



ZOOTAXA

3082

Checklist of Nematoda associated with the fishes of Brazil

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Magnolia Press
Auckland, New Zealand

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(*Zootaxa* 3082)

88 pp.; 30 cm.

28 Oct. 2011

ISBN 978-1-86977-813-2 (paperback)

ISBN 978-1-86977-814-9 (Online edition)

FIRST PUBLISHED IN 2011 BY

Magnolia Press

P.O. Box 41-383

Auckland 1346

New Zealand

e-mail: zootaxa@mapress.com

<http://www.mapress.com/zootaxa/>

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ISSN 1175-5326 (Print edition)

ISSN 1175-5334 (Online edition)

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Abstract

Seventy-four genera comprising approximately 140 named and 75 undetermined species of adult and larval nematodes are associated with about 330 named and 50 undetermined species of marine, brackish and freshwater fishes from Brazilian waters. These are listed with information on their hosts, habitat, distribution and records. A key to these parasites at the generic level is provided.

Key words: Biodiversity, Nematoda, fish parasites, checklist, key, Neotropics, Brazil

Introduction

The phylum Nematoda represent a taxonomically, ecologically and geographically diverse helminth group, with an enormous number of species, both parasitic and freeliving forms, a huge economic and ecological impact, and a number of individuals estimated at 10^{22} (Hodda, 2007). Because of the enormous abundance and diversity of the group, only an estimated 2–10% of the world fauna has been formally described, despite its importance (Hodda 2007). Nematodes represent a conspicuous component of the parasite assemblages in fishes. According to Luque & Poulin (2007), nematodes are the second group, after digeneans, in terms of the number of parasite associations recorded in fishes from the Neotropics.

Studies on nematodes parasitic in Brazilian fishes began with the description of *Trichocephalus gibbosus* Rudolphi [now *Oncophora melanocephala* (Rudolphi)] by Rudolphi (1819) based on specimens collected from *Thunnus thynnus* (L.) off the coast of Brazil by Pohl in 1817. The first freshwater records appear to be of *Lecanoccephalus spinulosus* Diesing [now *Goezia spinulosa* (Diesing)] and *Cheiracanthus gracilis* Diesing [now *Gnathostoma gracile* (Diesing)], both of which Diesing (1839) recorded from *Arapaima gigas* (Schinz). However, not until the work of Travassos *et al.* (1928), which recorded numerous nematodes from freshwater fishes, were detailed studies undertaken. Subsequently, a large number of papers by many authors, especially in recent years, have added to our knowledge of this fauna. Compilations of records have been published by Thatcher (1991, 2006), restricted to the Amazon River basin, and by Vicente *et al.* (1985), supplemented by Vicente & Pinto (1999). Moravec (1998), in his monograph on nematodes parasites of Neotropical freshwater fishes, also included numerous records from Brazil. Some of these compilations have included taxonomic keys, descriptions and/or aspects of the biology of the different taxa. Most recently, Muniz-Pereira *et al.* (2009) included records of nematode species in a checklist of helminth parasites of threatened vertebrate species from Brazil, and Eiras *et al.* (2010) published an account of the nematode species associated with Brazilian freshwater fishes.

Here we provide a checklist of the nematode species associated with both marine and freshwater fishes from Brazil, including detailed information on locality, habitat, site of infection and life cycle stage. The information is presented as parasite-host and host-parasite lists, with a key to the generic level. We have attempted to include information from all published reports and have added a small number of original records.