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اللوكريد يوم اسوانتسز نوع جد يد من طفيليات التريماثودا
التي تصيب سمكة البني في بحيرة ناصر بأسوان
بجمهورية مصر العربية

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وصف هذا النوع الجديد من أمعاء سمكة البني في بحيرة ناصر بأسوان ، وقد قورن هذا النوع بالأشكال الأخرى التابعة لهذا الجنس ، وقد انحصرت أهم الاختلافات التي تميز هذا النوع عن الأنواع الأخرى في امتداد الغدد المحيية من الطرف الخلفي للذوذة حتى المبيض ، عدد البيض قليل نسبياً ، المرء طويل ، كما أن الخصيتان توجدان واحدة أمام الأخرى ويوجد بينهما مسافة .

هذا وقد قدم الباحثون مفتاحاً لثمانية أنواع من الديدان التابعة لجنس اللوكريد يوم .

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**ALLOCREADIUM ASWANENSIS SP. N., A TREMATODE PARASITE FROM
A FRESHWATER FISH (BARBUS BYNNI) FROM LAKE NASSER
AT ASSWAN, A.R. EGYPT**
(With 1 Table & 1 Fig.)

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SUMMARY

Allocreadium aswanensis sp. n. is described from the intestine of freshwater fish Barbus bynni from lake Nasser of Asswan. The new species is compared with other related species of Allocreadium. Different morphological features were studied. Vitellaria extending to the ovary, eggs relatively small, oesophagus long and the two tandem testes are distinctly separated by an intertesticular space are constant features and can be safely used in separation of present species from different Allocreadium parasites. A Key for identification of eight species of the genus Allocreadium is given.

INTRODUCTION

Owing to the economical importance of lake Nasser in the Production of fishes in Egypt, especially if we know that the problem of food constitute today the most dangerous one among the Human problems throughout the world, and due to the new investigations that had been carried out on the fish parasites in lake Nasser, consequently, the present studies were decided owing to throw the light on the helminth parasites which may infest the fishes at lake Nasser of Asswan.

MATERIAL and METHODS

The present parasite was collected from the intestine of Barbus bynni caught from lake Nasser at Asswan. Thirty eight out of one hundred fish examined were found harbouring this species and the number of flukes varied from 5-14 per host. The collected worms were adequately washed in physiological saline solution and fixed in 10% formal saline or hot F.A.A. (Formaline acetic acid). They were stained in Acetic Acid Alum carmine and mounted in Canada balsam. Measurements were taken from mounted specimens and all drawings were done by Camera lucida. All the measurements are in millimeters.

RESULTS

Allocreadiidae STOSSICH, 1903 - Allocreadiinae LOOSS, 1902
Allocreadium LOOSS, 1900 - Allocreadium aswanensis sp.n.

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Description:

The body has a long oval outline tapering towards each extremity. The anterior end is fairly rounded, while the posterior end is slightly pointed. The tegument is smooth with no distinct tegumental spines. The total length of the body is 2.24-4.56 mm. (3.90 mm.) with a maximum breadth, attained in the region of the ovary, is 0.88-1.33 mm. (1.09 mm.). The oral sucker is subterminal, roughly circular in outline and relatively large, measuring 0.28-0.36 X 0.33-0.39 mm. (0.32 X 0.37 mm.). The ventral sucker is nearly equal to the oral sucker, measuring 0.32-0.39 X 0.29-0.39 mm. (0.36 X 0.35 mm.) and it lies about 0.61-0.72 mm. (0.64 mm.) far from the oral sucker.

There is no apparent prepharynx in any of the available specimens and the mouth leads directly into a muscular pharynx measuring 0.11-0.20 X 0.14-0.17 mm. (0.17 X 0.16 mm.). The pharynx opens into a long oesophagus measuring 0.33-0.56 mm. (0.47 mm.) in length. The oesophagus bifurcates into two simple intestinal caeca which extend posteriorly to terminate near the posterior end of the body.

