



A new species of *Sphaerephesia* (Polychaeta: Sphaerodoridae) from Mamala Bay, south shore of Oahu, Hawaii

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Abstract

A new species of *Sphaerephesia* is described from Mamala Bay, south shore of Oahu, Hawaii. *Sphaerephesia mamalaensis* sp. nov., differs from its congeners by the absence of microtubercles and number and arrangement of body and parapodial papillae. This species is commonly found in low abundance in shallow (20 m) and deep-waters (500 m) adjacent to ocean outfall diffusers or dredge dump sites and has been resilient to the waste water treatment plume of the outfalls for the last 25 years. A comparative table with morphological characteristics of all seven recognized species of *Sphaerephesia* is provided.

Key words: Annelida, Sphaerodoridae, new species, sewage outfalls, Oahu, Hawaii

Introduction

Sphaerodorids are small grub-like polychaetes more commonly found in deep waters (Kudenov, 1997), but shallow water assemblages might have been overlooked due to sample processing methods (Fauchald, 1977; Borowski, 1994). The taxonomy of these polychaetes was elucidated by Fauchald (1974) and most of the species and genera have been described in the last four decades (e.g. Hartman & Fauchald, 1971; Fauchald, 1972, 1974; Kudenov, 1987a, b; Sarda–Borroy, 1987; Kudenov, 1993; Aguado & Rouse, 2006; Rizzo, 2009). The genera within Sphaerodoridae can be distinguished by the presence of a long- or short-body, shape and arrangement of the macro- and microtubercles on the dorsal and ventral surface, number and arrangement of prostomial antennae and papillae, and types of chaetae (Fauchald, 1974).

The genus *Sphaerephesia* Fauchald, 1972 is a group of short-bodied sphaerodorids with short terminal papillae on the microtubercles. To date, only six species have been described: the type species *Sphaerephesia longisetis* Fauchald, 1972 from continental slope depths off southern California and western Mexico; *Sphaerephesia similisetis* Fauchald, 1972 from shelf and slope depths of the same locality as the type species; *Sphaerephesia chilensis* Fauchald, 1974 from intertidal and shallow subtidal regions of central and southern Chile; *Sphaerephesia fauchaldi* Kudenov, 1987 from shallow sandy areas (54 m) off Florida, east Gulf of Mexico; *Sphaerephesia regularis* Bögge-mann, 2009 from abyssal depths (5048–5494 m) in the southeast Atlantic, and *Sphaerephesia gesae* Moreira and Parapar, 2011 from deep sandy areas (620 m) in Antarctica. The new species of *Sphaerephesia* from south shore of Oahu, Hawaii described herein represented the westernmost record of the genus in the Pacific Ocean.

Material and methods

Hawaiian specimens of an undescribed sphaerodorid have been collected during the course of several monitoring programs in Mamala Bay, south shore of Oahu Island since 1986. Surface sediments were collected with a modi-