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Capitella teleta, a new species designation for the opportunistic and experimental *Capitella* sp. I, with a review of the literature for confirmed records

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Abstract

This paper provides a morphological description of *Capitella teleta* sp. nov., an opportunistic capitellid that is also commonly used as an experimental polychaete under the provisional designation *Capitella* sp. I. The species is widely distributed along the east and west coasts of North America and also reported from Japan and the Mediterranean. The species belongs to a group having distinct sexual dimorphism, yet with hermaphrodites occurring under certain conditions. Morphologically, *C. teleta* has a long, narrow body, with all thoracic segments similar except for sexual modifications on setigers 8–9; the prostomium/peristomium combined are long, narrow and about 2.5 times as long as setiger 1. Capillary setae are present in noto- and neuropodia of setigers 1–7; setigers 8–9 have hooded hooks in noto- and neuropodia of females; genital spines replace notopodial hooks in males. A methyl green staining pattern is limited to some thoracic setigers of females; males lack a distinct staining pattern. The cytochrome oxidase I (COI) sequence is presented. Relationships of *C. teleta* with the type-species, *C. capitata* and other known species including siblings identified in laboratory culture are discussed. The syntype of *Ancistria acuta* Verrill, 1874, the only known species of *Capitella* described from New England was examined and determined to be *incertae sedis*. *C. teleta* is a highly opportunistic species and appears to be the same as the *C. capitata* identified from southern California as the "polluted zone indicator" by D.J. Reish in the late 1950s. An appendix with over 200 published references to research conducted on *C. teleta* is included.

Key words: sibling species, morphology, taxonomy, reproduction, opportunistic species, Massachusetts, California, Japan

Introduction

Polychaetes of the genus *Capitella* are typically considered to be opportunistic in disturbed or otherwise stressed organically enriched sediments. Historically, a single species, *C. capitata* (Fabricius), believed to be cosmopolitan in distribution, was thought to be the only species of *Capitella* found in stressed habitats. This concept began to break down when detailed studies were conducted on cultures of *Capitella* taken from sediments contaminated by fuel oil during the West Falmouth, Massachusetts, oil spill in September 1969. Capitellids identified at the time as *C. capitata* were the most opportunistic invertebrate species found in recovering sediments (Sanders et al. 1980). *Capitella* was later collected from five populations in the vicinity of Woods Hole, Massachusetts, and two populations in Gloucester, Massachusetts, in an effort to further understand the population structure and life history. Subsequent allozyme electrophoresis and life history studies

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