The genital atrium is situated near the median line at various levels between the pharynx and the ventral sucker. There are two tandem testes, nearly spherical to oval in shape. They are situated in the posterior half of the body. The anterior testis lies at a distance 0.31-0.46 mm. from the ventral sucker and is separated from the posterior testis by a distinct inter-testicular space measuring 0.03-0.17 mm. (0.10 mm.). The anterior testis measure 0.33-0.48 X 0.33-0.42 mm. (0.39 X 0.38 mm.). The posterior testis is nearly to the anterior testis measuring 0.33-0.44 X 0.36-0.44 mm. (0.38 X 0.39 mm.). The cirrus pouch is pear to elongated in shape, measuring 0.44-0.67 X 0.11-0.24 mm. (0.56 X 0.20 mm.). It lies anterior to the ventral sucker and contains a slightly convoluted seminal vesicle which leads to a muscular ejaculatory duct that opens in the genital atrium. The latter lies nearly behind the pharynx.

The single ovary is spherical to elliptical in shape with a smooth outline. It measures 0.19-0.31 X 0.15-0.25 mm. (0.25 X 0.20 mm.). It lies behind the ventral sucker on the median line or slightly postero-lateral to the ventral sucker as seen in few specimens. The pear-shaped receptaculum seminis lies behind the ovary and measures 0.16-0.28 X 0.08-0.12 mm. (0.31 X 0.10 mm.). The uterus is coiled and occupies the area between the posterior testis and the ventral sucker. The metraterm, passes anterior to the ventral sucker to opens in the genital atrium. The vitellaria are follicular, extends from the level of the ovary to the posterior end of the body. They are situated in the two lateral fields, extracaecal and they are confused together behind the posterior testis to form a continuous band. Each follicle is up to 0.07 mm. in diameter. The excretory vesicle is saccular, measuring 0.12-0.14 mm. long.

The egg is large, oval in shape, thick shelled and operculated. It measures 0.07-0.08 X 0.03-0.04 mm. (0.08 X 0.08-0.05 mm.).

DISCUSSION

The above mentioned characters place the parasite in the genus Allocreadium. This genus was established by LOOSS (1900) with A. isoporum (LOOSS, 1899) as the type species.

THOMAS (1957) listed 29 species in the genus Allocreadium. However, nine of these species have been transferred to other genera.

YAMAGUTI (1958) listed 22 species in genus Allocreasium and six species tentatively assigned to this genus.

ALLOCREADIUM ASWANENSIS SP. N.

KOVAL (1966) produced a key for 32 species, and a few more species have since been added.

EL-NAFFAR (1970), described unpublished species of Allocreadium from the intestine of Barbus bynni at Assiut province.

KHALIL and THURSTON (1973) described A. engraulicypridis as a new species from the intestine of the cyprinid fish Engraulicypris argenteus from lake Victoria and gave a key to the other four species of Allocreadium so far reported from the African freshwater fishes. Also KHALIL (1971) in studying the zoogeographical affinities of the helminth parasites of African freshwater fishes, stated that the African species of Allocreadium seem to have Indian affinities and he accepted the opinion of MANTER (1963) in that judging from distribution records, the genus Allocreadium is predominantly Indian and predominately a parasite of cyprinids although it is potentially adaptable to a variety of hosts.

SAOUD et al. (1974) described Allocreadium sudanensis sp. nov. from the cyprinid fish Barbus bynni from the white Nile in the Sudan, and gave a key for the identification of five African species of the genus Allocreadium. Also, they listed 45 species assigned at since time to this genus in view of the arbitrary criteria used by some of them to distinguish between the various species. Moreover, SAOUD et al. in that study, were appealed for a careful revision of the genus Allocreadium, focusing particularly on those species described from India and U.S.S.A. This revision, needed because from India alone, nineteen species have been described. Six of these Indian species were reported from the same genus of fish; (PANDE, 1938; PAI, 1962; GUPTA, 1963) and four from the same species viz: Barbus tor (PANDE, 1938; PAI, 1962). The present authors concur in this revision especially, as SAOUD et al. (1974) felt that it is by no means certain that all the 45 species (4 from Europe, 13 from U.S.S.A., 19 from India, 3 from U.S.S.A., 2 from Japan, and 4 from Africa) are valid species.

