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OCCURRENCE OF *Bucephalus* sp. (TREMATODA: BUCEPHALIDAE) IN *Anomalocardia brasiliana* (GMELIN, 1791) (MOLLUSCA: VENERIIDAE) AT CANTO DA BARRA BEACH, FORTIM, CEARÁ STATE, BRAZIL

Ocorrência de *Bucephalus* sp. (Trematoda: Bucephalidae) em *Anomalocardia brasiliana* (Gmelin, 1791) (Mollusca: Veneriidae) na Praia do Canto da Barra, Fortim, Ceará, Brasil

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RESUMO

O presente trabalho registra a ocorrência de trematódios parasitando o bivalve venerídeo Anomalocardia brasiliana, habitante de fundos areno-lamosos do estuário do Rio Jaguaribe, na Praia do Canto da Barra, Fortim – Ceará. Do total de 469 exemplares de Anomalocardia brasiliana *analisados, 6% destes apresentaram-se parasitados. Esporocistos e cercárias de* Bucephalus *sp. foram encontrados preferencialmente nas gônadas, e em alguns casos, ocorrendo o rompimento dos folículos e desaparecimento das células germinativas. A ocorrência destes parasitas deve estar relacionada a fatores ambientais, tais como temperatura, salinidade e disponibilidade de alimento, e a possíveis impactos provocado pelo homem no meio marinho. Apesar da baixa incidência de organismos parasitados de* A. brasiliana *observados neste estudo, um aumento desse processo pode vir a afetar seriamente a estrutura populacional desta espécie na região.*

***Palavras-chaves**: parasitismo,* Bucephalus, Anomalocardia brasiliana.

ABSTRACT

This present paper reports the occurrence of trematods preying upon the venerid bivalve Anomalocardia brasiliana, *an inhabitant of sandy and muddy bottoms of Jaguaribe River estuary, Canto da Barra Beach, Fortim, Ceará State, Brazil. Among 469 individuals, 6% of them were shown to be preyed upon. Sporocyists and cercariae of Bucephalus sp were located mainly on the gonads of* A. brasiliana, *where they caused disruption of the ovarian follicular walls and testicular ducts and destroyed the germ cells. In some cases, the parasite activities prevented sexual differentiation. The occurrence of those parasites may be related to environmental parameters, such as temperature, salinity and food availability, as well as to human impact on estuarine environment. Although the prevalence of* Bucephalus *sp. was low in the* A. brasiliana *population from Canto da Barra Beach, its increase could seriously affect the population structure of this clam in the region.*

***Key words**: parasitism,* Bucephalus, Anomalocardia brasiliana.

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INTRODUCTION

Marine bivalves can harbor a wide spectrum of parasites and microorganisms (Bower *et al.*, 1994) that may cause mass mortality and result in major economic losses, especially for cultivated species.

The occurrence of trematode bucephalid parasites in bivalve mollusks has been registered along the Brazilian coast in natural and cultured environments. The first record of *Bucephalus* sp. infecting Brazilian mussels was reported by Umiji *et al.* (1976) in *Perna perna* (Linnaeus, 1758) from São Paulo State. According to Joaber *et al.* (1996), on the coast of Rio Grande do Sul State, the parasite *Bucephalus varicus* Manter, 1949 seems to use the mussel *Perna perna* as first host in its life cycle. The occurrence of *Bucephalus* sp. infecting this mussel was also registered by Magalhães (1998) and Silva *et al.* (2002) on the coast of Santa Catarina (Southern Brazil). Galvão *et al.* (2000) found *Bucephalus* sp. sporocysts and cercariae in the gonads of *Crassostrea brasiliana* (Lamarck, 1819) from Cananéia estuary (São Paulo State).

The aim of the present study was to register the occurrence of trematode parasites in the venerid bivalve *Anomalocardia brasiliana* (Gmelin, 1791), inhabitant of sandy and muddy bottoms of Jaguaribe River estuary, Canto da Barra Beach, Fortim, Ceará State, Brazil.

