

Chapter 4

Aquatic beetles of the Kwamalasamutu region, Suriname (Insecta: Coleoptera)

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SUMMARY

We conducted an intensive survey of aquatic beetles in the Kwamalasamutu Region of southwestern Suriname from 18 August to 7 September 2010. Both active collecting (using nets and by hand in aquatic habitats) and passive collecting (flight intercept traps, UV lights, dung baits) resulted in the collection of more than 4000 aquatic beetle specimens. We documented 144 species, distributed among 62 genera in 9 families. Sixteen of these species have been confirmed as new, with an additional 10 likely to be new. Two of these new species, both in the family Hydrophilidae, are described here: *Oocyclus trio* Short & Kadosoe sp.n. and *Tobochares sipaliwini* Short & Kadosoe sp.n. Camps 1 (Kutari) and 3 (Werehpai) had comparatively high species diversity, with 91 and 93 species respectively—although only 48 of these species were shared between the two sites. Camp 2 (Sipaliwini) had the lowest number of species with 68.

INTRODUCTION

Aquatic beetles represent a significant fraction of freshwater macroinvertebrate communities. At present, aquatic beetles are represented by nearly 13,000 described species distributed worldwide (Jäch & Balke 2008)—a guild richer in species than birds. These species are distributed across approximately 25 beetle families within four primary lineages: Myxophaga, Hydradephaga, aquatic Staphyliniformia (Hydrophiloidea & Hydraenidae) and the Dryopoidea (or aquatic Byrrhoids). Ecologically, these beetles play a variety of roles. 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; many 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 some 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 rely on highly oxygenated waters. Aquatic beetle communities are also effectively used to discriminate among different types of aquatic habitat (e.g. between lotic and lentic). However, in order to utilize aquatic insects as effective indicators of watershed health, these communities must be both 1) known and identifiable, and 2) have adequate information about their water quality tolerances. As neither of these criteria is met in the Guiana Shield region of South America, gaining more knowledge about both the diversity and ecology of these species is exceedingly

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