

**TREPTODEMUS LATUS AND CHAUHNOTREMA  
SPINIACETABULUM (TIREMATODA: DIGENEA);  
HEMIRHAMPHIDAE, PARASITES OF THE FISH,  
HEMIRHAMPHUS MARGINATUS  
FROM QATARI WATERS**

By

**Kaltham S.R. Al Kuwari**

Laboratory for Fish Parasitology, Scientific and Applied Research Centre and  
Department of Biological Sciences, College of Science, University of Qatar

**بعض طفيليات الأسماك في المياه القطرية**

**كلثم سالم الكواري**

مركز البحوث العلمية والتطبيقية

وقسم العلوم البيولوجية - جامعة قطر

تم في هذا البحث إعادة وصف نوعين من التريمتودات الطفيلية ثنائية العائل التي سجلت في نوع من أسماك الخليج العربي المعروف محلياً بسمك السلس ، النوع الأول هو تريمتوديمس لاتس والذي يسجل لأول مرة في الخليج العربي من هذا النوع من الأسماك ، أما النوع الثاني فهو شوهانوتريما سباينياًسيتابيولم والذي يسجل امتداد توزيعه الجغرافي في اتجاه جنوب الخليج العربي .

**Key Words :** Treptodemus, Chauhanotrema, Hemiramphus marginatus, Qatar.

**ABSTRACT**

The fish *Hemiramphus marginatus* recently examined from Qatari waters was found to be infected with two species of degenetic trematodes: *Treptodemus latus* Manter, 1961 and *Chauhanotrema spiniacetabulum* Nahhas and Sey, 1998. This report of *T. latus* represents the first host and locality records in *Hemiramphus marginatus* and the Arabian Gulf respectively.

## INTRODUCTION

About 100 species of fish had been surveyed for digenetic trematodes in Kuwait, Qatar and U.A.E respectively [1,2,3]. *Hemiramphus marginatus* was recently examined in Kuwait for digenetic trematodes [4].

In the present investigation, 12 specimens of *Hemiramphus marginatus*, locally called "Sils", caught from Qatari waters, have been examined. All specimens were found to be infected with two species of digenetic trematodes. These have been identified as *Treptodemus latus* Manter, 1961 and *Chauhanotrema spiniacetabulum* Nahhas and Sey, 1998. Description of the two trematode species is given below.

## Material and Methods

Identification and examination of fishes as well as the methods followed in collecting, fixing and staining of the trematodes were carried out as previously described [5,6]. Eight of the examined fish were found positive for digenetic trematodes. Three fishes harboured 4 specimens (1-2 trematodes per fish) of *Treptodemus latus* Manter, 1961, while 7 fish were infected with 56 specimens of *Chauhanotrema spiniacetabulum* Nahhas and Sey, 1998 (2-28 trematodes per fish). Two of the fishes had double infections with both *Treptodemus* and *Chauhanotrema*. Drawings are made to scale using a camera lucida. Measurements are in millimeters, unless stated otherwise.

### 1- *Treptodemus latus* Manter, 1961 (Fig. 1)

The body is transversely broad being wider than long, having no tegumental spines. The body length is 0.50-0.72 while the width is 1.08-1.69. Both oral and ventral suckers are lacking. A small, narrow tube from the mid anterior part of the body leads to the pharynx; this tube measures 0.008 – 0.012 while the pharynx measures 0.04 – 0.07 long 0.04 – 0.05 wide. The oesophagus is hardly differentiated because of the density of the eggs and vitelline follicles in the oesophageal region. The caeca extend and curve laterally to bend at the posterior part of the body.

Testis is single, unlobed on the left side of the body, lying just under the intestinal caeca. It is 0.17 – 0.20 long and 0.22 – 0.33 wide. Cirrus sac is large, lying on the right side of the body, opposite to the testis. It is almost equal in size to the

testis measuring 0.17 – 0.26 length and 0.18 – 0.33 in width. It incorporates a rounded seminal vesicle which is 0.06 – 0.10 long and 0.05 – 0.10 wide. The seminal vesicle which is surrounded by glandular cells occupies most space of the cirrus sac, and has thick-walled cirrus. The genital pore is situated on the right side of the intestinal bifurcation, just beside or posterodorsal to the ovary. The ovary is unlobed lying posterodorsal to the intestinal bifurcation, measuring 0.70 – 0.11 in length and 0.06 – 0.14 in width. There is a relatively large seminal receptacle which lies almost in the midbody, measuring 0.08 – 0.10 in length and 0.06 – 0.14 in width. The Mehlis gland and the ootype are clear, distinct with two vitelline ducts coming from the vitelline follicles to the ootype. The uterus extends between the testis and caecum. On the other side, a muscular metraterm extends along the anterior edge of the cirrus sac. The vitelline follicles are irregular in shape, distributed along the caeca, overlapping with it and becoming less dense near the posterior end. The eggs are large measuring 64-76  $\mu\text{m}$  x 32- 44 $\mu\text{m}$ .

