Arquivos de
Ciências do Mar

REPORT OF TWO PARASITES FROM BRAZILIAN TUNAS

Registro de dois parasitas de atuns no Brasil

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RESUMO

Foram realizados estudos em diferentes espécies de atuns do litoral do Rio de Janeiro, Brasil. O digenea Hirudinella ventricosa *(Pallas, 1774) (Hirudinellidae), já referido no Brasil em* Scomberomorus cavalla *(cavala), é agora registrado parasitando* Katsuwonus pelamis *(bonito). O* monogenea Sibitrema poonui *Yamaguti, 1966 (Gastrocotylidae), parasitando* Thunnus albacares *(albacora) e* T. obesus *(patudo), é registrado pela primeira vez na América do Sul. São apresentadas figuras e medidas originais.*

Palavras chaves: Hirudinella ventricosa, Sibitrema poonui*, atuns, parasitos de peixes, Brasil.*

ABSTRACT

Studies of different species of tunas from the shore of Rio de Janeiro State, Brazil were carried out. The digenean Hirudinella ventricosa *(Pallas, 1774) (Hirudinellidae), already referred in Brazil in* Scomberomorus cavalla *(common named "cavala"), is now reported parasitizing* Katsuwonus pelamis *("bonito"). The monogenean* Sibitrema poonui *Yamaguti, 1966 (Gastrocotylidae), parasitizing* Thunnus albacares *("albacora") e T. obesus ("patudo"), is referred for the first time in South America. Original figures and measurements are presented.*

Key words: Hirudinella ventricosa, Sibitrema poonui*, tunas, fish parasites, Brazil*

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INTRODUCTION

The helminths of tunas from the coast of Rio de Janeiro State, Brazil are being evaluated in order to increase the knowledge of their parasites (Moravec *et al*., 1999; Kohn *et al*., 2001; Fernandes *et al*., 2002; Kohn *et al*., 2004). During these studies, we collected the giant Digenea *Hirudinella ventricosa* in the stomach of *Katsuwonus pelamis*, commonly named "bonito" and the Monogenea *Sibitrema poonui* in the gills of *Thunnus albacares* ("albacora") and *T. obesus* ("patudo").

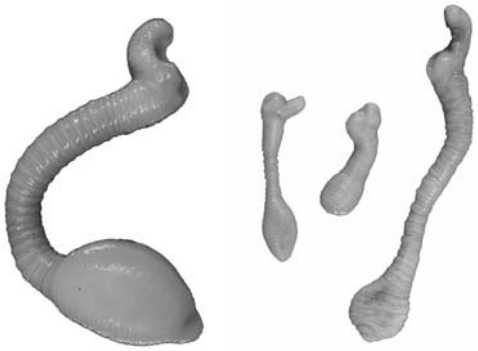
MATERIAL AND METHODS

Fishes were obtained by industrial tuna fisheries and carried in large containers to the laboratory. Digenea collected were fixed with or without compression in AFA and Monogenea in 5% formaldehyde under light cover-glass pressure; wholemounts were stained with Langeron's alcoholic-acid carmine, dehydrated in an ethyl alcoholic series, cleared in beechwood creosote, and mounted in Canada Balsam as permanent slides. Photographs of *Hirudinella ventricosa* were taken directly from digital camera and light micrographs of *Sibitrema poonui* through digital camera connected to Nikon Eclipse E 800 microscope. Voucher specimens are deposited in the Helminthological Collection of the "Instituto Oswaldo Cruz" (CHIOC), Rio de Janeiro, RJ, Fiocruz.

RESULTS AND REMARKS

***Hirudinella ventricosa* (Pallas, 1774)**
(Hirudinellidae) (Figs. 1-2)
Host: *Katsuwonus pelamis* (Linnaeus, 1758) (Scombridae).

Fig. 1 Fig. 2



Figures 1-2: Photographs of Hirudinella ventricosa. Figure 1 - Whole worm. 2x. Fig. 2. Whole worms, from the same host specimen. 2x.

Site: stomach.

