the second author, MC, wishes to stress his uneasiness with the decision; he expresses his support for the Edmonds & Zídek monobasic classification drawing on the arguments introduced in Cupello *et al.* (2021b) against subspecific classifications built upon geographical races (instead of one based on geographical isolates, as he would prefer).

***Phanaeus prasinus*** Harold, 1868
Fig. 68A

*Phanaeus prasinus* Harold 1868d: 83 (original description). Type locality: Venezuela. Name-bearing type: lectotype (MNHN), designated by Arnaud (1982), not examined.

*Phanaeus prasinus* – Harold 1869d: 1019 (catalogue). — Candèze 1891: 330 (list). — Nevinson 1892: 6 (list). — Heyne & Taschenberg 1908: 67 (list). — Gillet 1911b: 85 (catalogue). — d'Olsoufieff 1924: 40, 97, 135, 151 (key, distribution). — Blackwelder 1944: 2010 (list, cited for Colombia). — Gacharná 1951: 222 (list for Colombia). — Roze 1955: 45 (checklist for Venezuela). — Vulcano & Pereira 1967: 573 (key). — Edmonds 1972: 833 (comments); 1994: 46, 49, 103 (key, description, diagnosis, distribution, comments). — Arnaud 1982: 115 (list of types). — Blanco 1988: 44–45, fig. 5b (comments, distribution). — Escobar 2000: 209 (checklist for Colombia). — Gámez & Mora 2000: 1–16 (ecology, distribution). — Vítolo 2000: 597 (key); 2004: 286 (diagnosis, distribution for Colombia). — Gámez 2004: 48, 59 (list). — Pulido-Herrera *et al.* 2007: 307 (Andean region of Colombia). — Larsen *et al.* 2008: 1294 (list). — Price 2008: 139 (list). — Lozano 2010: 86 (list). — Krajcik 2012: 204 (list). — Ferrer-Paris *et al.* 2013: 110 (list). — Gámez & Acconcia 2018: 68, 73 (list, key).

*Phanaeus* (*Phanaeus*) *prasinus* – Edmonds 1994: 46, 49, 103 (key, description, diagnosis, distribution, comments). — Gámez & Mora 2000: 17 (list). — Arnaud 2002b: 100 (key). — Edmonds & Zídek 2012: 16 (revision, key). — Hielkema & Hielkema 2019: 107 (catalogue for the Guianas). — Gámez & Acconcia 2020: 4, 13 (comments, key).

**Distribution**

Colombia, Venezuela, and Trinidad and Tobago.

**Subregions of Venezuela**

Coastal island, Maracaibo Depression, Plains, System of hills and low sierras Lara-Falcón, System of hills and low piedmont mountains of the Guiana Shield, Andes mountains, Central Coast Mountain Range, and Guiana Shield.

**Literature records**

Harold 1868d: 83 (Venezuela); 1869d: 1019 (Venezuela). — Nevinson 1892: 6 (Venezuela). — Heyne & Taschenberg 1908: 67 (Venezuela). — Gillet 1911a: 85 (Venezuela). — d'Olsoufieff 1924: 97, 151 (Venezuela). — Blackwelder 1944: 210 (Venezuela). — Roze 1955: 45 (Venezuela: El Tuy). — Vulcano & Pereira 1967: 573 (Venezuela). — Arnaud 1982: 115 (Venezuela). — Blanco 1988: 44–45 (Venezuela: Táchira: Rubio, La Fría and Coloncito). — Edmonds 1994: 49, 103 (Venezuela: Apure, Aragua, Barinas, Bolívar, Carabobo, Distrito Capital, Falcón, Guárico, Mérida, Miranda, Monagas, and Yaracuy). — Gámez & Mora 2000: 1–16 (Venezuela). — Gámez 2004: 48, 59 (Venezuela: Barinas and Mérida states). — Vítolo 2004: 286 (Venezuela). — Larsen *et al.* 2008: 1294 (Venezuela: Bolívar: Lago Guri). — Price 2009: 139 (Venezuela). — Lozano 2010: 86 (Venezuela: Zulia). — Krajcik 2012: 204 (Venezuela). — Edmonds & Zídek 2012: 16 (Venezuela: northern). — Ferrer-Paris *et al.* 2013: 110 (Venezuela: Aragua [Guárico]: Altagracia de Orituco, Bolívar: Sabanas de Guri and Anacoco, Mérida: La Azulita-Jají; Sucre: Araya; and Yaracuy: Hacienda Guáquira). — Gámez & Acconcia 2018: 68, 73 (Venezuela: Cordillera de Mérida).

**Remarks**

Similarly to *Phanaeus meliabeus* above, dissent exists in the literature about the microtaxonomy of *P. prasinus*. Edmonds (1994) noted a considerable degree of polychromatism in the species, one with a seemingly important geographical component. In spite of that, he treated the species as monobasic. Arnaud (2002b), in contrast, delimited four subspecies, all corresponding to supposedly distinct geographical races. From west to east, we have first *Phanaeus prasinus prasinus*, characterised by its uniform dark green colouration and found across the Cordillera Oriental of the Colombian Andes as well as in the Venezuelan states of Aragua and Amazonas; then, *P. prasinus lugens*, completely dull black and endemic to the Cordillera de Mérida of Venezuela; *P. prasinus jolyi*, characterised by its coppery colouration and known exclusively from the state of Bolívar; and, finally, the Trinidad island endemic *P. prasinus trinidadensis* Arnaud, 2001, distinguished by its uniform dark blue colour. The truth of the matter, nevertheless, is that very little is still known about the chromatic population structure of the species and Arnaud's description should be taken cautiously. Edmonds & Zídek (2012), though with evident hesitation, synonymised the subspecific names and treated *P. prasinus* once more as monobasic. For this catalogue, we have chosen to follow Arnaud's classification, the one advocated by the senior author, FZVM. But the second author, MC, in line with his stance on *P. meleagris* above, would like to reiterate his objection to purely descriptive subspecific classifications such as Arnaud's, those established simply to reflect geographical variation of phenotypic characters and lacking a commitment to the naturalness of the delimited taxa (see Cupello *et al.* 2021b).

***Phanaeus prasinus joliyi*** Arnaud, 2001
Fig. 68B–D

*Phanaeus prasinus joliyi* Arnaud, 2001: 8 (original description). Type locality: Venezuela: Bolívar: Jabilal, Caura River. Name-bearing type: holotype (CPFA), not examined.

*Phanaeus prasinus joliyi* – Arnaud 2002b: 100 (key). — Edmonds & Zídek 2012: 3, 5, 17 (cited as synonym of *P. meleagris*). — Krajcik 2012: 204 (list).

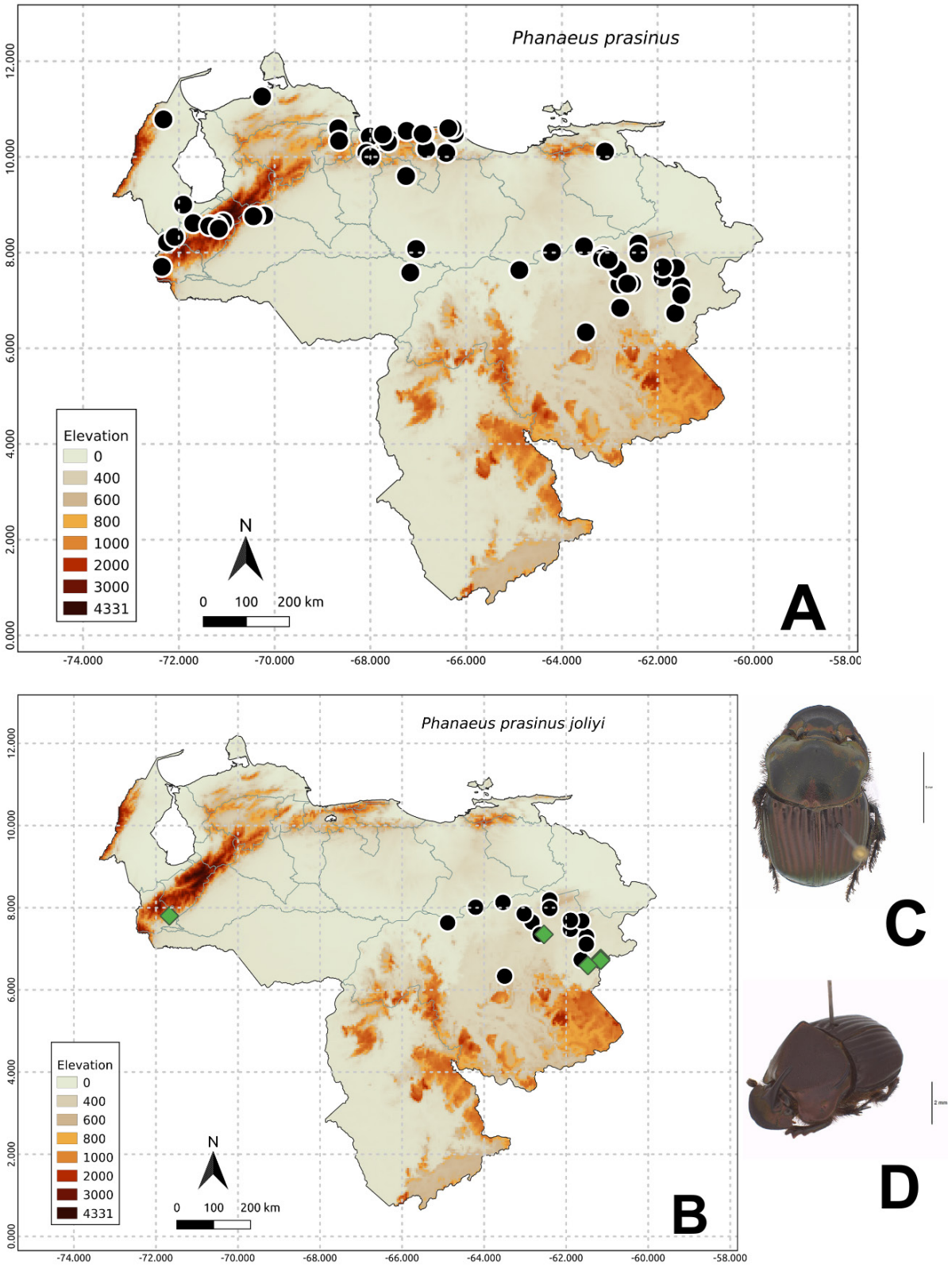


**Fig. 68.** Species distribution. **A**. *Phanaeus prasinus* Harold, 1868. **B**. *Phanaeus prasinus joliyi* Arnaud, 2001. **C**. Female of *P. prasinus joliyi.* **D**. Male of *P. prasinus joliyi.* Green diamond = CEMT collection data; black circle = literature data.

**Material examined**

VENEZUELA – **Bolívar** • 1 spec.; Isla de Anacoco, NM93-Trp001; 6 Aug. 2006; curso NM2006 leg.; faeces, 23h, 13:50; CEMT • 2 specs; Anacoco; 6 Aug. 2006; curso NM2006 leg.; faeces, 23h, 16:18; CEMT • 1 spec.; Anacoco, NM93-Trp52; 6 Aug. 2006; curso NM2006 leg.; faeces, 23h, 16:20; CEMT • 1 spec.; El Manteco, NM22-Trp022; 3 Aug. 2006; curso NM2006 leg.; faeces, 24h, 09:02; CEMT. – **Táchira** • 1 spec.; Libertador, San Joaquín de Navay; 7°47′59.99″ N, 71°40′24.24″ W; 655 m a.s.l.; Good *et al.* leg.; human faeces; CEMT.

**Distribution**

Venezuela (endemic).

**Subregions of Venezuela**

Peneplain of the Caura and Paragua rivers, System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Andes mountains.

**Literature records**

Arnaud 2001: 8 (Venezuela: Bolívar); 2002b: 100 (Venezuela: Bolívar). — Krajcik 2012: 204 (Venezuela).

***Phanaeus prasinus lugens*** Nevinson, 1889
Fig. 69A–C

*Phanaeus lugens* Nevinson, 1889: 179 (original description). Type locality: Venezuela. Name-bearing type: lectotype (MNHN), designated by Arnaud (1982), not examined.

*Phanaeus lugens* – Nevinson 1892: 5 (list). — Gillet 1911b: 84 (catalogue). — Sharp & Muir 1912: 582 (anatomy of the genitalia). — d'Olsoufieff 1924: 40, 96, 135, 151 (key, distribution). — Blackwelder 1944: 210 (list). — Roze 1955: 45 (cited, checklist for Venezuela). — Vulcano & Pereira 1967: 573 (key). — Arnaud 1982: 116 (list of types of MNHN).

*Phanaeus* (*Phanaeus*) *prasinus lugens* – Arnaud 2002b: 100 (key, characteristics). — Edmonds & Zídek 2012: 3, 6 (cited as junior synonym of *P. prasinus*). — Krajcik 2012: 204 (list).

**Material examined**

VENEZUELA – Mérida • 2 specs; 1400 m a.s.l.; Jun. 1998; Arnaud leg.; CEMT • 1 spec.; Sucre, Jaji; 8°33′24.19″ N, 71°21′57.63″ W; 1862 m a.s.l.; 7 Jul. 2009; D. Mora, P. Colmenares, M. Córdova and M. Nuñez leg.; human faeces; CEMT. – Zulia • 1 spec.; Santa Bárbara del Zulia; 190 m a.s.l.; 9 Apr. 2001; G.P. Almeida leg.; CEMT • 1 spec.; same locality data as for preceding; 10 Apr. 2001; G.P. Almeida leg.; CEMT.

**Distribution**

Venezuela (endemic).

**Subregions of Venezuela**

Maracaibo Depression, and Andes mountains.

**Literature records**

Nevinson 1892: 5 (Venezuela). — Gillet 1911b: 84 (Venezuela). — d'Olsoufieff 1924: 96–97, 151 (Venezuela: Mérida). — Blackwelder 1944: 210 (Venezuela). — Vulcano & Pereira 1967: 573

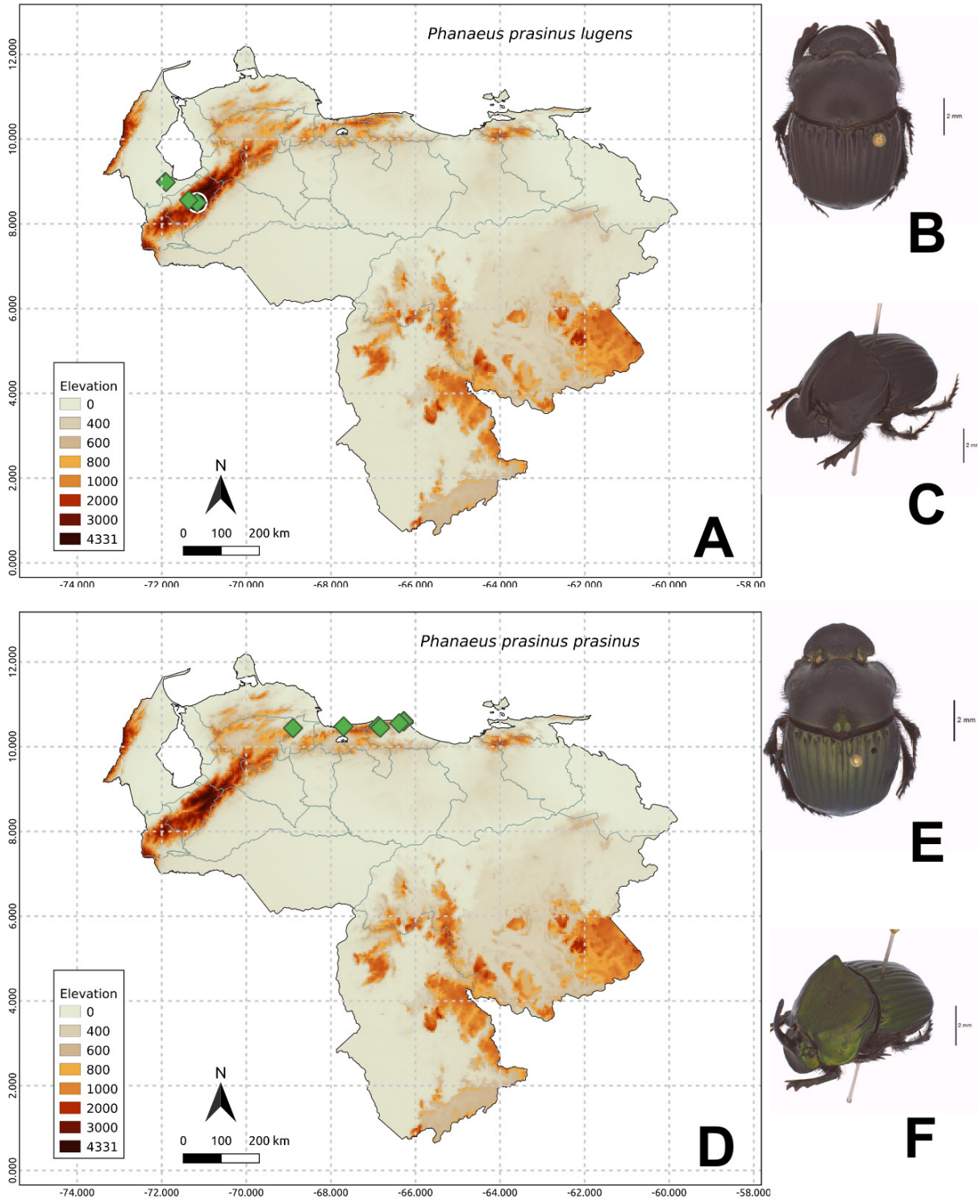


**Fig. 69.** Species distribution. **A**. *Phanaeus prasinus lugens* Nevinson, 1889. **B**. Female of *P. prasinus lugens*. **C**. Male of *P. prasinus lugens*. **D**. *Phanaeus prasinus prasinus* Harold, 1868. **E**. Female of *P. prasinus prasinus*. **F.** Male of *P. prasinus prasinus*. Green diamond = CEMT collection data; black circle = literature data.

(Venezuela). — Arnaud 1982: 116 (Venezuela: Mérida); 2002b: 100 (Venezuela: Mérida). — Krajcik 2012: 204 (Venezuela).

***Phanaeus prasinus prasinus*** Harold, 1868
Fig. 69D–F

*Phanaeus* (*Phanaeus*) *prasinus prasinus* – Arnaud 2002b: 100 (key).

**Material examined**

VENEZUELA – **Aragua** • 2 specs; Cuyagua; Jun.–Jul. 2008; D. García leg.; CEMT. – **Distrito Capital** • 1 spec.; Caracas; 10 May 1936; G.V. Berthier leg.; CEMT. – **La Guaira** • 1 spec.; La Sabana; 19 Jul. 2009; curso NM2009 leg.; CEMT • 1 spec.; Vargas, La Sabana; 10°36′25.34″ N, 66°16′31.08″ W; 17 m a.s.l.; 19 Jul. 2009; H. Martínez, P. Cely, M. Córdova and M. Nuñez leg.; human faeces; CEMT • 1 spec.; same data as for the preceding except for the coordinates, elevation, and bait; 10°35′48.76″ N, 66°16′48.86″ W; 28 m a.s.l.; chicken carrion; CEMT • 1 spec.; same data as for the preceding except for the coordinates, elevation, and bait; 10°35′47.90″ N, 66°16′49.94″ W; 30 m a.s.l.; human faeces; CEMT • 1 spec.; same data as for the preceding except for the coordinates and elevation; 10°35′51.03″ N, 66°16′48″ W; 22 m a.s.l.; CEMT. – **Yaracuy** • 3 specs; Bolívar, Aroa; 10°0′0″ N, 68°0′0″ W; 468 m a.s.l.; 19 Aug. 2009; M. Asmüssen, P. Colmenares and H. Martínez leg.; human faeces; CEMT.

**Distribution**

Venezuela (endemic).

**Subregion of Venezuela**

Central Coast Mountain Range.

**Literature record**

Arnaud 2002b: 100 (Venezuela: Amazonas [doubtful] and Aragua).

Genus ***Pseudocanthon*** Bates, 1887

*Pseudocanthon* Bates, 1887: 35 (original description). Type species: *Canthon perplexus* LeConte, 1847, by original monotypy.

*Opiocanthon* Paulian, 1947: 29–30 (original description). Type species: *Canthon vitraci* Fleutiaux & Sallé, 1889, by original designation.

*Pseudocanthon* – Bates 1889: 386 (cited). — Gillet 1911b: 27 (as junior synonym of *Canthon*). — Lucas 1920: 548 (catalogue). — Islas 1942: 303 (cited as a synonym of *Canthon*). — Blackwelder 1944: 198 (as junior synonym of *Canthon*; checklist). — Martínez 1947a: 263–264 (redescription); 1959: 57–58 (catalogue). — Pereira & Martínez 1956a: 95, 109, 184 (key, distribution). — Halffter 1961: 231–233 (monograph). — Vulcano & Pereira 1964: 591 (catalogue); 1967: 551 (key). — Halffter & Matthews 1966: 261 (list). — Matthews 1966: 83–85 (description, revision for the Antilles). — Halffter & Martínez 1977: 35, 45, 60, 62 (key, list, comments). — Howden & Young 1981: 35 (contributions). — Halffter & Edmonds 1982: 139 (list). — Medina & Lopera-Toro 2000: 301, 311 (key). — Vaz-de-Mello 2000: 194 (checklist). — Ratcliffe 2002: 13 (checklist). — Medina *et al.* 2003: 41 (systematic). — Medina & Pulido-Herrera 2009: 56, 59 (list). — Vaz-de-Mello *et al.* 2011a: 6, 11,18, 26, 33, 41, 45, fig. 149 (key). — Carvajal *et al.* 2011: 99, 119, 314 (list, description). — Solís & Kohlmann 2012: 2, 4 (checklist). — Boilly & Vaz-de-Mello 2013: 107 (key). — Tarasov & Dimitrov 2016: 15 (phylogeny). — Tissiani *et al.* 2017: 414 (key). — Cupello & Vaz-de-Mello 2018: 13, 17–18, 20, 32, 35–37, 39, 173 (cited). — Chamorro *et al.* 2018: 76 (key). — Hielkema &

Hielkema 2019: 81 (catalogue for the Guianas). — Nazaré-Silva & Silva 2021: 61–86 (revision for South America).

