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ZOOTAXA

A checklist of ciliate parasites (Ciliophora) of fishes from Mexico

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Abstract

A database with all available published accounts of the ciliate parasite species of Mexican fishes was assembled. This information, along with records derived from own recent research, allow generating a checklist containing all the records, which is a necessary first step to address future questions in the areas of ecology, evolutionary biology and biogeography of these host-parasite associations. The checklist is presented as a parasite-host list, and a host-parasite list. The checklist contains 30 nominal species, from 9 genera and 8 families of ciliate parasites. Most of the primary records were done for exotic fish species, artificially introduced to Mexico for aquaculture purposes; however, recent works have been conducted in diverse species of native fishes. Excepting one, all the ciliate species listed here have been previously recorded for diverse fish species from different localities around the world. Based on the amount of information contained in this checklist, much more effort is necessary to accurately know the diversity of species of this type of parasites in fish fauna of Mexico.

Key words: Ciliophora, parasites, Mexico

Introduction

Parasites are extremely abundant and diverse in nature, representing a substantial portion of global biodiversity. Inclusion of parasites in biodiversity surveys provides insights into the history and biogeography of other organisms, as well as into the structure of ecosystems the processes behind the diversification of life (Brooks & Hoberg, 2000; Poulin & Morand, 2000, 2004). In this context, parasites have, according to Brooks & Hoberg (2006), a dual and conflicting significance because they may regulate host populations, playing a central role in maintenance of genetic diversity and structuring host communities and, at the same time, they represent treats to human health, agriculture, natural systems, conservation practices, and the global economy (see Horwitz & Wilcox, 2005).

To date, many groups of parasites such as helminths (e.g. Platyhelminthes, Nematoda and Acanthocephala) have been widely recorded in freshwater fishes from Mexico, and some authors have considered that their inventory is near to be completed because representative helminth fauna of most of the Mexican fish families is currently known (Pérez-Ponce de León & Choudhury, 2010). However, other parasites such as protists are poorly known (Scholz & Chohudury, 2014), and the available records of these parasites have been mainly published only in local journals. In response to this, the present study compiles the current knowledge of the taxonomic composition and distribution of ciliate parasites of fish in Mexico. A list makes available the current nomenclature and specimens occurrence records, providing a portal to the information available about different species, which is necessary to successfully document and understand the causes and consequences of biotic diversity. Species lists form a vital element of distribution studies because they aid in generating hypotheses to guide the application of experimental or comparative methods. It is expected that this checklist will facilitate future research on taxonomy, biogeography, ecology, and biodiversity. The main objective of this study is to compile all the available published accounts on the ciliate parasites of fishes in Mexico, incorporating some new records derived from our own work in order to assemble a checklist providing parasite-host and host-parasite lists. A brief discussion on the importance of our findings is also provided.