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A FIRST RECORD OF PLEROCERCOID *FLORICEPS MINACANTHUS* CAMPBELL AND BEVERIDGE,1987 (CESTODA: TRYPANORHYNCHA) PARASITIC IN TWO CARANGID FISHES *CARANGOIDES ARMATUS* AND *C. MALABARICUS* FROM NORTHWEST OF THE ARABIAN GULF, IRAQ

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ABSTRACT

Floriceps minacanthus Campbell & Beveridge, 1987 (Cestoda: Trypanorhyncha) parasitic in viscera and body cavity of two carangid fishes (*Carangoides armatus* and *C. malabaricus*) from the period between September 2011 to March 2012 from Northwest of the Arabian Gulf, is described. The species are recorded for the first time in the Iraqi territorial waters of the Arabian Gulf. *C. armatus* and *C. malabaricus*) are a new hosts for this parasite in the Arabian Gulf.

KEYWORDS: *Floriceps*, Trypanorhyncha, fish, Carangidae, *C. armatus* and *C. malabaricus*.

INTRODUCTION

Trypanorhynchid Cestodes mature in elasmo branch and often use teleost fishes as intermediate or transport hosts (El-Naffar *et. al.,* 1992). Though accidental human infections are scarce (Bates, 1990). Worms in the fish flesh or body cavity reduce the fish market value by making them unappealing to consumers (El-Naffar *et. al.,* 1992). Trypanorhyncha are a group of tapeworms described from all world Oceans (Palm and Overstreet, 2000). Highest species diversity is in tropical and subtropical waters, where the diversity of the elasmo branch final hosts is also high, many Trypanorhyncha have low host specificity in the teleost second intermediate host, making this group of tapeworms one of the most frequent groups of parasite in warm water marine fish (Palm and Overstreet, 2000).

Most studies in Arabian Gulf were out of Iraqi water and pointed on survey of the marine cestodes in fishes (Khalil, 1982; Khalil and Abu-Hakima, 1985; Khalil and Abdul-Salam,1989; Saoud *et. al.,* 1986; Al-Kawri *et. al.,* 1994; Al-Kawri *et. al.,* 1996; Kardousha, 1999; Kardousha, 2003).

The aim of this study was to detect the most important parasites which can be found in species of marine fishes of carangdiae family from arabian gulf.

Materials and Methods

A total of 259 fish specimens of *C. armatus* and *C. malabaricus* were collected from the Iraqi marine waters, northwest Arabian Gulf (latitudes 47° 30′ to 48° 15′; longitude 30° 50′ to 30° 00′), during the period from September 2010 to February 2011. In the laboratory, each fish was opened and internal organs were fully examined for cestodes. The entire digestive system was removed and placed in a petri dish with normal saline (0.85%), the gut, heart, spleen, cecum, liver were also examined by using dissecting microscope according to the method by Amlacher, (1970) and Lucky, (1977). Encapsulated A trypanorhynch larvae were freed from the blastocyst and treated according to Palm, (2004). The worms were fixed in 70% ethanol and stained in aceto carmine, dehydrated in an ethanol series, cleared in methyl salicylate and mounted in Canada balsam. The parasite was identified according to Palm, (2004). All measurements in millimeter.

Result

Cestodes belong to *Floriceps minacanthus* Campbell & Beveridge, 1987 of the family Lacistohynchidae, order Trypanorhyncha (Table 1).

Number of cestodes: 5 (1 and 4 in *C. armatus* and *C. malabaricus* respectively).

Number of infected fishes: 5.

Hosts: *Carangoides armatus* and *C. malabaricus* (Carangidae).

Prevalence(%): 33.3 in *C. armatus* and 1.6 in *C. malabaricus*.

Mean of intensity: 1 in *C. armatus* and 4 in *C. malabaricus*.

Site of infection: viscera and body cavity.

Locality: Northwest Arabian Gulf within the Iraqi marine territorial waters.

Material deposition: Voucher specimens were deposited in the Natural History Museum, London accessions NHMUK 2012.6.1.2.

Table 1. Infection rate of *F. Minacanthus* on two species of the carangid fishes of the present study.

