SOME DIGENEA PARASITES OF TUNNY FROM THE COAST OF RIO DE JANEIRO STATE, BRAZIL

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(With 5 figures)

ABSTRACT

Rhipidocotyle pentagonum (Ozaki, 1924) is reported for the first time in South America parasitizing *Auxis thazard* and in a new host *Katsuwonus pelamis. Tergestia laticollis* (Rudolphi, 1819) is reported for the first time in South America and in *Thunnus albacares*, representing a new host record. *Copiatestes filiferus* (Leuckart, in Sars, 1885) is recorded for the first time in Brazil and in *Thunnus albacares,* another new host record. *Tetrochetus coryphaenae* (Yamaguti, 1934) is presented for the first time in Brazil parasitizing *Thunnus albacares*.

Key words: trematodes, parasites of tunny, Brazil.

RESUMO

Sobre alguns trematódeos parasitas de atuns no Brasil

Rhipidocotyle pentagonum (Ozaki, 1924) é referida pela primeira vez na América do Sul parasitando *Auxis thazard* e em um novo hospedeiro: *Katsuwonus pelamis. Tergestia laticollis* (Rudolphi, 1819) é referida pela primeira vez na América do Sul e em *Thunnus albacares,* que representa um novo hospedeiro para essa espécie. *Copiatestes filiferus* (Leuckart, in Sars, 1885) é assinalada pela primeira vez no Brasil em um novo hospedeiro: *Thunnus albacares*. *Tetrochetus coryphaenae* (Yamaguti, 1934) é assinalada pela primeira vez no Brasil parasitando *Thunnus albacares*.

Palavras-chave: trematódeos, parasitas de atuns, Brasil.

INTRODUCTION

Tuna and tuna-like species occur in the Atlantic, Indian, and Pacific Oceans and in the Mediterranean Sea and represent a significant food source. As Brazil, has a large canned-fish industry, these species are very important economically. At the same time, very litlle is known about the helminth parasites of these fish. In this paper we present data on the Digenea parasites of three different tuna species from the coast of the State of Rio de Janeiro. Four species are reported for the first time in Brazil, with three new host records.

MATERIAL AND METHODS

One hundred eighty-eight specimens belonging to three different tuna species were examined. The fishes were obtained by industrial tuna fisheries and carried in large containers to the laboratory. The trematodes collected were fixed in AFA (ethanol, formalin, acetic acid) under slight coverslip pressure; wholemounts were stained in an alcoholic acid carmine, cleared in beechwood creosote, and mounted in Canada balsam. Measurements, in micrometres unless otherwise stated, are quoted as the ranges with the means

in parentheses. Drawings were made using a drawing tube. Material studied is deposited in the Helminthological Collection of the Instituto Oswaldo Cruz (CHIOC) in Rio de Janeiro.

RESULTS AND REMARKS

Bucephalidae Poche, 1907

Rhipidocotyle pentagonum (Ozaki, 1924) Eckmann, 1932 (Figs. 1-2).

This species was originally described from *Scomberomorus nipponicus* from Japan, and has been reported in different hosts and localities.

It has been found in different species including: *Thunnus thynnus* from the Mediterranean by Eckmann (1932) and from the Pacific Ocean by Yamaguti (1938a); *Auxis thazard* and *Euthynnus affinis* from the Gulf of Bengal by Madhavi (1974), and *E. lineatus* from Mexico by Castillo-Sánches *et al.* (1997).

For the first time in South America we report this species parazitizing *A. thazard* and in a new host *Katsuwonus pelamis.* The specimens taken from *A. thazard* are in agreement with those reported by Ozaki (1928), Eckmann (1932), and Yamaguti (1938a), while specimens from *K. pelamis* presented smaller eggs than those previously reported.

Host: *Auxis thazard* (Lacepède, 1803)

Site: stomach

Intensity of infection: 4 out of the 7 fish examined were parasitized by 10, 3, 2, and 1 trematodes respectively.

