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DESCRIPTION OF NEW TREMATODE PARASITE (*CYCLORCHIS FAYOUMENSIS* N.SP.) IN THE BILE DUCT OF THE EGYPTIAN COBRA FROM FAYOUM GOVERNORATE IN EGYPT, WITH A REVIEW TO THE GENUS *CYCLORCHIS* LUHE, 1908.

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ABSTRACT

Cyclorchis fayoumensis n.sp. (Trematoda) was found in the bile duct of the Egyptian Cobra (*Naja haje*) from Fayoum Governorate in Egypt. This species differs from the other two known species of the genus by the largest size of the body, the smallest size of egg, deeply branched gonads, the variation in the position of both the genital pore and the bifurcation of the main excretory duct, and possessing a distinct insertion in the two caecal ends. The genus was briefly reviewed.

INTRODUCTION

Cobbold (1958) was the first to describe these trematode in the bile ducts of a *Delphinus phocaena* (*Phocaena communis*) that was shot near Scotland. He

assigned the name *Campula oblonga*. Cobbold (1976) also found similar flukes in the bile ducts of *Platanista gangetica* captured in India. He believed that the name *Distoma campula* was more

appropriate than *Campula oblonga*. Price (1932) subsequently reported that these flukes have the morphological characteristics of an opisthorchid and should be placed in the genus *Cyclorchis*. Price (1936) described *Cyclorchis varani* from the small intestine of *Varanus niloticus* from Africa. Yamaguti (1971) mentioned that *Metorchis amphileucus* was reported by Looss, 1902 from the bile duct of *Naja haje* in Egypt. He also amended that *Cyclorchis amphileucus* (Looss, 1896) Luhe 1908, synonym of both *Opisthorchis amphileucus* Kowalewski, 1898 and *Metorchis amphileucus* Looss, 1902. He also outlined the generic diagnosis of the genus *Cyclorchis* Luhe, 1908 as follows:

Opisthorchiidae, opisthorchiinae; body approximately fusiform, unspined; acetabulum comparatively small, in anterior third of body; oral sucker nearly as large as acetabulum, pharynx small or relatively large; oesophagus short or moderately long; ceca ter-

minating near posterior extremity; testes diagonal or nearly symmetrical, at/ or near cecal ends; seminal vesicle tubular, narrow; genital pore just preacetabular; ovary median or submedian, a little in front of anterior testis; seminal receptacle large, postovarian; uterus strongly winding between ovary and acetabulum, extending laterally beyond ceca; vitellaria limited to lateral fields of hindbody from postequatorial level to level of seminal receptacle; excretory stem sigmoid, running between two testes, bifurcating in front of anterior testis; parasitic in biliary duct or intestine of reptiles.

George Migaki et al., (1979), reported *Cyclorchis campula* from the large bile duct of Ganges River Dolphin (*Platanista gangetica*), (case report only). They also mentioned that *Cyclorchis campula* synonym of the following names: *Distoma campula*, *Metorchis campula*, and *Opisthorchis campula*.

The investigation aims to study trematode parasites in the bile duct of the Egyptian Cobra from Fayoum Governorate in Egypt.

MATERIAL AND METHODS

One adult female *Naja haje* about 1.58 meter in length was shot from Fayoum Governorate in February 1994 and identified according to Anderson (1898). The snake was examined immediately after shooting. The examination includes brief notes on the identification of the host, its sex and measurements. The internal organs were dissected and left in saline solution (0.07%) for few minutes with occasional shaking. A hand lens and a binocular dissecting microscope were used for the helminthological examination. The collected worms were cleaned by washing them with 0.07% saline solution.

The worms were fixed in 70% alcohol after relaxation. They were stained using Gower's carmine (Johri and Smyth, 1956). Drawings were made

to a scale using camera lucida. Parasite description is based on twenty specimens collected from the host.

RESULTS AND DESCRIPTIONS (Fig. 1)

The stained worms showed that the body is elongate, oval, variable in length, it measures 2.94-3.92 mm in length with maximum breadth of 1.17-1.34 mm. The tegument is unspined. The length/width ratio varies from 2.51-2.92:1.

The oral sucker is funnel-shaped and subterminal, it measures 0.13-0.15 mm long and 0.25-0.28 mm wide. The ventral sucker is round in shape and lies at the anterior one-third of the body, it measures 0.21-0.29 mm long and 0.25-0.28 mm wide. The ratio of oral/ventral sucker is 0.51-0.61: 1.

