



## On the genus *Raphidrilus* Monticelli, 1910 (Polychaeta: Ctenodrilidae) with description of two new species

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### Abstract

*Raphidrilus harperi* **sp. nov.**, is described from the Gulf Intracoastal Waterway (GIWW) in Venice, Florida from sediments consisting of coarse sands and shell hash. *Raphidrilus hawaiiensis* **sp. nov.**, is described from Oahu's shallow waters and inhabits a successful invasive alga in Waikiki and sandy sediments adjacent to ocean outfalls in Barbers Point and Sand Island, off Honolulu. The genus *Raphidrilus* is emended, the distinctness between the genera *Raricirrus* and *Raphidrilus* is confirmed and keys to all recognized genera of Ctenodrilidae and species of *Raphidrilus* are given.

**Key words:** Polychaeta, Ctenodrilidae, *Raphidrilus nemasoma*, Florida, Hawaii

### Introduction

Ctenodrilids are small polychaetes commonly found in soft, shallow-water sediments but some species have been described from the deep sea (Dean 1995) and another only from aquaria (Wilfert 1974). This family currently comprises 2 subfamilies: Ctenodrilinae, which includes those ctenodrilids with a short body, without branchial filaments and reproducing exclusively asexually; and Raphidrilinae for those ctenodrilids with long bodies, branchial filaments present, and reproducing both sexually and asexually (Hartmann–Schröder 1971 emended by Petersen & George 1991).

The distinction of the two genera within the Raphidrilinae, *Raricirrus* Hartman, 1961 and *Raphidrilus* Monticelli, 1910a, was supported by Petersen and George (1991) based on position and extent of the heart body and structure of the nuchal organs. Dean (1995) considered the position of the heart body to be a species level character rather than generic based on variability among species of *Raricirrus* and suggested that the distinctness between *Raricirrus* and *Raphidrilus* are due to the chaetal characteristics and arrangement of prostomium, peristomium and first chaetiger. However, the value of using the presence of modified chaetae in posterior regions as a generic level character was questioned by Dean (1995) based on uncertainties about the posterior end of *Raphidrilus* because no specimens of *Raphidrilus nemasoma* Monticelli, 1910a had been carefully examined. The relationships within the Raphidrilinae remained unclear.

Descriptions of two new species of *Raphidrilus* from Venice, Florida and the south shore of Oahu, Hawaii are presented, including notes on the external morphology of anterior fragments of the type species *Raphidrilus nemasoma* based on newly collected material from the northern Adriatic Sea. The genus *Raphidrilus* is emended and the separation between *Raricirrus* and *Raphidrilus* is maintained. Keys to all recognized genera of Ctenodrilidae and species of *Raphidrilus* are presented.

### Material and methods

Several fragmented specimens of *Raphidrilus nemasoma* were collected from the thallus of *Caulerpa racemosa*, an invasive alga growing on soft bottoms in the northern Adriatic Sea, by SCUBA diving. The alga canopy was