### 2- *Chauhanotrema spiniacetabulum* Nahhas and Sey, 1998 Description

Body elongate 2.04 – 3.36 in length, and 0.39 – 0.85 in width. Tegument is spinose, the spines cover 2/3 of the body length. Oral sucker is terminal measuring 0.10 – 0.22 in length and 0.12 – 0.24 in width, prepharynx measures 0.02 – 0.04 in length, pharynx is 0.08 – 0.12 in length and 0.10 – 0.16 in width, oesophagus not very clear. Intestinal bifurcation is not very clear in the specimens and could not be defined, except for the two caeca which can be seen near the posterior extremity. Ventral sucker is at the end of the first third of the body, measuring 0.24-0.48 in length and 0.24 – 0.40 in width. It is covered by rows of spines measuring 0.008 – 0.012  $\mu$ .

Testis is single, elongate, measuring 0.40 – 1.14 in length and 0.40 – 0.48 in width, cirrus sac absent and seminal vesicle long, measuring 0.36 – 0.40 in length and 0.12 – 0.14 in width. Pars prostatica tubular, measuring 0.14- – 0.24 long; it leads to a short cirrus measuring 0.04 – 0.06 in length and opens together with the metraterm on the genital atrium which opens just anterior to ventral sucker. Ovary oval, measuring 0.14 – 0.20 in length and 0.10 – 0.16 in width. Mehlis gland, ootype and seminal receptacle could not be seen due to the density of the vitellaria in that area. Uterus pre-ovarian,

metraterm is well developed. Vitellaria are elongated follicles of different sizes, extending from the posterior end of the seminal vesicle but not reaching the end of the body. Eggs, measuring 48 – 68 X 40 – 52  $\mu\text{m}$ . Excretory vesicle as seen in living specimens seems to be V or Y-shaped, extending anteriorly to the oesophageal level.

## DISCUSSION

Manter [7] established the genus *Treptodemus* for trematodes lacking both oral and ventral suckers, with single large testis and two vasa efferentia, two excretory vesicles, large cirrus sac containing a spherical seminal vesicle and with many gland cells and large eggs. He placed the genus in the family Bivesiculidae, Yamaguti, 1939.

Yamaguti [8] erected the family Treptodemidae to accommodate *Treptodemus* Manter 1961 as the genotype. The present author agrees with Yamaguti's opinion because of the absence of both the oral and ventral suckers, while members of the family Bivesiculida are characterized by the presence of well developed oral sucker. Moreover, body shape and topography of the genital organs and related structures are distinctively different in the two families.

Manter [7] described *T. latus* from *Hemiramphus* sp. in Fiji. The present material is similar to *T. latus* Manter, 1961 in the body shape, absence of oral and ventral suckers, size of

testis and ovary. However, there are some minor differences in certain features e.g. the smaller size of cirrus sac and the relatively larger size of vitelline follicles. Table (1) includes a comparison of the characters reported in the original description by Manter, 1961 and that of the present specimens from the Arabian Gulf.

The present report represents first host and locality records of *T. latus* from *Hemirhamphus marginatus* and the Arabian Gulf respectively.

The other specimens of digenetic trematodes collected from Qatari waters are identified as *Chauhanotrema spiniacetabulum* Nahhas and Say, (1998) which was described recently from Kuwait as the second known species of this genus. This species differs from *C. indica* Zukov, 1972 [9] in its shorter oesophagus and an intestinal bifurcation near the anterior level of the ventral sucker. The specimens from Qatar shows a great similarity to the Kuwait specimens, although the measurements of some organs are slightly larger in size, e.g. the pharynx, oral and ventral suckers and testis. This may be due to the larger size of the specimens collected from the same species of fish in Qatari waters compared to those reported from Kuwait.

The present record of *C. spiniacetabulum* extends the geographical distribution of that species of trematodes to the Southern regions of the Arabian Gulf.

