

Chapter 4

Aquatic Beetles of the Grensgebergte and Kasikasima Regions, Suriname (Insecta: Coleoptera)

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SUMMARY

An extensive survey of aquatic beetles was conducted between 9–26 March 2012 in the Grensgebergte and Kasikasima regions of the Upper Palumeu River Basin, Suriname. More than 2500 specimens were collected representing 157 species in 70 genera. Twenty-six species and 8 genera are confirmed as new to science, with an additional 10–15 species likely being undescribed. Surprisingly, more species were recorded here than during the Kwamalasamutu Region RAP despite less collecting effort. Additionally, there was a high species turnover between these RAP sites: 40% of the species recorded here were not found in the Kwamalasamutu Region. The families Lutrochidae, Hydrosaphidae, and Torridincolidae are recorded from Suriname for the first time. While a broad range of habitats contributed to the high species and lineage diversity, hygropetric habitats on granite outcrops in particular provided a wealth of new and interesting taxa. Two of the new species in the family Hydrophilidae are described herein: *Tobochares kasikasima* Short sp. n. and *Tobochares striatus* Short sp. n. A key to the species of *Tobochares* is provided.

INTRODUCTION

Aquatic beetles—loosely defined as beetles that require aquatic habitats for at least one life stage—represent a significant portion of freshwater aquatic macroinvertebrate diversity with approximately 13,000 described species found worldwide (Jäch & Balke 2008). These species are distributed across approximately 20 beetle families in four primary lineages: Myxophaga, Hydradephaga, aquatic Staphyliniformia (Hydrophiloidea and Hydraenidae) and the Dryopoidae (or aquatic byrroids). Members of Myxophaga are small beetles that feed largely on algae as larvae and adults. The Hydradephaga (including the diving and whirligig beetles) are largely predators as adults and larvae; the aquatic Staphyliniformia are largely predators as larvae but scavengers as adults; the dryopoids are largely scavengers or eat algae as both larvae and adults.

Aquatic insects in general (including several groups of aquatic beetles) are often used to assess water quality in freshwater rivers and streams. The dryopoids are most frequently used for this purpose because they are most commonly found in these habitats and often have high-oxygen needs. Aquatic beetle communities are also effectively used to discriminate among different types of aquatic habitat (e.g. between lotic and lentic; rock outcrops, substrate, etc.).

The only prior survey to have focused on aquatic beetles in Suriname was a prior RAP survey in the Kwamalasamutu Region (Short and Kadosoe 2011). Overall, the fauna of the country and broader region is very poorly known, with the exception of recent work in Venezuela where the number of known species has literally more than doubled in just a few years.

METHODS AND STUDY SITES

I collected aquatic beetles at three of the four primary sites on the RAP (Site 1: Upper Palumeu; Site 2: Grensgebergte; Site 4: Kasikasima).

Field methods

I used a variety of passive and active collecting techniques to assemble as complete a picture of the aquatic beetle communities as possible. Passive techniques are advantageous because they often allow large amounts of material to be collected in quantitative ways at one time and with little effort, but provide little ecological or habitat data; we do not gain

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