

New species of dung beetles (Coleoptera: Scarabaeidae: Scarabaeinae) from Costa Rica and Panama

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Abstract

The following new species of dung beetles (Coleoptera: Scarabaeidae) from Costa Rica and Panama are described: *Copris tridentatus* sp. nov., *Onthophagus notiodes* sp. nov., *Onthophagus xiphias* sp. nov. and *Trichillum arcus* sp. nov. *Pedaridium bradyorum* (Boucomont) is reported from the Pacific slope of Costa Rica for the first time. Drawings of the dorsal habitus of all species are provided.

Key words: Coleoptera, Scarabaeidae, *Copris*, *Onthophagus*, *Pedaridium*, *Trichillum*, new species, Costa Rica, Panama

Introduction

During the last twelve years the National Biodiversity Institute (INBio) in Costa Rica has conducted an extensive nationwide insect survey. Material from this survey, as well as the collections of H.F. Howden collection (Ottawa) and the University of Nebraska State Museum (Lincoln), has yielded four new dung beetle species belonging to the genera *Copris* Geoffroy, *Onthophagus* Latreille and *Trichillum* Harold. *Pedaridium bradyorum* (Boucomont) is reported for the first time from the Pacific slope of Costa Rica.

Measurements were made to the nearest 0.1 mm using an ocular micrometer. Holotypes and allotypes are deposited in the INBio collection in Santo Domingo de Heredia (*C. tridentatus* sp. nov., *O. notiodes* sp. nov. and *T. arcus* sp. nov.) and the Canadian Museum of Nature, Ottawa (*O. xiphias* sp. nov.). Paratypes are deposited in the INBio collection (all species), the Canadian Museum of Nature in Ottawa (*O. notiodes* sp. nov., *O. xiphias* sp. nov. and *T. arcus* sp. nov.), University of Nebraska State Museum and Andrew Smith's collection in Lincoln, Nebraska (*O. xiphias* sp. nov.) and Vaz-de-Mello's collection in Lavras, Brasil (*T. arcus* sp. nov.).