*Opiocanthon* – Matthews 1966: 85 (cited as synonym of *Pseudocanthon*). — Ratcliffe 2002: 13 (cited as synonym of *Pseudocanthon*). — Solís & Kohlmann 2012: 4 (cited as synonym of *Pseudocanthon*). — Peck *et al.* 2014: 43 (cited as synonym of *Pseudocanthon*). — Cupello & Vaz-de-Mello 2018: 18 (cited as synonym of *Pseudocanthon*). — Nazaré-Silva & Silva 2021: 62, 64 (cited as synonym of *Pseudocanthon*).

*Canthon* (*Pseudocanthon*) – Krajcik 2006: 25 (checklist); 2012: 63 (checklist).

***Pseudocanthon perplexus*** (LeConte, 1847)
Fig. 70A

*Canthon perplexus* LeConte, 1847: 85 (original description). Type locality: United States: Illinois: Adams Co.: Quincy. Name-bearing type: holotype (MCZC), examined from photos.

*Canthon perplexus* – LeConte 1859: 11 (description); 1863: 36 (checklist). — Halffter 1961: 232–233 (comments). — Harold 1868a: 67 (description, cited for Mexico: Yucatan); 1869d: 992 (catalog, distribution, cited for Texas). — Horn 1870: 46 (description, cited for Texas). — Blanchard 1885: 164, 167 (key, description, cited for Arkansas, Texas, and Mexico). — Kolbe 1905: 579 (description, cited for Louisiana, Illinois, Texas and Mexico). — Blatchley 1910: 915 (redescription, cited for Illinois); 1918: 54 (list, comments, cited for Illinois to California and Yucatan). — Gillet 1911b: 31 (catalog, cited for Mexico, North and Central America). — Leng 1920: 248 (list, Illinois, Texas, Mexico, Indiana, California). — Schmidt 1922: 64, 78 (description). — Balthasar 1939a: 190 (key, North and Central America). — Islas 1942: 334 (key, cited for Mexico). — Robinson 1948b: 86, 97 (key, distribution, cited for Arizona, Florida, Louisiana, Texas). — Matthews 1966: 83 (cited as type of *Pseudocanthon*). — Howden & Young 1981: 35 (cited; cited for United States, Mexico, El Salvador, Costa Rica, Panama, Colombia, and Trinidad and Tobago). — Nazaré-Silva & Silva 2021: 66 (cited).

*Pseudocanthon perplexus* – Bates 1887: 35 (catalog, cited for Mexico, Guatemala: Paso Antonio, Nicaragua and Amazon). — Pereira & Martínez 1956a: 109 (remarks, cited as present from the United States to Argentina). — Halffter 1961: 232–233 (taxonomic remarks); 2003: 26 (catalogue for Mexico). — Vulcano & Pereira 1964: 591–592 (catalog, cited from North and Central America, Colombia, Venezuela and Brazil); 1967: 551 (key, cited for Venezuela, Colombia, Central America, Mexico and Antillas). — Halffter & Martínez 1977: 60 (review, list). — Howden & Young 1981: 35–36 (description, distribution, remarks). — Vaz-de-Mello 2000 (checklist). — Barbero 2001: 3 (checklist for Nicaragua). — Medina *et al.* 2001: 137 (checklist for Colombia). — Navarrete-Heredia *et al.* 2001: 54 (checklist, cited, Mexico). — Ratcliffe 2002: 13 (checklist for Panama). — Hamel-Leigue *et al.* 2006: 14 (inventory for Bolivia). — Ivie & Philips 2008: 11–12 (comments, checklist). — Medina & Pulido-Herrera 2009: 59 (checklist for Colombia). — Carvajal *et al.* 2011: 119, 314 (checklist, cited for Ecuador). — Solís & Kohlmann 2012: 4 (checklist for Costa Rica). — Taboada-Verona *et al.* 2019: 589 (checklist, cited as *Pseudocanthon aff. perplexus*). — Nazaré-Silva & Silva 2021: 66 (diagnosis, distribution).

*Canthon perplexum* – Blackwelder 1944: 200 (checklist, cited for United States, Mexico, Guatemala, Nicaragua, Colombia and Brazil). — Roze 1955: 42 (checklist). — Nazaré-Silva & Silva 2021: 66 (cited).

*Pseudocanthon perplexum* – Martínez 1947a: 267 (catalogue). — Nazaré-Silva & Silva 2021: 66 (cited).

*Canthon* (*Pseudocanthon*) *perplexus* – Krajcik 2006: 29 (checklist, cited for North America); 2012: 64 (checklist, cited for North America). — Nazaré-Silva & Silva 2021: 66 (cited).

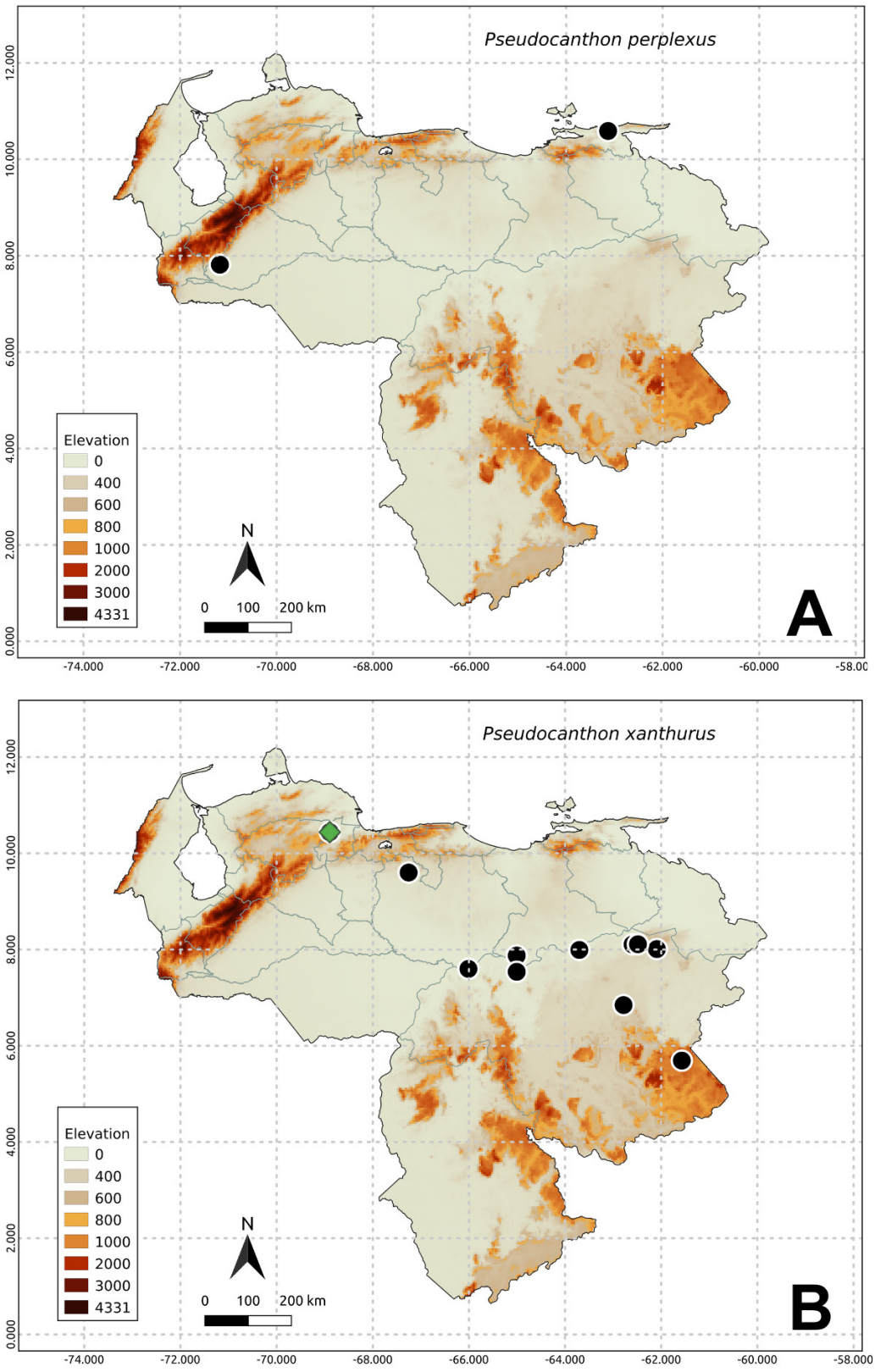


**Fig. 70.** Species distribution. **A**. *Pseudocanthon perplexus* (LeConte, 1847). **B**. *Pseudocanthon xanthurus* (Blanchard, 1847). Green diamond = CEMT collection data; black circle = literature data.

**Distribution**

United States to Venezuela, Trinidad and Tobago, and the Antilles.

**Subregions of Venezuela**

Plains, and Delta plain of the Orinoco River and coastal swamp of the San Juan River.

**Literature records**

Roze 1955: 42 (Venezuela: Sucre: Tunapuicito). — Nazaré-Silva & Silva 2021: 66 (Venezuela: Barinas).

***Pseudocanthon xanthurus*** (Blanchard, 1846)
Fig. 70B

*Canthon xanthurum* [sic] Blanchard, 1846: 166 (original description) [see Cupello *et al.* (2023a) for the publication date]. Type locality: Argentina: Corrientes. Name-bearing type: lectotype (MNHN), designated by Nazaré-Silva & Silva (2021), examined by FZVM.
*Canthon felix* Arrow, 1913: 456 (original description). Type locality: Brazil: Pará: Santarém. Name-bearing type: lectotype (BMNH), designated by Bacchus (1978), examined by FZVM.

*Canthon xanthurus* – Harold 1868a: 140 (monograph); 1869d: 995 (catalogue). — Bruch 1911: 185 (catalogue). — Gillet 1911b: 34 (catalogue). — Arrow 1913: 456 (redescription). — Schmidt 1922: 64, 82 (cited, distribution). — Balthasar 1939a: 189–190 (key). — Martínez 1947a: 268 (cited).
*Canthon felix* – Boucomont 1928b: 1 (distribution). — Balthasar 1939a: 224 (monograph). — Blackwelder 1944: 199 (checklist). — Pereira & Martínez 1956b: 109 (distribution); 1956: 37–38 (cited as synonym *P. xanthurus*). — Halffter 1961: 232–233 (monograph). — Bacchus 1978: 102 (catalogue of types, lectotype designation). — Krajcik 2006: 32 (cited as junior synonym of *P. xanthurus*).
*Canthon xanthurum* – Blackwelder 1944: 202 (checklist).
*Pseudocanthon xanthurum* – Martínez 1947b: 268 (new combination). — Halffter 1961: 232–233 (monograph). — Vaz-de-Mello 2000: 194 (checklist). — Ratcliffe *et al.* 2015: 196 (checklist).
*Pseudocanthon xanthurus* – Pereira & Martínez 1956a: 109 (distribution); 1960: 37–38 (notes). — Martínez 1959: 57 (catalogue). — Vulcano & Pereira 1964: 592 (catalogue); 1967: 551 (key). — Halffter & Martínez 1977: 60 (revision). — Medina *et al.* 2001: 137 (checklist). — Hamel-Leigue *et al.* 2006: 14 (inventory). — Medina & Pulido-Herrera 2009: 59 (synopsis). — Carvajal *et al.* 2011: 119 (distribution, cited). — Hielkema & Hielkema 2019:81 (catalogue for the Guianas). — Nazaré-Silva & Silva 2021: 63, 67, 71, 80, 81 (revision). — Cupello *et al.* 2023a: 86, 88–90 (distribution in Paraguay and publication date).
*Canthon* (*Pseudocanthon*) *xanthurus* – Krajcik 2006: 32 (checklist); 2012: 64 (checklist).
*Pseudocanthon felix* – Ratcliffe *et al.* 2015: 196 (checklist).

**Material examined**

VENEZUELA — **Yaracuy** • 1 ♀; Aroa; 19 Jul 2009; 459 m; Asmussen leg.; pitfall with human faeces; CEMT.

**Distribution**

Colombia, Venezuela, Suriname, French Guiana, Brazil, Bolivia, Paraguay, and Argentina.

**Subregions of Venezuela**

Plains, System of hills and low piedmont mountains of the Guiana Shield, Central Coast Mountain Range, and Guiana Shield.

**Literature records**

Ferrer-Paris *et al*. 2013: 110 (Venezuela: Aragua [Guárico]: Altagracia de Orituco; Bolívar: Isla de Anacoco; and Zulia: Rosario de Perijá). — Nazaré-Silva & Silva 2021: 67, 70 (Venezuela: Bolívar and Yaracuy).

Genus ***Scatimus*** Erichson, 1847

*Scatimus* Erichson, 1847a: 110 (original description). Type species: *Scatimus cucullatus* Erichson, 1847, by original monotypy.

*Scatimus* – Lacordaire 1855: 92 (redescription). — Harold 1867a: 9 (key); 1868c: 54 (key); 1869d: 1001 (catalogue). — Bates 1887: 43 (distribution). — Gillet 1911b: 49 (catalog, distribution). — Lucas 1920: 582 (catalog, distribution). — Balthasar 1939e: 89 (contribution, new species); 1939g: 87 (contribution). — Paulian 1938: 232 (key). — Pessôa & Lane 1941: 440 (comment). — Blackwelder 1944: 203 (catalogue). — Halffter & Matthews 1966: 259 (catalog, distribution). — Vulcano & Pereira 1967: 575 (key). — Howden & Young 1981: 13, 48 (key, redescription). — Halffter & Edmonds 1982: 137 (catalog, distribution). — Kohlmann & Solís 1996: 99 (redescription). — Medina & Lopera-Toro 2000: 306 (key). — Vaz-de-Mello 2000: 194 (checklist for Brazil). — Medina *et al.* 2001: 139 (checklist for Colombia). — Ratcliffe 2002: 15 (checklist for Panama). — Génier & Kohlmann 2003: 57 (list for Mexico), 72 (revision). — Noriega *et al.* 2007: 79 (list for Colombia). — Vaz-de-Mello 2008: 8, 14 (comments, key). — Vaz-de-Mello *et al.* 2011a: 22 (key). — Carvajal *et al.* 2011: 131, 316 (diagnosis, list for Ecuador). — Krajcik 2012: 238 (list). — Solís & Kohlmann 2012: 2 (checklist for Costa Rica). — Chamorro *et al.* 2018: 74, 98 (list for Ecuador); 2019: 223 (catalogue). — Hielkema & Hielkema 2019: 45 (catalogue for the Guianas).

***Scatimus fernandezi*** Martínez, 1988
Fig. 71A

*Scatimus fernandezi* Martínez, 1988a: 85–87 (original description). Type locality: Venezuela: Barinas: Ezequial Zamora: Santa Bárbara: "Solano". Name-bearing type: holotype (MACN), examined by MC in 2014.

*Scatimus fernandezi* – Escobar 2000: 210 (checklist for Colombia). — Medina *et al.* 2001: 139 (cited for Colombia). — Génier & Kohlmann 2003: 64, 76 (key, redescription). — Pulido-Herrera *et al.* 2007: 307 (Andean region of Colombia). — Medina & Pulido-Herrera 2009: 58 (diversity). — Carvajal *et al.* 2011: 316–317 (cited for Ecuador). — Ferrer-Paris *et al.* 2013: 110 (list). — Chamorro *et al.* 2018: 98 (list for Ecuador); 2019: 223 (catalogue).

**Material examined**

VENEZUELA – **Táchira** • 1 spec.; near Pregonero, presa la Honda (La Idea); 1100 m a.s.l.; 16 Aug. 1989; D. Havranek leg.; mini-cup trap; CEMT • 1 spec.; Libertador, San Joaquín de Navay; 7°47′59.99″ N, 71°40′24.24″ W; 655 m a.s.l.; 26 Aug. 2006; T. Good *et al.* leg.; human faeces; CEMT • 1 spec.; Río Frío; 600 m a.s.l.; 2–10 Sep. 1981; F. Fernandez, J. Clavijo and A. Chacon leg.; CEMT • 1 spec.; San Joaquín de Navay; 23 Aug. 2006; curso NM2006 leg.; faeces, 09:40, 24h; CEMT • 1 spec.; same data as for the preceding except for the date and time; 24 Aug. 2006; faeces, 09:57, 24h; CEMT.

**Distribution**

Colombia, Venezuela, Trinidad and Tobago, and Ecuador.

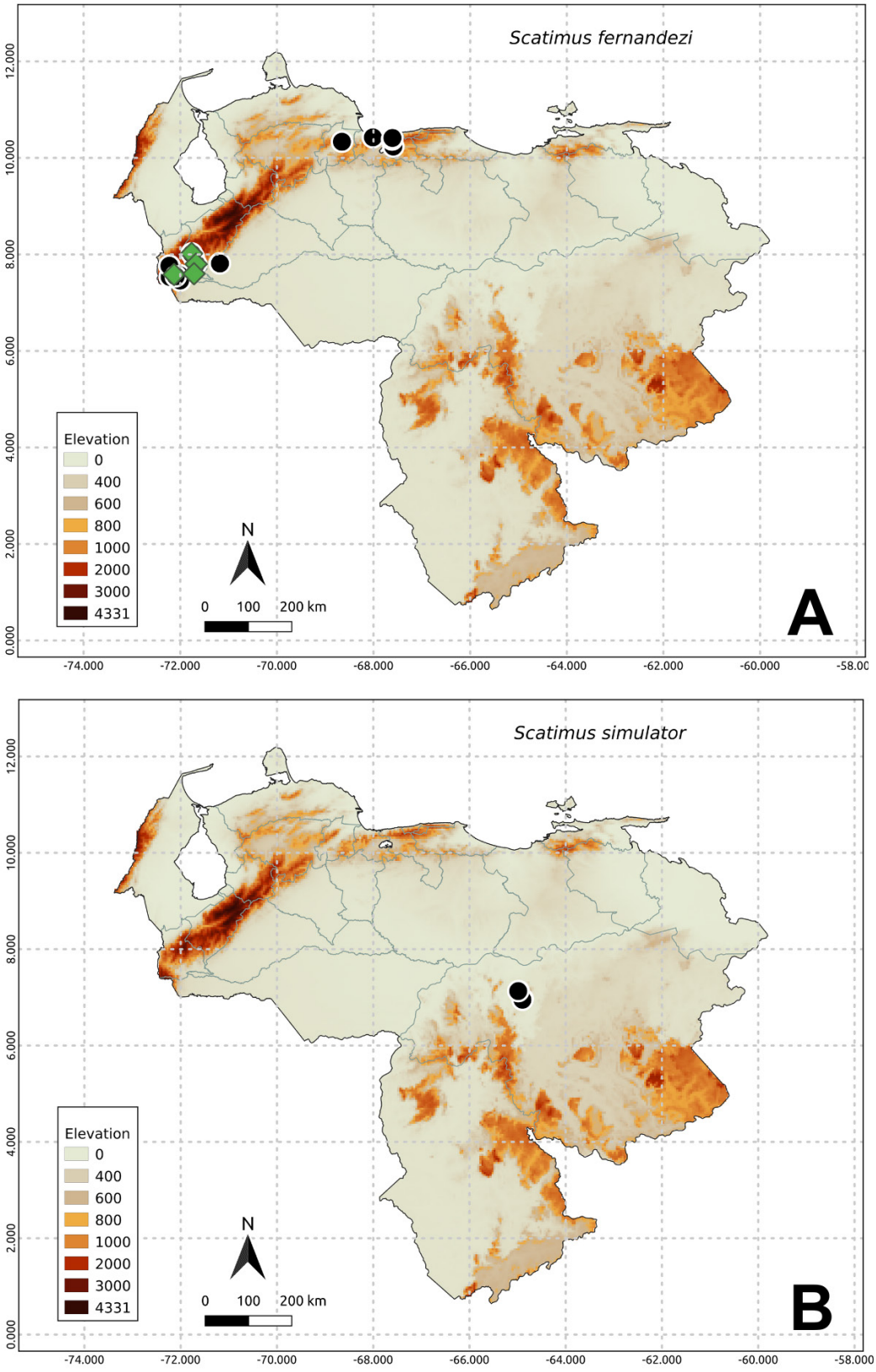


**Fig. 71.** Species distribution. **A**. *Scatimus fernandezi* Martínez, 1988. **B**. *Scatimus simulator* Martínez, 1988. Green diamond = CEMT collection data; black circle = literature data.

**Subregions of Venezuela**

Plains, System of hills and low sierras Lara-Falcón, Andes mountains, and Central Coast Mountain Range.

**Literature records**

Martínez 1988a: 85 (Venezuela: Barinas: Santa Bárbara and Carabobo). — Génier & Kohlmann 2003: 64, 76 (Venezuela: Aragua, Barinas, Carabobo and Táchira). — Ferrer-Paris *et al*. 2013: 110 (Venezuela: Yaracuy: Hacienda Guáquira). — Chamorro *et al*. 2019: 225 (Venezuela).

