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First record for *Cypherotylus dromedarius* (Lacordaire)
(Coleoptera: Erotylidae) from Panama

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First record for *Cypherotylus dromedarius* (Lacordaire) (Coleoptera: Erotylidae) from Panama

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Abstract. *Cypherotylus dromedarius* (Lacordaire, 1842) (Coleoptera: Erotylidae) was described from French Guiana. Information about its current distribution is scattered throughout the literature and the internet. Specimens of this species were recently observed and photographed in the Boquete area, Chiriquí Province, Panama, and constitute a new record for the country of this species. Subsequently, we located two specimens deposited in the National Reference Collection of the G. B. Fairchild Museum of Invertebrates, University of Panama, from the same locality in Chiriquí Province. We summarize the distribution of this species from scattered sources and provide five new records.

Key words. Pleasing fungus beetle, western Panama, mycophagous.

Resumen. *Cypherotylus dromedarius* (Lacordaire, 1842) (Coleoptera: Erotylidae) fue descrito de la Guayana Francesa. La información sobre su distribución actual se encuentra dispersa en toda la literatura e internet. Recientemente se observaron y fotografiaron especímenes de esta especie en el área de Boquete, provincia de Chiriquí, Panamá, y constituyen un nuevo registro para el país de ésta especie. Posteriormente, localizamos de la misma localidad en provincia de Chiriquí dos especímenes depositados en la Colección Nacional de Referencia del Museo de Invertebrados G. B. Fairchild, de la Universidad de Panamá. Resumimos la distribución de esta especie de fuentes dispersas y proporcionamos cinco nuevos registros.

Palabras clave. Agradable escarabajo hongo, oeste de Panamá, micófago.

ZooBank registration. urn:lsid:zoobank.org:pub:8D98D0FD-06F8-4798-902F-2B7026E9C7BF

Introduction

Pleasing fungus beetles (Coleoptera: Erotylidae) are worldwide in distribution and include approximately 3,500 species and over 258 genera (Leschen et al. 2010). The tribe Erotylini in the subfamily Erotylinae contains 26 genera and 753 species (Leschen et al. 2010), and is almost entirely restricted to the Neotropics. Often the adult members of this family have attractive (“pleasing”) coloration and members of the subfamily Erotylinae feed primarily on macrofungi (Basidiomycetes; Leschen and Buckley 2007).

Recently, photographs of one species, *Cypherotylus dromedarius* (Lacordaire, 1842), were provided to the authors from three locations near Boquete, Chiriquí Province. Subsequently, two pinned specimens of this species were found in a permanent museum collection. A perusal of the literature revealed that this species had not previously been recorded from Panama, and further that records of its presence in other countries were somewhat limited. The purpose of this note is to report its presence in Panama and provide some distribution information for the species.

Materials and Methods

We received and confirmed the identification of individuals from three different locations based on photographs. After further inquiry, we discovered and examined two pinned specimens of *Cypherotylus dromedarius* from the Museo de Invertebrados G.B. Fairchild (MIUP), de la Universidad de Panamá. The photographs were provided, with permission for their use, from Tatiana I. Arefina-Armitage (Boquete), Larry Wilkinson (Boquete), and Dr. Abel Batista (Universidad Autónoma de Chiriquí, David).

We searched both the literature and online databases (e.g., Global Biodiversity Initiative Facility and Biodiversidad Nicaragua) for additional country records of this species. Some databases (e.g., iNaturalist) post pictures of specimens incorrectly identified as *C. dromedarius*. These are not reported here. A modern revision of *Cypherotylus* is needed to resolve species identifications. Finally, we contacted three international experts for this family (Drs. Paul Skelley of the Florida State Collection of Arthropods, Joseph McHugh of the University of Georgia, and Quentin Wheeler of the State University of New York) seeking additional information.

Results

Cypherotylus dromedarius was described by Lacordaire in 1842 as *Erolytus dromedarius* from a specimen collected in Cayenne, French Guiana. Crotch (1873) included this species in a list of erotylids collected by Edward M. Janson in the vicinity of Santa Domingo, Chontales, Nicaragua, and transferred it to the genus *Cypherotylus*. Earlier, Voet (1806) had created several new generic names for certain erotylids. However, Voet did not follow the binomial system required by the International Code of Zoological Nomenclature (ICZN 1999). As a result, his nomenclatural works were judged permanently unavailable for use under the ICZN articles. Nevertheless, Alvarenga (1994), in his monumental work on the Erotylidae of the Neotropics, placed this species in the genus *Gibbifer* Voet (1806). Most recently, Skelley (2020), in a comprehensive effort to resolve nomenclatural issues such as this in the subfamily Erotylinae, returned this species to the genus *Cypherotylus*.

