



## Survey of the endohelminth parasites of freshwater fishes in the upper Mezquital River Basin, Durango State, Mexico

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### Abstract

As a part of an ongoing inventory of the helminth parasites of freshwater fishes in Mexico, 676 specimens were collected between November 2007 and December 2008 in 23 localities along the upper Mezquital River Basin in Durango State, northern Mexico. Sixteen species of hosts, mostly corresponding to Nearctic freshwater elements, were studied. A total of 1,230 individual worms were collected during this survey, representing 25 species of endohelminths of which 9 were digeneans, 3 were cestodes, 4 were acanthocephalans, and 9 were nematodes. The checklist contains 24 new hosts and 42 new locality records. The information provided in this checklist may be helpful for our understanding of the biodiversity and historical biogeography of this host-parasite system, since the Mezquital River Basin mostly contains a Nearctic freshwater fish fauna, with a few Neotropical and endemic elements and may represent a transitional area from a biogeographical point of view.

**Key words:** Helminths; freshwater fishes; survey; upper Mezquital River Basin; Durango; Mexico

### Introduction

Because of its diverse parasite fauna, Mexico is considered to be a hot spot of parasite diversity for freshwater fishes (Luque & Poulin 2007). The study of helminth parasites of freshwater fishes in Mexico started with the descriptions of *Crassicutis cichlasomae* Manter, 1936 and *Derogenes tropicus* Manter, 1936 as parasites of the cichlid *Cichlasoma mayorum* Hubbs and the heptapterid *Rhamdia guatemalensis* Barbour and Cole, respectively (Manter, 1936) in sinkholes (cenotes) of the Yucatán Peninsula in southeastern Mexico. Several isolated reports were established over the next 50 years, and most of the survey work has been conducted over the last two decades (see compilations by Pérez-Ponce de León *et al.* 1996; Vidal-Martínez *et al.* 2001; Garrido-Olvera *et al.* 2006; Salgado-Maldonado 2006). Even though freshwater fishes are the host group benefitting from the largest study effort in Mexico for helminth parasites, and the one with the best-known parasite fauna, the inventory is far from complete. In addition to that, sampling effort has been unequal, and the vast majority of records have been obtained from field work conducted in localities of southeastern and central Mexico, with the northern regions basically remaining unexplored (Garrido-Olvera *et al.* 2006); just a few records have been documented for helminth parasites of freshwater fishes from that part of the country.

More specifically, only five papers have been published on endohelminth parasites of freshwater fishes for the study region in Durango State. Salgado-Maldonado *et al.* (2005) described a new species of acanthocephalan in the pupfish (*Cyprinodon meeki* Miller) from the Abraham González spring. In the same year, as part of a comprehensive survey of the helminth parasites of goodeids in Mexico, Mejía-Madrid *et al.* (2005) recorded four species of helminths as parasites of two species of these fish from El Toboso, Amado Nervo, and Los Berros. Later, Martínez-Aquino *et al.* (2007) studied the helminth parasite fauna of two