Voucher specimens deposited: CHIOC n. 34.550 a-j

Measurements based on 10 specimens. Body 1.57-2.67 mm (2.06 mm) in length by 0.41-0.79 mm (0.55 mm) in width; anterior sucker 105-195 (134) x 123-251 (169); cephalic hood 168-279 (212) x 205-345 (270); pharynx 78-149 (123) x 93-205 (131); caecum 326-457 (397) x 195-345 (291); anterior testis 150-262 (217) x 187-281 (203); posterior testis 112-279 (205) x 123-261 (193); cirrus-sac 550-980 (709) x 149-251 (209); seminal vesicle 86-176 (129) x 75-142 (106); ovary 127-180 (158) x 93-157 (124); eggs 18-23 (21) x 11-16 (14).

Host: *Katsuwonus pelamis* (Linnaeus, 1758)

Site: intestine

Intensity of infection: 1 out of the 92 fish examined were parasitized by 6 trematodes.

Voucher specimens deposited: CHIOC n. 34.551 a-f

Measurements based on 6 specimens. Body 2.18-3.74 mm (2.73 mm) in length by 0.42-0.88 mm (0.70 mm) in width; anterior sucker with cephalic hood 198-335 (266) x 145-391 (294); pharynx 101-146 (124) x 101-363 (166); caecum 232-438 (307) x 93-391 (243); anterior testis 232-318 (268) x 258-344 (295); posterior testis 251-318 (298) x 187-300 (255); cirrus-sac 348-1183 (840) x 97-335 (214); seminal vesicle 138-315 (229) x 90-150 (122); ovary 157-262 (209) x 165-206 (178); eggs 14-16 (15.6) x 9-11 (10.2).

Bucephalus sp. (Fig. 3)

We recovered only one immature specimen from the stomach of *Katsuwonus pelamis* (Linnaeus, 1758) out of the 92 fish examined. The anterior sucker with 19 short tentacles and the general morphology are very similar to those of *Bucephalus confusus* (Velasquez, 1959), but considering the immaturity of the specimen, more material would be necessary in order to confirm this observation.

Voucher specimens deposited: CHIOC n. 34.552

Main measurements: body 1.92 mm in length x 0.24 mm in width; anterior sucker 112 x 116; cephalic hood 105 x 195 with 19 short tentacles; pharynx 67 in diameter; caecum 243 x 116; anterior testis 138 x 86; posterior testis 135 x 90; cirrus-sac 277 x 63; ovary 63 in diameter.

Accacoeliidae (Odhner, 1911) Looss, 1912

Tetrochetus coryphaenae Yamaguti, 1934 (Fig. 4)

