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Anew Finding of Allocreadium Isoproum (Looss, 1902) (Digenea Allocreadinae) Parasite of the Stomach of Freshwater Fishes Tetraodon Fahaka from Jebel Aulia Dam Southern Khartoum, Sudan

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Abstract

A species of Allocreadinae (Trematoda, Digenea) was found in the stomach of freshwater fish "Tambar" Tetraodon fahaka (yousif), in Jebel Aulia Dam in the White Nile, southern Khartoum. The species classified in the genus Allocreadium isoproum (Loss, 1902) as a first finding in the Sudanese freshwater fishes the genus found from several freshwater fishes in Europe South America, Japan, and India (Yamagutti, 1958). The present study it was the first report in the Sudan and Africa as all. The objective of the study were to carryout the following characteristic to describe of parasites with relevant classification, the measurement of determination of the prevalence rate density of infection parasite.

Keywords

Tetraodon fahaka, Digenea, Allocreadium, helminth parasite, Jeble Aulia Dam, Sudan

1. Introduction

Tetraodon fahaka is a fresh water fish, popularly known as "Tambira" found in Jebel Aulia Dam in the White Nile. There was a few studies about this speciments helminth parasites and classified in the genus *Allocreadium* is oproum (Looss, 1902). The present study it was the first report in the Sudan and Africa as whole.

2. Method

In this survey viscera of 307 freshwater fishes from Jeble Aulia Dam Area were examined for helminth -parasites. 199 out of 307 fishes (63.13 %) were infected with: four species of Trematodes one of them ***Allocreadium*** **sp** with prevalence 6.66. The external surfaces of visceral organs were examined using a hand lens. The esophagus, stomach and intestine were divided out and each was placed in to a separate Petri dish that contains tap water or normal saline, each organ was cut into small pieces, and examined carefully under a dissecting, microscope. Detected parasites were placed on clean slides and examined under the microscope digenetic Trematodes collected from the viscera fish were first washed in several rinses of water or normal saline to remove any attached debris and then left for a few minutes to stretch in descending grades of alcohol, and then they were fixed in Bouin's solution for a few days, then followed by 70% ethyl alcohol and the flukes were transferred to 70% ethy alcohol with several changes for 3 days to washed Bouin's several times until become the ethyl alcohol colorless. After that they were stained with Barox Carmine (Mahoney, 1973). For 5-15 minutes then transferred to 70% ethanol for 5 minutes and 80% ethanol for 5 minutes 90% for 5 minutes and 100% for 5 minutes, then cleared in xylene and mounted with Canada balsam or DPEX in a clean glass slide finally covered with a cover glasses then examine (The specimen was mounted in Canada balsam to be examined later under the light Microscope). Measurement were made with a calibrated Ocular Micrometer, Microphotography was done using (Leitz Dialu Light Microscope adopted with wilds MPS Camera). Classification of Trematodes was based on (Yamagutti, 1959).

3. Result

Allocreadium **sp. (Looss, 1900)**

Classification

Order: Digenea;

Family: *Allocreadium* (Stoscich, 1903);

Subfamily*: Allocreadinae* (Looss, 1902);

Genus: *Allocreadium* (Looss, 1900);

Species: *Isoproum* (Looss, 1902);

Host: *Tetraodon fahaka*;

Prevalence of Infection: (6.66%) one out of 10/15;

Intensity of infection: (2-8) worms per fish.

Description: (Table 1, Plate 1 & 2).

This description is based on two gravid worms. These are small worms. The body is oval blunt on both ends, and the tegument is smooth. The oral sucker is sub ventral relatively large, and has internal swelling (family character). The acetabulum is smaller than the oral sucker and is in the anterior half of body. The esophagus with bulb at bifurcation. The intestinal caeca are simple; they extend to a short distance from the posterior end of the body. The testes are rounded, oblique, the median, in posterior

half of boy. The ovary is spherical, small lies between the acetabulum and anterior testes to side of median line. The uterus winded from below acetabulum to posterior extremity to fill the interceacal area and down beyond it. The vitelline glands are lateral, the follicles are numerous, and large they start at the level of intestinal bifurcation and extend to level of the posterior testes. The genital atrium is preaceatabulor. The seminal vesicle is voluminous. The eggs are numerous.