***Scatimus simulator*** Martínez, 1988
Fig. 71B

*Scatimus simulator* Martínez, 1988a: 87 (original description). Type locality: Brazil: Roraima: Pacaraima: Surumu: Serra do Marari. Name-bearing type: holotype (MACN), examined by MC in 2014.

*Scatimus simulator* – Génier & Kohlmann 2003: 65, 73–76 (key, description). — Vaz-de-Mello 2008: 43 (list). — Hielkema & Hielkema 2019: 81 (catalogue for the Guianas).

**Distribution**

Venezuela and Brazil.

**Subregion of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield.

**Literature record**

Génier & Kohlmann 2003: 65, 73 (Venezuela: Bolívar).

Genus ***Scybalocanthon*** Martínez, 1948

*Scybalocanthon* Martínez, 1948b: 4 (original description). Type species: *Canthon moniliatus* Bates 1887, by original designation.

*Scybalocanthon* – Martínez 1949b: 188–189 (key). — Pereira & Martínez 1956a: 96, 114, 184 (key). — Halffter 1958: 207 (comments); 1961: 231 (key). — Vulcano & Pereira 1964: 637 (catalogue); 1967: 549 (key). — Halffter & Mathews 1966: 261 (list). — Halffter & Martínez 1977: 17, 38, 67–68 (monograph, redescription). — Halffter & Edmonds 1982: 139 (list, ecology). — Medina & Lopera-Toro 2000: 311 (key). — Vaz-de-Mello 2000: 194–195 (checklist). — Medina *et al.* 2001: 137 (checklist); 2003: 65 (list, phylogeny). — Hamel-Leigue *et. al.* 2006: 15 (checklist). — Monaghan *et al.* 2007: 682 (phylogeny). — Molano & Medina 2010: 689 (comments). — Vaz-de-Mello *et al.* 2011a: 6, 11, 19, 26, 34, 41, 45, figs 154–155 (key). — Carvajal *et. al.* 2011: 116, 314 (checklist). — Solís *et al.* 2011: 36 (list for Atlantico Department, Colombia). — Solís & Kohlmann 2012: 3 (cited as a junior synonym of *Canthon*). — Boilly & Vaz-de-Mello 2013: 108 (key). — Tarasov & Génier 2015: 21 (phylogeny). — Tarasov & Dimitrov 2016: 15 (phylogeny). — Vaz-de-Mello & Silva 2017: 144–145 (key to the species from South America south of the Amazon). — Cupello & Vaz-de-Mello 2018: 15, 18, 34, 47, 54 (cited). — Chamorro *et al.* 2018: 76, 98 (key for Ecuador); 2019: 10, 229, 263 (catalogue). — Silva & Valois 2019: 301–341 (revision).

*Canthon* (*Scybalocanthon*) – Krajcik 2006: 25 (catalogue); 2012: 63 (catalogue).

***Scybalocanthon cyanocephalus*** (Harold, 1868)
Fig. 72A

*Canthon cyanocephalus* Harold, 1868a: 13, 53 (original description). Type locality: Venezuela or Colombia: Orinoco River. Name-bearing type: lectotype (MFNB), designated by Silva & Valois (2019), examined by FZVM.

*Canthon cyanocephalus* – Harold 1869d: 990 (catalogue). — Bates 1887: 28 (comments). — Gillet 1911b: 29 (catalogue). — Schmidt 1922: 65, 74 (diagnosis). — Balthasar 1939a: 191 (monograph, key). — Krajcik 2006: 26 (checklist); 2012: 63 (checklist).
*Canthon cyanocephalum* – Blackwelder 1944: 199 (checklist). — Roze 1955: 41 (checklist).
*Scybalocanthon cyanocephalus* – Pereira & Martínez 1956a: 115, 119 (key). — Vulcano & Pereira 1964: 637 (catalogue); 1967: 554 (key). — Halffter & Martínez 1977: 68 (list). — Larsen *et al.* 2008: 1294 (list). — Ferrer-Paris *et al.* 2013: 110 (list). — Hielkema & Hielkema 2019: 81 (catalogue for the Guianas). — Silva & Valois 2019: 307, 319 (key, diagnosis). — Storck-Tonon *et al.* 2020: 2426 (diversity).
*Scybalocanthon cyanocephalum* – Vaz-de-Mello 2000: 194 (checklist).

**Material examined**

VENEZUELA – **Bolívar** • 1 ♀; Isla de Anacoco; 61°8′00″ W, 6°43′0″ N; 6 Aug 2006; Curso NM 2006 leg.; CEMT • 1 ♂; Isla de Anacoco; 6°43′0″ N, 61°8′00″ W; 6 Aug. 2006, N.M. Curso 2007 leg.; CEMT.

**Distribution**

Venezuela, Trinidad and Tobago, French Guiana, and Brazil (Silva & Valois 2019).

**Subregions of Venezuela**

Delta plain of the Orinoco River and coastal swamp of the San Juan River, System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Guiana Shield.

**Literature records**

Harold, 1868a: 13, 53 ([Venezuela?]: Orinoco). — Blackwelder 1944:199 (Venezuela). — Roze 1955: 41 (Venezuela). — Vulcano & Pereira 1964: 637 (Venezuela). — Larsen *et al.* 2008: 1294 (Venezuela: Bolívar). — Ferrer-Paris *et al.* 2013: 110 (Venezuela: Bolívar: Isla de Anacoco). — Silva & Valois 2019: 307, 319 (Venezuela: Bolívar).

***Scybalocanthon haroldi*** Silva & Valois, 2019
Fig. 72B

*Scybalocanthon haroldi* Silva & Valois, 2019: 321 (original description). Type locality: Venezuela: Aragua: Parque Nacional Henri Pittier, Estación Biológica Rancho Grande, Portachuelo. Name-bearing type: holotype (CEMT), examined by CL and FZVM.

**Type material**

**Holotype**

VENEZUELA – **Aragua** • ♂; Parque Nacional Henri Pittier, Estación Biológica Rancho Grande, Portachuelo; 10.347620° N, 67.688039° W; 1100 m a.s.l.; 2 Sep. 1978; J.M. Ayala leg.; CEMT.

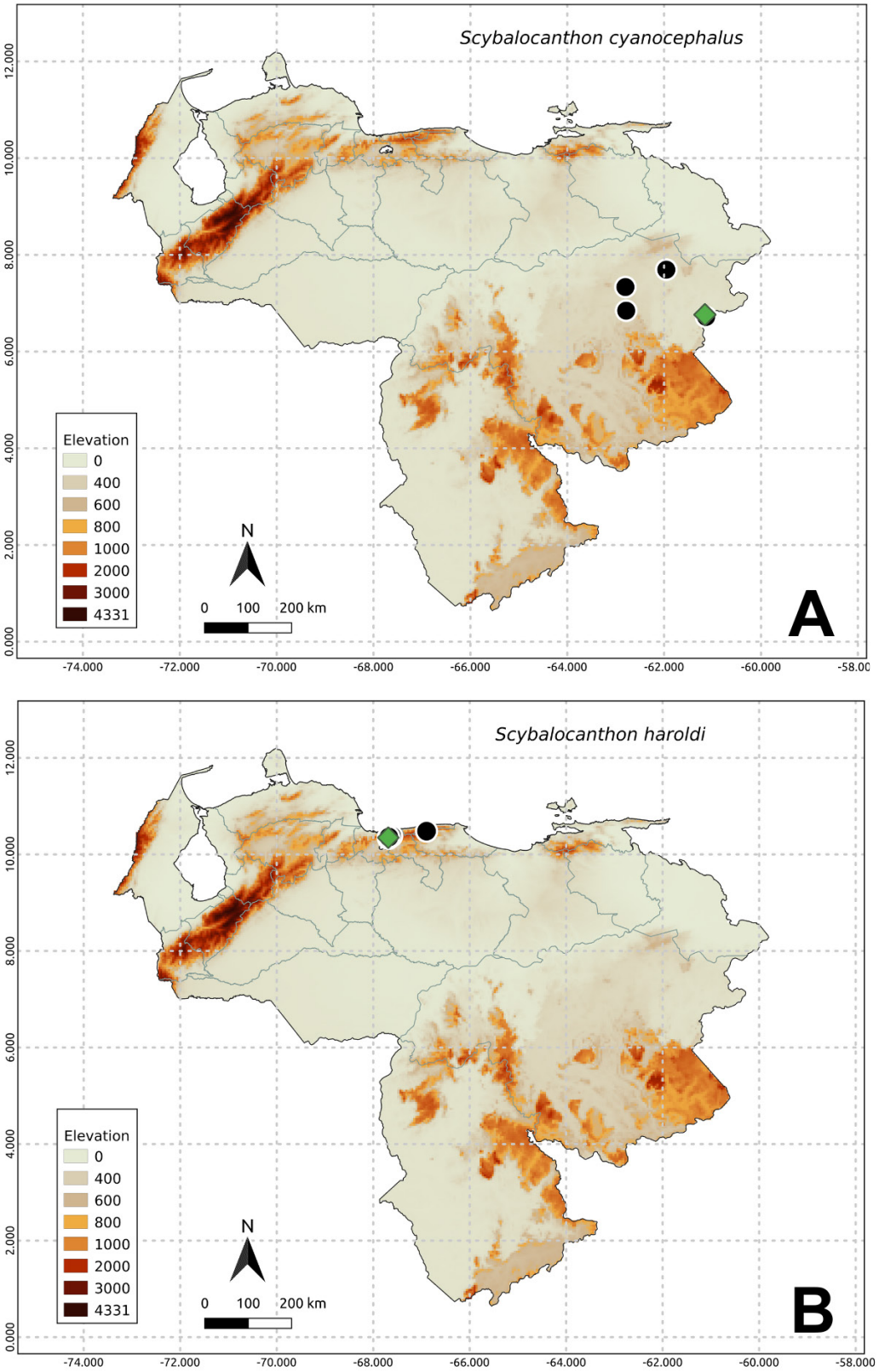


**Fig. 72.** Species distribution. **A**. *Scybalocanthon cyanocephalus* (Harold, 1868). **B**. *Scybalocanthon haroldi* Silva & Valois 2019. Green diamond = CEMT collection data; black circle = literature data.

**Paratypes**

VENEZUELA – **Aragua** • 1 ♀; Parque Nacional Henri Pittier; 16 May 1993; Hornburg leg.; CEMT • 1 ♂; same locality as for holotype; 10°20′59″ N, 67°40′55″ W; 1500 m a.s.l.; 21–25 Feb. 1971; S. Peck leg.; forest, human dung; CEMT.

**Distribution**

Venezuela (endemic).

**Subregion of Venezuela**

Central Coast Mountain Range.

**Literature record**

Silva & Valois 2019: 322 (Venezuela: Aragua).

***Scybalocanthon pygidialis*** (Schmidt, 1922)
Fig. 73A

*Canthon pygidialis* Schmidt, 1922: 65, 79, 90 (original description). Type locality: Amazon, no specified country ("Amazonas") (see Vaz-de-Mello & Cupello 2018). Name-bearing type: lectotype (SMTD), designated by Silva & Valois (2019), examined by FZVM.

*Canthon pygidialis* – Balthasar 1939a: 192 (monograph). — Blackwelder 1944: 201 (checklist). — Krajcik 2006: 30 (checklist); 2012: 64 (checklist). — Vaz-de-Mello & Cupello 2018: 63, 64 (list of types).

*Scybalocanthon pygidialis* – Pereira & Martínez 1956a: 114, 119 (key, new combination). — Vulcano & Pereira 1964: 639 (catalogue); 1967: 554 (key). — Halffter & Martínez 1977: 68 (list, review). — Feer 2000: 32 (list); 2008: 56, 62 (ecology); 2013: 767 (list for French Guiana). — Medina *et al.* 2001: 137 (checklist for Colombia); 2003: 49 (fig. 119). — Feer & Pincebourde 2005: 30 (list). — Quintero & Roslin 2005: 3307 (list, habitat). — Larsen 2011: 99 (list); 2013: 97 (list). — Price & Feer 2012: 327 (list). — Ratcliffe 2013: 493 (list, ecology). — Feer & Boissier 2015: 169 (list). — Hielkema & Hielkema 2019: 82 (catalogue for the Guianas). — Silva & Valois 2019: 307, 331 (revision).

*Scybalocanthon pygidiale* – Vaz-de-Mello 2000: 194–195 (checklist).

**Distribution**

Venezuela, Suriname, French Guiana, and Brazil (Silva & Valois 2019).

**Subregions of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, and Guiana Shield.

**Literature records**

Schmidt 1922: 90 ([Venezuela?]: Amazonas). — Medina *et al.* 2003: 65 (Venezuela). — Silva & Valois 2019: 307, 331 (Venezuela: Bolívar).

***Scybalocanthon sexspilotus*** (Guérin-Méneville, 1855)
Fig. 73B

*Canthon sexspilotum* Guérin-Méneville, 1855: 587 (original description). Type locality: Brazil: Amazonas: Iranduba, Amazon River, Marchantaria island, 59°58′ W, 3°15′ S, varzea. Name-bearing type: neotype (CEMT), designated by Silva & Valois (2019), examined by CL and FZVM.

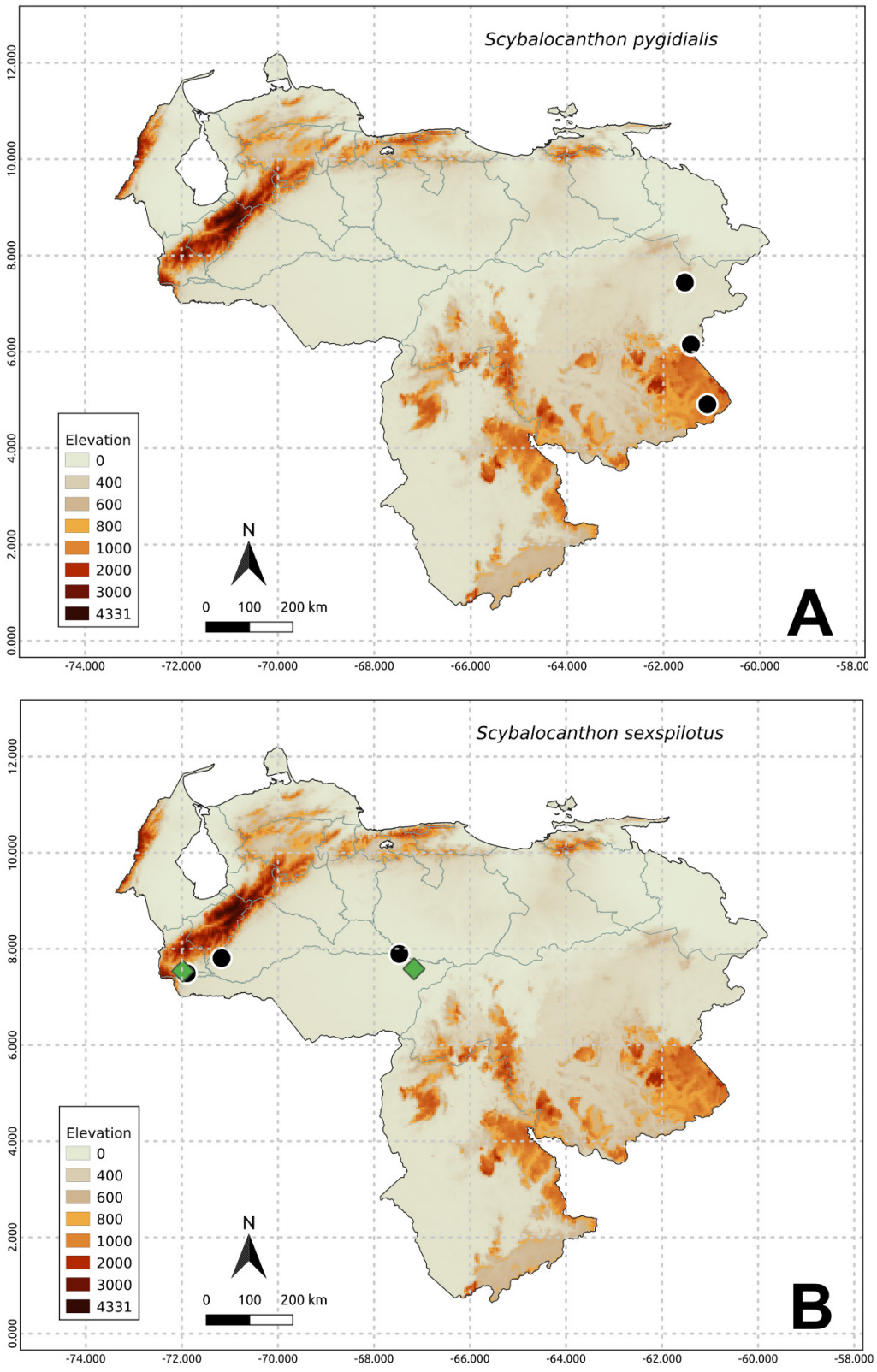


**Fig. 73.** Species distribution. **A**. *Scybalocanthon pygidialis* (Schmidt, 1922). **B**. *Scybalocanthon sexspilotus* (Guérin-Méneville, 1855). Green diamond = CEMT collection data; black circle = literature data.

*Canthon rufulus* Harold, 1868a: 13, 54 (original description). Type locality: the banks of the Amazon River, no specified country (Harold 1868a). Name-bearing type: unknown whereabouts (Silva & Valois 2019).

*Canthon imitans* Harold, 1868a: 13, 56 (original description). Type locality: Venezuela. Name-bearing type: unknown whereabouts (Silva & Valois 2019).

*Canthon sexspilotus* – Harold 1868a: 140 (monograph); 1869d: 994 (catalogue). — Bates 1887: 28 (comments). — Gillet 1911b: 33 (catalogue). — Schmidt 1922: 65, 80 (distribution). — Balthasar 1939a: 193 (redescription, monograph). — Vulcano & Pereira 1964: 630 (catalogue); 1967: 552 (key). — Krajcik 2006: 31 (checklist); 2012: 64 (checklist). — Silva & Valois 2019: 333 (cited).

*Canthon rufulus* – Harold 1869d: 994 (cited as synonym of *Canthon sexspilotus*). — Gillet 1911b: 33 (catalog, cited as synonym of *C. sexspilotus*). — Silva & Valois 2019: 333 (cited as synonym of *Scybalocanthon sexspilotus*).

*Canthon imitans* – Harold 1869d: 991 (catalogue). — Gillet 1911b: 30 (catalogue). — Schmidt 1922: 65, 75 (distribution, redescription). — Balthasar 1939a: 193 (redescription). — Blackwelder 1944: 199 (checklist). — Roze 1955: 41 (checklist). — Krajcik 2006: 27 (checklist); 2012: 63 (checklist). — Silva & Valois 2019: 333 (cited as synonym of *S. sexspilotus*).

*Canthon sexspilotum* – Blackwelder 1944: 201 (checklist).

*Canthon rufulum* – Blackwelder 1944: 201 (checklist, cited as synonym of *C. sexspilotum*).

*Scybalocanthon imitans* – Pereira & Martínez 1956a: 114–115 (key, new combination). — Vulcano & Pereira 1964: 638 (catalogue). — Halffter & Martínez 1977: 68 (list). — Vaz-de-Mello 2000: 194 (checklist). — Ratcliffe *et al.* 2015: 196 (cited for Peru). — Silva & Valois 2019: 333 (cited as synonym of *S. sexspilotus*).

*Scybalocanthon sexpilotus* – Halffter & Martínez 1977: 67 (list). — Vaz-de-Mello 2000: 194 (checklist). — Medina *et al.* 2001: 137 (checklist for Colombia). — Ratcliffe *et al.* 2015: 196 (cited for Peru). — Silva & Valois 2019: 333 (revision); 2019: 333 (revision). — Hielkema & Hielkema 2019: 82 (catalogue for the Guianas).

**Material examined**

VENEZUELA – **Apure** • 1 ♂, 1 ♀; San Fernando; 7°53′38″ N, 67°28′23″ W; 26 Aug. 2006; curso NM 2006 leg.; CEMT. – **Táchira** • 1 ♀; Isla de Betancurt; 29 May 1986; D. Havranek leg.; CEMT.

**Distribution**

Colombia, Venezuela, Peru, Bolivia, and Brazil (Silva & Valois 2019),

**Subregion of Venezuela**

Plains.

**Literature records**

Harold 1868a: 56 (Venezuela); 1869d: 991 (Venezuela). — Gillet 1911b: 30 (Venezuela). — Schmidt 1922: 75 (Venezuela). — Balthasar 1939a: 193 (Venezuela). — Blackwelder 1944: 199 (Venezuela). — Krajcik 2012: 63 (Venezuela). — Pereira & Martínez 1956a: 115 (Venezuela). — Vulcano & Pereira 1964: 638 (Venezuela); 1967:554 (Venezuela). — Silva & Valois 2019: 333 (Venezuela: Apure, Barinas and Táchira).

## Genus ***Sulcophanaeus*** d'Olsoufieff, 1924

*Eucopricus* Gistel, 1857: 602 (original description). Type species: *Phanaeus columbi* Macleay, 1819, by original designation. **Nomen oblitum** (see Edmonds 2000).

*Phanaeus* (*Sulcophanaeus*) d'Olsoufieff, 1924: 23 (original description). Type species: *Scarabaeus sulcatus* Drury, 1773, by original designation. **Nomen protectum** (see Edmonds 2000).

