Zootaxa 2568: 39–66 (2010)
www.mapress.com/zootaxa/

Article

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

Biodiversity of free-living marine nematodes on the coast of Brazil: a review

VIRÁG VENEKEY[1,2], VERÔNICA G. FONSECA-GENEVOIS[3] & PAULO J. P. SANTOS[3]
[1]*UFPA, ICB, Av. Augusto Corrêa, 01. Guamá – Belém – PA, Brazil. CEP: 66075-110. E-mail: venekey@ufpa.br*
[2]*UFPE, PPG Oceanografia*
[3]*UFPE, CCB, Depto. Zoologia, R. Prof. Moraes Rêgo s/n. Cid. Universitária – Recife – PE, Brazil. CEP: 50670-920*

Abstract

The taxonomic richness of the marine Nematoda in coastal habitats of Brazil and similarities in generic composition among them are analysed. A complete faunal list is presented, containing 11 orders, 59 families, 294 genera and 231 species, among which 1 family, 10 genera and 87 species were discovered for the first time in Brazil. Seven habitats were considered (sandy beaches, estuaries, phytal, oceanic islands, beach rocks, salt works and artificial substrates): sandy beaches had the greatest generic richness (241), followed by estuaries (142) and the phytal environment (126). Taxonomic composition was similar to that of other coastal habitats sampled worldwide, with Chromadoridae and Xyalidae the most representative families. The three major habitats (beaches, rocky shores and estuaries), showed statistically significant differences in faunas. Estuaries were the most uniform in composition.

Key words: nematode, composition, coastal environments, beaches, estuaries, rocky shores

Introduction

Phylum Nematoda has four to five thousand free-living marine species (Lorenzen 1994). This number seems very low considering the total number of known nematode species (26646) and even lower considering the estimates of up to one to one hundred million living species (Hugot *et al.* 2001, Lambshead 1993). Discrepancies regarding the total number of nematode species are due to recording a low number of valid species from limited locations (Coomans 2001). While interest in parasitic nematodes has been growing, attention to aquatic and terrestrial nematodes from different environments has been decreasing (Ferris 1994). Moreover, free-living nematodes are normally only a few millimetres long, making taxonomic studies difficult (Heip *et al.* 1982).

In addition to the difficulties mentioned above, in Brazil there were no specialists working with the group until very recently. The first record of marine nematodes—a list of only three species (*Alaimella truncata*, *Litotes minuta* and *Synonema brasiliense*)—was made on the coast of the state of Bahia (northeastern region) by Cobb (1920). Taxonomic studies on nematodes in Brazil effectively began with the work of Dr. Sebastian Gerlach, an invited researcher to the University of São Paulo in the 1950's (Gerlach 1954; 1956a; 1956b; 1957a; 1957b). His publications, together with those for semi-limnetic environments by Meyl (1956 and 1957), were an important first step and resulted in records of 209 species, among which 106 were new to science. Taxonomic studies restarted only in the 1990s, resulting in new manuscripts (Netto & Gallucci 2003; Fonsêca-Genevois *et al.* 2004; Fonsêca-Genevois *et al.* 2006) as well as the first descriptions of new species and genera since those by Gerlach and Meyl in the 1950s (e.g. Venekey *et al.* 2005; Castro *et al.* 2006; Fonsêca-Genevois *et al.* 2009).

Reviews of many other benthic animal groups have been carried out for the Brazilian coast: Mollusca (Rios 1994); Annelida Polychaeta (Amaral & Nonato 1996); Coral Reefs (Maida & Ferreira 1997); and Crustacea (Young 1998). However, most of the biodiversity data regarding Brazilian nematodes has remained in the gray literature: particularly theses or undergraduate papers. In this review paper we present an updated

Accepted by M. Hodda: 3 Jul. 2010; published: 16 Aug. 2010