



Taxonomic revision of the Neotropical diving beetles genus *Laccodytes* Régimbart, 1895 (Coleoptera: Dytiscidae)

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Abstract

The Neotropical Laccophilinae genus *Laccodytes* Régimbart, 1895 is redefined and revised. We recognize ten species, six of which are described as new. We define two species groups: the *Laccodytes apalodes*-group (*L. apalodes* Guignot, 1955, *L. rondonia* sp.n.), and the *L. phalacroides*-group (*L. americanus* Peschet, 1919, *L. obscuratus* sp.n., *L. bassignanii* sp.n., *L. neblinae* sp.n., *L. olibroides* Régimbart, 1895, *L. phalacroides* Régimbart, 1895, *L. takutuanus* sp.n., *L. androginus* sp.n.). *Laccophilus pumilio* LeConte, 1878, assigned to *Laccodytes* by Young (1954), belongs to an undescribed genus. *Laccodytes* species are lotic and most of them inhabit the north-eastern part of South America, apparently with Venezuela and Guyana as centre of diversity. Descriptions, illustrations and SEM photos of habitus, genitals and other diagnostic features are provided for each species, together with habitat notes, when known. We provide a key for species identification.

Key words: Coleoptera, Dytiscidae, *Laccodytes*, running water, strictly lotic, new species

Introduction

The diving beetle tribe Laccophilini contains twelve genera with about 400 species worldwide (Alarie *et al.* 2000; Balke *et al.* 2000; Nilsson 2001). The cosmopolitan genus *Laccophilus* Leach is most species rich with some 250+ known species, followed by the *Neptosternus* Sharp, with more than 90 species in the Old World tropics and subtropics. The other genera are less diverse and have smaller ranges (e.g. Alarie *et al.* 2000; Nilsson 2001). Laccophilini are conspicuous beetles. When disturbed and moved on land, they will usually jump, or rather “click”, for a couple of centimeters, trying to escape. A variety of habitats are utilized, there are numerous stagnant water species (many *Laccophilus*), hygropetric ones (*Africophilus* Guignot) and strictly running water species in the genera *Australphilus* Watts, *Philaccolus* Guignot, *Philaccolilus* Guignot, *Neptosternus* and *Laccodytes* and some *Laccophilus*.

The monophyly of Laccophilini was suggested in recent studies based on larval characters (Alarie *et al.* 2000) as well as DNA sequence data (Ribera *et al.* 2008). The serrate female ovipositor is a potential adult apomorphy for that group (Burmeister 1976; see also Miller 2001). Also, the monophyly of most genera has been demonstrated (e.g. Hendrich & Balke 1997; Alarie *et al.* 2000; Balke *et al.* 2000), but intergeneric relationships remain hardly understood. First insights came from an analysis of larval characters (Alarie *et al.* 2000), adults (Miller 2001), and a molecular study recently published (Ribera *et al.* 2008).

Taxonomic revisions of many Laccophilini genera from different parts of the World have been published recently (e.g. Balke, Hendrich & Yang 1997; Balke, Larson & Hendrich 1997; Balke *et al.* 2000; Brancucci