Intensity of infection: 7 out of 120 fish examined were parasitized by one to 3 in a total of 12 specimens.

Voucher specimens deposited: CHIOC no. 35.277,35.278,35.279,35.280, 35.281,35.282, 36.390, 36.391

The body shape varies from oval, stout, to very elongate with bulbous terminal portion. Ten uncompressed worms measure 27mm to 71 mm in length by 1.5 mm to 4 mm in width behind ventral sucker and 3 mm to 12 mm wide at level of terminal portion.

Considering that the morphology of this species is well known, we are presenting only the main measurements of two slightly compressed worms (in millimeters): Body 50-72 in length by 3.7-6 in width behind acetabular level, 5.8-14 at largest width of bulbous terminal level; oral sucker 1.85-2.31 by 1.92–2.31; ventral sucker 3.46–4.47 by 2.85-3.85; pharynx 1.15 by 1.00; eggs 0.025-0.030 by 0.020-0.025.

Hirudinella ventricosa is a cosmopolitan giant parasite that has been known for more than 200 years and is among the oldest known trematodes.

Nigrelli & Stunkard (1947) reviewed the genus *Hirudinella* Blainville,1828 and considered only two valid species: *H. ventricosa* (Pallas, 1774) and *H. marina* Garcin, 1730, despite the large number of species in the past. They considered that all described species are variants of these two species, due to the distortion in the process of killing and preserving which may affect the external form and the internal structures. Gibson (1976) considered both species as synonyms and accepted *H. ventricosa* as the oldest available name for this species,since *H. marina* is pre-Linnaean.

H. ventricosa was well studied by Nigrelli and Stunkard (1947) from 9 different species of scombriform fishes from both Atlantic and Pacific oceans. In 1977 Gibson & Bray, in the revision of the family Hirudinellidae, published the description and synonyms of *H. ventricosa* and the illustrations of representatives from different hosts and localities deposited on the collection of the British Museum.

In Brazil, *H. ventricosa* was reported by Diesing (1850) as *Distomum clavatum* from liver of *Coryphaena hippurus* and referred by Viana (1924) as *H. clavata* and as *H. ingens* (of Moniez, 1886) from stomach of Scombridae sp. Travassos *et al.* (1969) referred as "species dubium" *Distoma* sp. for *H. clavata* and *Distoma ingens* for *H. ingens*. Fernandes & Kohn (1984) described one mature specimen from *Scomberomorus cavalla*.

The characteristic shape of our specimens with bulbous terminal portion is similar to parasites described by Nigrelli & Stunkard (1947) from *K. pelamis*

and to worms illustrated by Gibson & Bray (1977) from *K. pelamis*, unidentified "bonito", *Euthynnus affinis*, *E. alletteratus* and *S. commerson*. It differs from the oval specimens of *S. cavalla* described by Fernandes & Kohn (1984) in Brazil, from parasites of *C. hippurus*, *T. albacares*, *Acanthocybium solandri* and other undetermined hosts, illustrated by Gibson & Bray (1977) and from specimens of *Acanthocybium* sp., *Tetrapturus audax* (=*Makaira mitsukurii*) and *T. thynnus* presented by Nigrelli & Stunkard (1947).

H. ventricosa already reported in Brazil from *S. cavalla* is now referred parasitizing *K. pelamis*.

***Sibitrema poonui* Yamaguti, 1966**
(Gastrocotylidae; Monogenea) (Figs. 3-5)
Hosts: *Thunnus albacares* (Bonnaterre, 1788); *Thunnus obesus* (Lowe, 1839) (Scombridae)
Site: gills