In addition to French Guiana (type locality) and the Nicaragua record mentioned above by Crotch, several other publications and web sites provided other country locations for this species (see Table 1). All pinned specimens and photographic records of this species from the Boquete area of Chiriqui Province were made between 1000 m and 1300 m altitude. Information concerning these records is as indicated below.

Table 1. Sources and locations for *Cypherotylus dromedarius* in the Neotropics. Online sources were accessed in July 2020.

Source	Location
Lacordaire 1842	French Guiana (Type locality)
Crotch 1873	Nicaragua
Kuhnt 1908	French Guiana, Nicaragua
Deelder 1942	Brazil, Suriname
Mader 1942, 1951	Peru
Blackwelder 1945	French Guiana, Nicaragua
Alvarenga 1994	Central America through Brazil (no data)
Global Biodiversity Initiative Facility http://www.gbif.org [Snow Entomological Museum Collection; University of Kansas]	Peru
Biodiversidad de Nicaragua http://www.bio-nica.info/Ento/Coleo/Erotylidae.htm [Museo Entomológico de León, Nicaragua]	Brazil, French Guiana, Nicaragua

Pinned material examined. Panama, Chiriqui Province, Boquete, E. Polo, 20 October 1978, MIUP; *ibid.*, except M. Villalaz, 11 November 1979, MIUP.

Photographed specimens (Fig. 1). Panama, Chiriqui Province, Boquete District, Jaramillo Centro, 8.76668°N and 82.42289°W, 1225 m, T. Arefina-Armitage, 29 July 2015; *ibid.*, except Jaramillo Abajo, 8.75032°N and 82.41997°W, 1070 m, A. Batista, 1 August 2018; *ibid.*, except off Volcancito Rd., Finca Wild Orchid, 8.774806°N and 82.451944°W, 1280 m, L. Wilkinson, 12 July 2020.

Distribution. Brazil, French Guiana, Nicaragua, Panama, Peru, Suriname.

Discussion

We expected to find more records in the literature than we did, because of the attractive and distinctive appearance of this species. This is surely due to the lack of a modern revision to help with species identifications. If *C. dromedarius* is closely tied to a specific macrofungal host, then perhaps its distribution is restricted by the host's distribution. This begs the question of the host's identity, which is currently unknown. Given the variety of locations around Boquete where this species has been collected or observed, perhaps this question can be answered in the near future.

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Literature Cited

- Alvarenga M. 1994.** Catálogo dos Erotylidae (Coleoptera) Neotropical. *Revista Brasileira de Zoologia* 11(1): 1–175.
- Blackwelder RE. 1945.** Checklist of the Coleopterous insects of Mexico, Central America, the West Indies and South America. *Bulletin of the U.S. National Museum*; Washington 185(3): 443–550.
- Crotch GR. 1873.** A list of Erotylidae collected by Edward M. Janson, in the vicinity of Santo Domingo, Chontales, Nicaragua, with descriptions of new genera and species. *Cistula Entomologica* 1: 141–150.
- Deelder CL. 1942.** Revision of the Erotylidae (Coleoptera) of the Leiden Museum. *Zoologische Mededelingen* 24(3): 49–115.
- ICZN [International Commission on Zoological Nomenclature]. 1999.** International Code of Zoological Nomenclature, Fourth Edition, adopted by the International Union of Biological Sciences. International Trust for Zoological Nomenclature, The Natural History Museum, London, UK. xxix + 306 p.
- Kuhnt P. 1908.** Synopsis der Gattungen *Erotylus*, *Cypherotylus*, *Micrerotylus*. *Deutsche Entomologische Zeitschrift* 1: 67–100, 2: 225–238.
- Lacordaire JT. 1842.** Monographie des erotyliens, famille de l'ordre des coléoptères. Roret; Paris. xiv + 543 p.
- Leschen RAB, Buckley TR. 2007.** Multistate characters and diet shifts: evolution of Erotylidae (Coleoptera). *Systematic Biology* 56: 97–112.
- Leschen RAB, Skelley PE, McHugh JV. 2010.** Erotylidae Leach, 1815. p. 311–319. *In*: Leschen RAB, Beutel RG, Lawrence JF (eds.). *Handbuch der Zoologie. Band IV, Teilband 38, vol. 2.* DeGruyter; Berlin. 786 p.
- Mader L. 1942.** Neue exotische Erotyliden. *Mitteilungen der münchener entomologischen Gesellschaft* 32(1): 219–222.
- Mader L. 1951.** Die Erotyliden von Peru (Col.). *Entomologische Arbeiten aus dem Museum G. Frey* 2: 197–225.
- Skelley PE. 2020.** Nomenclatural notes for the Erotylinae (Coleoptera: Erotylidae). *Insecta Mundi* 0767: 1–35.
- Voet JE. 1806.** *Catalogus systematicus coleopterorum. Catalogue systématique des coléoptères. Systématique naamlijst van dat geslacht van insecten dat men torren noemt. Tomus II.* Bakhuisen; The Hague. 82 (Latin text) + 86 (French text) + 87 (Dutch text) + 20 (Index tabularum. Tom. I and II) p. + 50 pls.

