



## Acoela (Acoelomorpha) from Bocas del Toro, Panama

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## Abstract

Twenty species of Acoela, nine new to science, are reported from Bocas del Toro, on the Caribbean coast of Panama. The species include two from the family Childiidae (*Childia crassum*, *Childia groenlandica*), two from Convolutidae (*Convoluta* sp., cf. *Heterochaerus sargassi*), one from Dakuidae (*Daku riegeri* sp. nov.), six from Haploposthiidae (*Exocelis reedi* sp. nov., *Haploposthia vandula*, *Kuma albiventer*, *Kuma blacki* sp. nov., *Pseudohaplogonaria caribbea*, Unnamed Species 1), one from Hofsteniidae (*Hofstenia miamia*), seven from Isodiametridae (*Aphanostoma collinae* sp. nov., cf. *Avagina marci*, *Diatomovora jacki* sp. nov., *Isodiametra cuernos* sp. nov., *Isodiametra nicki* sp. nov., *Praeaphanostoma foramivora* sp. nov., *Praeconvoluta bocasensis* sp. nov.), and one from Sagittiferidae (*Antrosagittifera corallina*). The genus *Exocelis* is transferred from the defunct family Otocelididae to the family Haploposthiidae.

**Key words:** Meiofauna, turbellarians, Platyhelminthes, interstitial

## Introduction

Acoels are mostly microscopic marine flatworms that can be interstitial, epiphytic, epibenthic, or planktonic. The Acoela comprises approximately 370 species divided into 20 families distinguished primarily by characters of their male copulatory organs.

Research on acoels from the Caribbean Sea has been scant; although a recent survey from Carrie Bow Cay, Belize and the surrounding area yielded 14 identifiable species, including eight previously unknown to science (Hooge & Tyler 2007; Achatz et al. 2007).

In August 2004, as part of a taxonomic survey of marine invertebrates hosted by the Smithsonian Tropical Research Institute's Bocas del Toro Research Station, we collected acoels from various locations around the station. We report here our findings of twenty species of Acoela, including nine new species descriptions.

## Materials and Methods

Samples of sediment, mangrove leaves, plankton, and seagrass were collected during the first week of August 2004 and transported to the Bocas del Toro research station for extraction and observation of the animals. Specimens were extracted from sediment using magnesium-chloride anesthetization (Sterrer 1971). Live animals were viewed by light microscopy in squeeze preparations using a Nikon E600 microscope with differential interference contrast (Nomarski) or an Olympus CX41 microscope, and photographed with an Olympus C-5050 digital camera.

Specimens of *Hofstenia miamia* were extracted from submerged and decaying mangrove leaves by placing a large quantity (~ 3 L) of mangrove leaves in a bucket of sea water. Specimens crawled to the water surface over a period of 1–5 h.

For histological study, specimens were fixed in warm Stefanini's fixative (Stefanini et al. 1967), washed in phosphate buffer (Millonig's, 0.1 M), fixed in phosphate-buffered 1% (v/v) osmium tetroxide, dehydrated