



New species and revalidations of scarab beetles (Coleoptera: Geotrupidae: Athyreini and Coleoptera: Scarabaeidae: Scarabaeinae) from Costa Rica and Panama

BERT KOHLMANN¹ & ÁNGEL SOLÍS²

¹Universidad EARTH, Apdo. 4442-1000, San José, Costa Rica. Email: bkohlman@earth.ac.cr

²INBio, Apdo. 22-3100, Santo Domingo de Heredia, Costa Rica. Email: asolis@inbio.ac.cr

Abstract

The following new species of geotrupids and scarabs from Costa Rica and Panama are described: *Athyreus gulesseriani* **new species**, *Ateuchus alutacius* **new species** (the first recorded brachypterous *Ateuchus* species), *Coprophanaeus gephyra* **new species**, *Deltochilum acanthus* **new species**, and *Onthophagus turgidus* **new species**. The following two species of *Coprophanaeus* are revalidated: *C. kohlmanni* Arnaud and *C. uhleri* Malý & Pokorný. Illustrations of the dorsal habitus of the new species are provided, as well as distribution maps for all species.

Key words: Coleoptera, Geotrupidae, Scarabaeidae, *Ateuchus*, *Athyreus*, *Coprophanaeus*, *Deltochilum*, *Onthophagus*, new species, revalidation, Costa Rica, Panama

Introduction

During the last 20 years, the National Biodiversity Institute (INBio) in Costa Rica has been conducting an extensive nationwide insect survey, as well as having participated in some limited collecting on the Panamanian side of the border. Collections from these surveys have yielded five new beetle species of a geotrupid belonging to the genus *Athyreus* MacLeay and scarabs belonging to the genera *Ateuchus* Weber, *Coprophanaeus* Olsoufieff, *Deltochilum* Eschscholtz, and *Onthophagus* Latreille. The two following species of *Coprophanaeus*, *C. kohlmanni* and *C. uhleri*, are also revalidated.

Measurements were made to the nearest 0.1 mm using an ocular micrometer. The holotypes, allotypes, and paratypes of *Athyreus gulesseriani* and *Deltochilum acanthus*, and the holotype of *Ateuchus alutacius* are deposited in the INBio collection in Santo Domingo de Heredia, Costa Rica. The holotype of *Onthophagus turgidus* and the Panamanian paratypes of *D. acanthus* are deposited at the Invertebrate Museum of the University of Panama (MIUP). The holotype, allotype, and paratypes of *Coprophanaeus gephyra* are deposited in the Canadian Museum of Nature, Ottawa.

Athyreus gulesseriani Kohlmann & Solís, new species

Figs. 1–3, 13

Diagnosis. This species is distinguished from other *Athyreus* species by the following combination of characters: body extremely pilose (Fig. 1–2); males have a central pronotal horn nearly vertical, tapering to a slender, slightly tricuspid apex (Figs. 1, 3a); anterior and posterior base of horn impunctate; posterior to horn a shallow depression is present, with a mid-line of sparse setae running from the pronotal base to the mid-depression. Clypeal horn nearly vertical, slender, and longer than pronotal horn, with distinct anterior and lateral carinae (Figs. 1, 3a), posterior carina running from base to horn mid-height. Females almost impossible to separate from related species: pronotum as in figure 2, with the carina beside the median swelling forming an inverted “U”; lateral margin posterior to median angle slightly arcuate, curving lightly inward anterior to elytral humerus.