*Sulcophanaeus* – Blackwelder 1944: 209 (list). — Edmonds 1972: 820–821 (key, redescription); 2003: 60 (diagnosis). — Howden & Young 1981: 12, 137 (key, redescription). — Halffter & Edmonds 1982: 136 (catalog, distribution). — Zunino 1985: 104 (comments). — Edmonds 1994: 17 (key); 2000: 3 (revision). — Gámez & Mora 2000: 17 (list). — Medina & Lopera-Toro 2000: 303 (key). — Vítolo 2000: 595 (key); 2004: 280 (diagnosis). — Vaz-de-Mello 2000: 195 (checklist for Brazil). — Medina *et al.* 2001: 140 (checklist for Colombia). — Arnaud 2002b: 14, 131 (key). — Ratcliffe 2002: 17 (checklist for Panama). — Philips *et al.* 2004b: 50 (comments). — Hamel-Leigue *et al.* 2006: 18 (list for Bolivia): 2009: 67 (distribution for Bolivia). — Vaz-de-Mello *et al.* 2011a: 25 (key). — Carvajal *et al.* 2011: 139, 320 (diagnosis, list for Ecuador). — Solís & Kohlmann 2012: 8 (checklist for Costa Rica). — Boilly & Vaz-de-Mello 2013: 107 (key). — Figueroa *et al.* 2014: 132 (distribution for Peru). — Chamorro *et al.* 2018: 75, 98 (list for Ecuador); 2019: 235 (catalogue). — Hielkema & Hielkema 2019: 107 (catalogue for the Guianas).

*Phanaeus* (*Sulcophanaeus*) – Halffter & Matthews 1966: 258 (cited, list). — Vulcano & Pereira 1967: 570 (key for the Amazon). — Krajcik 2012: 204 (checklist).

*Eucopricus* – Edmonds 2000: 3 (cited as nomen oblitum, synonym of *Sulcophanaeus*). — Solís & Kohlmann 2012: 8 (cited as synonym of *Sulcophanaeus*). — Figueroa *et al.* 2014: 132 (cited as synonym of *Sulcophanaeus*).

### ***Sulcophanaeus auricollis joffrei*** Martínez, 1988
Fig. 74A–C

*Sulcophanaeus auricollis joffrei* Martínez, 1988a: 90 (original description). Type locality: Venezuela: Táchira: "Vía Chorro del Indio and Río Negro". Name-bearing type: holotype (unknown whereabouts). Originally deposited in Martínez's personal collection, the holotype would now be expected to be in MACN (see Cupello & Vaz-de-Mello 2018), but it was not located there in 2014 by MC. Edmonds (2000), mistakenly assuming that Martínez's name-bearing types had been transferred to the CMNC with the rest of his collection, did not search for the holotype in the MACN. However, he found in the CMNC two of the five paratypes originally deposited in Martínez's collection. The other three, including the one originally assigned as the "allotype", are, like the holotype, missing.

*Sulcophanaeus auricollis joffrei* – Blanco 1988: 44 (distribution). — Edmonds 2000: 30–31 (key, revision, diagnosis). — Gámez & Mora 2000: 17 (list). — Arnaud 2002b: 138 (key); 2004: 10 (comments). — Gámez 2004: 48, 59 (distribution). — Gámez & Acconcia 2018: 68, 72–73 (list, comments, key).

*Phanaeus* (*Sulcophanaeus*) *auricollis joffrei* – Krajcik 2012: 204 (list).

#### Material examined

VENEZUELA – **Táchira** • 2 specs; Parque Nacional Chorro El Indio; Sep. 1990; J. Blanco leg.; CEMT • 2 specs; Tanque INDS, Vía Chorro del Indio; Oct. 1984; J. Blanco leg.; CEMT.

#### Distribution

Venezuela (endemic).

#### Subregions of Venezuela

Plains, and Andes mountains.

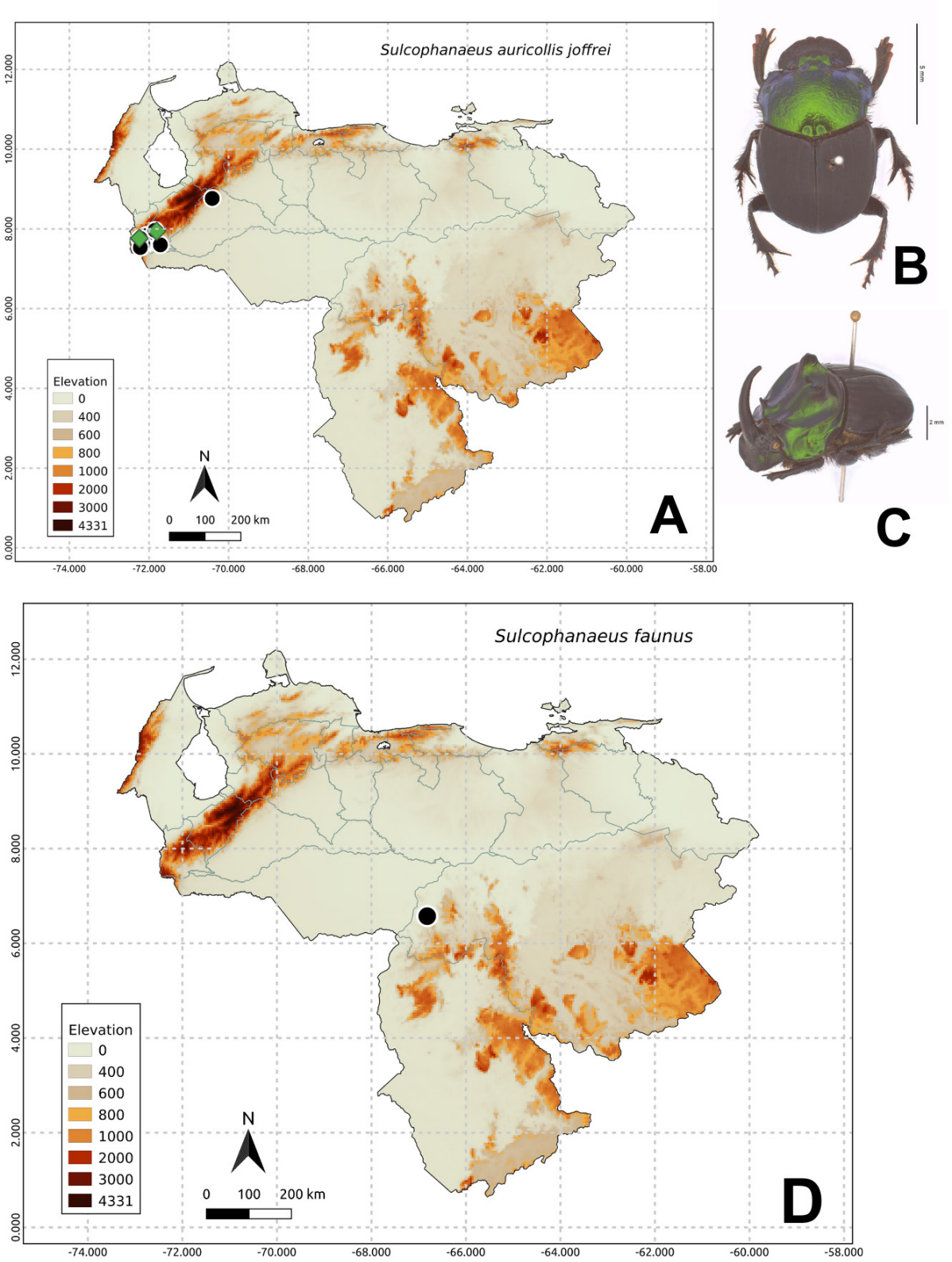


**Fig. 74.** Species distribution. **A**. *Sulcophanaeus auricollis joffrei* Martínez, 1988. **B**. Female of *S. auricollis joffrei*. **C**. Male of *S. auricollis joffrei*. **D**. *Sulcophanaeus faunus* (Fabricius, 1775). Green diamond = CEMT collection data; black circle = literature data.

**Literature records**

Blanco 1988: 44 (Venezuela: Táchira). — Martínez 1988a: 90 (Venezuela: Táchira). — Edmonds 2000: 31 (Venezuela: Barinas state: Barinitas; Táchira state: Lomas de Pánaga, San Cristobal, Parque Nacional El Tamá and Parque Nacional Chorro del Indio). — Gámez & Mora 2000: 17 (Venezuela). — Arnaud 2002b: 138 (Venezuela). — Gámez 2004: 48, 59 (Venezuela: Táchira: San Joaquín de Navay, Río Negro, Río Frío; San Cristóbal: Hacienda Pánaga). — Arnaud 2004: 10 (Venezuela). — Krajcik 2012: 204 (Venezuela: Táchira). — Gámez & Acconcia 2018: 68 (Venezuela: Cordillera de Mérida).

***Sulcophanaeus faunus*** (Fabricius, 1775)
Fig. 74D

*Scarabaeus faunus* Fabricius, 1775: 23 (original description). Type locality: French Guiana. Name-bearing type: unknown typification status and whereabouts (Zimsen 1964; Edmonds 2000).

*Scarabaeus faunus* – Olivier 1789: 103 (redescription).

*Copris faunus* – Olivier 1790: 154 (new combination, redescription). — Sturm 1802: 62 (redescription). — Erichson 1848: 564 (cited).

*Phanaeus faunus* – Erichson 1848: 564 (catalogue). — Harold 1869d: 1017 (list, distribution). — Nevinson 1892: 4 (list). — Gillet 1911b: 83 (catalogue). — d'Olsoufieff 1924: 32, 80, 146 (key, comments, distribution). — Balthasar 1941: 351 (distribution). — Blackwelder 1944: 209 (checklist).

*Phanaeus* (*Phanaeus*) *faunus* – Pessôa 1934: 304–305 (key, redescription). — Vulcano & Pereira 1967: 572 (key).

*Sulcophanaeus faunus* – Edmonds 1972: 823–824 (new combination, taxonomic discussion); 2000: 8–9 (revision, key). — Vaz-de-Mello 2000: 195 (cited for Brazil). — Vítolo 2000: 595 (key); 2004: 280 (diagnosis). — Medina *et al.* 2001: 140 (cited for Colombia). — Arnaud 2002b: 131, 133 (key, diagnosis). — Hamel-Leigue *et al.* 2006: 18 (cited for Bolivia); 2009: 67 (comment). — Carvajal *et al.* 2011: 320–321 (cited for Ecuador). — Krajcik 2012: 204 (list). — Boilly & Vaz-de-Mello 2013: 105 (illustration). — Figueroa *et al.* 2014: 132–133 (comments, cites for Peru). — Ratcliffe *et al.* 2015: 195 (cited for Peru). — Boilly *et al.* 2016: 89, 95 (cited for French Guiana). — Chamorro *et al.* 2018: 98 (cited for Ecuador); 2019: 236–237 (catalogue). — Larsen 2011: 99 (cited for Suriname); 2013: 97 (list). — Feer 2000: 32 (cited for French Guiana). — Feer & Pincebourde 2005: 30 (list). — Gardner *et al.* 2008: table S1 (ecology). — Pacheco & Vaz-de-Mello 2015: 2 (list).

*Sulcophaneus* [sic] *faunus* – Forsyth & Gill 1993: 70 (list). — Quintero & Roslin 2005: appendix A (list).

**Distribution**

Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, Peru, Bolivia, and Paraguay.

**Subregions of Venezuela**

System of hills and low piedmont mountains of the Guiana Shield.

**Literature record**

d'Olsoufieff 1924: 80 (Venezuela). — Balthasar 1941: 351 (Venezuela); 1951: 336 (Venezuela). — Martínez & Clavijo 1990: 6 (Venezuela: Amazonas). — Arnaud 2002b: 133 (Venezuela: Amazonas). — Vítolo 2004: 280 (Venezuela).

**Remarks**

Although the CEMT houses no specimens of *Sulcophanaeus faunus* originating from Venezuela, the presence of the species in the country is certain. This is a highly characteristic and widely distributed

element of the Amazonian fauna, and there is no chance that such an experienced scarab specialist as Antonio Martínez would have misidentified the three specimens he studied from Atabapo, Amazonas state (Martínez & Clavijo 1990). The same is true for d'Olsoufieff (1924), even though his material bore information no more specific than just the name of the country. The other records for Venezuela found in the literature are all based on either Martínez & Clavijo or d'Olsoufieff.

***Sulcophanaeus leander*** (Waterhouse, 1891)
Fig. 75A

*Phanaeus leander* Waterhouse, 1891c: 128 (original description). Type locality: Colombia: Cundinamarca: Bogotá. Name-bearing type: lectotype (BMNH), designated by Edmonds (2000), not examined.

*Phanaeus leander* – Heyne & Taschenberg 1908: 65 (list). — Blackwelder 1944: 210 (cited for Colombia). — Vulcano & Pereira 1967: 573 (key).

*Sulcophanaeus leander* – Edmonds 1972: 822–824 (comments). — Blanco 1988: 44 (catalogue). — Edmonds 2000: 9, 12 (key, revision, diagnosis, distribution). — Escobar 2000: 210 (checklist for Colombia). — Gámez & Mora 2000: 17 (list). — Vítolo 2000: 595 (key); 2004: 281 (diagnosis, distribution for Colombia). — Medina *et al.* 2001: 140 (checklist for Colombia). — Arnaud 2002b: 130, 134 (key). — Noriega 2002a: 67–82 (biology); 2004: 40 (checklist for Tinigua Park, Colombia). — Gámez 2004: 48, 58 (list, distribution). — Medina & Pulido-Herrera 2009: 61 (diversity). — Noriega & Acosta 2011: 111 (ecology). — Gámez & Acconcia 2018: 70, 73 (distribution, comments, key).

*Phanaeus* (*Sulcophanaeus*) *leander* – Krajcik 2012: 204 (list, cited for Colombia).

**Material examined**

VENEZUELA – **Apure** • 2 specs; Muñoz, Finca Rancho Grande, sector El Palmar Mantecal; 200 m a.s.l.; 6 Aug 2002; CEMT. – **Mérida** • 2 spec; Jun. 2002; Terry Taylor leg.; CEMT. – **Táchira** • 1 spec.; Río Negro, Parque Nacional El Tamá; 2 Jan. 1984; Joffre Blanco leg.; CEMT • 1 spec.; San Antonio de Caparo; 22 Mar. 1986; D. Havranek leg.; CEMT.

**Distribution**

Colombia and Venezuela.

**Subregions of Venezuela**

Maracaibo Depression, Plains, Peneplain of the Casiquiare River–Upper Orinoco, System of hills and low piedmont mountains of the Guiana Shield, and Andes mountains.

**Literature records**

Vulcano & Pereira 1967: 573 (Venezuela). — Blanco 1988: 44 (Venezuela: Táchira). — Edmonds 2000: 12 (Venezuela: Amazonas: Yávita; Apure: San Fernando de Apure and Trapichote; Bolívar: Suapure: Río Caura; Táchira: Parque Nacional El Tamá, San Antonio de Capara and Caño Tigre). — Gámez & Mora 2000: 17 (Venezuela). — Arnaud 2002b: 134 (Venezuela: Apure and Zulia). — Gámez 2004: 48, 58 (Venezuela: Barinas: Ezequiel Zamora: Reserva Forestal de Caparo and Alberto Arvelo Torrealba: Sector Madre Vieja: Nuestra Señora del Pilar; Apure: Muñoz: Sector El Palmar: Finca Rancho Grande). — Vítolo 2004: 281 (Venezuela). — Noriega & Acosta 2011: 111 (Venezuela). — Gámez & Acconcia 2018: 70, 73 (Venezuela: Mérida).

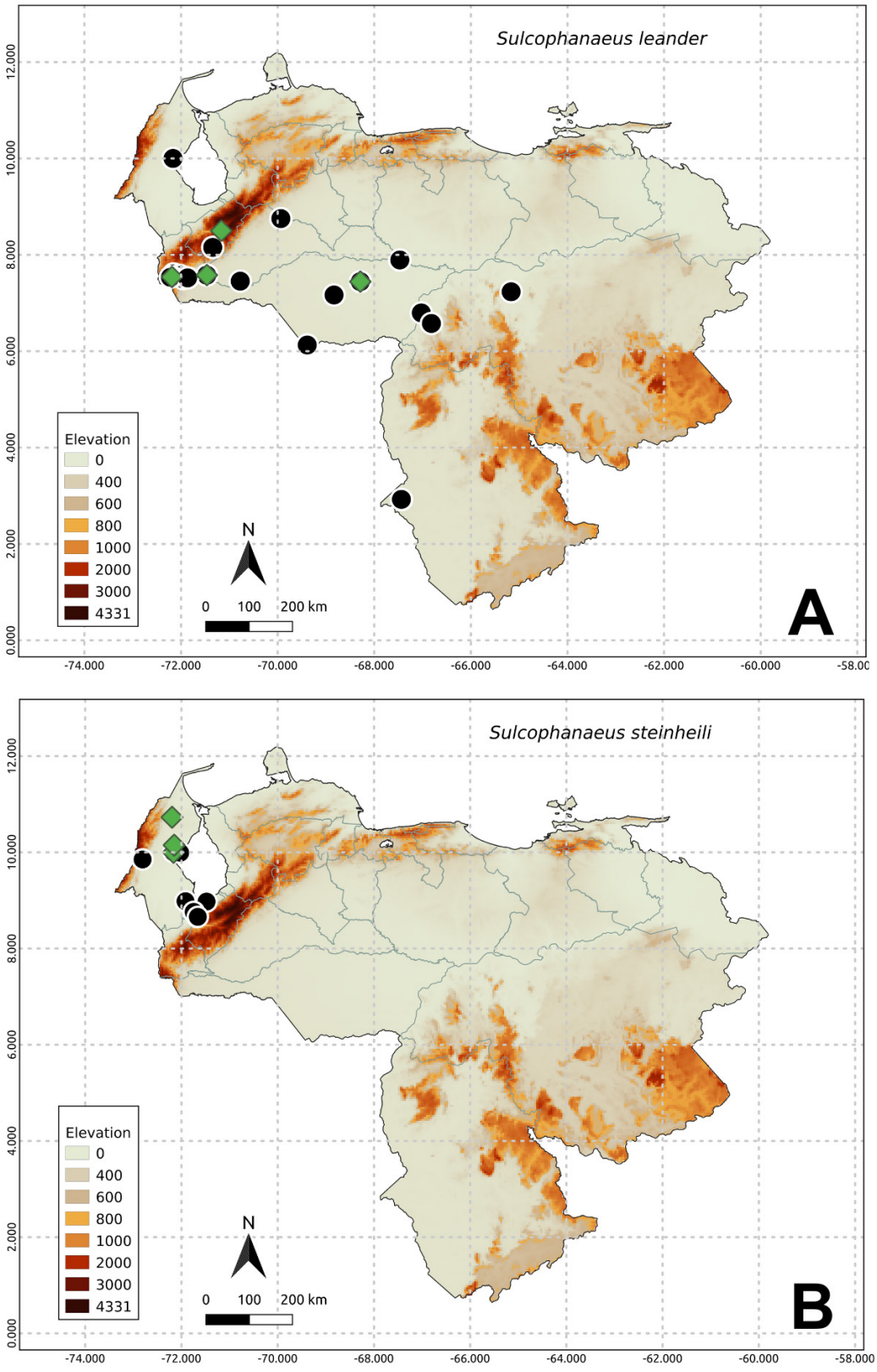


**Fig. 75.** Species distribution. **A**. *Sulcophanaeus leander* (Waterhouse, 1891). **B**. *Sulcophanaeus steinheili* (Harold, 1875). Green diamond = CEMT collection data; black circle = literature data.

***Sulcophanaeus steinheili*** (Harold, 1875)
Fig. 75B

*Phanaeus steinheili* Harold, 1875c: 213 (original description). Type locality: Colombia: Quindío. Name-bearing type: lectotype (MNHN), designated by Arnaud (1982), not examined.

*Phanaeus steinheili* – Gillet 1911b: 86 (catalog, cited for Colombia).
*Phanaeus* (*Sulcophanaeus*) *steinheili* – d'Olsoufieff 1924: 79, 135, 146 (key, redescription, distribution).
*Sulcophanaeus steinheili* – Blackwelder 1944: 209 (cited for Colombia). — Vulcano & Pereira 1967: 572 (key for the Amazon). — Edmonds 1972: 822, 824–825 (comments); 2000: 33, 36 (key, diagnosis, distribution). — Arnaud 1982: 115 (list of MNHN types). — Escobar 2000: 210 (checklist for Colombia). — Gámez & Mora 2000: 17 (list). — Vítolo 2000: 595 (key); 2004: 281 (diagnosis, distribution for Colombia). — Arnaud 2002b: 144 (key). — Gámez 2004: 48, 58 (list, distribution). — Noriega *et al.* 2007: 83 (list for Colombia). — Pulido-Herrera *et al.* 2007: 307 (Andean region of Colombia). — Gámez & Acconcia 2020: 4, 7, 10, 13 (comments, distribution, key).

**Material examined**

VENEZUELA – 2 specs; Solia [Zulia, misspelling]; Dec. 1996; J. Gaméz leg.; CEMT. – **Zulia** • 2 specs; 1 Nov. 1996; J. Gamez leg.; CEMT • 1 spec.; Colón, El Caracolí; 70 m a.s.l.; 20 Feb. 1996; Jorge Gámez leg.; pasture; CEMT • 1 spec.; Colón, Km 36 vía Santa Barbara, Hacienda Santa Ana; 40 m a.s.l.; 20 Feb. 1996; J. Gaméz and E. Moza leg.; cow dung, pasture; CEMT.

**Distribution**

Colombia and Venezuela.

