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Gryporhynchidae (Cestoda: Cyclophyllidea) in Mexico: species list, hosts, distribution and new records

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Abstract

As a result of this study, 8 new host (*Botaurus lentiginosus* for *Glossocercus caribaensis* and *Valipora mutabilis*; *Egretta caerulea* for *Valipora minuta*; *Egretta thula* for *Glossocercus cyprinodontis*; *Egretta tricolor* and *Nycticorax nycticorax* for *Glossocercus caribaensis*; *Pelecanus occidentalis* and *Platalea ajaja* for *Paradilepis caballeroi*) and 31 new locality records for gryporhynchid cestode species in Mexico are presented. With these data, the total number of species of this group of helminths in Mexico becomes 25 (19 named species and 6 unidentified taxa), which have been registered as parasites of fishes (47 host species) and (or) birds (20 host species). This information comes from 102 localities, pertaining to 20 of 32 Mexican states. Five of the 25 taxa have been exclusivelly collected in fishes, 7 in fish-eating birds, and 13 in both groups of hosts. The most frequent metacestodes found in Mexican fishes are the merocercoids of *Cyclustera ralli*, *Valipora mutabilis, Parvitaenia cochlearii* and *Valipora campylancristrota*; in adult stage, *Glossocercus caribaensis* was the species with the largest host spectrum, while *Paradilepis caballeroi* has the widest distribution range. The work includes parasite/host lists, as well as habitat, distribution, references and information on specimens' deposition.

Key words: Cestodes, fishes, fish-eating birds, helminthes, adults, metacestodes

Introduction

Gryporhynchinae Spassky & Spasskaya, 1973 was erected to allocate dilepidid species that mature in fish-eating birds; however, in the last revision of Dilepididae (Bona, 1994), this subfamily was not recognized as valid. Spassky (1995) elevated Gryporhynchinae to family level, but its validity has been continuously questioned (Georgiev & Vaucher 2000, 2004; Scholz 2001). However, morphological and molecular phylogenetic studies have confirmed its validity, distinguishing it from the Dilepididae *sensu stricto* (Mariaux 1998; Hoberg *et al*. 1999).

These tapeworms are obligate endoparasites with complex life cycles that use crustaceans (copepods) as the first intermediate hosts, teleost fish as the second intermediate hosts, and fish-eating birds (Suliformes and Pelecaniformes) as definitive hosts (Spassky & Spasskaya 1973; Bona 1975, 1994; Scholz *et al*. 2004). The taxonomic identification of the members of this family at generic and specific levels is mainly based on the size and shape of the rostellar hooks (Scholz & Salgado-Maldonado 2001; Scholz *et al*. 2004). Based on these morphological traits, the family consists of 13 genera: *Amirthalingamia* Bray, 1974, *Ascodilepis* Guildal, 1960, *Baerbonaia* Deblock, 1966, *Clelandia* Johnston, 1909, *Cyclorchida* Fuhrmann, 1907, *Cyclustera* Fuhrmann, 1901, *Dendrouterina* Fuhrmann, 1912, *Glossocercus* Chandler, 1935, *Neovalipora* Baer, 1962, *Neogryporhynchus* Baer & Bona, 1960, *Paradilepis* Hsü, 1935, *Parvitaenia* Burt, 1940, and *Valipora* Linton, 1927 (Bona 1994; Scholz *et al*. 2002, 2004; Ortega-Olivares *et al*. 2008).

The first record of a member of Gryporhynchidae in Mexico was the adult of *Parvitaenia cochlearii* Coil, 1955, a parasite of the Boat-billed heron *Cochlearius cochlearius* (L.) in Oaxaca and Chiapas states (Coil 1955a, b). Since then, numerous records of adults and larval stages in fish-eating birds and fishes, respectively, have been made in this country. The objectives of the current study are: 1) to present new records of gryporhynchids in Mexico, and 2) compile all the information related to this group in Mexico and analyzed their distribution patterns and host specificity.

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