Fish species	Examined fish	Fish length (cm)		Infected fish	prevalence (%)	Mean of intensity
		Mean	±SD			
Carangiodes armatus	3	32	2	1	33.3	1
C. malabaricus	256	26	5.5	4	1.6	4

The larva of *F. minacanthus* were found in body cavity and viscera(intestine, stomach wall, liver gonad tissue). This larva isolated from *C. armatus* and *C. malabricus* fishes, each larva present inside white cyst, small size. Total length of body 40-35(35) long and 4-6 (5) wide. Pars bothridialis is composed of two bothridia each measures 0.040-0.045 (45) long, 0.025-0.027 (0.026) wide. Tentacles are inside their sheaths and both have a much coiled shape. The for bulbs are small measures 0.046-0.062 (0.054) long and 0.03-0.05 (0.04) wide. Appendix 0.21-0.25 (0.23 long but 0.04-0.06 (0.05) wide (Fig. 1 A, B & 2).

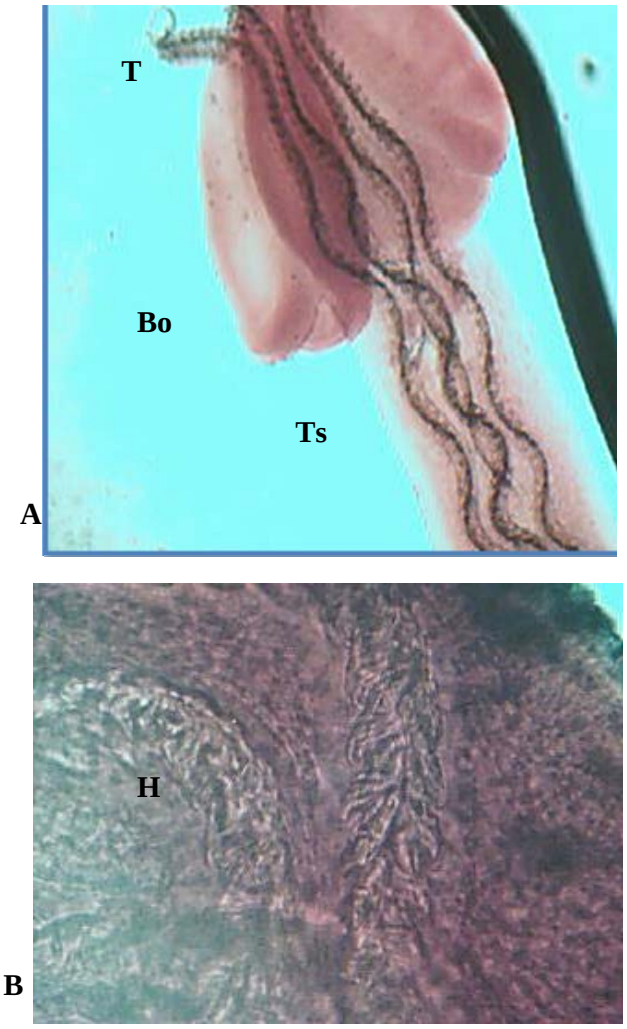

Fig. (1): A. *F. minacanthus*, bothrium (Bo), tentacle (T), tentacle sheath (Ts) (Aceto carmine stain,100 X); *F. minacanthus*, hooks (H) (Aceto carmine stain,400 X)