**Subregions of Venezuela**

Maracaibo Depression, and Plains.

**Literature records**

Vulcano & Pereira 1967: 572 (Venezuela). — Edmonds 2000: 36 (Venezuela: Zulia and Mérida). — Gámez & Mora 2000: 17 (Venezuela). — Arnaud 2002b: 144 (Venezuela: Zulia). — Gámez 2004: 48, 58 (Venezuela: Zulia: Colón: Hacienda Santa Ana). — Vítolo 2004: 281 (Venezuela). — Gámez & Acconcia 2020: 10 (Venezuela: south of Lake Maracaibo and Sierra de Perijá).

Genus ***Sylvicanthon*** Halffter & Martínez, 1977

*Sylvicanthon* Halffter & Martínez, 1977: 61 (original description). Type species: *Canthon candezei* Harold, 1869, by original designation.

*Sylvicanthon* – Halffter & Edmonds 1982: 139 (catalog, distribution). — Medina & Lopera-Toro 2000: 311 (characteristics). — Vaz-de-Mello 2000: 195 (checklist for Brazil). — Medina *et al.* 2001: 137 (checklist for Colombia); 2003: 65 (distribution). — Hamel-Leigue *et al.* 2006: 15 (list for Bolivia). — Vaz-de-Mello *et al.* 2011a: 26 (key). — Carvajal *et al.* 2011: 117, 316 (diagnosis, list for Ecuador). — Solís & Kohlmann 2012: 3 (checklist for Costa Rica, cited as synonym of *Canthon*). — Boilly & Vaz-de-Mello 2013: 107 (key). — Chamorro *et al.* 2018: 76, 98 (list for Ecuador). — Cupello & Vaz-de-Mello 2018: 20, 56 (revision, redescription, key); 2019: 239 (catalogue). — Hielkema & Hielkema 2019: 83 (catalogue for the Guianas).
*Canthon* (*Sylvicanthon*) – Krajcik 2012: 63 (list).

***Sylvicanthon seag*** Cupello & Vaz-de-Mello, 2018
Fig. 76A

*Sylvicanthon seag* Cupello & Vaz-de-Mello, 2018: 123 (original description). Type locality: French Guiana: Saint-Laurent-du-Maroni: Maripasoula: Saül: Bélvédère de Saül, 03°37′22″ N, 53°12′57″ W, 326 m a.s.l.

*Sylvicanthon seag* – Hielkema & Hielkema 2019: 83 (catalogue for the Guianas).

**Material examined**

**Paratypes**

VENEZUELA – **Bolívar** • 1 ♂; "93-51-07/08/06"; "NM 93 ej. 144542 / Anacoco / Edo. Bolívar, VEN / 93-T-051, heces, col. curso NM2006 / 07 ago 2006 12:25, 20h / *Sylvicanthon bridarolli* / Martínez, 19489 det. A. Solís"; "77"; "PARATYPE ♂/ *Sylvicanthon seag* / sp. nov. Cupello & / Vaz-de-Mello des. 2015, [yellow label]"; "CEMT / CUIABÁ / 00058130 [white label]"; CEMT • 1 ♀; "NM 93 ej. 144543 / Anacoco / Edo. Bolívar, VEN / 93-T-051, heces, col. curso NM2006 / 07 ago 2006 12:25, 20h / Sylvicanthon bridarolli / Martínez, 19489 det. A. Solís"; "PARATYPE ♀/ *Sylvicanthon seag* / sp. nov. Cupello & / Vaz-de-Mello des. 2015, [yellow label]"; "CEMT / CUIABÁ / 00058131 [white label]"; CEMT • 1 ♀; "VENEZ: Bolivar / 10km S El Dorado / 17.VII-7.VIII.86 / B.Gill 200m"; "PARATYPE ♀/ *Sylvicanthon seag* / sp. nov. Cupello & / Vaz-de-Mello des. 2015, [yellow label]"; "CEMT / CUIABÁ / 00058127 [white label]"; CEMT • 1 ♀; "VENEZ: Bolivar / Rio Chicanan / 40km SW El Dorado / 22-23.VII.86/ B.Gill"; " PARATYPE ♀/ *Sylvicanthon seag* / sp. nov. Cupello & / Vaz-de-Mello des. 2015, [yellow label]"; "CEMT / CUIABÁ / 00058128 [white label]"; CEMT • 1 ♀; "Ven: Bolivar / 10km N Corocito; 18.VI-3.VIII.87 / S & JPeck, FIT / R. Caura rainforest"; "PARATYPE ♀/ *Sylvicanthon seag* / sp. nov. Cupello & / Vaz-de-Mello des. 2015, [yellow label]"; "CEMT / CUIABÁ / 00058129 [white label]"; CEMT.

**Distribution**

Venezuela, Trinidad and Tobago, Guyana, Suriname, French Guiana, and Brazil.

**Subregions of Venezuela**

Plains, Delta plain of the Orinoco River and coastal swamp of the San Juan River, Peneplain of the Caura and Paragua rivers, Peneplain of the Casiquiare River–Upper Orinoco, System of hills and low piedmont mountains of the Guiana Shield, System of low mountains and hills Imataca-Cuyuní of Northeast Guyana Shield, Andes mountains, Oriental Coast Range, and Guiana Shield.

**Literature record**

Cupello & Vaz-de-Mello 2018: 123 (Venezuela: Amazonas, Bolívar, Delta Amacuro, Mérida and Monagas).

Genus ***Tetraechma*** Blanchard, 1841

*Tetraechma* Blanchard, 1841: pl. 10 fig. 6 (the genus-group name is made available by being accompanied with an indication – namely, an illustration of an individual assigned to the taxon – in accordance with Article 12.2.7 of the Code [ICZN 1999]). Type species: *Tetraechma sanguineomaculata* Blanchard, 1841, by original monotypy. Note: See Cupello *et al.* (2023b) for details on the publication date of both the genus-group name and its type species.

*Tetraechma* – Blanchard 1846: 167 (first description). — Harold 1868a: 15, 97 (synonym of *Canthon*, key); 1869d: 993 (synonym of *Canthon*, catalogue). — Burmeister 1873: 410 (synonym of *Canthon*,

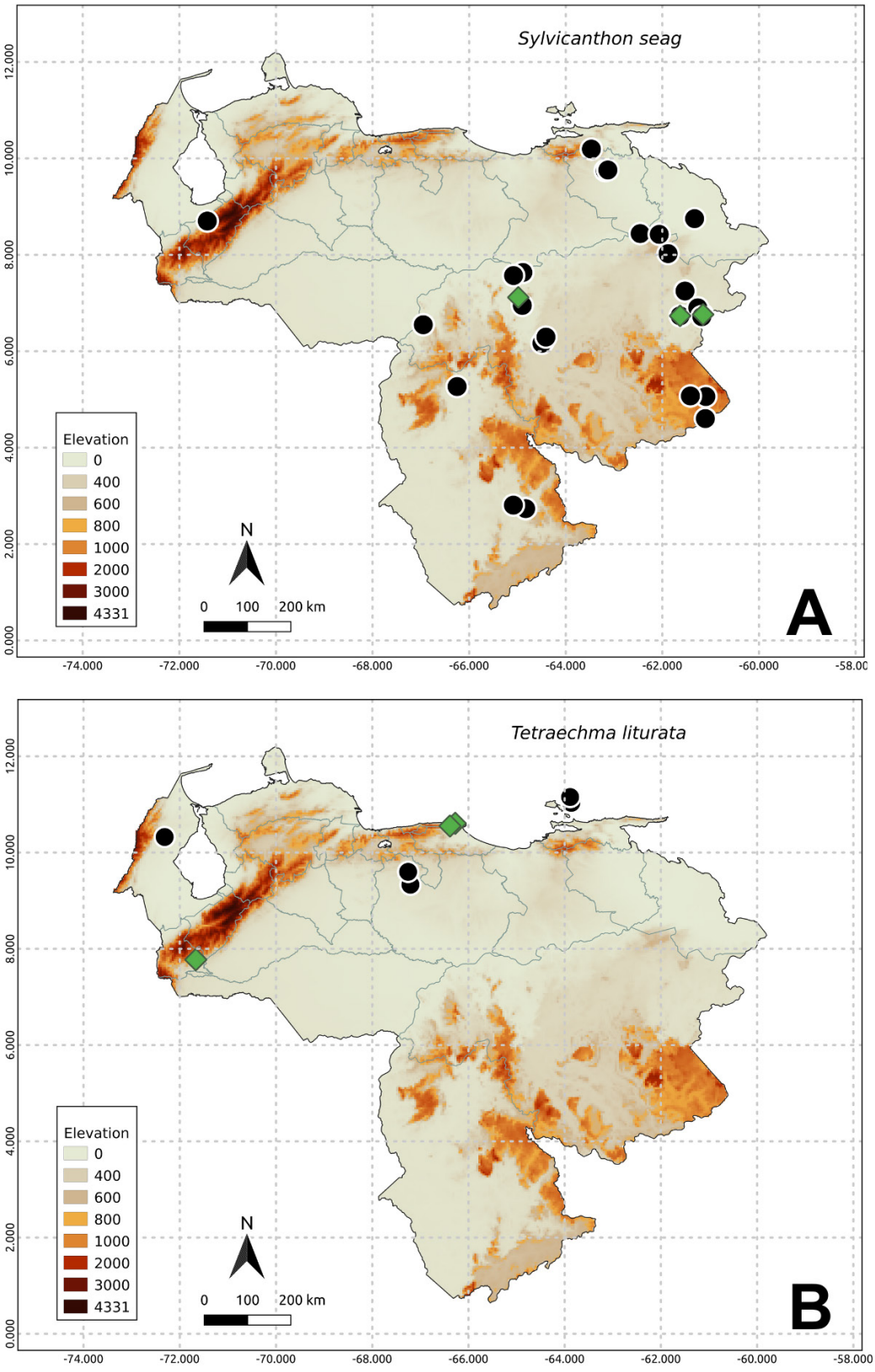


**Fig. 76.** Species distribution. **A**. *Sylvicanthon seag* Cupello & Vaz-de-Mello, 2018. **B**. *Tetraechma liturata* (Germar, 1813). Green diamond = CEMT collection data; black circle = literature data.

catalogue). — Kolbe 1907: 61 (synonym of *Canthon*, catalogue). — Bruch 1911: 185 (synonym of *Canthon*, catalogue). — Gillet 1911b: 33 (synonym of *Canthon*, catalogue). — Lucas 1920: 634 (synonym of *Canthon*, catalogue). — Schmidt 1922: 80 (synonym of *Canthon*, key). — Balthasar 1939a: 210 (synonym of *Canthon*, key for *Canthon*). — Blackwelder 1944: 201 (synonym of *Canthon*, catalogue). — Martínez 1949b: 186 (synonym of *Canthon*, list); 1959: 59 (catalogue). — Pereira & Martínez 1956a: 108 (revalidation). — Halffter 1961: 230 (monograph). — Vulcano & Pereira 1964: 589 (catalogue). — Halffter & Martínez 1977: 35, 44, 59 (checklist, descriptions). — Cupello & Vaz-de-Mello 2018: 12, 13, 17, 34 (revision of *Sylvicanthon*). — Nunes & Vaz-de-Mello 2022: 1–4 (revision).

***Tetraechma liturata*** (Germar, 1813)
Fig. 76B

*Ateuchus lituratus* Germar, 1813: 117 (original description). Type locality: Brazil. Name-bearing type: lectotype (MFNB), designated by Nunes & Vaz-de-Mello (2022), examined by FZVM.

*Canthon quadripustulatum* Guérin-Ménéville, 1855: 587 (original description). Type locality: South America: Amazon. Name-bearing type: unknown typification status and whereabouts (Nunes & Vaz-de-Mello 2022).

*Canthon lituratus bifasciatus* Schmidt, 1920: 120 (original description). Type locality: Colombia: Tolima: Honda, Magdalena River. Name-bearing type: lectotype (NHRS), designated by Vaz-de-Mello & Cupello (2018) [Nunes & Vaz-de-Mello's (2022) designation of the same specimen as the lectotype is invalid for being junior], examined by FZVM.

*Canthon lituratus solutus* Schmidt, 1920: 120 (original description). Type locality: Colombia. Name-bearing type: lectotype (NHRS), designated by Vaz-de-Mello & Cupello (2018) [Nunes & Vaz-de-Mello's (2022) designation of the same specimen as the lectotype is invalid for being junior], examined by FZVM.

*Canthon lituratus* – Perty 1830: 38 (description). — Harold 1868a: 95 (redescription). — Harold 1880: 15 (cited for Barranquilla, Colombia). — Bruch 1915: 540 (catalog, cited as synonym of *Canthon apicalis*). — Schmidt 1920: 120 (distribution). — Boucomont 1928b: 3 (list). — Pessôa & Lane 1941: 422 (monograph, distribution). — Martínez 1959: 35 (catalogue for Argentina). — Vulcano & Pereira 1964: 617 (catalogue). — Halffter & Martínez 1977: 10 (notes). — Howden & Young 1981: 25 (redescription). — Escobar 1997: 423 (list); 2000: 206 (checklist for Colombia). — Solís & Kohlmann 2002: 29 (redescription, distribution). — Bustos-Gómez & Lopera-Toro 2003: 61 (diet). — Noriega 2004: 40 (checklist for Tinigua Park, Colombia). — Quintero & Roslin 2005: appendix A (ecology). — Kohlmann *et al.* 2007: 29 (atlas). — Noriega *et al.* 2007: 82 (list). — Pulido-Herrera *et al.* 2007: 307 (cited for Andean region of Colombia). — Cultid-Medina *et al.* 2012: 67 (guide). — Solís & Kohlmann 2012: 3 (checklist for Costa Rica). — Ferrer-Paris *et al.* 2013: 108 (list). — Silva *et al.* 2014: 348 (diversity); 2017: 490 (list). — Giraldo *et al.* 2018: 26 (guide). — Nieto *et al.* 2020: 136 (report). — Nunes & Vaz-de-Mello 2022: 1–4 (revision).

*Canthon lituratus quadripustulatus* – Harold 1868a: 95 (key). — Harold 1869a: 992 (catalogue). — Bates 1887: 33 (list, cited for Panama). — Bruch,1911: 184 (catalogue). — Gillet 1911b: 31 (catalogue). — Schmidt 1920: 120 (list); 1922: 76 (key). — Pessôa & Lane 1941: 422 (catalogue). — Pereira 1944: 88 (list). — Vulcano & Pereira 1964: 618 (cited). — Nunes & Vaz-de-Mello 2022: 19 (cited).

*Canthon lituratus bifasciatus* – Schmidt 1920: 125 (description, list). — Schmidt 1922: 76 (key). — Pessôa & Lane 1941: 422 (catalogue). — Pereira 1944: 88 (list). — Vulcano & Pereira 1964: 618 (cited). — Nunes & Vaz-de-Mello 2022: 19 (cited).

*Canthon lituratum* – Blackwelder 1944: 200 (checklist). — Roze 1955: 41 (checklist for Venezuela). — Vulcano & Pereira 1964: 617 (cited). — Nunes & Vaz-de-Mello 2022: 17 (cited).

*Canthon lituratum quadripustulatum* – Blackwelder 1944: 200 (checklist). — Gacharná 1951: 221 (catalogue). — Vulcano & Pereira 1964: 618 (cited). — Nunes & Vaz-de-Mello 2022: 19 (cited).
*Canthon lituratum bifasciatum* – Blackwelder 1944: 200 (checklist). — Gacharná 1951: 221 (list). — Roze 1955: 41 (species list). — Nunes & Vaz-de-Mello 2022: 19 (cited).
*Canthon lituratum solutum* – Blackwelder 1944: 200 (checklist). — Gacharná 1951: 221 (catalogue). — Vulcano & Pereira 1964: 618 (cited). — Nunes & Vaz-de-Mello 2022: 19 (cited).
*Canthon* (*Canthon*) *lituratus* – Halffter & Martínez 1977: 89 (list). — Vaz-de-Mello *et al.* 2011b: 86 (list). — Hielkema & Hielkema 2019: 62 (catalogue for the Guianas).
*Tetraechma liturata* – Nunes & Vaz-de-Mello 2022: 17–22 (remarks).

**Material examined**

VENEZUELA – **La Guaira** • 1 spec.; Vargas, La Sabana; 10°36′25.34″ N, 66°16′31.08″ W; 17 m a.s.l.; 19 Jul. 2009; H. Martínez, P. Cely, M. Córdova and M. Núñez leg.; human faeces; CEMT. – **Táchira** • 2 spec.s; Libertador, San Joaquín de Navay; 7.7741° N, 71.6675° W; 550 m a.s.l.; Aug. 2006; T. Good leg.; CEMT.

**Distribution**

Colombia, Venezuela, Brazil, Bolivia, Paraguay, Argentina, and Uruguay.

**Subregions of Venezuela**

Maracaibo Depression, Plains, Andes mountains, Central Coast Mountain Range and Cerro Copey, and Margarita Island.

**Literature records**

Schmidt 1922: 76 (Venezuela). — Pessôa & Lane 1941: 422 (Venezuela). — Roze 1955: 41 (Venezuela: Nueva Esparta: Isla Margarita: Manzanillo and La Asunción; and Guárico). — Howden & Young 1981: 25 (Venezuela). — Solís & Kohlmann 2002: 29 (Venezuela). — Ferrer-Paris *et al*. 2013: 108 (Venezuela: Aragua [Guárico]: Altagracia de Orituco; Zulia: Rosario de Perijá). — Nunes & Vaz-de-Mello 2022: 20–21 (Venezuela: La Guaira and Táchira).

## Genus ***Uroxys*** Westwood, 1842

*Uroxys* Westwood, 1842: 59 (original description). Type species: *Uroxys cuprescens* Westwood, 1842, by original monotypy.
*Pseuduroxys* Balthasar, 1938: 210 (original description). Type species: *Pseuduroxys ohausi* Balthasar 1938, by original monotypy.

*Uroxys* – Westwood 1843: 61 (redescription); 1847: 229 (redescription). — Agassiz 1846: 1111 (catalogue). — Lacordaire 1855: 91 (redescription). — Harold 1868c: 37, 54 (redescription, key); 1869d: 1001 (catalogue). — Bates 1887: 43 (distribution). — Gillet 1911b: 49 (catalogue). — Lucas 1920: 666 (catalog, distribution). — Arrow 1933: 387 (list). — Paulian 1938: 233 (key). — Pessôa & Lane 1941: 441 (diagnosis, misspelled as *Uroxis*). — Blackwelder 1944: 203 (catalogue). — Pereira 1954a: 56 (key). — Roze 1955: 43 (checklist for Venezuela). — Halffter & Matthews 1966: 256 (catalog, distribution). — Vulcano & Pereira 1967: 576 (key for the Amazon). — Howden & Young 1981: 13, 50 (key, redescription). — Halffter & Edmonds 1982: 137 (catalog, distribution). — Medina & Lopera-Toro 2000: 306 (key). — Vaz-de-Mello 2000: 195 (checklist for Brazil). — Medina *et al.* 2001: 139 (checklist for Colombia). — Ratcliffe 2002: 15 (checklist for Panama). — Kohlmann 2003: 56 (diagnosis). — Hamel-Leigue *et al.* 2006: 12 (list for Bolívia). — Vaz-de-Mello *et al.* 2011a: 22 (key). — Carvajal *et al.* 2011: 132, 318 (diagnosis, list for Ecuador). — Krajcik 2012:

262 (list). — Solís & Kohlmann 2012: 5 (checklist for Costa Rica); 2013: 290 (redescription). — Boilly & Vaz-de-Mello 2013: 106 (key). — Chamorro *et al.* 2018: 74, 81 (list for Ecuador); 2019: 244 (catalogue). — Hielkema & Hielkema 2019: 43 (catalogue for the Guianas).

*Pseuduroxys* – Blackwelder 1944: 204 (catalog, distribution). — Halffter & Matthews 1966: 256 (catalog, distribution). — Halffter & Edmonds 1982: 137 (catalog, distribution). — Vaz-de-Mello *et al.* 2011a: 3 (cited as synonym of *Uroxys*). — Carvajal *et al.* 2011: 135, 318 (cited as synonym of *Uroxys*). — Krajcik 2012: 230 (list). — Solís & Kohlmann 2012: 5 (cited as synonym of *Uroxys*).

***Uroxys metallescens*** Harold, 1868
Fig. 77

*Uroxys metallescens* Harold, 1868c: 49 (original description). Type locality: Colombia. Name-bearing type: two syntypes (MNHN), examined by FZVM.

*Uroxys metallescens* – Harold 1869d: 1002 (catalog, cited for Colombia). — Pessôa & Lane 1941: 442 (description). — Roze 1955: 43 (checklist for Venezuela). — Vulcano & Pereira 1967: 580 (key for the Amazon). — Medina *et al.* 2001: 139 (checklist for Colombia).

