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A new species of *Micromaldane* (Polychaeta: Maldanidae) from the Falkland Islands, southwestern Atlantic, with notes on reproduction

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Abstract

Micromaldane shackletoni n. sp. is described from the Falkland Islands in the southwest Atlantic. It is only the eighth species of *Micromaldane* to be recognized worldwide and is a new record of the genus for the Falkland Islands. The main characters of the new species are: up to 23 chaetigerous segments; nuchal organs as rounded ciliated pits with small central grooves anteriorly; two kinds of notochaetae: lancet-shaped chaetae and fine capillaries; neurochaetae as a single row of strongly curved, avicular uncini; a single pre-anal achaetigerous segment and anal plaque funnel-shaped with a crenated edge. This new species is a simultaneous hermaphrodite, only the second report of this reproductive mode in the genus along with *Micromaldane androgyne* Rouse, 1990. The stages of larval development from internal gametes to external in-tube development are also discussed.

Key words: taxonomy, simultaneous hermaphrodite, eggs, sperm, larvae

Introduction

Micromaldane is a small genus of only seven species worldwide. The genus was erected by Mesnil in 1897 for the European species *Micromaldane ornithochaeta*. Since then, other species have been described from the Red Sea (*M. bispinosa* Hartmann-Schröder, 1960), India (*M. jonesi* Kumaraswamy Achari, 1968) and Australia (*M. androgyne*, *M. nutricula*, *M. pamela* and *M. rubrospermatheca*: all by Rouse, 1990). Except for *M. ornithochaeta*, none of the species have been reported outside their original type locality (De Assis *et al.* 2007). The widely distributed European species has been recorded further afield from Mexico (Jiménez-Cueto & Salazar-Vallejo 1997), Antarctica (Fauvel 1951; Branch 1994) and British Columbia, Canada (Berkeley & Berkeley 1962). A catalogue of the Nicomachinae with taxonomic keys to species and a review of current literature, including *Micromaldane*, was published by De Assis *et al.* in 2007.

All species of this genus are small, the largest reported species being *M. jonesi* at around 12 mm in length. Historically there has been debate over the validity of the genus with several authors, including Fauvel (1927), Hartman (1959) and Day (1967) suggesting that specimens in fact represent a juvenile stage of *Nicomache* Malmgren, 1865 rather than a distinct species. However, several of the species were described with reproductive products inside the body (Mesnil 1897; Rouse 1990) indicating that they were mature adults. In addition, Rouse (1990) and this paper describe the presence of directly developing larvae inside tubes of specimens indicating that these specimens must indeed be adults and not still-developing juveniles of another species.

A large-scale study of the intertidal and nearshore polychaetes of the Falkland Islands began in 2011. Subtidal rock scrapings of hydroid and bryozoan turf were found to have many small tubes of *Micromaldane* embedded within and attached to the turf species (no specimens have so far been found from intertidal samples). The majority of the larger specimens were found to be in various stages of reproduction, enabling an investigation of development from presence of internal gametes to larval stages and fully developed adults. The new species is the first record of the genus from the Falkland Islands.