



# ZOOTAXA

3082

## Checklist of Nematoda associated with the fishes of Brazil

JOSÉ L. LUQUE<sup>1</sup>, JULIO C. AGUIAR<sup>2</sup>, FABIANO M. VIEIRA<sup>3</sup>, DAVID I. GIBSON<sup>4</sup>  
& CLÁUDIA PORTES SANTOS<sup>5</sup>

<sup>1</sup>Departamento de Parasitologia Animal, Universidade Federal Rural do Rio de Janeiro, Caixa Postal 74508, Seropédica, RJ, 23851-970, Brazil. Corresponding author. E-mail: jlluque@ufrj.br.

<sup>2</sup>Curso de Pós-Graduação em Ciências Veterinárias, Universidade Federal Rural do Rio de Janeiro, Seropédica, RJ, Brazil.

<sup>3</sup>Curso de Pós-Graduação em Biologia Animal, Universidade Federal Rural do Rio de Janeiro, Seropédica, RJ, Brazil.

<sup>4</sup>Department of Zoology, Natural History Museum, Cromwell Road, London SW7 5BD, UK

<sup>5</sup>Laboratório de Avaliação e Promoção da Saúde Ambiental, Instituto Oswaldo Cruz, Fundação Oswaldo Cruz, Av. Brasil 4365, Rio de Janeiro, 21045-900, Brazil.



Magnolia Press  
Auckland, New Zealand

JOSÉ L. LUQUE, JULIO C. AGUIAR, FABIANO M. VIEIRA, DAVID I. GIBSON & CLÁUDIA PORTES SANTOS

**Checklist of Nematoda associated with the fishes of Brazil**

(*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](mailto:zootaxa@mapress.com)

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

© 2011 Magnolia Press

All rights reserved.

No part of this publication may be reproduced, stored, transmitted or disseminated, in any form, or by any means, without prior written permission from the publisher, to whom all requests to reproduce copyright material should be directed in writing.

This authorization does not extend to any other kind of copying, by any means, in any form, and for any purpose other than private research use.

ISSN 1175-5326 (Print edition)

ISSN 1175-5334 (Online edition)

## Table of contents

Abstract .....	3
Introduction .....	3
Materials and methods .....	4
Results .....	4
Key to Adult Nematoda .....	4
Key to Larval Nematoda .....	7
Parasite-Host List .....	8
Host-Parasite List .....	45
Discussion .....	76
Acknowledgements .....	76
References .....	76

## 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.