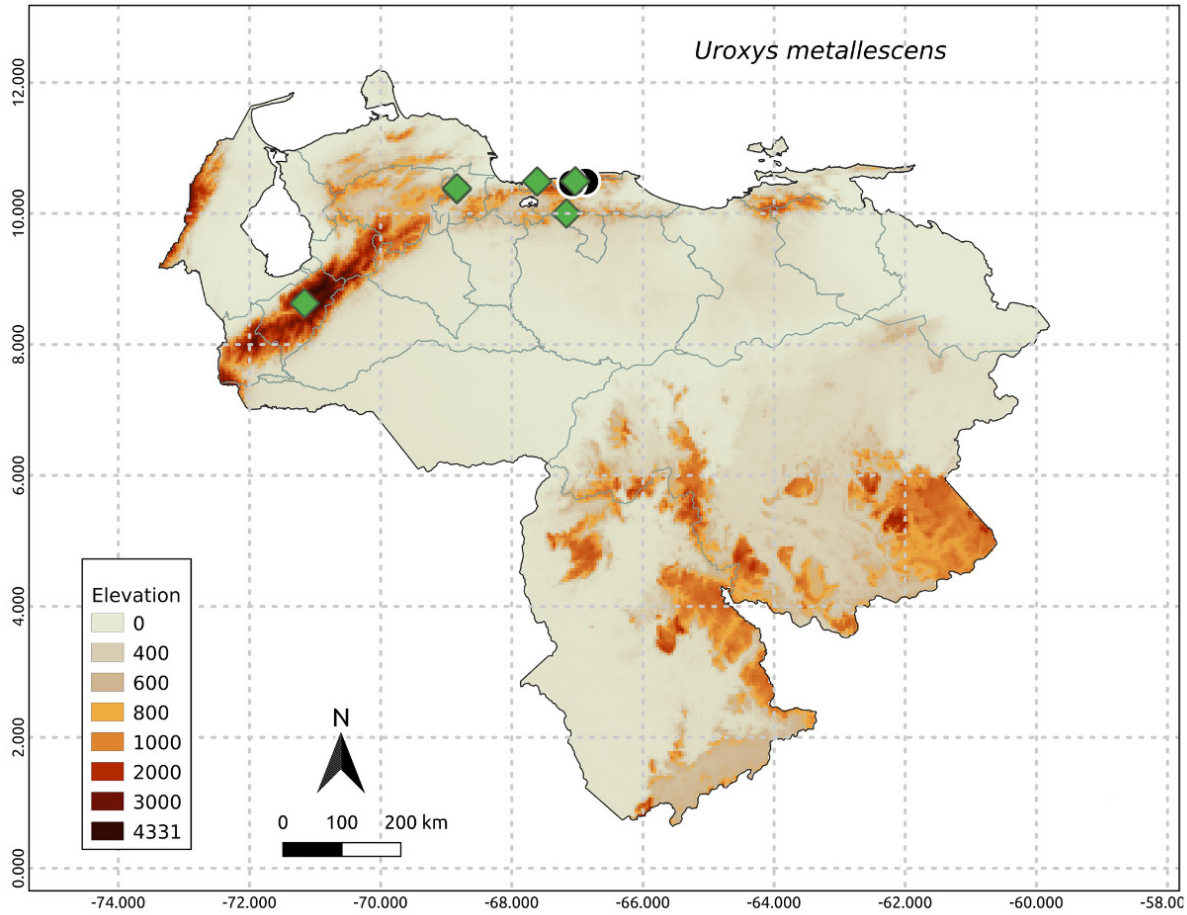


**Fig. 77.** Species distribution. *Uroxys metallescens* Harold, 1868. Green diamond = CEMT collection data; black circle = literature data.

**Material examined**

VENEZUELA – **Aragua** • 1 spec.; K. Tynuhoba leg.; CEMT • 1 spec.; Maracay, Choroni; 28 Jul. 1993; O. Hillert leg.; CEMT. – **Mérida** • 3 specs; Monte Zerpa; 2600 m a.s.l.; Jul. 1995; A. de Ascencao leg.; dung; CEMT. – **Miranda** • 1 spec.; El Junquito, bei Caracas; 30 Apr. 1995; O. Hillert leg.; CEMT. – **Yaracuy** • 1 spec.; Bolívar, Aroa; 10°23′10″ N, 68°50′14″ W; 1647 m a.s.l.; 19 Jul. 2009; M. Asmussen, P. Colmenares and H. Martínez leg.; human faeces; CEMT • 1 spec.; same locality and collector data as for the preceding; 10°22′8.21″ N, 68°50′18.52″ W; 1626 m; 21 Jul. 2009; CEMT.

**Distribution**

Colombia and Venezuela.

**Subregions of Venezuela**

Coastal mainland, Andes mountains, and Central Coast Mountain Range.

**Literature records**

Harold 1869d: 1002 (Venezuela: Distrito Capital: Caracas). — Pessôa & Lane 1941: 442 (Venezuela). — Roze 1955: 43 (Venezuela: Distrito Capital: El Junquito).

***Uroxys simplex*** Waterhouse, 1891

*Uroxys simplex* Waterhouse, 1891a: 349 (original description). Type locality: Venezuela. Name-bearing type: syntypes (BMNH), examined by FZVM.

*Uroxys simplex* – Gillet 1911b: 50 (catalogue). — Blackwelder 1944: 204 (checklist). — Roze 1955: 43 (cited, checklist for Venezuela). — Vulcano & Pereira 1967: 579 (key). — Krajcik 2012: 262 (checklist).

**Distribution**

Venezuela (endemic).

**Literature records**

Waterhouse 1891a: 349 (Venezuela). — Gillet 1911b: 50 (Venezuela). — Blackwelder 1944: 204 (Venezuela). — Vulcano & Pereira, 1967: 579 (Venezuela). — Krajcik 2012: 262 (Venezuela).

**II - Records to be confirmed for Venezuela**

Genus ***Anisocanthon*** Martínez & Pereira, 1956

*Anisocanthon* Martínez & Pereira, 1956: 363 (original description). Type species: *Deltochilum pygmaeum* Gillet, 1911a, by original designation.

*Anisocanthon* – Pereira & Martínez 1956a: 95, 108, 183 (distribution, description). — Martínez 1959: 48 (catalogue for Argentina). — Halffter 1961: 230 (monograph). — Halffter & Martínez 1977: 38, 47 (key). — Escobar 2000: 200 (list for Colombia). — Medina & Lopera-Toro 2000: 311 (illustrated key). — Medina *et al.* 2001: 103 (checklist for Colombia). — Hamel-Leigue *et al.* 2006: 3 (inventory for Bolivia). — Vaz-de-Mello *et al.* 2011: 4, 12 (list, characteristics); 2020: 1–6 (key). — Ratcliffe *et al.* 2015 (checklist for Peru).

***Anisocanthon sericinus*** (Harold, 1868)

*Canthon sericinus* Harold, 1868a: 18 (original description). Type locality: Brazil. Name-bearing type: holotype (unknown whereabouts), said by Harold (1868a) to be a female and belong to the MFNB, not found there by FZVM in 2013–2014.

*Canthon asper* – Harold 1868a: 11, 29 (original description). Type locality: Colombia. Name-bearing type: a syntype (MNHN), examined by FZVM.
*Canthon sericinum* – Blackwelder 1944: 201 (checklist). — Roze 1955: 41 (checklist for Venezuela).
*Canthon sericinus* – Harold 1869d: 11, 29 (catalogue). — Gillet 1911b: 33 (catalogue). — Schmidt 1922: 63, 80 (cited). — Balthasar 1939a: 184 (key). — Martínez 1949b: 187 (comments).
*Anisocanthon sericinus* – Martínez & Pereira 1956: 366, 376, 386 (key, diagnosis). — Martínez 1959: 49 (catalogue). — Schmidt 1922: 63, 72 (cited). — Balthasar 1939a: 184 (key). — Blackwelder 1944: 201 (checklist). — Gacharná 1951: 221 (checklist for Colombia).

**Distribution**

Supposedly Colombia, Venezuela, Suriname, Brazil, Bolivia, and Argentina (Schoolmeesters 2023).

**Literature records**

Martínez 1959: 49 (Venezuela). — Vulcano & Pereira 1964: 588 (Venezuela). — Ferrer-Paris *et al.* 2013: 108 (Venezuela: Bolívar: Isla de Anacoco).

***Canthidium basipunctatum*** Balthasar, 1939

*Canthidium basipunctatum* Balthasar, 1939d: 114 (original description). Type locality: Peru. Name-bearing type: two known syntypes (NMPC and SMF), examined by FZVM (see also Bezděk & Hájek 2012).

*Canthidium basipunctatum* – Vulcano & Pereira 1967: 590 (key to the Amazon dung beetles, transferred to *Neocanthidium*). — Martínez & Halffter 1986: 26 (transferred to *Canthidium* s. str.). — Cupello 2018: 466 (comments).

**Distribution**

Supposedly Colombia, Venezuela, Peru, and Bolivia (Vulcano & Pereira 1967; Cupello 2018; Schoolmeesters 2023).

**Literature record**

Vulcano & Pereira 1967: 590 (Venezuela).

***Canthidium coerulescens*** (Balthasar, 1939)

*Canthidium coerulescens* Balthasar, 1939d: 117 (original description). Type locality: Ecuador: eastern slopes of the Andes: "Teremotillo, Iivaria" (unknown province) and "Santa Inéz" (possibly Santa Inéz in the province of Tungurahua; see Paynter 1993). Name-bearing type: three known syntypes (NMPC and SMF), examined by FZVM (see also Bezděk & Hájek 2012).

*Canthidium coerulescens* – Vulcano & Pereira 1967: 592 (transferred to *Neocanthidium*). — Martínez & Halffter 1986: 26 (transferred to *Canthidium* (*Canthidium*)). — Ferrer-Paris *et al.* 2013: 100 (list). — Cupello 2018: 468 (comments).

**Distribution**

Supposedly Venezuela, Ecuador, and Peru (Ferrer-Paris *et al.* 2013; Cupello 2018; Schoolmeesters 2023).

**Literature record**

Ferrer-Paris *et al.* 2013: 100 (Venezuela: Miranda).

***Canthidium euchalceum*** Balthasar, 1939

*Canthidium euchalceum* Balthasar, 1939d: 123 (original description). Type locality: French Guiana: Cayenne: Kourou: Mont Pariacabo. Name-bearing type: holotype (NMPC), examined by FZVM.

**Distribution**

Supposedly Colombia, Venezuela, Suriname, French Guiana, and Bolivia (Cupello 2018; Schoolmeesters 2023).

**Literature records**

Martínez & Halffter 1986: 32 (Venezuela).

***Canthidium funebre*** Balthasar, 1939

*Canthidium funebre* Balthasar, 1939d: 125–127 (original description). Type locality: Suriname: Sipaliwini: Lucia River area. Name-bearing type: holotype (NMPC), examined by FZVM.

**Distribution**

Supposedly Ecuador, Colombia, Venezuela, and Suriname (Cupello 2018; Schoolmeesters 2023).

**Literature records**

Martínez & Halffter 1986: 32 (Venezuela). — Chamorro *et al.* 2019: 27 (Venezuela).

***Canthidium hypocrita*** Balthasar, 1939

*Canthidium hypocrita* Balthasar, 1939d: 129–130 (original description). Type locality: "Mérida"; ambiguous country, either Venezuela or Mexico (see Cupello 2018). Name-bearing type: holotype (NMPC), examined by FZVM.

**Distribution**

Unknown (see Cupello 2018).

**Literature records**

Balthasar 1939d: 130 (Mérida, ambiguous between Venezuela and Mexico). — Martínez 1947b: 111 (Mérida, as ambiguous between Venezuela and Mexico) — Martínez & Halffter 1986: 28 (Venezuela). — Bezdek & Hajek 2012: 302 (Mérida).

***Canthidium latipleurum*** Preudhomme de Borre, 1886

*Canthidium latipleurum* Preudhomme de Borre, 1886: 113 (original description). Type locality: French Guiana: Cayenne. Name-bearing type: two known syntypes (RBINS), examined by FZVM.

**Distribution**

Supposedly Venezuela, Guyana, Suriname, French Guiana, and Brazil (Cupello 2018; Schoolmeesters 2023).

**Literature record**

Martínez & Halffter 1986: 28 (Venezuela).

***Canthidium steinheili*** Harold, 1880

*Canthidium steinheili* Harold, 1880: 19 (original description). Type locality: Colombia: Cundinamarca: La Mesa and Paime. Name-bearing type: two known syntypes (MNHN), examined by FZVM. In accordance with Article 72.4.1 of the Code (ICZN 1999), the material examined by Harold (1880) from San Carlos, in the Colombian department of Antioquia, is not part of the type series because the author expressly assigned it to a variety of the species different from the "forma typica" from La Mesa and Paime. FZVM found one of the San Carlos specimens – perhaps the sole one – in the MNHN along with the two syntypes.

*Canthon steinheili* – Roze 1955: 43 (list).

**Distribution**

Supposedly Colombia and Venezuela (Cupello 2018; Schoolmeesters 2023).

**Literature record**

Martínez & Halffter 1986: 29 (Venezuela: Amazonas).

***Canthidium trinodosum*** (Boheman, 1858)

*Onthophagus trinodosus* Boheman, 1858: 46. Type locality: Brazil: Rio de Janeiro. Name-bearing type: a single known syntype (NHRS), examined by FZVM. Note: Boheman's name is a junior primary homonym of *Onthophagus trinodosus* Fåhraeus, 1857. Both names are currently in use, the former for a South American species treated in the genus *Canthidium* since Harold (1867b), the latter for an African species of *Onthophagus*. Since the two primary homonyms are in use and have not been applied to taxa considered congeneric after 1899, the junior homonym must not be automatically replaced as it would be in other situations. The case must instead be referred to the Commission under Article 23.9.5 for a ruling. In the meantime, current usage is maintained.

*Onthophagus subarmatus* Harold, 1862: 403 (new replacement name for *Onthophagus trinodosus* Boheman, 1858 due to its junior primary homonymy with *O. trinodosus* Fåhraeus, 1857). Type locality and name-bearing type: the same as for *Onthophagus trinodosus* Boheman in accordance with Article 72.7. Note: when Harold (1862) established this nomen novum, the species was still treated in *Onthophagus*. However, five years later, after seeing "the type specimen", Harold (1867b) transferred it to *Canthidium* and resurrected the replaced name, invalidating his own nomen novum. He did so because, in his view, the homonymy had been undone once the species was transferred to another genus and, therefore, nothing prevented Boheman's name from being used. This is not the interpretation of the current Code: primary homonymies are not undone even if the homonyms are no longer applied to congeneric taxa; the junior homonym is, with a few exceptions, permanently invalid according to Article 57.2 and a substitute name should be adopted following Article 60. But since, in this case, as explained above, the junior primary homonym is in prevailing usage in a different genus as that of its senior homonym, Harold's decision should be respected until the Commission rules on the case.

**Distribution**

Brazil (Cupello 2018).

**Literature record**

Roze 1955: 44 (cited for Aragua).

***Canthon acutoides*** Schmidt, 1922

*Canthon acutoides* Schmidt, 1922: (original description). Type locality: Colombia. Name-bearing type: lectotype (NHRS), designated by Vaz-de-Mello & Cupello (2018), examined by FZVM. Note: though, in the original description, Schmidt (1922) indicated the species as present in Venezuela in addition to Colombia, neither we nor Vaz-de-Mello & Cupello (2018) could locate any Venezuelan syntypes (now lectotype and paralectotypes) in collections, solely Colombian ones. All the other authors who have ascribed the species to Venezuela (see below) seem to have done so relying on Schmidt's record. In the absence of specimens originating from the country, we consider the presence of *Canthon acutoides* in Venezuela as dubious.

**Distribution**

Supposedly Colombia and Venezuela (Schoolmeesters 2023).

**Literature records**

Schmidt 1922: 72, 82 (Venezuela). — Balthasar 1939a: 208 (Venezuela). — Blackwelder 1944: 198 (Venezuela). — Vulcano & Pereira 1964: 660 (Venezuela); 1967: 553, 562 (Venezuela).

***Canthon acutus*** Harold, 1868

*Canthon acutus* Harold, 1868a: 16, 114 (original description). Type locality: Colombia and northern Brazil. The additional presence on "Insel St. Thomas", i.e., the island of Saint Thomas, in the US Virgin Islands, as informed in the original description, is certainly incorrect, as pointed out decades ago by Matthews (1966). The sole Scarabaeinae species known to be present on the island is *Canthonella parva* Chapin, 1930, first recorded from there a mere 15 years ago by Ivie & Philips (2008). Harold's syntype must be mislabelled. Name-bearing type: at least three syntypes, two found by FZVM in MNHN (one mislabelled as though from St. Thomas and another lacking any provenance label).

**Distribution**

Supposedly Colombia, Venezuela, Trinidad and Tobago, and French Guiana (Schoolmeesters 2023).

**Literature records**

Candèze 1891: 329 (Venezuela: San-Esteban). — Schmidt 1922: 72 (Venezuela). — Blackwelder 1944: 198 (Venezuela). — Martínez *et al.* 1964a: 3–4, 10 (Venezuela). — Vulcano & Pereira 1964: 660 (Venezuela); 1967: 553 (Venezuela). — Blanco1987: 42 (Venezuela: Táchira: Rio Negro y adyacentes). — Medina *et al.* 2003: 64 (Venezuela). — Larsen *et al.* 2008: 1294 (Venezuela: Bolívar).

***Canthon mutabilis*** Lucas, 1859

*Canthon mutabilis* Lucas, 1859: 100 (original description). Type locality: Peru: Loreto: Mariscal Ramón Castilla: Pebas. Name-bearing type: syntypes (MNHN), examined by FZVM.

*Canthon mutabilis basalis* Schmidt, 1920: 118. Type locality: Brazil: Santa Catarina: Joinville. Name-bearing type: lectotype (NHRS), designated by Vaz-de-Mello & Cupello (2018), examined by FZVM.

*Canthon mutabilis nigrinus* Schmidt, 1920: 118. Type locality: Peru: Junín: Chanchamayo. Name-bearing type: lectotype (NHRS), designated by Vaz-de-Mello & Cupello (2018), examined by FZVM.

*Canthon mutabilis signatus* Schmidt, 1920: 118. Type locality: Unknown (Vaz-de-Mello & Cupello 2018). Name-bearing type: unknown typification status and whereabouts (Vaz-de-Mello & Cupello 2018).

*Canthon mutabilis transversalis* Schmidt, 1920: 117. Type locality: Paraguay: Concepción. Name-bearing type: lectotype (NHRS), designated by Vaz-de-Mello & Cupello (2018), examined by FZVM.

*Canthon mutabilis variomaculatus* Schmidt, 1920: 118. Type locality: Brazil. Name-bearing type: lectotype (NHRS), designated by Vaz-de-Mello & Cupello (2018), examined by FZVM.

**Distribution**

Supposedly Panama, Colombia, Venezuela, Suriname, French Guiana, Brazil, Peru, Bolivia, Paraguay, Argentina, and Uruguay (Schoolmeesters 2023).

**Literature records**

Roze 1955: 42 (Venezuela: Miranda and Sucre). — Ferrer-Paris *et al.* 2013: 108 (Venezuela: Aragua [actually, Guárico]: Altagracia de Orituco and Zulia: Rosário de Perijá).

### ***Canthon nigellus*** Schmidt, 1922

*Canthon nigellus* Schmidt, 1922: 88 (original description). Type locality: said by Schmidt (1922) to be "Oriba", supposedly in Venezuela, and the Brazilian state of Pará. But see Remarks below. Name-bearing type: a single known syntype (NHRS), examined by FZVM.

**Distribution**

Uncertain. Possibly Venezuela and Brazil (see Remarks below).

**Literature records**

Schmidt 1922: 77, 88 (Venezuela: "Oriba" [unknown locality]). — Balthasar, 1939a: 215 (Venezuela). — Blackwelder 1944: 200 (Venezuela). — Pereira & Martínez 1960: 44 (Venezuela). — Vulcano & Pereira 1964: 639 (Venezuela); 1967: 561 (Venezuela). — Krajcik 2012: 64 (Venezuela). — Vaz-de-Mello & Cupello, 2018: 60 (Venezuela?). — Silva & Valois 2019: 301–302 (Venezuela).

**Remarks**

The only author who has claimed to have examined specimens from Venezuela was Schmidt (1922), who described the species from material said to be, in his words, from "Oriba (Venezuela), Pará (Brasilien)". Every other author who has indicated the presence of *C. nigellus* in Venezuela has done so following Schmidt. Whereas "Pará" is clearly the Brazilian state of this name (perhaps, more specifically, its capital city, Belém, which used to be called by this name by older naturalists such as H.W. Bates and A.R. Wallace [Mello-Leitão 1944; Papavero 1973]), the identity of the "Oriba" locality is most unclear. Though the single syntype so far found in collections is precisely from there, unlike Schmidt's text, its label does not mention Venezuela, but rather situates the "Oriba" locality more generically in the Amazon, with no specified country (see Vaz-de-Mello & Cupello 2018). Since we cannot tell from where Schmidt (1922) got the information that the locality is Venezuelan, we consider the presence

of the species in the country as uncertain. Paynter (1982) mentions no locality called "Oriba" in his Venezuela gazetteer. As for the alleged presence in Brazil, we also deem it suspicious and possibly in error since no syntypes from "Pará" were located by Vaz-de-Mello & Cupello (2018) in their study of the Schmidt *Canthon* types. As no specimens other than the syntypes have been so far identified in the literature as belonging to this species, for the time being, the precise range of *C. nigellus* will remain dubious. The only aspect that, thanks to the label of the single known type specimen, seems certain is that the species is present in the Amazon, possibly an endemic to the region.

***Canthon politus*** Harold, 1868

*Canthon politus* Harold, 1868a: 60–61 (original description). Type locality: Southern Mexico and Colombia. Name-bearing type: a single known syntype (MNHN), examined by FZVM.

*Canthon granadensis* Van Lansberge, 1874: 5. Type locality: Colombia ("Nouvelle Grenade", in the original description). Type material: holotype by monotypy (MNHN – ex Van Lansberge collection), examined by FZVM.