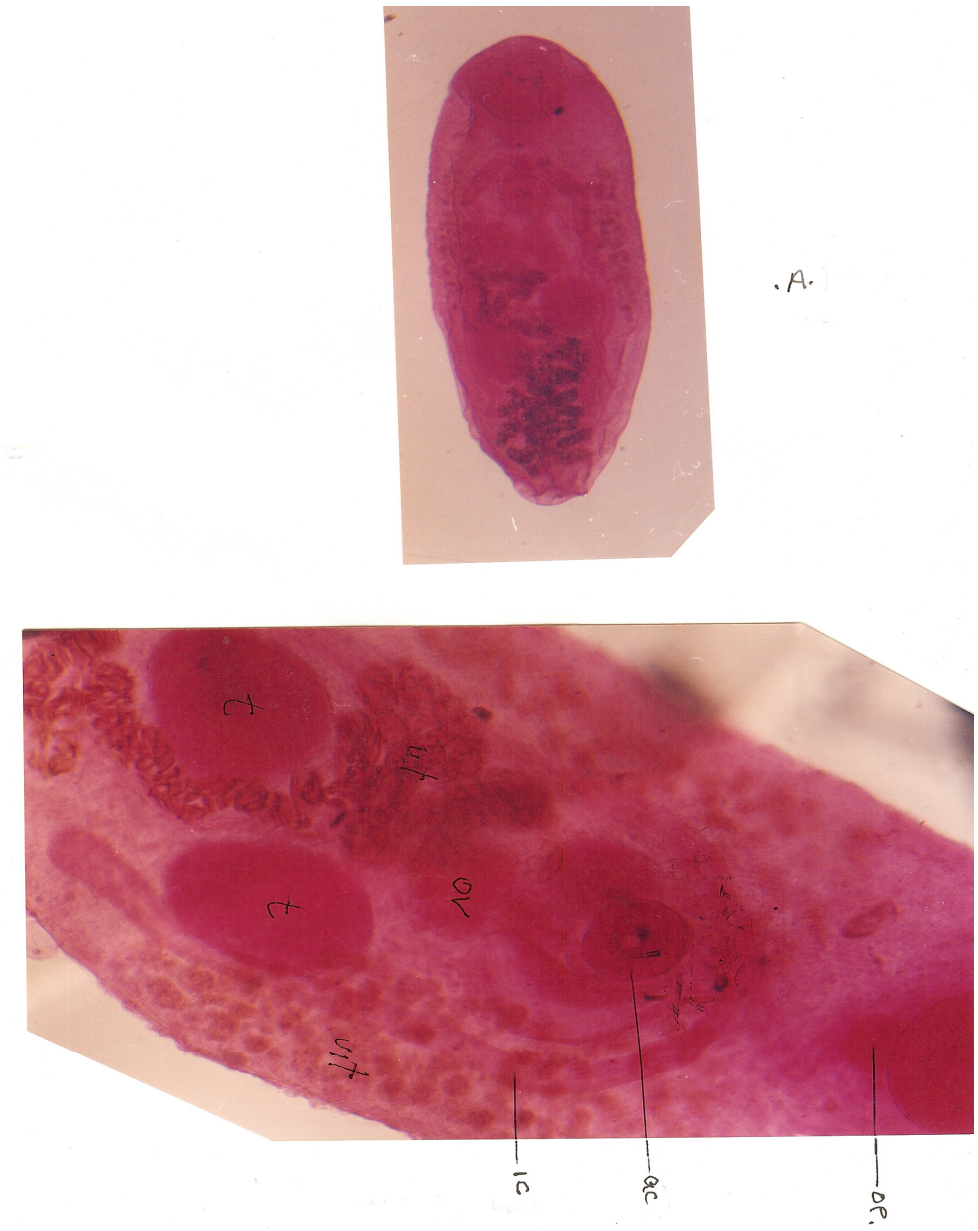

Figure 1. Allocreadium Isoproum Whole Amount (X 40)

Plate (1): *Allocreadium* isoproum

A) Whole amount (X 40);

B) Midbody- Small acetabulum (ac.), esophageal bulb (oeso.bulb), intestinal Ceca (i, c.) testes (t), ovary (ov.), uterus (ut) vitellaria (vit). (X 250);

Stain with acetocarmine.