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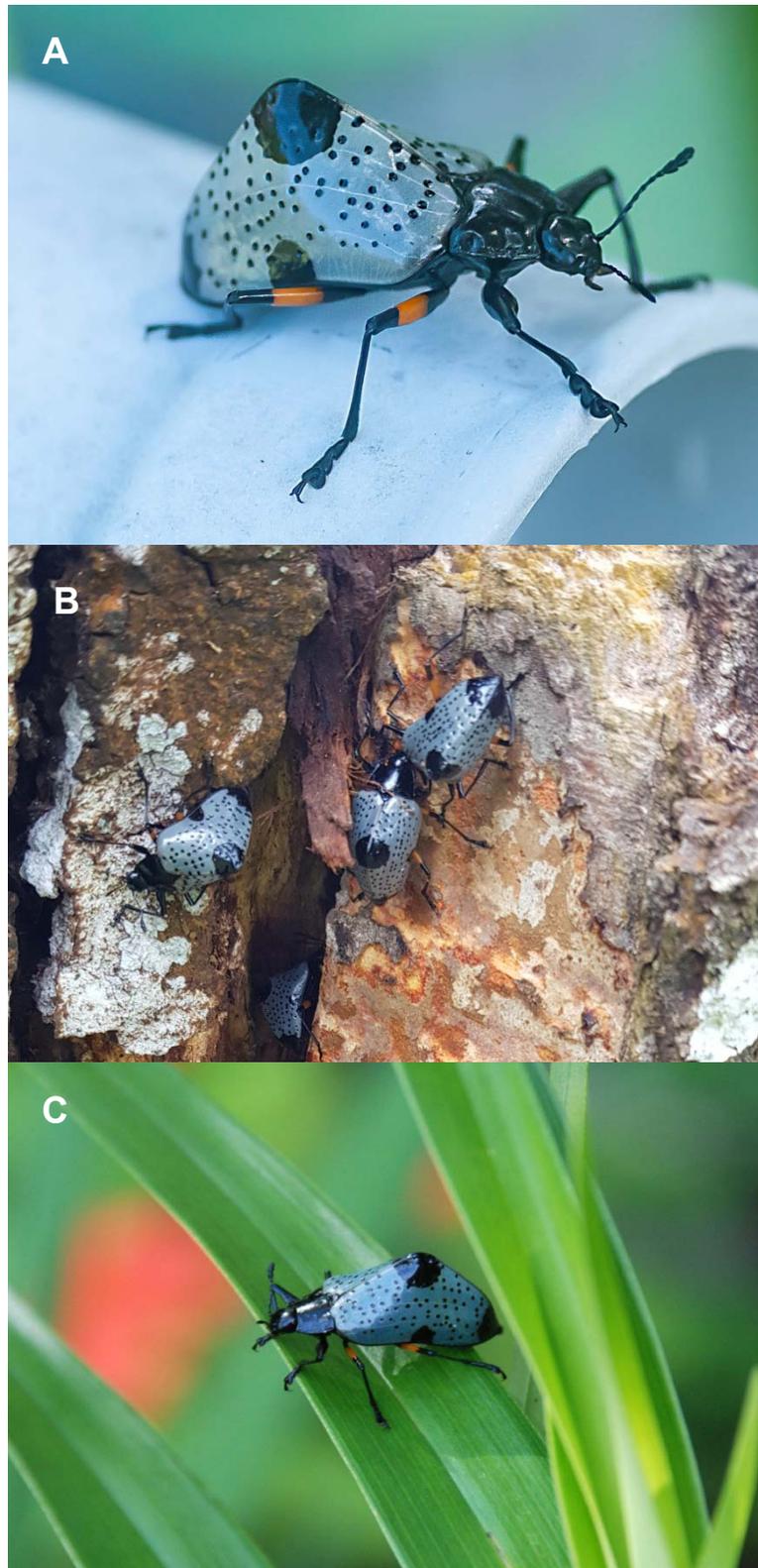


Figure 1. *Cypherotylus dromedarius*. Photos from Boquete District, Chiriqui Province. **A)** Volcancito Road (photo by Larry Wilkinson, Boquete). **B)** Jaramillo Abajo (photo by Dr. Abel Batista, Jaramillo Abajo). **C)** Jaramillo Centro (photo by Tatiana Arefina-Armitage, Boquete).