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Review of the Lutrochidae (Coleoptera) of the Guianas and Lesser Antilles, with description of four new species

CRYSTAL A. MAIER & ANDREW EDWARD Z. SHORT

Division of Entomology, Biodiversity Institute & Department of Ecology and Evolutionary Biology, University of Kansas, Lawrence, KS, 66045, USA. E-mail: cmaier@ku.edu

Abstract

The species of Lutrochidae from the Guianas, and the Lesser Antilles are reviewed, including the first reports of the family from Guyana, Suriname, and Grenada. Four species are described as new: *Lutrochus funkae* n. sp. and *L. wao* n. sp. from Guyana and French Guiana, *L. grenadensis* n. sp. from Grenada, and *L. leeanneae* n. sp. from Suriname. Photographs, genitalia illustrations, and distribution maps are provided for all species, and habitat photos and notes are presented for the species for which they are available.

Key words: Aquatic insects, travertine beetles, West Indies, Leeward Islands, Guiana Shield, Neotropical Region, *Lutrochus*

Introduction

Lutrochidae is a family of aquatic beetles endemic to the New World. Commonly called the “travertine beetles,” the group ranges from southern Canada (Roughley & Larson 1991) to Brazil and Bolivia, with 14 of the 17 presently described species in the Neotropics (Spangler *et al.* 2001, Maier & Short 2013). The size of the family has increased by more than half in the past year with the publication of a revision of the Venezuelan taxa (Maier & Short 2013). Prior to 2013, most known Neotropical species were described in three works: Grouvelle 1889 and 1896, and Hinton 1939. In our 2013 paper, six new species were described and we presented the first key to species since Grouvelle (1896).

These small aquatic beetles live in a variety of lotic habitats, including on submerged wood, in detritus, on moss in seeps, and on travertine. Most Nearctic species live in calcium-rich streams with travertine deposits, inspiring their common name, the travertine beetles. The Neotropical species cling to logs and other organic matter in running water habitats and the larvae develop in the decaying wood. Valente-Neto & Fonseca-Gessner (2011) and Costa *et al.* (1996) reported the larvae of *Lutrochus germari* Grouvelle in Brazil burrow into submerged woody debris and indicated that they create galleries and ingest the wood on which they live. The discovery of two recently described species from Venezuela has expanded the known habitat preferences, with *Lutrochus minutus* Maier & Short inhabiting water splashed detritus and *Lutrochus meridaensis* Maier & Short living on liverworts and mosses on rockface seeps (Maier & Short 2013). *Lutrochus* species are often difficult to collect, as their preferred habitats are often obscure or rather specific. Once an appropriate habitat is found, however, they can often be collected by the dozens, perhaps even hundreds.

Recent fieldwork in Suriname and Guyana by AEZS has yielded rich and diverse new water beetle material from the region. In addition, we were able to gather specimens from other institutions and collectors. From this material, we identified four undescribed species, most of which are only known from their type localities. Additionally, we have revised the key, which appears in Maier & Short (2013), to accommodate the newly described species.

- Apical metatarsomere pubescent for significantly less than half of length when viewed dorsally (Fig. 10); parameres of aedeagus smooth, lacking weak crenulations at border (Fig 11) 7
- 7(6) Apical protarsomere two-toned, dark brown to nearly apex, testaceous at apex; femora light brown dorsally and dark brown ventrally; tibiae dark brown (Fig. 5); apex of parameres not extended apically (Fig 6)..... ***L. funkae* n.sp.**
- Apical protarsomere, femora, and tibiae entirely reddish-brown to testaceous (Fig 8); apex of parameres extended apically (Fig 11) ***L. grenadensis* n. sp.**
- 8(3) Apical protarsomere entirely glabrous (cf. Maier & Short 2013 Fig. 23)..... *L. gustafsoni* Maier and Short
- Apical protarsomere at least partially pubescent (cf. Maier & Short 2013 Fig. 18)..... 9
- 9(8) Apex of protibia of male with distinct patch of long golden setae apically (Fig. 16)..... ***L. leanneae* n. sp.**
- Apex of protibia of male with setae of similar length on entire surface (cf. Maier & Short 2013 Fig. 15) 10
- 10(9) Apical protarsomere with discrete pubescent patch in basal third, apical two-thirds glabrous (cf. Maier & Short 2013 Fig. 18); body without metallic sheen dorsally (cf. Maier & Short 2013 Fig. 14) *L. cauraensis* Maier & Short
- Apical protarsomere pubescent, although more sparse in apical half (cf. Maier & Short 2013 Fig. 58); body with bluish-violet metallic sheen dorsally (cf. Maier & Short 2013 Fig. 55)..... *L. violaceous* Maier & Short
- 11(1) Metasternum with medial circular glabrous patch (cf. Maier & Short 2013 Fig. 45); scutellum diamond-shaped (cf. Maier & Short 2013 Fig. 46); elytron with seven rows of shallow punctures (cf. Maier & Short 2013 Fig. 40); apical maxillary palpomere narrow (cf. Maier & Short 2013 Fig. 43) *L. meridaensis* Maier & Short
- Metasternum without medial circular glabrous patch (cf. Maier & Short 2013 Fig. 49); scutellum triangular (cf. Maier & Short 2013 Fig. 48); elytral punctuation dense, confused, not in rows (cf. Maier & Short 2013 Fig. 52); apical maxillary palpomere wide (cf. Maier & Short 2013 Fig. 53) *L. minutus* Maier & Short

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