*Epilissus sydneyensis* Paulian, 1937: 121. Type locality: unknown. The type material is labelled simply as "Sydney" (Matthews 1974), presumably referring to the Australian city of this name, as indeed interpreted by Paulian (1937) in the original description. If this is what the label really means, it is certainly incorrect given that the species is exclusively South American (Martínez & Halffter 1972; Schoolmeesters 2023). Matthews (1974) was the first to notice this error and to point out the synonymy between Paulian's *Epilissus sydneyensis* and *Canthon politus*. Type material: holotype by original designation (SDEI), not examined by us.

**Distribution**

Supposedly Ecuador, Colombia, Venezuela, Guyana, Suriname, and French Guiana (Schoolmeesters 2023).

**Literature records**

Schmidt 1922: 79 (Venezuela). — Blackwelder 1944: 201 (Venezuela). — Pereira & Martínez 1956a: 137 (Venezuela). — Vulcano & Pereira 1964: 672 (Venezuela). — Martínez & Halffter 1972: 64 (eastern Venezuela). — Blanco 1987: 42 (Venezuela: Táchira: Via San Cristóbal-Chorro del Indio). — Havranek 1989: 61 (Venezuela: Mérida). — Rivera-Cervantes & Halffter 1999: 46 (Venezuela). — Ferrer-Paris *et al*. 2013: 108 (Venezuela: Mérida: La Azulita-Jají and Miranda: Altos de Pipe). — Chamorro *et al*. 2019: 56 (Venezuela). — Hielkema & Hielkema 2019: 66 (Venezuela).

***Canthon quadriguttatus*** (Olivier, 1789)

*Scarabaeus quadriguttatus* Olivier, 1789: 173, pl. 27 fig. 230 (original description). Type locality: French Guiana and Suriname. Name-bearing type: at least two syntypes (unknown whereabouts).

*Ateuchus bidens* Fabricius, 1801: 62. Type locality: Guyana. Said to be simply South America ("America meridionali") by Fabricius (1801) and stated as "Essequibo" on the label of the examined syntype. Essequibo was the name of a Dutch colony in what is now the Republic of Guyana, and is also the name of a river in the same country. Name-bearing type: three syntypes (ZMUK) (based on Zimsen 1964), one of them examined by FZVM.

*Choeridium elegans* Castelnau, 1840: 83. Type locality: French Guiana ("Cayenne"). Name-bearing type: likely originally in Castelnau's first collection and, if so, destroyed in a fire in 1865 (see Evenhuis 2012; Maldaner *et al.* 2017).

**Distribution**

Supposedly Colombia, Guyana, Suriname, French Guiana, Brazil, Ecuador, and Peru (Schoolmeesters 2023).

**Literature records**

Ferrer-Paris *et al*. 2013: 108 (Venezuela: Bolívar: Isla de Anacoco). — Hielkema & Hielkema 2019: 66 (Venezuela).

***Canthon rubrescens*** Blanchard, 1846

*Canthon rubrescens* Blanchard, 1846: 167 (original description). Type locality: Bolivia: Santa Cruz: Chiquitos and Guarayos. Name-bearing type: a single known syntype (MNHN), examined by FZVM.

*Canthon laesus* Erichson, 1847a: 105 (original description). Type locality: Peru. Name-bearing type: two known syntypes (MFNB), examined by FZVM.

*Canthon confluens* Harold, 1868a: 136 (original description). Type locality: Bolivia: Santa Cruz: Chiquitos. Name-bearing type: holotype by monotypy (ZSM), examined by FZVM.

**Distribution**

Supposedly Brazil, Peru, and Bolivia (Schoolmeesters 2023).

**Literature record**

Roze 1955: 41 (Venezuela; cited by the junior synonym *C. laesus*).

***Canthon semiopacus*** Harold, 1868

*Canthon semiopacus* Harold, 1868a: 57 (original description). Type locality: French Guiana and Brazil. Name-bearing type: two known syntypes (MFNB and ZSM), examined by FZVM.

*Geocanthon semiopacus* – Pereira & Martínez 1956a: 170 (revision, new combination). — Vulcano & Pereira 1964: 673 (catalogue).

**Distribution**

Supposedly Colombia, Venezuela, French Guiana, Brazil, Ecuador, and Bolivia (Schoolmeesters 2023).

**Literature record**

Pereira & Martínez 1956b: 170 (Venezuela). — Vulcano & Pereira 1964: 673 (Venezuela).

***Canthon velutinus*** Harold, 1868

*Canthon velutinus* Harold, 1868a: 106 (first appears in an available publication as a rejected synonym of *Canthon opacus* Boheman, 1858; eventually adopted as valid for a taxon and, thus, made available under Harold's authorship by Schmidt 1920 in accordance with Article 11.6.1 of the Code). Type locality: Argentina: Pampas grasslands. Name-bearing type: unknown to us, likely in the Harold collection material in the MNHN. Note: This name has a complicated history and, as it turns out, an unresolved status. When Harold was preparing his *Canthon* monograph, he considered that he had in front of him a new species from the Argentinian Pampas and coined for it the name *Canthon velutinus*. This name was, for a time, used both in correspondence with colleagues and in the manuscript of the monograph (Harold 1868a). But when the manuscript was already in press, Harold finally received one of Boheman's syntypes of *C. opacus* from the NHRS and concluded that it belonged to his *C.*

*velutinus*, making this name unnecessary. Running up against time, he managed to place *C. opacus* as the valid name in the heading of the species' section on page 106 and to move *C. velutinus* to the position of a rejected synonym on the same page, but he was not as successful in updating the identification key on page 15, where *C. velutinus* still appears as the valid name of the species. Despite this latter inconsistency, because it is clear from the context (especially from his explanation of the situation on page 107) that Harold did not adopt *C. velutinus* as valid in the publication – and this was later reiterated in his following year's worldwide Scarabaeidae catalogue (Harold 1869d) –, his work alone did not make the name available for not meeting Article 11.5 of the Code (ICZN 1999; see Cupello *et al.* [2022] for an analogous case). Schmidt (1920), however, argued that, contrary to Harold's decision, *Canthon opacus* Boheman, 1858 could not be adopted for the species because it was a junior homonym of *Canthon opacus* Lucas, a name published supposedly in 1857, a year earlier than Boheman's (currently, *C. opacus* Lucas is treated as an invalid subjective synonym of *Canthon unicolor* Blanchard, 1846; e.g., in Martínez 1959; Halffter & Martínez 1977). To replace Boheman's supposed junior homonym, Schmidt adopted Harold's rejected name *C. velutinus*, attributing its authorship to Harold himself. Through this act, Schmidt made *Canthon velutinus* available under Harold's (1868a) authorship in accordance with Article 11.6.1. Following Article 72.4.3, the type material of *C. velutinus* is the series of specimens ascribed to *Canthon opacus* Boheman in Harold's (1868a) monograph, including the examined Boheman's syntype, making the type series of the two names partly overlapped; should this shared syntype be designated as the lectotype of each of the names, they will become objective synonyms. Schmidt's nomenclatural interpretation – i.e., *Canthon velutinus* Harold as the valid substitute name for *C. opacus* Boheman – is in prevailing usage, having been adopted by all authors who mentioned the species in the literature ever since (e.g., Schmidt 1922; Balthasar 1939a, 1941, 1951; Blackwelder 1944; Roze 1955; Martínez 1959; Vulcano & Pereira 1964; Halffter & Martínez 1977; Vaz-de-Mello 2000; Peck *et al.* 2002; Ratcliffe *et al.* 2015). But what may eventually overturn Schmidt is that he is possibly mistaken about the priority of Lucas's homonym over Boheman's: the livraison of Lucas's book containing page 97, livraison 27, where his *C. opacus* appeared, was earliest noticed as late as 7 March 1859, indicating that it was almost certainly not published in 1857 as Schmidt believed (Bousquet 2016). If this was indeed the case and the livraison only appeared after the publication of Boheman's work (which we only know happened in 1858, no more specific date available; Bousquet 2016), then Boheman's *C. opacus* has priority in the homonymy and should regain validity, invalidating its substitute name *velutinus*. In the face of such uncertainties, we will preserve the status quo until someone revises the species and is better positioned to solve the conundrum.

*Canthon opacus* Boheman, 1858: 40 (original description). Type locality: Argentina: Buenos Aires. Name-bearing type: a single known syntype (NHRS), examined by FZVM. Note: Rejected by Schmidt (1920) for supposedly being a junior primary homonym of *Canthon opacus* Lucas, 1857, itself also invalid for being a junior subjective synonym of *Canthon unicolor* Blanchard, 1846. But see the note above.

**Distribution**

Supposedly Venezuela, Brazil, Peru, Paraguay, and Argentina (Schoolmeesters 2023).

**Literature records**

Roze 1955: 43 (cited for Venezuela).

***Canthon viduus*** Harold, 1868

*Canthon viduus* Harold, 1868a: 16, 116 (original description). Type locality: French Guiana. Name-bearing type: a single known syntype (MNHN), examined by FZVM.

*Canthon viduum* – Roze 1955: 43 (cited).

**Distribution**

Supposedly Venezuela and French Guiana (Hielkema & Hielkema 2019; Schoolmeesters 2023).

**Literature records**

Roze 1955: 43 (Venezuela).

***Canthon virens chalybaeus*** Blanchard, 1846

*Canthon chalybaeus* Blanchard, 1846: 163 (original description). Type locality: Bolivia: Cochabamba: Carrasco: Totora. Name-bearing type: a single known syntype (MNHN), examined by FZVM.

*Canthon conformis* Harold, 1868a: 14, 86 (original description, key). Type locality: Brazil and Uruguay: Montevideo. Name-bearing type: two known syntypes (MNHN, ZSM), examined by FZVM.

**Distribution**

Supposedly Venezuela, French Guiana, Brazil, Peru, Bolivia, Argentina, Paraguay, and Uruguay (Schoolmeesters 2023; but see Hielkema & Hielkema 2019).

**Literature records**

Schmidt 1922: 74 (cited as *C. conformis*). — Blackwelder 1944: 198 (cited as *C. conforme*). — Vulcano & Pereira 1964: 608 (cited as *C. conformis*).

***Deltochilum aureopilosum*** Paulian, 1939

*Deltochilum* (*D.*) *aureopilosum* Paulian, 1939: 4, figs 7–9 (original description). Type locality: Brazil: Amazonas: São Paulo de Olivença. Name-bearing type: holotype by original designation (MNHN), examined by FZVM.

**Distribution**

Supposedly Venezuela, Brazil, Peru, and Bolivia (Schoolmeesters 2023).

**Literature records**

Paulian 1939: 4 (Venezuela: Caracas). — Vulcano & Pereira 1964: 653 (Venezuela). — Krajcik 2012: 88 (Venezuela).

***Deltochilum carinatum*** (Westwood, 1837)

*Hyboma carinata* Westwood, 1837: 256 (original description). Type locality: South America. Name-bearing type: a single known syntype (OUMNH), examined by FZVM.

*Hyboma dromedarius* Castelnau, 1840: 74. Type locality: Brazil. Name-bearing type: originally said to be in the Gory collection, whose material was eventually scattered across European museums (Maldaner *et al.* 2017). The particular whereabouts of the type specimens of *Hyboma dromedarius* is unknown to us.

**Distribution**

Supposedly Colombia, Venezuela, Brazil, Guyana, Suriname, French Guiana, Ecuador, Peru, and Bolivia (Schoolmeesters 2023).

**Literature records**

Pereira & d'Andretta 1955: 8, 22 (Venezuela: Amazonas: Yavita). — Vulcano & Pereira 1964: 643 (Venezuela). — González *et al*. 2009: 263 (Venezuela). — Chamorro *et al*. 2019: 86 (Venezuela). — Hielkema & Hielkema 2019:75 (Venezuela).

***Deltochilum orbignyi amazonicum*** Bates, 1887

*Deltochilum amazonicum* Bates, 1887: 37 (original description). Type locality: Peru: Loreto: Mariscal Ramón Castilla: Pebas. Name-bearing type: lectotype (MNHN), designated by González-Alvarado & Vaz-de-Mello (2014), examined by FZVM.

**Distribution**

The polytypic species *Deltochilum orbignyi* (Blanchard, 1846) is widely distributed in South America, ranging from Colombia in the north, crossing the Brazilian Amazon and the Bolivian Chiquitano Dry Forests in the central region of the continent, and extending as far south as the Argentinian provinces of Salta and Corrientes (González-Alvarado & Vaz-de-Mello 2014). All Amazonian populations (Colombia, Ecuador, Peru, and Brazil) have been classified as the subspecies *D. orbignyi amazonicum*, whereas populations in the south, from Bolivia and Argentina, constitute the nominotypical subspecies, *D. orbignyi orbignyi* (González-Alvarado & Vaz-de-Mello 2014; Ratcliffe *et al*. 2015). Presence in Venezuela is likely, but still to be formally confirmed (see below).

**Literature records**

Paulian 1938: 262 (Venezuela). — Vulcano & Pereira 1964: 650 (Venezuela). — Blanco 1987: 43 (Venezuela: Táchira). — Larsen *et al.* 2008: 1294 (Venezuela: Bolívar: Lago Guri). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Aragua [actually, Guárico]: Altagracia de Orituco; Bolívar: Isla de Anacoco; Yaracuy: Hacienda Guáquira and Zulia: Rosario de Perijá). — Hielkema & Hielkema 2019: 79 (Venezuela).

**Remarks**

González-Alvarado & Vaz-de-Mello (2014) unfortunately did not address any of the multiple records of the taxon for Venezuela as found in the literature. Since they also did not examine any specimens from the country, Venezuela was not included in the distribution of *Deltochilum orbignyi amazonicum* as presented by them. Their nearest records are from Colombia and the Brazilian state of Amazonas. We will wait until someone confirms the presence of the species in Venezuela using González-Alvarado & Vaz-de-Mello's key before including it in the list of species certainly present in the country.

***Diabroctis mimas*** (Linnaeus, 1758)

*Scarabaeus mimas* Linnaeus, 1758: 347 (original description). Type locality: South America. Name-bearing type: unknown number of syntypes, unknown whereabouts (Valois *et al.* 2018). Linnaeus (1758) assigned to *Scarabaeus mimas* the specimen illustrated by Rösel von Rosenhof (1749: Scarabaeorum Terrestrium Praef. Classis I, pl. b fig. 1) plus material he studied in the collection of Louisa Ulrika of Prussia, Queen consort of Sweden and a patron of Linnaeus's. The latter collection was referred to by Linnaeus (1758) through the abbreviation "M.L.U.", standing for "Museum Ludovicae Ulricae" (Landin 1956; Maldaner *et al.* 2017; Hielkema 2022), not "Martin Luther University Halle-Wittenberg", Germany, as believed by Valois *et al.* (2018). The Queen's collection was donated by her grandson, King Gustav IV Adolf of Sweden, to the University of Uppsala in 1803 (Horn *et al.* 1990b) and has since been preserved in what is now known as the university's Museum of Evolution, Zoology Section (Wallin 2001). Unfortunately, no syntypes of *Scarabaeus*

*mimas* seem to have survived in the Queen's collection material (Landin 1956; Wallin 2001). In spite of that, the specimen illustrated by Rösel von Rosenhof (i.e., one of the syntypes) clearly belongs to the species modernly called *Diabroctis mimas* and confirms that the allocation of the name has been correct. If desirable, it can be designated as the lectotype. Note that Linnaeus (1758) listed a second literature reference in addition to Rösel von Rosenhof's work under *Scarabaeus mimas*: Marcgrave (1648: 247, second figure; the page was erroneously cited as "147"). But because the assignment of this reference to *Scarabaeus mimas* was doubtful – Linnaeus followed the reference with a question mark and the observation that it might refer to a minor specimen ("Marcgr. bras. 147. f. 2? sed minor") –, Marcgrave's specimen addressed in it is not part of the type series in accordance with Article 72.4.1 of the Code (ICZN 1999). This is fortunate, for Linnaeus's uneasiness was fully justified: the specimen belongs to the species modernly called *Coprophanaeus ensifer* (Germar, 1821) (Maldaner *et al.* 2017). Later, in the 12th edition of *Systema Naturae*, Linnaeus (1767) finally convinced himself of the heterospecificity of the specimens and assigned Marcgrave's no longer to *Scarabaeus mimas*, but to his new species *Scarabaeus lancifer* Linnaeus, 1767. Nevertheless, because he also assigned to this species individuals belonging to the species modernly called *Coprophanaeus lancifer* (Linnaeus, 1767), this created another nomenclatural problem, one that was only detected and solved 250 years later by Maldaner *et al.* (2017). Also noteworthy is that, as previously mentioned in the literature (Landin 1956; Valois *et al.* 2018) and confirmed by MC during his latest visit in October 2019, the collection of the Linnean Society of London houses a specimen of *Diabroctis mimas*, but one lacking any labels, let alone one in Linnaeus's handwriting. This may be a syntype that Linnaeus incorporated into his personal collection, one of the vanished specimens from Queen Louisa Ulrika's collection. If this is somehow confirmed – which, alas, due to the apparent lack of any meaningful historical data associated with it, we hardly see happening –, the specimen will be, like the one depicted by Rösel von Rosenhof, eligible to become the lectotype.

**Distribution**

Still ambiguous. The material of *D. mimas* studied for Valois *et al.*'s (2018) review of the genus originates mostly from open environments south of the Amazon Basin in Brazil and Bolivia, as well as from the banks of the lower Amazon, the Marajó Bay and their tributaries (Valois *et al.* 2018). The only exception we found in their material examined is an MNRJ male from Rio Uaupés (misspelled by them as "Uapés"), a tributary of the upper Rio Negro, in Brazil's northwestern Amazon. This might at first indicate that the species was restricted to these two sole countries. Nevertheless, records from all other South American countries except for Ecuador and Chile can be found in the literature (see works cited by Valois *et al.* 2018; Hielkema & Hielkema 2019). The ones from Paraguay and northwestern Argentina (e.g., d'Olsoufieff 1924; Martínez 1959) are reliable and refer to the same kinds of habitats the species inhabits in Brazil and Bolivia. The one from Peru (Horgan 2005), though deep into the Amazon, also seems to be correct for no other species potentially present there could be confused with *D. mimas*. The single record from Uruguay (d'Olsoufieff 1924), on the other hand, was most likely based on old, mislabelled material and should be incorrect. Similarly, for the Guianas, only old records are available (Hielkema & Hielkema 2019), and they, too, may well refer to mislabelled specimens. Finally, the Colombian and Venezuelan records (e.g., Vítolo 2000; Medina *et al.* 2001; references below) may actually refer to *Diabroctis venezuelensis*, which was recently raised from subspecies status under *D. mimas* by Valois *et al.* (2018). Checking the specimens upon which these Venezuelan records were made is necessary to confirm whether the species should be moved to the list of species certainly present in the country or to that of those most certainly absent.

**Literature records**

Nevinson 1892: 6 (Venezuela). — Heyne & Taschenberg 1908: 65 (Venezuela). — Gillet 1911a: 85 (Venezuela). — d'Olsoufieff 1924: 62, 140 (Venezuela: Caracas). — Pessôa & Lane 1941: 474

(Venezuela). — Blackwelder 1944: 209 (Venezuela). — Martínez 1959: 96 (Venezuela). — Vítolo 2004: 280 (Venezuela).

***Dichotomius belus*** (Harold, 1880)

*Pinotus belus* Harold, 1880: 25 (original description). Type locality: Colombia: Antioquia: Medellín. Name-bearing type: lectotype (MNHN), designated by Montoya-Molina & Vaz-de-Mello (2021), examined by FZVM.

**Distribution**

Deemed a Colombian endemic in the revision of Montoya-Molina & Vaz-de-Mello (2021); Roze's (1955) Venezuelan record was not addressed.

**Literature record**

Roze 1955: 44 (Venezuela, cited).

***Dichotomius lucasi*** (Harold, 1869)

*Pinotus lucasi* Harold, 1869b: 137 (original description). Type locality: unknown. Name-bearing type: unknown.

**Distribution**

Supposedly Venezuela, Guyana, French Guiana, Brazil, Peru, and Bolivia (Schoolmeesters 2013; references below).

**Literature records**

Blanco 1988: 40–41 (Venezuela: Táchira). — Havranek 1989: 61 (Venezuela: Táchira). — Ferrer-Paris *et al.* 2013: 109 (Venezuela: Bolívar: Isla de Anacoco).

***Dichotomius subaeneus*** (Castelnau, 1840)

*Copris subaenea* Castelnau, 1840: 79 (original description). Type locality: French Guiana. Name-bearing type: lectotype (BMNH), designated by Montoya-Molina & Vaz-de-Mello (2021), examined by FZVM.

**Distribution**

Montoya-Molina & Vaz-de-Mello (2021) recorded the species from Guyana, French Guiana, and Brazil. Vulcano & Pereira's (1967) record from Venezuela was not addressed.

**Literature record**

Vulcano & Pereira 1967: 587 (Venezuela).

***Dichotomius yucatanus*** (Bates, 1887)

*Pinotus yucatanus* Bates, 1887: 51, pl. III fig. 9 (original description). Type locality: Mexico: southwestern Yucatan; and Nicaragua: Chontales. Name-bearing type: unknown number of syntypes (BMNH and possibly MNHN) (see Kohlmann & Solís 1997), not examined.

**Distribution**

Mexico, El Salvador, Honduras, Nicaragua, Costa Rica, and Colombia (Schoolmeesters 2023).

**Literature record**

Roze 1955: 44 (Venezuela: Guárico and Miranda).

