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Trypanorhynch cestodes of elasmobranchs from the Persian Gulf

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Abstract

The first large scale study of trypanorhynch cestodes of elasmobranchs from the Persian Gulf was carried out during November to December 2007. A total of 194 elasmobranch specimens belonging to six families and 15 species was infested with the following cestodes, most representing new locality and 23 new host records: *Kotorella pronosoma* (Stossich, 1901), *Kotorella* sp. and *Nybelinia* spp. from the stomach, and *Pterobothrium lesteri* Campbell & Beveridge, 1996, *Pseudogrillotia perelica* (Shuler, 1938), *Callitetrarhynchus gracilis* Pintner, 1931, *Proemotobothrium southwelli* Beveridge & Campbell, 2001, *Otobothrium carcharidis* (Shipley & Hornell, 1906), *Otobothrium* sp., *Halysiorhynchus macrocephalus* (Shipley & Hornell, 1906), *Trygonicola macropora* (Shipley & Hornell, 1906), *Eutetrarhynchus platycephali* Palm, 2004, *Eutetrarhynchus* sp., *Oncomegoides celatus* Beveridge & Campbell, 2005, *Parachristianella monomegacantha* Kruse, 1959, *P. indonesiensis* Palm, 2004, *Parachristianella* sp., *Pseudochristianella southwelli* Campbell & Beveridge, 1990, *Prochristianella macracantha* Palm, 2004, *Prochristianella* spp. and *Dollfusiella* spp. from the host intestine. The most abundant trypanorhynchs were *Dollfusiella* that were found in seven different elasmobranch species. *Pastinachus* cf. *sephen* (Forsskål) was most species rich, with at least eight different trypanorhynch species. Highest prevalence (100%) was recorded for *Pseudochristianella southwelli* with a maximum intensity of 24 in *Rhinobatos* cf. *punctifer* Compagno & Randall (n=5). Within the elasmobranchs, highest prevalence (83.3%) was seen for *Otobothrium carcharidis* with a maximum intensity of 39 in *Rhizoprionodon acutus* (Rüppell). Host specificity values were recalculated for *Kotorella pronosoma*, *Pseudogrillotia perelica*, *Callitetrarhynchus gracilis* and *Proemotobothrium southwelli*.

Key words: Trypanorhyncha; fish parasites; sharks; rays; host specificity; zoogeographical distribution

Introduction

The order Trypanorhyncha Diesing, 1863 is a cosmopolitan group of marine cestodes, with more than 270 recorded species (Palm 2010). Larval trypanorhynchs parasitize marine invertebrates or teleosts, and the adults are among the most common parasites of elasmobranchs (Palm 2004; Palm *et al*. 2009). They have been reported to be less host specific than other parasite taxa (Palm & Caira 2008), making them an interesting group to study as biological indicators in the marine environment. Trypanorhynchs are common teleost parasites especially in the tropical and subtropical regions, according to the relative abundance and species richness of their elasmobranch final hosts.

Fish parasites are a major component of marine biodiversity, with cestodes playing a significant role in aquatic environments (Rohde 2005; Kuris *et al*. 2008). Parasites can be used as biological indicators for fish stock separation (Mackenzie 1983; Moser 1991; Arthur 1997; Williams *et al*. 1992; Humphreys *et al*. 1993; Mackenzie & Abaunza 1998; Malek 2004; Mackenzie *et al*. 2008), feeding ecology of their fish hosts (Campbell *et al*. 1980; Palm 1999) and they also have been used as an early warning system to monitor pollution and environmental degradation (Mackenzie 1999; Sures *et al*. 1999; Thielen *et al*. 2004; Marcogliese 2005). Most recently, Palm and Rückert (2009) have presented a new method to monitor environmental change by using fish parasites.

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