THOMAS (1957) and SAOUD et al. (1974) considered the following characters to be important in the differentiation of the various species of Allocreadium:

- 1) Relative size of oral and ventral sucker;
- 2) Extents of vitelline glands;
- 3) Position of the ovary;
- 4) Extent of inter-testicular space;
- 5) Length of oesophagus;
- 6) The size of the pharynx;
- 7) The position of the genital pore;
- 8) Geographical distribution of the host.

An extensive literature exists on the species of Allocreadium showed that the genus occurs only in freshwater. So far, seven species of Allocreadium have been reported from Alestes macrolepidotus from Black Volta River in Ghana; A. indistinctum BAER, 1959 from Barbus sp. from Vitshumbi on Lake Edward in Zair (Congo); A. mazoensis Beverley-Burton, 1962 from Clarias mossambicus from Mazoe in Rhodesia; A. bynni EL-NAFFAR, 1970 from Barbus bynni from River Nile at Assiut province in Egypt; A. ghanensis FISCHTHAL & THOMAS, 1972 from Synodontis sp. from the Volta River in Ghana; A. engraulicypridis KHALIL & THURSTON, 1973 from Engraulicypris argenteus from Kaazi (near Kampala) on Lake Victoria and A. sudanensis SAOUD et al. 1974 from Barbus bynni from the White Nile in Sudan.

A. aswanensis n. sp. can be easily distinguished from A. voltanum by the unlobed testis, the extension of the uterus posteriorly behind anterior testis and genital atrium anterior to intestinal bifurcation. It resembles A. mazoensis in the extension of uterus behind anterior testis,

the genital atrium anterior to intestinal bifurcation, but it differs in the host, locality, absence of cuticular spines, the subterminal oral sucker, equal size of the ventral sucker and oral sucker, extension of the excretory bladder, size of the egg, size of the ovary to the testes and the measurements, all differences are summarised in Table (1).

The present new species differs from A. sudanensis and A. bynni in the general outline of the body shape, presence of long oesophagus, presence of distinct inter-testicular space.

The present new species differ from A. eggraucypridis in that the vitellaria do not extend anteriorly to the level of oral sucker. It differs from A. indistinctum in that the extension of the vitellaria anterior to anterior testis. From A. ghanensis in that the vitellaria do not extend to level of the genital pore.

Furthermore, the present new species in general, differs from all those known African species of Allocreadium by distinct differences in measurements of the body, and various organs and the size of the eggs.

In conclusion, the present authors believe that they are justified, from the above differences, in considering the species under consideration as a new species, and the name Allocreadium aswanensis is proposed for it.

Host: Barbus bynni Location: Intesine.
 Locality: Lake Nasser, Asswan, Egypt.
 Type: Helminthological collections, Department of Zoology,
 Faculty of Science, Assiut University.

Key to the species of Allocreadium form African Freshwater fishes.

- | | |
|-----------------------------------------------------------------------------------------------|--------------------------|
| 1- Testes lobed | <u>A. votanum</u> |
| Testes spherical or oval with smooth outline | 2 |
| 2- Vitellaria extending anteriorly to the pharyngeal level | <u>A. ghanensis</u> |
| | <u>A. engraucypridis</u> |
| Vitellaria not extending anterior to the acetabulum | 3 |
| 3- Vitelline follicles small and numerous, tegumental spines present anteriorly | <u>A. mazoensis</u> |
| Vitelline follicles large and less numerous, no tegumental spines | 4 |
| 4- Vitellaria extending to the ovary, eggs relatively small | 5 |
| 5- (a) Oesophagus short, almost always, posterior testis overlap the anterior testis | <u>A. sudanensis</u> |
| | <u>A. bynni</u> |
| 5- (b) Oesophagus long, two testes are distinctly separated by an intertesticular space | <u>A. aswanensis.</u> |
| Vitellaria extending only to the anterior testis, the eggs relatively larger .. | <u>A. indistinctum</u> |