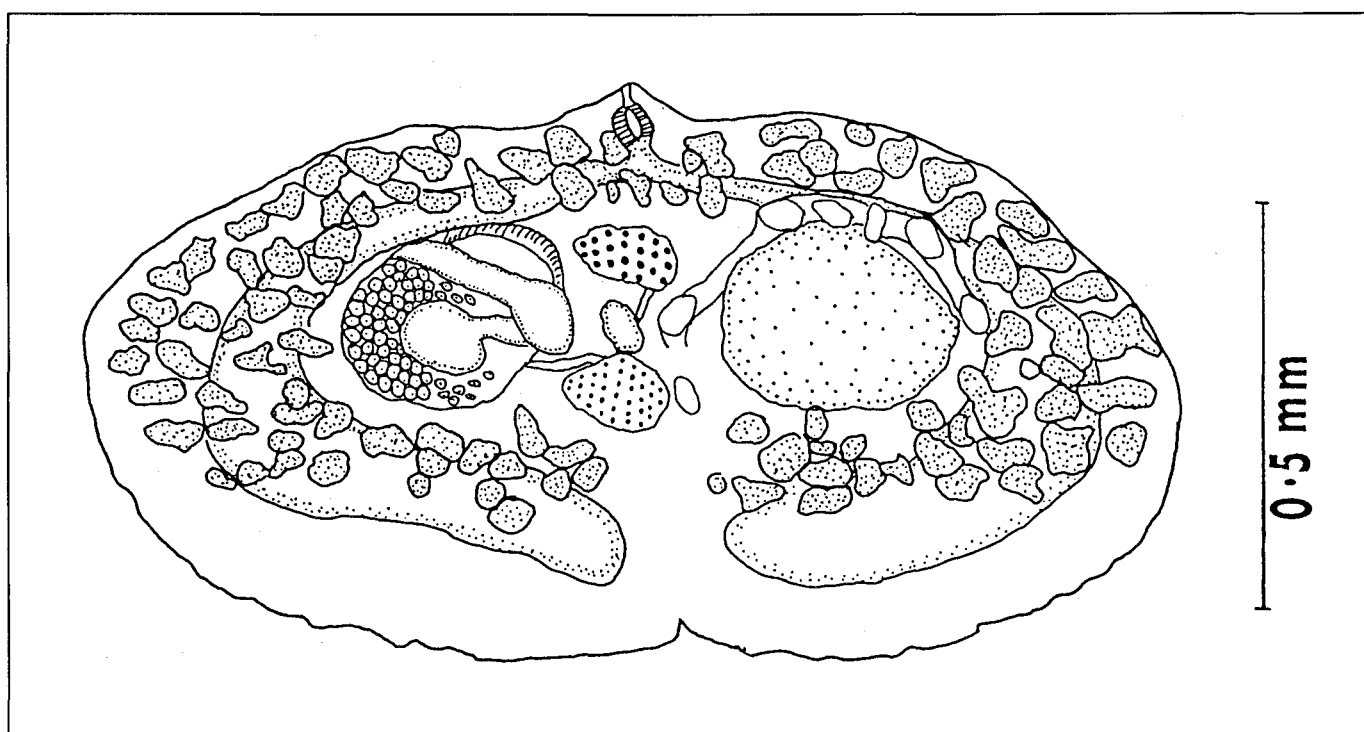


Fig. (1) : *Treptodemus latus*

**Table (1)**

A comparison between *T. latus* Manter, 1961  
described from Fiji and the Arabian Gulf

Characters	<i>T. latus</i> manter 1961 from Fijii	<i>T. latus</i> , Manter 1961 from Arabian Gulf
Body shape	Broadly rounded	Brooded, wide than long
Tegument	Without spines	Without spines
Length	0.711	0.50 – 0.72
Wdith	1.390	1.08 – 1.70
Length/Width	0.5 : 1	0.42 – 0.46:1
Pharynx	0.07 long 0.06 wide	0.04 – 0.07 by 0.05 – 0.05
Oesophagus	Longer than pharynx	Hardly differentiated
Testis	Single, large, unlobed same size as cirrus sac	Single, unlobed, large 0.17 – 0.20 by 0.22 – 0.33
Cirrus sac	Large, 0.34 by 0.17 in right half of body	Large, in right side of the body 0.17 – 0.26 by 0.18-0.33
Seminal vesicle	Small, rounded	Rounded, 0.06 – 0.10 in diameter
Cirrus	Thick walled-tube	Thick walled-tube
Genital pore	To right of midline	To the right side of intestinal bifurcation
Ovary	Pyriform, near mid body, to left of midline	Unlobed, Posterodorsal to intestinal bifurcation 0.07 – 0.11 by 0.06 – 0.14
Vitellaria	Irreglar, bilobed, along length of intestinal caeca.	Irregular, along caeca, overlapping it.
Eggs	Thin shelled, collapsed 72-74 X 36-43 µm	Large 64 – 76x32 – 44 µm
Host	<i>Hemiramphus</i> sp.	<i>Hemiramphus marginatus</i>
Locality	Fiji	Arabian Gulf

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