Taxonomy of the Oriental genus *Bolbochromus*: a generic overview and descriptions of four new species (Coleoptera: Geotrupidae: Bolboceratinae)

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Abstract

A taxonomic overview of the essentially Oriental genus *Bolbochromus* Boucomont, 1909 is given. Two new southeast Asian subgenera are proposed: *Metabolbochromus* (type species *Scarabaeus sulcicollis* Wiedemann, 1819), characterised by unique male genitalia (lacking separated parameres), and *Bolbochromops* (type species *Bolboceras lauekingi* Lansberge, 1886), with a distinctly two-horned head (but with separated parameres). The remaining known *Bolbochromus*, apparently all with a distinct pair of parameres and a distinct frontovertexal protrusion only, are left in the nominotypical subgenus, awaiting a reappraisal of the poorly sampled continental fauna. Four new species are described and compared with close relatives, all in the nominotypical subgenus: *Bolbochromus (Bolbochromus) dumogensis* (Sulawesi), *B. (Bolbochromus) mindanaicus* (Philippines), *B. (Bolbochromus) pumilus* (south India), and *B. (Bolbochromus) sinensis* (south China). Identity of type species of *Bolbochromus* to be established (type of *Bolboceras laetus* Westwood, 1852 not found, and type locality Ceylon doubtful). All named *Bolbochromus* taxa are listed and characterised (some of them tentatively) in a synoptic table. The southeast Asian island taxa are all keyed and diagnosed, along with notes on variation, range extensions, taxon ranking, and illustrations.

Key words: Coleoptera, Geotrupidae, *Bolbochromus*, key, genus description, new subgenera, new species, Oriental Region

Introduction

For almost a century the genus *Bolbochromus* Boucomont, 1909 has barely been mentioned, but lately there has been a modest surge of papers, i.e., Li et al. (2008), Ochi et al. (2010), Ochi et al. (2011), Keith (2012), and Li et al. (2013). The genus ranges throughout the Oriental Region (north to the Ryukyu Islands), now comprising 19 named species (12 described before 1915, one in 1984, six during the past few years, see list below). In this paper, four new species are added. Li et al. (2013) just published a review of *Bolbochromus* focusing on continental southeast Asia; here the emphasis is on the *Bolbochromus* of the southeast Asian islands. Really informative material remains hard to come by, and is particularly wanting from large tracts of continental south Asia. Without informative series of specimens, populational and individual variation, in several *Bolbochromus* species particularly obvious in their dorsal colour patterns, is difficult to interpret taxonomically. This applies to ranking (like species versus subspecies), and to the recognition of any parallelisms in similar patterns between different species. Note also that some species seem to have a very limited distribution (like *B. dumogensis* new species from Sulawesi).

Additionally, the genus as currently conceived appears internally heterogeneous, i.e., in a way justifying formal supraspecific clustering of at least some of the species. Differences in the basic structure of the male genitalia and in the configuration of certain forebody details support the recognition of new subgenera in the southeast Asian islands, where the genus ranges east to Mindanao, Sulawesi and the Lesser Sundas. Although an overview of the total set of *Bolbochromus*-like taxa is given in this paper, the focus is here indeed on the identification of the southeast Asian island fauna (by way of a key, species diagnoses, and illustrations). The new subgenera are diagnosed, and two new island species are described. As implied above, the continental fauna
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