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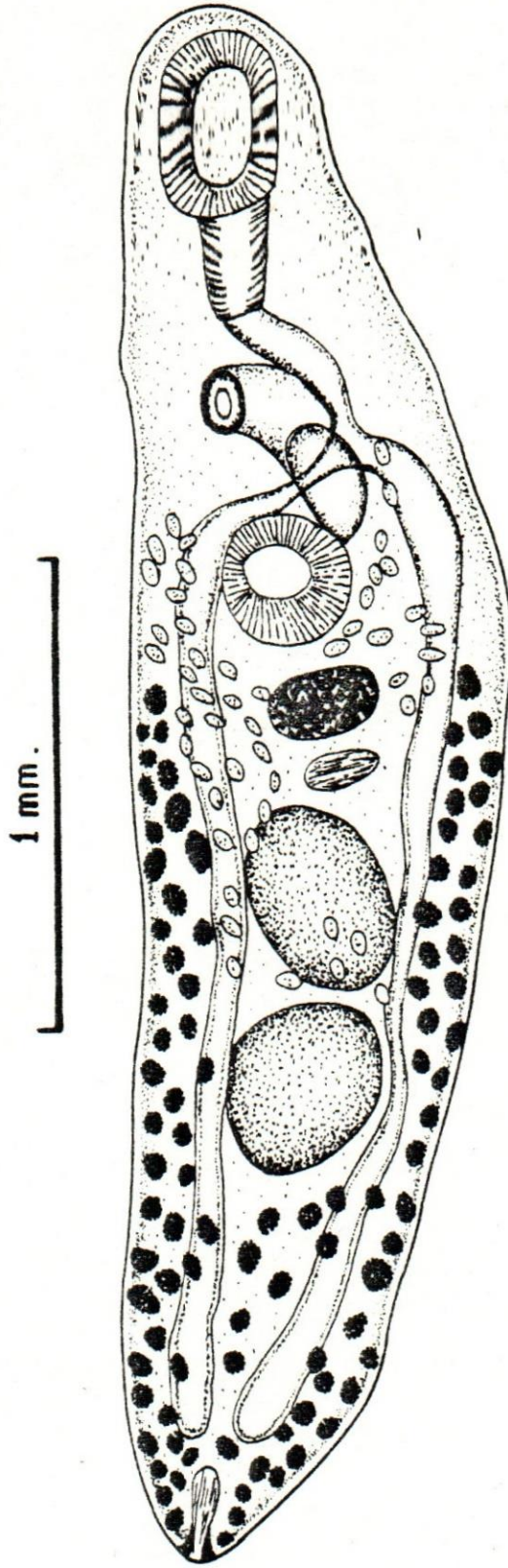
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Table (1).
Comparison between Allocreadium aswanensis n.sp.
and Allocreadium mazoensis Burton 1962

| | <u>Allocreadium mazoensis</u> Burton 1962 | <u>Allocreadium aswanensis</u> n.sp. |
|----------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Host | <u>Clarias mossambicus</u> | <u>Barbus bynni</u> |
| Locality | Mazoe-Rhodesia | Lake Nasser, Egypt. |
| Body size | 1.69-2.62 X 0.65-0.98 | 2.24-4.56 X 0.88-1.33 |
| Cuticular spines | present | absent |
| Oral sucker | Terminal, 0.19-0.23 X 0.22-0.30 | Subterminal, 0.28-0.26 X 0.33-0.39 |
| Ventral sucker | Slightly larger than oral sucker, 0.23-0.32 X 0.26-0.36 | Equal to the oral sucker, 0.32-0.39 X 0.29-0.39 |
| Anterior testis | 0.22-0.30 X 0.14-0.30 | 0.33-0.48 X 0.33-0.42 |
| Posterior testis | 0.27-0.33 X 0.17-0.32 | 0.33-0.44 X 0.36-0.44 |
| Ovary | rounded, 0.21-0.25 X 0.19-0.27, situated immediately behind ventral sucker | elliptical, 0.14-0.31 X 0.15-0.25, separated from the ventral sucker by a space |
| Excretory bladder | Extends from the Excretory pore to the posterior border of posterior testis | Extends from excretory pore to one fourth of the distance between the excretory pore and the posterior border of posterior testis |
| Egg | 0.088-0.095 X 0.056-0.060 | 0.07-0.08 X 0.03-0.04 |



Allocreadium aswanensis n. sp.

Ventral view of the adult.