***Isocopris imitator*** Felsche, 1901

*Dichotomius imitator* Felsche, 1901: 136 (original description). Type locality: Brazil: Pará. Name-bearing type: lectotype (SMTD), designated by Rossini & Vaz-de-Mello (2017), examined by FZVM.

*Pinotus latistriatus* Luederwaldt, 1935: 335. Type locality: Brazil: Pará: Santarém. Name-bearing type: lectotype (BMNH), designated by Rossini & Vaz-de-Mello (2017), examined by FZVM.

**Distribution**

The actual extension is still dubious. The specimens examined in the revision by Rossini & Vaz-de-Mello (2017) originate almost exclusively from Amazonian areas in Brazil south of the Amazon River. The only exception was a single, old BMNH specimen labelled as coming from Cayenne (French Guiana), incidentally a paralectotype of the junior synonym *Pinotus latistriatus* Luederwaldt, 1935. If this were the only report north of the Amazon apart from Roze's (1955) from Venezuela, one could disregard it on the basis of probable mislabelling and treat Roze's (1955) as resulting from a likely misidentification. Nevertheless, more recently, Hielkema & Hielkema (2019), presumably using Rossini & Vaz-de-Mello's revision, reported the identification of material from another area in the Guianas, Suriname. This makes both the Cayenne and Venezuelan reports more plausible. The two specimens studied by Roze need to be reassessed in order to check their identity and confirm the presence of the species in Venezuela.

**Literature record**

Roze 1955: 44 (Venezuela: Guárico: Sosa).

***Onthophagus acuminatus*** Harold, 1880

*Onthophagus acuminatus* Harold, 1880: 30 (original description). Type locality: Colombia: Antioquia: San Carlos; Boyacá: Muzo; Cundinamarca: Fusagasugá; Tolima: Ambalema. Also "Colon", either the homonymous Colombian town in the department of Putumayo or Panamanian province or city. Name-bearing type: six known syntypes (MNHN), examined by FZVM.

**Distribution**

Mexico, Nicaragua, Costa Rica, Panama, Colombia, Ecuador, Peru, and Brazil (Moctezuma 2021; Schoolmeesters 2023).

**Literature record**

Ferrer-Paris *et al.* 2013: 109 (Venezuela: Zulia: Rosário de Perijá).

***Onthophagus incensus*** Say, 1835

*Onthophagus incensus* Say, 1835: 173 (original description). Type locality: Mexico. Name-bearing type: holotype (MCZC), examined from photos.

**Distribution**

Presumably United States, Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama (Moctezuma 2021), also recorded from the Dominican Republic ("Santo Domingo"), Venezuela, and Uruguay by Schoolmeesters (2023).

**Literature records**

Boucomont 1932: 324 (Venezuela). — Roze 1955: 46 (Venezuela: Distrito Capital). — Howden & Young 1981: 98 (Venezuela). — Pulido-Herrera & Zunino 2007: 106 (Venezuela). — Moctezuma *et al.* 2016: 46 (Venezuela).

***Onthophagus rubrescens*** Blanchard, 1846

*Onthophagus rubrescens* Blanchard, 1846: 183 (original description). Type locality: Bolivia: La Paz: Chulumani, Santa Rosa ("Chupe"), and Yanacachi ("Yanacuché"). Name-bearing type: six known syntypes (MNHN), examined by FZVM.

**Distribution**

Presumably Colombia, Venezuela, Guyana, Suriname, French Guiana, Brazil, Ecuador, Peru, and Bolivia (Hielkema & Hielkema 2019; Schoolmeesters 2023).

**Literature records**

Ferrer-Paris *et al.* 2013: 109 (Venezuela: Aragua [actually, Guárico]: Altagracia de Orituco and Bolívar: Isla de Anacoco). — Rossini *et al.* 2018b: 12 (Venezuela).

***Onthophagus xanthomerus*** Bates, 1887

*Onthophagus xanthomerus* Bates, 1887: (original description). Type locality: Brazil: Amazonas: Tefé ("Ega"). Name-bearing type: two known syntypes (MNHN), examined by FZVM.

**Distribution**

Presumably Colombia, French Guiana, Brazil, Ecuador, and Peru (Schoolmeesters 2023).

**Literature record**

Boucomont 1932: 322 (Venezuela).

***Phanaeus chalcomelas*** (Perty, 1830)

*Onitis chalcomelas* Perty, 1830: 40 (original description). Type locality: Brazil: one of the localities visited by the collectors of the type series, Spix and Martius, in the Amazon (see Papavero 1971). The type locality was incorrectly said by Perty (1830) to be in the then-provinces (now states) of São Paulo and Minas Gerais, but this exclusively Amazonian species does not occur there (Edmonds 1994; Edmonds & Zídek 2012). See Cupello (2024) for the analogous case of *Gromphas aeruginosa* (Perty, 1830). Name-bearing type: a single known syntype (ZSM) (cited as "typus" by Scherer [1983] and "holotype?" by Edmonds [1994]), not examined.

**Distribution**

Colombia, Guyana, Suriname, French Guiana, Brazil, Ecuador, Peru, and Bolivia.

**Literature record**

Hielkema & Hielkema 2019: 106 (remarks on the possible Venezuelan presence).

***Scatimus ovatus*** Harold, 1862

*Scatimus ovatus* Harold, 1862: 401 (original description). Type locality: Mexico: Veracruz: ~24 km S of Catemaco, ~400 m. Name-bearing type: neotype (MNHN), designated by Génier & Kohlmann (2003), not examined.
*Scatimus patruelis* Preudhomme de Borre, 1886: 108 (original description). Type locality: Mexico. Name-bearing type: holotype (RBINS), not examined.
*Scatimus quadridentatus* Balthasar, 1939g: 89 (original description). Type locality: Costa Rica: Cartago: Turrialba. Name-bearing type: holotype (NMPC), not examined.

**Distribution**

Mexico, Belize, Nicaragua, Costa Rica, Panama, and Colombia.

**Literature record**

Lozano 2010: 86 (Venezuela: Zulia).

***Uroxys brevis*** Waterhouse, 1891

*Uroxys brevis* Waterhouse, 1891a: 348 (original description). Type locality: Brazil. Name-bearing type: a single known syntype (BMNH), examined by FZVM.

**Distribution**

Presumably Venezuela and Brazil (Vulcano & Pereira 1967; Schoolmeesters 2023).

**Literature record**

Vulcano & Pereira 1967: 579, 581 (Venezuela).

**III – Erroneous records**

***Ateuchus candezei*** (Harold, 1868)

**Erroneous literature records for Venezuela**

Balthasar 1939c: 64 (Venezuela). — Roze 1955: 43 (Venezuela: Miranda: Baruta). — Vulcano & Pereira 1967: 588 (Venezuela).

**Actual distribution**

From southeastern Mexico to Colombia west of the Andes (MC pers. obs.).

***Ateuchus connexus*** (Harold, 1868)

**Erroneous literature records for Venezuela**

Roze 1955: 43 (Venezuela: Isla Margarita). — Chamorro *et al.* 2019: 14 (Venezuela).

**Actual distribution**

Southern and western Amazon (MC pers. obs.).

***Ateuchus illaesus*** (Harold, 1868)

**Erroneous literature records for Venezuela**

Candèze 1891: 330.

**Actual distribution**

From Mexico to Guatemala (MC pers. obs.).

***Ateuchus rodriguezi*** (Preudhomme de Borre, 1886)

**Erroneous literature records for Venezuela**

Kohlmann 2003: 53 (Venezuela).

**Actual distribution**

From western Mexico to Costa Rica (Kohlmann 1997; MC pers. obs.).

***Canthon curvodilatatus*** Schmidt, 1920

**Erroneous literature records for Venezuela**

Roze 1955: 41 (Venezuela). — Hielkema & Hielkema 2019: 61 (Venezuela).

**Actual distribution**

It appears to be in South America south of the Amazon Basin. See Hielkema & Hielkema's (2019) discussion.

***Copris incertus*** Say, 1835

**Erroneous literature records for Venezuela**

Roze 1955: 45 (Venezuela: Distrito Capital: Caracas).

**Actual distribution**

Native to the Gulf side of Mexico, but introduced to several locations across the Pacific, including Hawaii, Fiji, Vanuatu, New Caledonia, New Zealand, and the Solomon Islands (Darling & Génier 2018). No *Copris* is known from Venezuela and Roze's record must have been based on misidentification, likely of *Dichotomius* material.

***Deltochilum icaroides*** (Balthasar, 1939)

**Erroneous literature records for Venezuela**

Balthasar 1939b: 10 (doubtfully cited for Venezuela). — Blackwelder 1944: 23 (Venezuela). — Roze 1955: 43 (cited for Venezuela). — Martínez 1959: 54 (doubtfully cited for Venezuela). — Vulcano & Pereira 1964: 655 (Venezuela); 1967: 557 (doubtfully cited for Venezuela). — Krajcik 2012: 88 (cited for Venezuela).

**Actual distribution**

Brazil, Bolivia, Paraguay, and Argentina(Silva *et al.* 2015).

**Remarks**

In the original description, Balthasar (1939b) suggested that the "San Bernardino" locality stated on the holotype's label, his single known specimen, was possibly in Venezuela. He seems to have considered that it might refer to Hacienda San Bernardino, a ranch then existing near Caracas (Paynter 1982). All the other Venezuelan records existing in the literature are direct repetitions of Balthasar's. Génier (2001), drawing from a comparison with a Paraguayan specimen said to be "identical" to the holotype,

was the first to suggest that this "San Bernardino" is most likely instead the town of this name in the Paraguayan department of Cordillera, near the capital Asunción. This was eventually confirmed by Silva *et al.* (2015), who showed that *Deltochilum icaroides* is restricted to the open environments of central Brazil, Bolivia, Paraguay, and northeastern Argentina. The presence in Venezuela is, thus, discarded.

***Deltochilum gibbosum*** (Fabricius, 1775)

**Erroneous literature records for Venezuela**

Ferrer-Paris *et al.* 2013: 106 (Venezuela).

**Actual distribution**

Southern United States (González-Alvarado & Vaz-de-Mello 2014).

***Dendropaemon convexus*** (Harold, 1869)

**Erroneous literature records for Venezuela**

Blackwelder 1944: 211 (cited as *Eurypodea convexus*). — Vulcano & Pereira 1967: 566 (cited as *Tetramereia convexa*). — Arnaud 2002b: 16 (cited as *Tetramereia convexa*, Venezuela: Suapure). — Noriega *et al.* 2008: 132 (cited as *Tetramereia convexa*, Venezuela: Bolívar: Suapure).

**Actual distribution**

Brazil and Bolivia (Génier & Arnaud 2016).

**Remarks**

For more than a century, specimens from many parts of South America were identified both in collections and in the literature as *Tetramereia convexa* (see compilation in Ampudia Gatty *et al.* 2012). Génier & Arnaud (2016), however, argued that they actually refer to at least two different species, both belonging to *Dendropaemon*, *D. convexus*, from central Brazil and Bolivia, and *D. fredericki* (Klages, 1906), from the Amazon. Only the latter is present in Venezuela; the references reporting *Tetramereia convexa* (and other combinations) for the country all refer to it.

***Dichotomius bitiensis*** (Gillet, 1911)

**Erroneous literature records for Venezuela**

Ferrer-Paris *et al.* 2013: 109 (Venezuela: NM93).

**Actual distribution**

Supposedly Brazil and Argentina (Kohlmann & Solís 1997; Vaz-de-Mello 2000).

**Remarks**

The record from Venezuela actually refers to *Dichotomius costaricensis*, which was originally described as a variety of *D. bitiensis* by Luederwaldt (1935) and raised to species status by Solís & Kohlmann (1997).

***Eurysternus velutinus*** Bates, 1887

**Erroneous literature records for Venezuela**

Jessop 1985: 1101, 1106 (Venezuela). — Blanco 1987: 41 (Venezuela: Táchira state).

**Actual distribution**

Costa Rica and Panama (Génier 2009).

***Ontherus bridgesi*** Waterhouse, 1891

**Erroneous literature records for Venezuela**

Vulcano & Pereira 1967: 583 (Venezuela). — Génier 1996: 67 (Venezuela?).

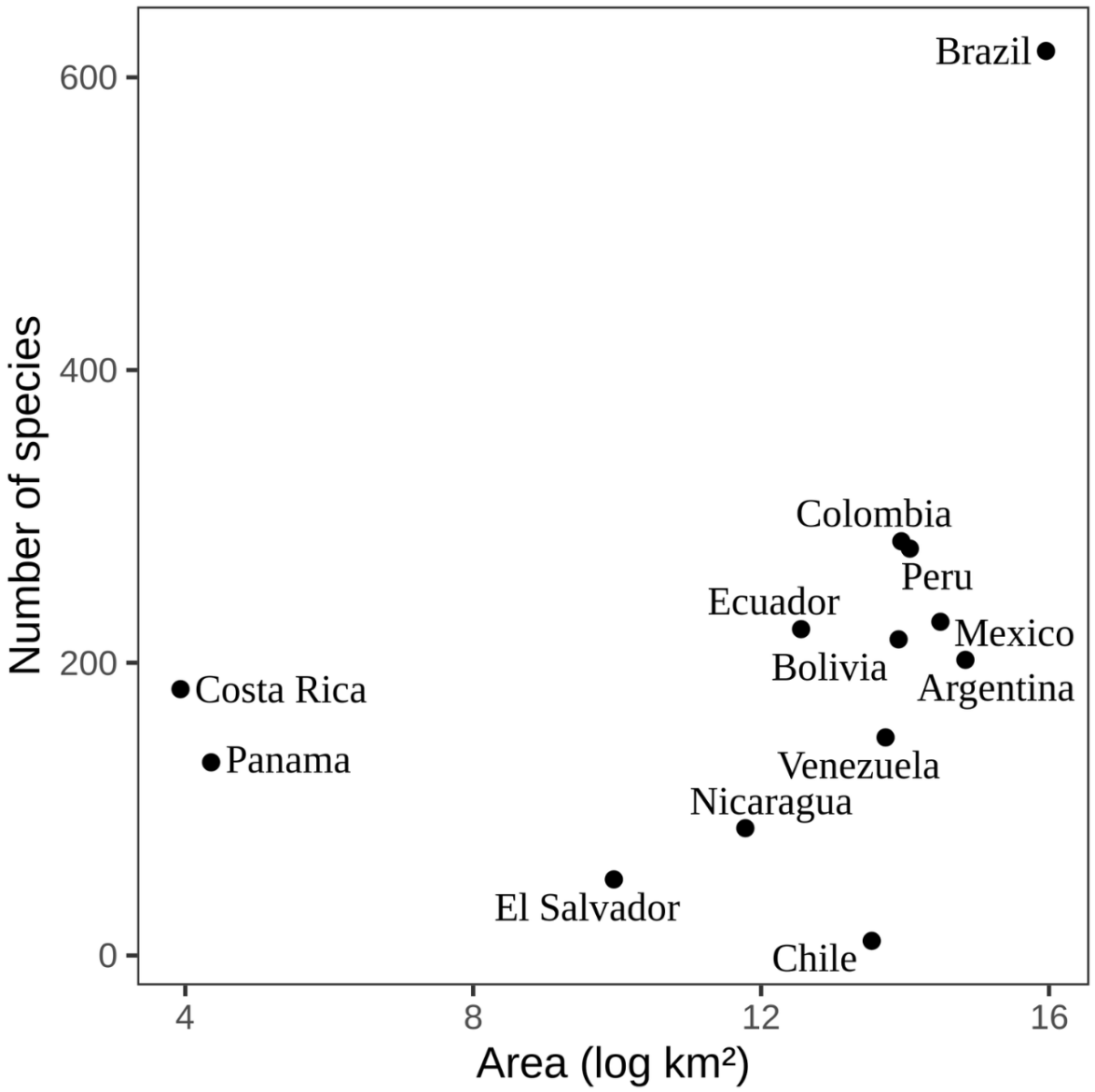


**Fig. 78.** Representation of the number of dung beetles species by country that have a catalogue or checklist: Mexico (Morón 2003), El Salvador (Pablo-Cea *et al.* 2022), Nicaragua (Maes *et al.* 2020), Costa Rica (Solís & Kohlmann 2012), Panama (Ratcliffe 2002), Colombia (Medina *et al.* 2001), Venezuela (present work), Ecuador (Chamorro *et al.* 2019), Peru (Ratcliffe *et al.* 2015), Brazil (Vaz-de-Mello 2000, 2022), Bolivia (Hamel-Leigue *et al.* 2006), Chile (Mondaca 2023) and Argentina (Martínez 1959).

**Table 1.** Number of species by genera of dung beetles (Coleoptera: Scarabaeinae) recorded for Venezuela and the world.

| Dung beetle genera present in Venezuela | Species in Venezuela (Roze 1955) | Species in Venezuela (current work) | Species in the world (Cupello *et al*. 2023b; Schoolmeesters 2023) |
|---|---|---|---|
| *Agamopus* | – | 1 | 5 |
| *Anisocanthon* | – | – | 4 |
| *Anomiopus* | – | 8 | 63 |
| *Ateuchus* | 4 | 10 | 102 |
| *Bdelyropsis* | – | 1 | 3 |
| *Bdelyrus* | – | 1 | 27 |
| *Bradypodidium* | – | 1 | 3 |
| *Canthidium* | 2 | 1 | 178 |
| *Canthon* | 29 | 13 | 163 |
| *Canthonella* | – | 1 | 17 |
| *Copris* | 1 | – | 280 |
| *Coprophanaeus* | – | 9 | 50 |
| *Cryptocanthon* | – | 4 | 43 |
| *Deltochilum* | 3 | 10 | 114 |
| *Dendropaemon* | 1 | 4 | 41 |
| *Diabroctis* | 2 | 2 | 5 |
| *Dichotomius* | 13 | 20 | 200 |
| *Digitonthophagus* | – | 1 | 16 |
| *Eurysternus* | 3 | 15 | 53 |
| *Genieridium* | – | 1 | 7 |
| *Gromphas* | 1 | 1 | 6 |
| *Hansreia* | – | 1 | 6 |
| *Malagoniella* | – | 1 | 9 |
| *Ontherus* | 2 | 8 | 60 |
| *Onthophagus* | 5 | 8 | 2257 |
| *Oxysternon* | – | 5 | 11 |
| *Phanaeus* | 4 | 6 | 83 |
| *Pseudocanthon* | – | 2 | 11 |
| *Scatimus* | – | 2 | 13 |
| *Scybalocanthon* | – | 4 | 24 |
| *Sulcophanaeus* | – | 4 | 15 |
| *Sylvicanthon* | – | 1 | 15 |
| *Tetraechma* | – | 1 | 5 |
| *Uroxys* | 2 | 2 | 59 |

**Table 2.** Comparison of catalogues and checklists recording dung beetles (Coleoptera: Scarabaeinae) species for Venezuela.

| Autor | Year of publication | Geographical coverage | Number of species recorded from Venezuela |
|---|---|---|---|
| Harold | 1869 | world | 5 |
| Gillet | 1911 | world | 15 |
| Blackwelder | 1944 | Latin America | 49 |
| Roze | 1955 | Venezuela | 73 |
| Krajcik | 2012 | world | 40 |

**Actual distribution**

The eastern slopes of the Andes, from southern Peru to northern Argentina (Génier 1996). Génier (1996) mentioned the examination of two specimens labelled as though coming from outside this area, one from Colombia, the other from Venezuela, neither bearing further locality data. In the absence of additional, more precisely labelled material from either country, he deemed these records doubtful, most likely the result of mislabelling. Judging from characters known to vary geographically in the species, both specimens seem to have actually come from Argentinian populations (Génier 1996). We agree with Génier and, given the distance from the nearest trustful record (Cuzco, southern Peru), we rule out the presence of the species in Venezuela. Vulcano & Pereira's (1967) assertion that the species was endemic to the country was certainly a lapse, for information available to them already indicated, if not the implausibility of the Venezuelan occurrence as we now know, at least that *O. bridgesi* was also certainly present elsewhere (viz., the type locality "Bolivia" provided by Waterhouse 1891a).

***Oxysternon lautum*** (MacLeay, 1819)

**Erroneous literature record for Venezuela**

Vulcano & Pereira 1967: 568 (Venezuela).

**Actual distribution**

Southern Amazon in Colombia, Peru, Brazil, and Bolivia (Edmonds & Zídek 2004).

***Scybalophagus plicatipennis*** (Blanchard, 1846)

**Erroneous literature record for Venezuela**

Roze 1955: 42 (cited for Venezuela).

**Actual distribution**

Endemic to Argentina (Ocampo & Molano 2011; Schoolmeesters 2023).

## Discussion

The present catalogue records 77 more species from Venezuela than the last published list, that of Roze (1955) (Table 1). Worldwide Coleoptera catalogues and checklists published before Roze also recorded Scarabaeinae species for Venezuela, but their numbers were even smaller (Table 2). Venezuela has 24

endemic species, and another 36 are distributed exclusively there and in the neighbouring countries of Brazil, Colombia, Trinidad and Tobago, and Guyana. Compared to other South and Central American countries whose dung beetle faunas have also been inventoried, Venezuela ranks among the poorest in terms of the number of species relative to country size (Fig. 78).

In the case of the species of the genus *Canthidium*, the identifications are questionable due to the lack of taxonomic revisions. For the genera *Onthophagus* and *Ateuchus*, the number of species recorded for Venezuela will certainly increase, as they are currently being revised by Michele Rossini (*Onthophagus*) and MC (*Ateuchus*), both of whom have discovered new Venezuelan species. The same will likely be true for other taxa still lacking modern revisions, such as *Uroxys* and many groups of *Dichotomius*, *Canthon*, and *Deltochilum*.

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