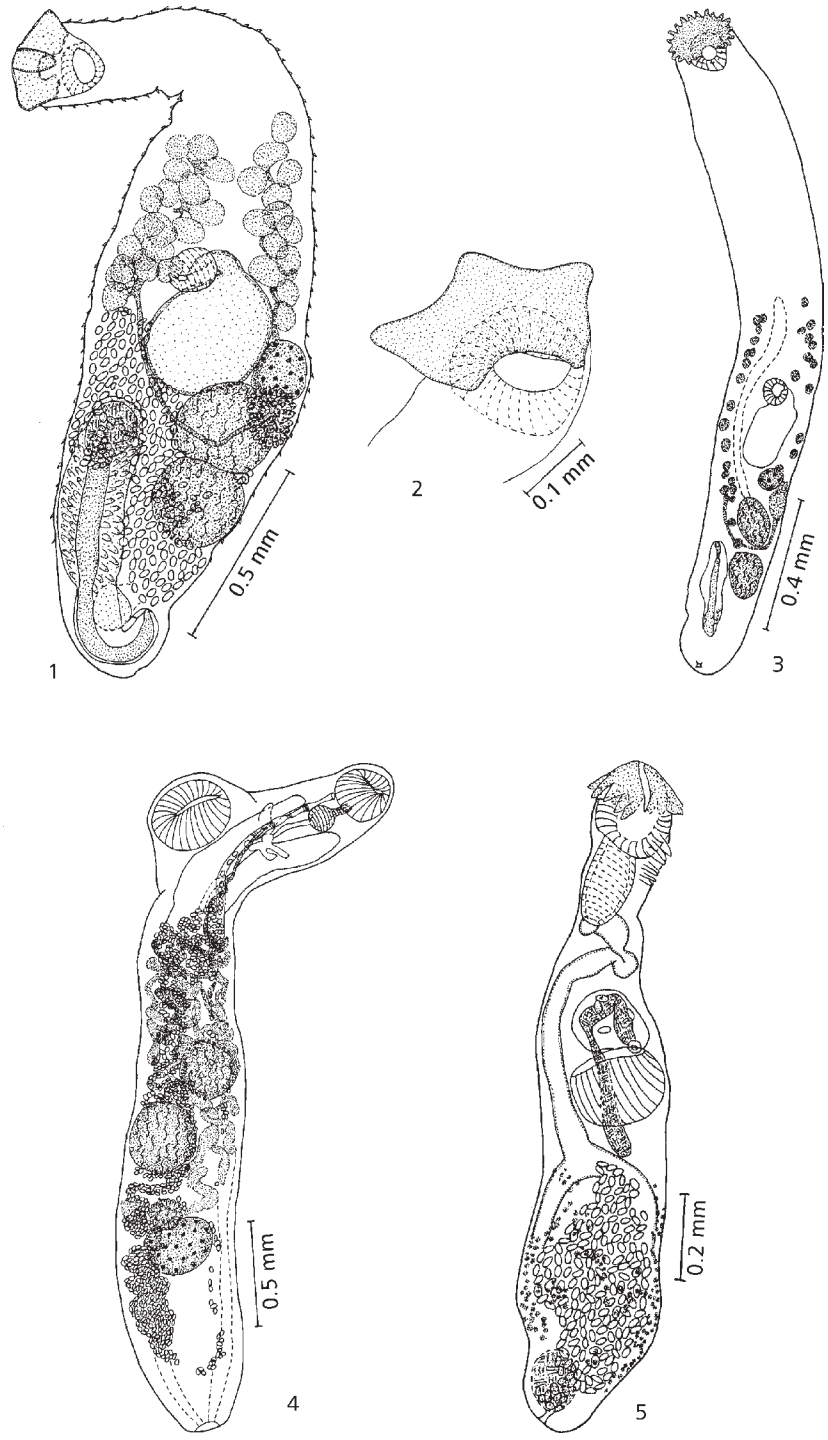
Oliva (1984) reported this species in the type host, *Coryphaena hippurus* from Chile, with one original figure, but without measurements or detailed description. It has been also reported as occurring in other hosts and localities in the Pacific, Atlantic, and Indian Oceans. In this paper, *T. coryphaenae* is reported for the first time in Brazil in *Thunnus albacares* (Bonaterre, 1788). It was already reported for this trematode by Korataeva (1976) from the Pacific Ocean.

Host: *Thunnus albacares* (Bonaterre, 1788)

Site: stomach

Intensity of infection: 2 out of 89 fish examined were parasitized by a single mature and 2 immature specimens respectively.

Voucher specimens deposited: CHIOC n. 34.553



Figs. 1-5 — Fig. 1 — *Rhipidocotyle pentagonum*. Total, dorsal view. **Fig. 2 —** *Rhipidocotyle pentagonum.* Anterior extremity with hood-like expansion distended. **Fig. 3 —** *Bucephalus* sp. Total, dorsal view. **Fig. 4 —** *Tetrochetus coryphaenae*. Total, ventral view. **Fig. 5 —** *Tergestia laticollis*. Total, dorsal view. Original figures.

