LECITHOBOTRYS IMAMI, A NEW TREMATODE FROM MULLET OF LAKE QARUN IN EGYPT

BY

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SUMMARY

Lecithobotrys imami, n.sp. is described from Mugil cephalus caught from lake Qarun in Egypt. It differs from all species of the genus by having well developed excretory system, few number of vitelline follicles, short prepharynx, elongate pharynx and the shape of the body. A comparison was made with the other related species of the genus. A key is presented to distinguish between the species known so far from the genus.

INTRODUCTION

Lake Qaroun, is an inland closed basin of about 40 km long and 5.7 km width, with an average depth of 4.2 m(Morcos and Meshal,1984). It lies in an arid region occupying the deepest part of Fayoum depression in the western desert. The lake receives only brackish water annually estimated to be as much as 390 million cubic meter which conveys about 430000 tons of salts to the lake each year (Meshal,1973). A volume of water nearly equal to that of drainage influx is lost through evaporation and as a result the salinity of the water increases continuously as time passes.

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Rekharani and Madhavi (1985) described *L. mugilis* from *Mugil cephalus*, *Liza macrolepis* and *valamugil cunninesius* from brackish water at Visakhapatnam, India, Ramadan et al. (1988) described *cephalus* and *Mugil capito* caught from lake Qarun in Egypt.

**MATERIAL AND METHODS**

Fresh fishes were collected from lake Qarun and identified by using four standard references Boulenger (1907); Sandon (1950); Latif (1974) and Boraey (1974). The fishes were dissected and examined for helminth parasites. The parasites were fixed in 70% alcohol after relaxation. They were stained using Gower's carmine (Johri and Smyth, 1956). Drawing were made to scale using a camera lucida. All measurements in millimeters unless stated otherwise.

During the present investigation, the author recorded trematodes belonging to the genus Lectithobotrys Looss, 1902 from *Mugil cephalus* caught from lake Qarun in Egypt.

**RESULTS**

The following description is based on four specimens collected from *Mugil cephalus* locally called "Bouri" caught from lake Qarun in December, 1992. *Lectithobotrys (Lectithobotrys) imami* n.sp. (Fig. 1) is named in the honour of the distinguished Egyptian parasitologist the late Prof. E.A. Imam. (All measurements in median size of four specimens)

**Morphological features:**

The body is oval elongate, tapering anteriorly, 1.34 long and 0.6 wide. Body surface spindles, each spine 4 u in length, but these spines are easily shed. The length to width ratio is 2.23 : 1. The oral sucker is subterminal relatively larger than the ventral sucker 0.12 long and 0.15 wide. The ventral sucker
Losses (1902) established the genus *Lecithobotrys* for those Haploporid trematodes having short and wide caeca, extending back beyond the ventral sucker to the posterior border of the testis. Bifurcation of the intestine dorsal to the ventral sucker. Genital pore in front of the intestinal bifurcation. Testis median, not far behind the ventral sucker, between the caeca. Ovary median, in front of the testis. Vitellaria formed of seven spherical follicles in each side lateral to the middle of the caeca. Uterus with descending and ascending limbs, much folded in the posterior region behind the caeca and the gonads. Eggs very numerous, each containing a miracidium with eye-spots. *L. putrescens* Looss, 1902 from *Mugil auratus* collected from triest was designated as the type species of the genus.

In (1970) *L. vitellinosus* was added by Sharma and Cupta from *Mugil para-sia* in India. Yamaguti (1971) outlined the generic diagnosis of *Lecithobotrys* Looss, 1902 and he suggested a key to subgenera of *Lecithobotrys* as follows:

1- Vitelline follicles massed together, forming symmetrical bunches, caeca usually short———(Lecithobotrys) Looss, 1902.

2- Vitelline follicles rather scattered; caeca long —-(Paralecithobotrys) Freitas, 1948.

He also listed *L. putrescens* Looss, 1902 (Type species) under the subgenus *Lecithobotrys* Looss, 1902, Martin (1973) added *L. sprenti* from Lisa argentea and *Mugil cephalus* from Australia. He agreed with Overstreet's opinion (Overstreet, 1971) and transferred *Saccocoelioides magniovatus*, Szidat, (1954) from *Lecithobotrys* Looss, (1902). He also transferred *S. elongatus*, Szidat, (1954) to the genus *Lecithobotrys*, Looss (1902), Nasir and Gomez (1977) included *S. magnus*, Szidat (1954) in the genus *Lecithobotrys* and *S. octavus*, Szidat, (1954) may also belong to this genus.
is preequatorial 0.09 long and 0.12 wide. The ratio between the oral sucker/ventral sucker diameters is 1.3 : 1.

