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New Guinea *Onthophagus*: taxonomy of ten small, unicolored new species (Coleoptera: Scarabaeidae: Scarabaeinae)

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Abstract

The taxonomy of small, unicolor brown to black Papuasian species of the genus *Onthophagus* Latreille, 1802 is discussed. Two multi-species groups are defined in the nominotypical subgenus *Onthophagus*, one with broad and one with narrow dorsal eye foramina (*O. acerus* and *O. kokodentatus* groups, respectively). Twelve species are listed, keyed, and diagnosed. Ten of these are new species from Papua New Guinea (PNG) and West New Guinea (WNG, Indonesia), here described in the *Onthophagus acerus* group: *O. aceroides* (WNG), *O. baiyericus* (PNG), *O. bituberoculus* (WNG), *O. daymanus* (PNG), *O. kokocellosus* (PNG), *O. kokopygus* (PNG); in the *Onthophagus kokodentatus* group: *O. dissidentatus* (PNG), *O. kokodentatus* (PNG), *O. kukali* (PNG); and an ungrouped new species: *Onthophagus ofianus* (PNG). Two previously named species, *O. acer* Gillet, 1930 and *O. mimikanus* Balthasar, 1969, are briefly diagnosed and discussed.

Key words: Coleoptera, Scarabaeidae, *Onthophagus*, New Guinea, key, list of species, new species

Introduction

This paper is part of a series on Papuasian members of the dung beetle genus *Onthophagus* Latreille, 1802 (see introduction in Krikken & Huijbregts 2012). Ten new species from New Guinea and nearby islands, all relatively small (usually up to approximately 6 mm long) and virtually unicolored brown to black, are described herein, and keyed along with two named relatives. We predict, considering the very limited sampling of the Papuasian fauna, that this paper will be followed by descriptions of many more of these small *Onthophagus*. As for their ecology, most individuals appear to have been attracted to dung or carrion, for instance in baited traps; the details of their natural history remain as yet unknown.

In two previous synopses treating these Papuasian *Onthophagus* (Gillet 1930, Balthasar 1969) two relatives of our novelties were described—both are here rediagnosed and illustrated. Usually, the most practical way to handle the taxonomy of the hyperdiverse genus *Onthophagus* is to start with the creation of operational groups of species delimited by morphological characters, applicable to at least one faunal region—in this case Papuasias. These groups are then further taxonomically analyzed, and phylogenetically tested when sufficient relevant facts have been gathered. In this paper the *Onthophagus* concerned are indeed, with one exception, arranged in two such groups: a larger one containing broad-eyed and a smaller one containing narrow-eyed species. One narrow-eyed species, distinguished by a remarkable pronotal protrusion, is kept apart (*O. ofianus* new species). Eye foramen size may be connected with ecological factors (Krikken & Huijbregts 2012), and does not necessarily represent an autapomorphic feature—but it is an easily recognizable one (character 4 in Table 1). All species are formally placed in the nominotypical subgenus *Onthophagus*, the other onthophagine subgenera (or closely related genera) not being applicable to the Papuasian fauna.

The two multi-species groups here recognized could be subdivided, as will be evident from the key and the synoptic guide below (Table 1: asterisks mark notable characters), but as to this no formal action is taken yet, in anticipation of further informative material. An example of a potential subgroup is the closely related pair of species in the broad-eyed group with at least two potential synapomorphies: the unique canaliculate sculpture on