Main measurements based on one mature specimen: body 3.95 mm in length by 0.60 mm in width; oral sucker 273 x 277; pharynx 127 x 150; prepharynx 45 long; ventral sucker 410 x 345; sucker width ratio 1:1.2; anterior testis 315 x 300; posterior testis 367 x 340; ovary 281 x 359; eggs 32-35 x 21-23 (34 x 22).

Our specimen basically agrees with the original description, but presents a wider body (0.60 mm instead of 0.29 mm) and larger eggs (32-35 x 21-23 instead of 26-33 x 16-19).

Fellodistomidae Nicoll, 1913

Tergestia laticollis (Rudolphi, 1819) Stossich, 1899 (Fig. 5)

In South America the genus *Tergestia* Stossich, 1899, has been recorded only in Brazil where it comprises four species. These are, in the State of Rio de Janeiro: *T. Pauca*, proposed by Freitas & Kohn (1965) and cited by Wallet & Kohn (1987); *T. pectinata* (Linton, 1905), cited by Takemoto *et al.* (1995, 1996); and *T. priacanthi* (MacCallum, 1917), described by Fábio (1981); and in the State of Santa Catarina: *T. selenei* Amato, 1982.

Tergestia laticollis was originally described from the Mediterranean Sea in *Trachurus trachurus* and has been reported from the Pacific and Atlantic Oceans in different hosts. Regarding tunna, this trematode was already reported from Puerto Rico in *Euthynnus alletteratus* by Siddiqi & Cable (1960), and in Florida (after Yamaguti, 1971). We found one specimen which is in agreement with those reported previously. This species is being reported for the first time in South America and in *Thunnus albacares*, representing a new host record.

Host: *Thunnus albacares* (Bonaterre, 1788)

Site: stomach

Intensity of infection: 1 out of the 89 fish examined was parasitized by 1 trematode.

Voucher specimens deposited: CHIOC n. 34.554

Main measurements based on one specimen: body 1.51 mm in length by 0.32 mm width; oral sucker 183 x 165; pharynx 176 x 108; ventral sucker 183 x 195; sucker width ratio 1:1.18; eggs 23-25 x 16-18.

Syncoeliidae Looss, 1899

Copiatestes filiferus (Leuckart, in Sars, 1885) Gibson & Bray, 1977

Copiatestes filiferus has been reported in different hosts from the Atlantic and Pacific Oceans. From *K. pelamis* was previously reported from Japan as *Syncoelium katuwo* by Yamaguti (1938b); in South America, it was reported from Chile as *Syncoelium filiferum*, parasitizing *Trachurus murphyi* (Oliva, 1999).

This species was described in detail by Gibson & Bray (1977). The single mature specimen collected in this study is similar to those reported by Gibson (1976) from *Acantholatris monodactylus* (= *Euthynnus pelamys*) from Tristan da Cunha, South Atlantic Ocean, with slightly smaller eggs (22.5-35 x 25-27.5 instead of 35-44 x 18-27). This trematode is reported for the first time in Brazil and in *Thunnus albacares*, representing a new host record.

Hosts: *Katsuwonus pelamis* (Linnaeus, 1758) and *Thunnus albacares* (Bonnaterre, 1788).

Site: intestine

Intensity of infection: 1 out of the 92 specimens of *K. pelamis* examined harbored 1 mature trematode, and 1 out of 89 specimens of *T. albacares* examined were parasitized by 2 immature trematodes.

Voucher specimens deposited: CHIOC n. 34.555

Main measurements of the mature specimen of *K. pelamis*: body 6.01 mm in length by 0.71 mm in width; oral sucker 355 x 310; pharynx 250 x 150; esophagus 100 long; ventral sucker 350 x 225; sucker width ratio 1:0.7; peduncle 1 mm; eggs 22.5-35 x 25-27.5.

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