Plate (2) Allocreadium **isoproum.**

A) Note-sub ventral oral sucker with bulbous internal swellings (int). (X 500).

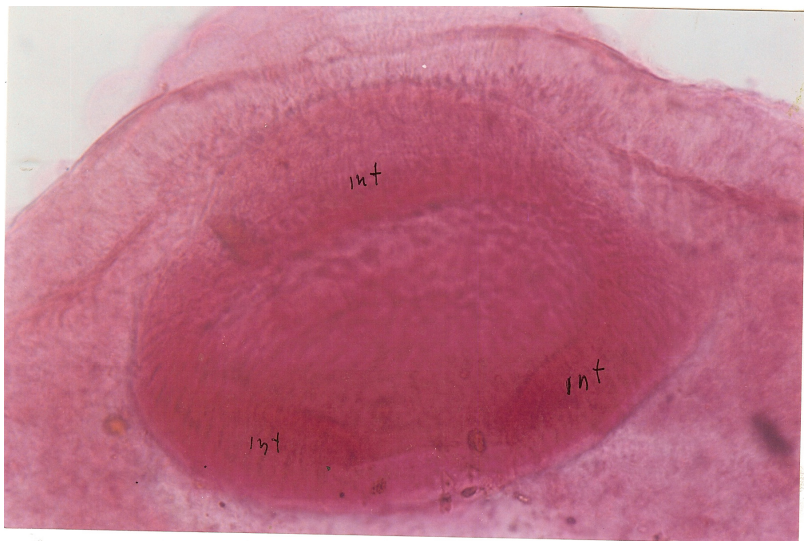

Figure 2. Note-Sub Ventral Oral Sucker with Bulbous Internal Swellings (Int) (X 500)

Table 1. Measurement of Allocreadium sp. Comparison with (Shimazu, 2004)

Character (mm)	(Present Work, 2008)	(Shimazu, 2004)
Total length	2.16	2.8 - .50
Maximum width	1.49	-
Size of oral sucker	(0.27) x (0.27)	(0.15 - .24) x (0.27 - .32)
Size of ventral sucker	(0.14) x (0.15)	(0.19 - .26)x (0.23 - .26)
Length of pharynx	0.23	0.06 - 0.12
Length of oesophagus	0.19	0.21 - 0.36
Size of right testes	(0.14 x 0.23)	(0.28 - 0.43) x (0.31 - 0.39)
Size of left testes	(0.18 x 0.24)	(0.36 - 0.51) x (0.31 - 0.40)
Diameter of eggs	23 - 42	(36 - 44) x (22 - 29)
Size of ovary	0.63	(0.32 - 0.37) x (0.24 - 0.27)

4. Discussion

The characteristics of the present species coincide with all those of the type's species *A. isoproum* the (genotype) except for the vitellaria which are confined to hind body in the type species and for the

limitation of the uterine to the area between the anterior testis and acetabulum. However according to (Yamagutti, 1961) the use of uterine extent and vitelline extent for generic-diagnosis is inconsistent as considerable overlapping occurs. The type species *A. isoproum* was originally described by (Looss, 1902) from several freshwater fishes in Europe; subsequent reports came from South America, Japan, and India (Yamagutti, 1958). This is first record in Sudan and Africa as whole. The family *Allocrediidae* is a huge one that includes many genera. Important generic features, such as the extent of vitelline follicles and the extent of uterine folds are shared by several genera in the family Allocrediidae (Kakaji, 1969) therefore, the use of such characters result in considerable degree of synolnymity between genera if not species (Yamagutti, 1961). The family characters visa the presence of intestinal swelling in the oral sucker, their number and arrangement are better criteria for distinguishing genera. In the present specimen the inner margin of the ventral sucker divided into three masses. According to (Shimazu *et al*., 2004) the family *Allocreadium* is currently in need of revision.

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