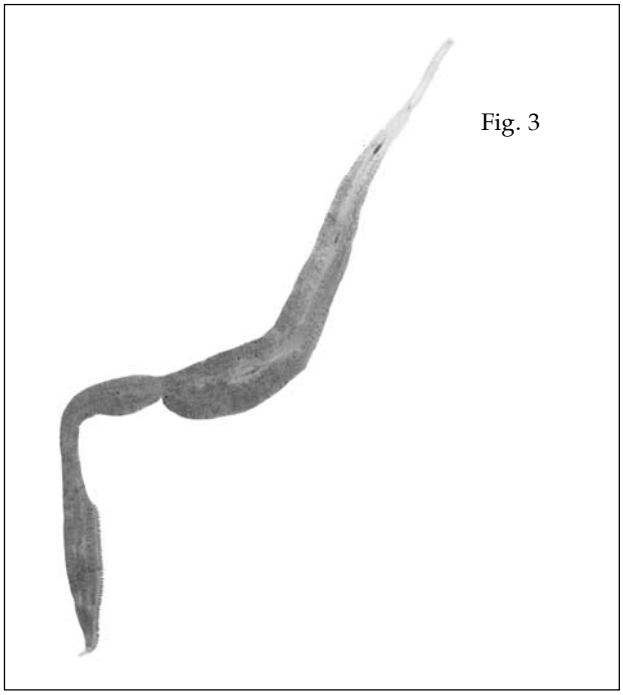


Fig. 3

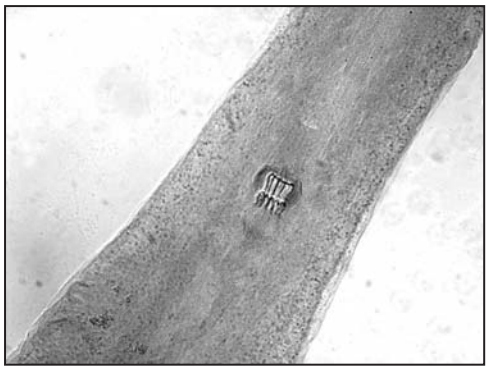


Fig. 4

Fig. 5

Figures 3-5. Lightmicrographs of Sibitrema poonui from Thunnus obesus. Fig. 3 – Whole worm. 9x. Fig. 4 – Detail of genital atrium with spines. 90x. Fig. 5 – Terminal end of body showing clamps of haptor and lappet with hooklets. 90x.

Intensity of infection: 4 out of 64 *Thunnus albacares* examined were parasitized by one to two specimens in a total of 5; one out of 26 *Thunnus obesus* examined harboured a single mature specimen.

Voucher specimens deposited: CHIOC no.36385,36.386 a-b,36.387,36.388,36.389

Considering that this species was originally very well described by Yamaguti (1966) and the morphology of our material is in agreement of his description, we are presenting herein main measurements of four mature specimens, which are in micrometers otherwise specified:

Body very long with 8.5 – 18 mm in total length by 1.0 – 1.5 mm in maximum width; haptor 1.4 – 3.5 mm long by 0.4 – 0.9 mm wide, with single row of 26 – 53 clamps, with 24 – 70 long by 24 – 85 wide; lappet 150 by 60 with two pairs of larval hooklets of different sizes: large 40 – 62 and small 18 – 37 in length; buccal suckers 31 – 62 by 26 – 44; pharynx 51 – 100 by 29 – 75; atrial crown of 10 – 12 spines 48 – 62 long; eggs 250 – 340 long by 67 – 80 wide.

Sibitrema poonui Yamaguti, 1966 was originally described from gills of *Thunnus obesus* (=*Parathunnus sibi*) and *Thunnus albacares* (=*Neothunnus macropterus*) in Hawaii and redescribed by Rohde (1978) from *Cybiosarda elegans* and *Euthynnus alleteratus* (= *E. alleteratus affinis*) in Heron Island, Australia. It was referred from *Thunnus albacares* from Antilles Islands by Bussieras & Baudin-Laurencin (1973).

In this opportunity *S. poonui* is reported for the first time from South America.

Acknowledgements - The authors are grateful to Dr. Antonia Maria de Andrade Rabello of Quaker Brasil Ltda, Rio de Janeiro for providing the hosts and to Rodirgo Mexas from the Laboratory for the Production and Handling of Images, Instituto Oswaldo Cruz, for assisting with preparation of figures.

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