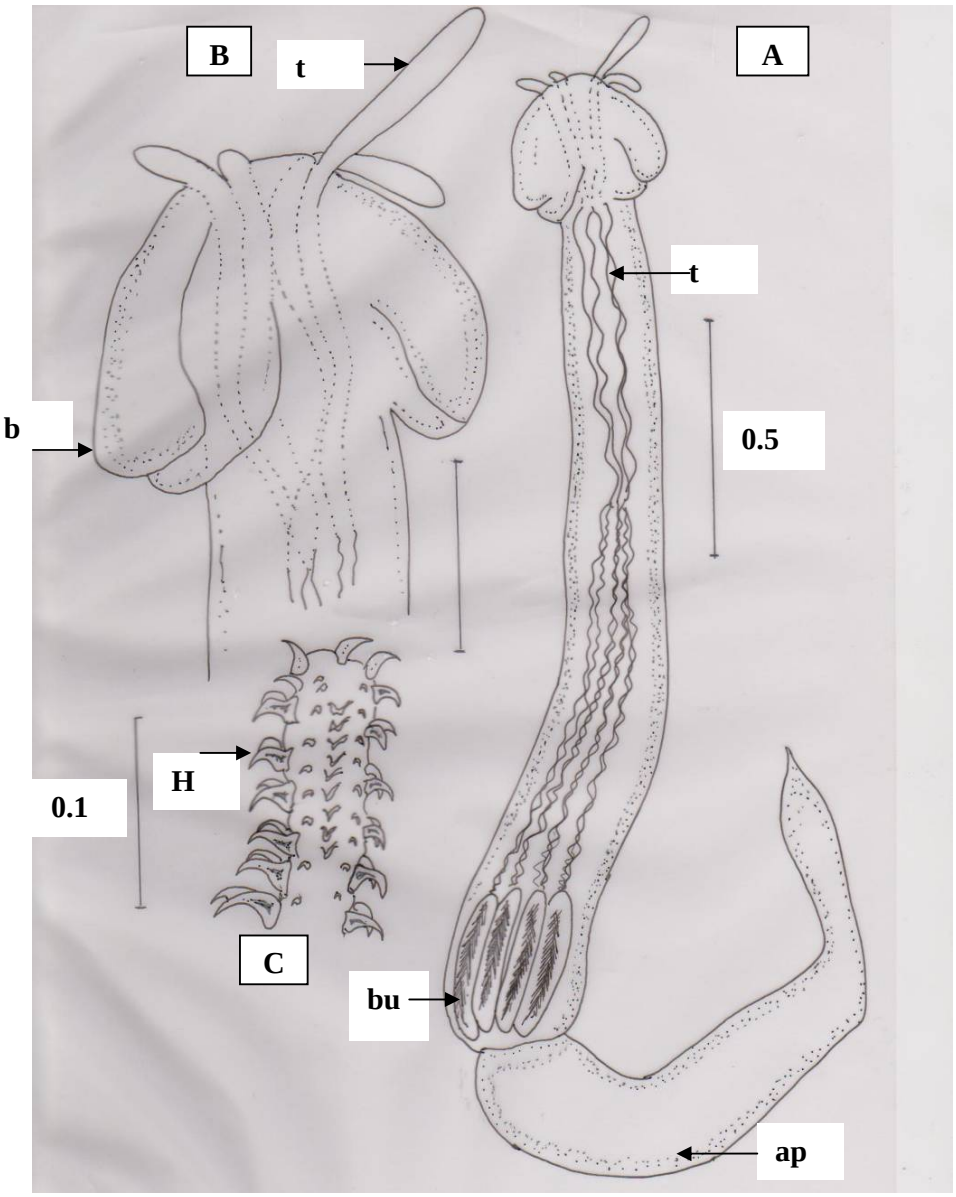

Fig. (3): *Floriceps minacanthus*, A: Whole worm, B: Anterior part, C: Part of tentacle, appendix (ap), (b) bothria, bulb (bu), hooks (H), tentacle (t).

Discussion

This parasite mature in elasmo branch while the larval stage can infect all kinds of marine teleosts and invertebrates (Abdou *et. al.*, 1999; Kardousha, 1999; Abdou, 2005;) So, in the current study it was found that *F. minacanthus*, similar with species which recorded by (Al-Zubaidy and Mhaisen, 2011). but present measurements were less. This species was considered a new recorded in Iraq.

Many studies on the lacitorhynchid *Floriceps minacanthus* was done by Abdou,2000; Abdou, 2001; Abdou, 2005). Plerocerci of *Floriceps* spp. were isolated from different fish at the costal of the United Arab Emirates (Overstreet, 1977; Al-Ghais, and Kardousha,1994; Hassan et. al., 2002). In Yemen, Al-Zubaidy and Mhaisen (2011). recorded *F. minacanthus* from intestine and body cavity of *Lethrinus lentjan*, *L. mahsena* and *Thunnus tonggol.*

The parasite under this study was put in British Natural History Museum as a voucher specimens under the number: NHMUK 2012.6.1.2.

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