Zootaxa 1850: 43–52 (2008)
www.mapress.com/zootaxa/

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

Rhabditid nematodes found from a rocky coast contaminated with treated wastewater of Casey Station in East Antarctica, with a description of a new species of *Dolichorhabditis* Andrássy, 1983 (Nematoda: Rhabditidae)

KENJI KITO[1] & YOSHIKUNI OHYAMA[2]

[1]*Department of Biology, School of Medicine, Sapporo Medical University, Sapporo 060-8556, Japan. E-mail: kito@sapmed.ac.jp*
[2]*National Institute of Polar Research, Tokyo 173-8515, Japan*

Abstract

Three unknown species of rhabditid nematodes were found from sediment collected in a rocky coast area at Budd Coast, Wilkes Land, East Antarctica. The sediment was contaminated with treated wastewater which had been discharged through a pipeline extending from Casey Station (Australia). The most abundant of the three species is described here as *Dolichorhabditis tereticorpus* **sp. n.** based on female specimens. *Dolichorhabditis tereticorpus* resembles *Dolichorhabditis dolichuroides* (Anderson & Sudhaus, 1985) but is distinguished by the features of body length, pharyngeal corpus, and vulval lips. The remaining two undetermined species, Rhabditidae sp. 1 and Rhabditidae sp. 2, are briefly reported because the specimens obtained were inadequate in condition or number for detailed taxonomic analysis. It is suggested that these three species are peculiar to this rocky coast, although it is not certain yet whether they are specific to the habitat contaminated with the discharged effluent of the station.

Key words: Nematoda, Rhabditidae, *Dolichorhabditis tereticorpus*, new species, taxonomy, human impact, wastewater, pollution, Antarctica

Introduction

A taxonomic and ecological study of terrestrial invertebrates was carried out along the coastal ice-free region of Budd Coast, Wilkes Land, East Antarctica in the austral summer of 1995/96. The study aimed not only to provide baseline biodiversity data in the region but also to determine the influence of anthropogenic pollutants on the invertebrate fauna in Casey Station (Australia). During the course of the study, three unknown nematode species of Rhabditida were found from a rocky coast where treated wastewater from the station has been disposed. The present paper deals with the taxonomy of the three rhabditid species, especially with reference to a description of a new species of *Dolichorhabditis* Andrássy, 1983. This is the first report on the nematodes found in anthropogenically contaminated environments in Antarctica.

Material and methods

Casey Station is located in a rocky area of Bailey Peninsula, Budd Coast, Wilkes Land (66°17’S, 110°32’E) and consists of five large buildings for accommodation, communication, research, storage, and mechanics, along with other small ones (Fig. 1). Wastewater of the station is treated in a sewage treatment plant and disposed of through a heated pipeline into Shannon Bay. Effluent from the outfall of the pipeline is discharged onto the ice and snow covering coastal rocks and freezes into them during the winter. The main mechanism

Accepted by P. Mullin: 8 Jul. 2008; published: 15 Aug. 2008