The pharynx is large, elongate in shape , 0.10 long and 0.07 wide. The prepharynx is short 0.02 in length. The oesophagus is moderately long 0.19 in length. The intestinal caeca are short, tubular in shape and extending back far beyond the ventral sucker to the posterior end of testis. The bifurcation of the intestine occurs dorsal to the ventral sucker the caeca are 0.18 long and 0.04 wide. The testis is median, it is located not far behind the ventral sucker, between the caeca. The testis is 0.22 long and 0.20 wide. The hermaphroditic pouch is egg-shaped, 0.15 long and 0.12 wide. It includes an oval elongate internal seminal vesicle 0.09 in length; prostate duct, prostate bulb and a hermaphroditic duct. The metraterm and prostatic duct join together to form a hermaphroditic duct which opens by the genital pore. The external seminal vesicle is elongate 0.06 in length. The genital pore lies preacetabularly infront of the bifurcation of the intestine.

The ovary is median, egg-shaped, lies on the dorsal side of testis. The ovary is 0.07 long and 0.13 wide. The vitelline glands are formed of three irregular shaped follicles in each side lateral to teh middle of the caeca. The uterus has descending and ascending limbs occupying the middle third of the body. The eggs are numerous, each egg 40 u long and 19 u wide.

The excretory system consists of : flame cells, fine tubules, two pairs of accessory excretory pores, excretory vesicle and main excretory pore. The flame cells lead to fine branched tubules which are opened dorsolateral by one pair of accessory excretory pores on each side of the last third of the body. Moreover, the fine tubules are opened also in the excretory vesicle. The excretory vesicle is small saccular opened by the main excretory pore. The main
excretory pore is subterminal, it lies in a large depression in posterior extremity.

**DISCUSSION**

*L. (Lecithobotrys) imami* n.sp. can be easily distinguished from all the other known species of the genus Lecithobotrys mainly by the size and number of vitelline follicles, the excretory system, the length of the prepharynx, the size and shape of the pharynx and the body shape.

*L.(Lecithobotrys) imami* n.sp. is closely related to *L.(Lecithobotrys) putrescens* Looss, (1902) (the genotype) but differs from it by certain characters are shown in (Table 1) and summarized as follows:

1- The prepharynx is very short, but in Looss's specimens was long.
2- The size of the spharynx is very small, but in Looss's specimens was large.
3- The excretory system include fine tubules and two pairs of accessory excretory pores, but in Looss's specimens the accessory excretory pores were absent.
4- The excretory vesicle is small, but in Looss's specimens was very large.
5- The number of vitelline follicles are three, but in Looss's specimens were seven in number.
6- The caeca are short ending at the level of the postreior edge of testis, but in Looss's specimens were long ending posterior to testis.

The present author believe that all the above differences are sufficient to designate *L.(Lecithobotrys) imami* as a new species.

Host: *Mugil cephalus*

Location: Intestine.

Locality: lake Qaroun.
Types: Holotype and paratype deposited in the Department of Biology, Faculty of Education, Cairo University, Fayoum, Egypt.

The following key is suggested to distinguish between the species known so far from the genus Lecithobotrys Looss, 1902.

* Vitelline follicles massed together, forming symmetrical bunches, and caeca short ........................................ (a)

* Vitelline follicles rather scattered and caeca long ............... (b)

a. Bifurcation if two caeca preacetabular, vitelline follicles divided into two symmetrical groups, each composed of a follicles enclosed a circle, uterus occupying all hindbody .............. L.vitellosus Sharma & Cupta, (1970).

* Bifurcation of two caeca postacetabular, vitelline follicles divided into two symmetrical compact groups not enclosing a circle, uterus leaving free space at posterior extremity ......................... (1)

1- Caeca short tubular, vitellaria 7 follicles in each side of caeca...

.....L.putrescens Looss, (1902).

* Caeca short tubular, vitellaria 3 follicles in each side of ...............

L.imami n.sp.

* Caeca short saccular, vitellaria more than 6 follicles in each side of caeca......................................................... (2)


* Prepharynx long, body elongate ........................................ (3)

3- Vitellaria 6-8 follicles scattered in ovarioacetabular zone.......

L.mugilis Rekharani and Madhavi (1985).
Vitellaria 15-25 follicles in each side of caeca ..........L.helmymohamedi
Ramadan et al.(1988).

Vitellaria 7-10 follicles in each side of caeca.........L.Sprenti Martin ,
(1973).

b. Vitellaria 7 follicles and prepharynx absent........L.brasiliensis Freitas
(1948).

Vitellaria 11 follicles and prepharynx long.......L.africanus Manter and
Pritchard,(1964).

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A) Adult worm
B) Cirrus pouch
C) Eggs

FIG. 1
الملخص العربي

مسهل نوع جديد من أقسام الترباتودا المتفلقة على أساك البورى الأصيل من بحيرة قارون بجمهورية مصر العربية

ديهوم عبد العزيز حافظ لعلوم الباورى

تم وصف نوع جديد من أقسام الترباتودا المتفلقة على أساك البورى الأصيل من بحيرة قارون بجمهورية مصر العربية، وهذا النوع يختلف عن جميع الأنواع المعروفة من نفس الجنس باحتواجه على جهاز إخراجي متعدد القليل من الفصيد الحبيبة وقصور في طول تحل البلعوم مع كبر في حجم البلعوم، كما أن هناك اختلاف في شكل الجسم العام تم عمل مقارنة بين جميع الأنواع المعروفة وانتشار مفتيح ناسبة للخربة بينهم.

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