



Article

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Earthworms (Clitellata: Acanthodrilidae, Almidae, Eudrilidae, Glossoscolecidae, Ocnerodrilidae) of the coastal region of Gamba, Ogooué-Maritime Province, southwestern Gabon

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Abstract

This is the first account of earthworms from the Gamba Complex of Protected Areas, a highly biodiverse coastal area of equatorial Africa. We describe five new species of *Dichogaster* Beddard, 1888: *Dichogaster (Diplotheodrilus) moussavoui* sp. nov., *D. (Diplotheodrilus) tchignoumbai* sp. nov., *D. (Diplotheodrilus) tobii* sp. nov., *D. (Diplotheodrilus) alonsoi* sp. nov., and *D. (Dichogaster) gambaensis* sp. nov.; report several more taxa for which the material was not adequate to serve as the basis for new species descriptions, and present new records of several exotic species. Coastal Gamba is now known to have ten indigenous species and four introduced species, some of which are known invasives. Characteristics shared by several Gamba *Dichogaster* conflict with characters used to define subgenera of *Dichogaster*, indicating that additional data are needed to resolve relationships within this large taxon.

Key words: Africa, *Alma*, *Buettneriodrilus*, *Dichogaster*, Oligochaeta, *Pontoscolex*

Introduction

The Gamba Complex is a large area composed of several ecosystem types distributed over a petroleum field and some adjoining protected areas. The study area can be briefly described as a coastal plain composed of a very large sand spit that blocks river flow to create a highly dissected lake inland from the coastal plain, behind which are some ranges of low mountains. The petroleum exploration and extraction activity is complemented by a research effort devoted to discovery and documentation of the diversity of life in the many habitats and microhabitats of Gamba. Full details of the research program, complete description of the location, and some of the earlier results are available in Alonso *et al.* (2006). In cooperation with the Smithsonian Institution's Center for Conservation Education and Sustainability, we conducted a short, preliminary survey of earthworms from the more accessible parts of Gamba, the prairie-woodland mosaic coastal plain and some nearby small hills. The region is accessible by sea and air only, so other than the oil field infrastructure and accompanying development for the employees and a small town, there has been little disturbance.

Methods

Earthworms were collected by digging and hand-sorting soils and litter, searching organic microhabitats such as fallen tree trunks and leaf axils of large-leafed plants like palms and Pandanaceae, and searching for surface castings along the margins of water bodies. Specimens were euthanized in 50% ethanol and sorted by morphospecies in the field. Where possible one duplicate set was fixed in 4% neutral buffered formalin-NaCl and the other set was preserved in 95% ethanol. When unique species were encountered, small tissue samples were taken from the tail prior to fixation, and the samples preserved in 95% ethanol.