



Article

***Trichodina heterodentata* (Ciliophora: Trichodinidae): a new parasite for *Piaractus mesopotamicus* (Pisces: Characidae)**

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Abstract

Trichodinids are mobile peritrichous ciliated protozoa, and widely known as ectocommensals and/or parasites of fish and other aquatic organisms. Little is known about the trichodinid fauna in Brazilian fish. This study reports *Trichodina heterodentata* Duncan, 1977 as a new parasite for freshwater fish *Piaractus mesopotamicus* Holmberg, 1887. This is the first record of this trichodinid in southeastern Brazil. Fifty specimens impregnated with 2% silver nitrate and another fifty stained with Giemsa were used for morphometry on the taxonomic characteristics. *T. heterodentata* in this study is medium size, with a disc-shaped body measuring 49.0 to 61.0 µm, parasitizing the skin, fins and gills of pacu. Measurement comparisons between the present material and other records from different countries are presented.

Key words: Trichodinids, fish ectoparasite, aquaculture health

Introduction

Trichodinids are mobile peritrichous protozoa that present widespread distribution around the world. They often act as ectocommensals and are capable of establishing ecological relationships with mollusks (Pinto *et al.* 2006), crustaceans (Silva *et al.* 2009), fish (Martins *et al.* 2010) and amphibians (Dias *et al.* 2009). Some trichodinids can cause harmful effects on their hosts, and they act as parasites of importance in aquaculture that are capable of causing losses through mortality (Khan 2009) and diminished productive performance (Ekanem & Obiekezie 1996), as well as making the hosts susceptible to other infectious diseases like streptococcosis (Evans *et al.* 2007) and influencing the efficacy of vaccines (Martins *et al.* 2011).

Epithelial proliferation on the skin and gills is the main histopathological change caused by trichodinid infestation (Huh *et al.* 2005; Yemmen *et al.* 2011), and this may be associated with fusion of the secondary lamellae of the gill filaments and accumulation of mucus (Yemmen *et al.* 2011), along with destruction of the secondary lamellae (Schalch *et al.* 2006). Together, these structural disorders in the gill tissue cause respiratory deficit because of the obstruction that comes with tissue death, and this may cause asphyxia and culminate in mortality.

Among the trichodinids, *Trichodina heterodentata* is a cosmopolitan species and, since it was first described by Duncan (1977), more than 35 species of fishes in 14 families have now been recognized as hosts for this parasite (Martins *et al.* 2010). In South America, this parasite was first recorded in Venezuela (Van As & Basson 1989), and it has recently been recorded in Brazil (Dias *et al.* 2009; Martins *et al.* 2010) and Peru (Miranda *et al.* 2012). However, it possibly originated from the African continent and has been dispersed to other countries together with shipments of cichlids destined for aquaculture (Van As & Basson 1989).