MATERIAL AND METHODS

The histological preparation followed the routine, dehydration in an alcoholic series, clearing with xylen and embedding in paraffin. The 5 to 7 μm thick cross sections were stained with Harris'hematoxilin and 1% aqueous eosin (H-E) (Junqueira & Junqueira, 1983). The cells were observed in optical microscope Standard 25 (ZEISS) and measured with micrometric ocular lens. During the reproductive cycle analysis of *A. brasiliana*, 469 individuals consisting of 161 females, 208 males and 100 of indeterminant sex, were examined.

RESULTS AND DISCUSSION

Among the individuals with no gonadal development, 28 showed trematode *Bucephalus* sp. sporocysts and cercariae, corresponding to 6% of the examined sample.

The bucephalids were located mainly in the gonads of *A. brasiliana*, where they caused disruption of the ovarian follicular walls (Figure 1) and testicular ducts (Figure 2) and destroyed the germ cells. In some cases, the parasite activities prevented differentiation. Sporocysts and cercariae were also found in the connective tissue between the digestive gland ducts. In agreement with Magallhães (1998), infection intensity was positively correlated with damage to the bivalve host gonadal tissue, with a severe loss in reproductive potential and castration in some clams. The deleterious effects of the parasite seem to be related, mainly, to the host glicids and lipids reserves (Magalhães, 1998). The parasite apparently could also evade the immune system of the mussel *Perna perna* (Silva *et al.*,2002).

The occurrence of those parasites may be related to environmental parameters, such as temperature, salinity and food availability, as well as to human impact in estuarine environment. Those parameters can interfere with the host defense mechanisms (Galvão *et al.*, 2000).

Although the prevalence of *Bucephalus* sp. was low in the *A. brasiliana* population from Canto da Barra Beach, an increase in the parasite prevalence could seriously affect to population structure of this clam.

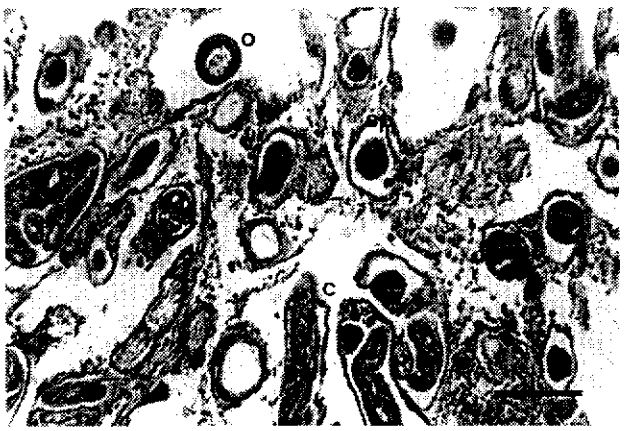

Figure 1 - Histological sections of the gonad of a female *Anomalocardia brasiliana* infected with sporocysts and cercariae of *Bucephalus* sp. Legend: o=oocyte; c=cercarie; sp=sporocytes (800m).

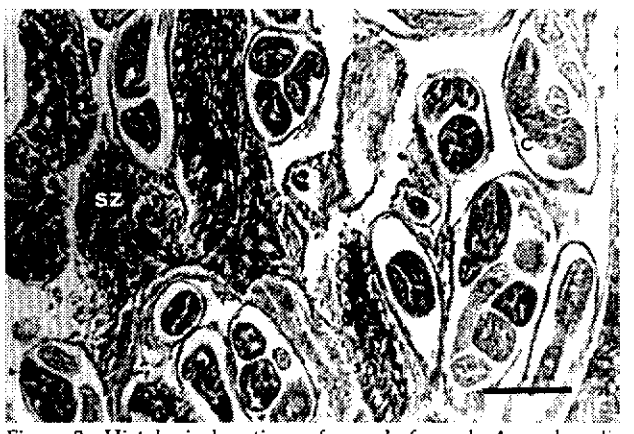

Figure 2 - Histological sections of gonad of a male *Anomalocardia brasiliana* infected with sporocysts and cercariae of *Bucephalus* sp. Legend: sz=spermatozoa; c=cercarie (800m).

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