The mouth leads to a very short prepharynx, it measures 0.014-0.019 mm in length. The pharynx is well developed, muscular, oval in shape and measures 0.12-0.13 mm long and

0.10-0.13 mm wide. The oesophagus is very long, 0.35-0.38 mm long and 0.034-0.057 mm wide. The caecal bifurcation occurs in between the oral and the ventral suckers. The two caeca are not equal in length, the right caecum is 2.60-2.88 mm in length, left one reaches 2.44-2.76 mm. The caeca extends near to the posterior extremity.

There are two large testes which are irregular or deeply branched in shape. The testes are diagonal, located in between the posterior end of caeca. The right testis lies at the level of the posterior margin of the ovary, it measures 0.22-0.28 mm long and 0.19-0.20 mm wide. The left testis lies at 0.14-0.16 mm behind the posterior margin of the ovary, it measures 0.24-0.30 mm long and 0.21-0.23 mm wide. The cirrus pouch lies between caecal bifurcation and acetabulum, it measures 0.15-0.22 mm long and 0.11-0.16 mm wide and contains an internal seminal vesicle, prostate gland cells, pars prostatica and cirrus. The internal seminal vesicle is oval reaches

0.13-0.22 mm in length. The cirrus is 0.03-0.05 mm in length and opens into a very shallow genital atrium. The prostate cells surround the pars prostatica and cirrus. The external seminal vesicle is very long and coiled, it measures 0.28-0.52 mm in length, it is elongate tubular, almost bipartite in some specimens and usually extend posteriorly to acetabulum. The genital pore is found at the anterior margin of acetabulum, it measures 0.03-0.06 mm in diameter.

The ovary is irregular in shape, 0.28-0.31 mm long and 0.23-0.26 mm wide, usually median and pretesticular. The oviduct arises from the posterior margin of the ovary. The ootype complex is found at the posterior margin of the ovary. Laurer's canal is present. The seminal receptacle is very small, spherical and measures 0.096-0.10 mm in diameter. The vitellaria occur in lateral fields. They have small follicles extending along the middle third of the body. The vitelline ducts from both sides of

the body unite near the midline to form a common vitelline duct which leads to the ootype complex. The uterus is much coiled, occupying the middle third of the body. There is an unspined thick-walled metraterm.

The eggs are numerous, small in size measuring 18-20 u long and 7-9 u wide. The excretory vesicle is elongate, tubular, bifurcate behind the left testis, and opening through the terminal excretory pore.

DISCUSSION

The present investigation agreed with Yamaguti (1971) in considering the genus *Cyclorchis* Luhe, 1908 contains two species only *C. amphileucus* (Looss, 1896), Luhe 1908 and *C. varani* Price, 1936.

Cyclorchis fayoumensis n.sp. differs from two known species of the genus by deeply branched testes, the position of the bifurcation of the excretory duct, the distinct insertion in the end of the caeca, the position of the

genital pore, the small size of the egg and largest body size. The new species differs from *C. varani* Price 1936, by certain characters summarized as follows:

1. The body size is 2.94-3.92 mm long and 1.17-1.34 mm wide, but in Price's specimens the body is 2.0-2.2 mm long and 0.8-0.976 mm wide.
2. The egg measures 18-20 u long and 7-9 u wide, but in Price's specimens the egg measures 30 u long and 15 u wide.
3. The genital pore lies at 0.28 mm behind the caecal bifurcation, but in Price's specimens, it lies just behind the caecal bifurcation.
4. The main excretory duct bifurcates behind the testes, but in Price's specimens, it bifurcates in front of the testes.
5. The two caeca are unequal in length, but in

Price's specimens, they are equal in length.

6. The testes are deeply branched and diagonal but in Price's specimens, they are symmetrical and spherical in shape.

The new species differs from *C. amphileucus* (Looss, 1986) Luhe 1908 by certain characters summarized as follows:

1. The body measures 2.94-3.92 mm long and 1.17-1.34 mm wide, but in Looss's specimens, it measures 3.0-3.5 mm long and 0.9 mm wide.
2. The egg measures 18-20 u long and 7-9 u wide, but in Looss's specimens, it measures 23 u long and 13 u wide.
3. The testes are deeply branched, but in Looss's specimens, they are oval in shape.
4. The main excretory duct bifurcates behind the testes, but in

Looss's specimens, it bifurcates in front of the anterior testis.

5. The caecal ends possess distinct insertion, but in Looss's specimens, they are without insertion.

The author believes that all these differences are sufficient to designate *Cyclorchis fayoumensis* as a new species.

Host: *Naja haje* (The Egyptian Cobra).

Location: The bile duct.

Locality: Fayoum Governorate, Egypt.

Types: Holotype and paratype deposited in the Department of Biology, Faculty of Education, Cairo University, Fayoum Branch.

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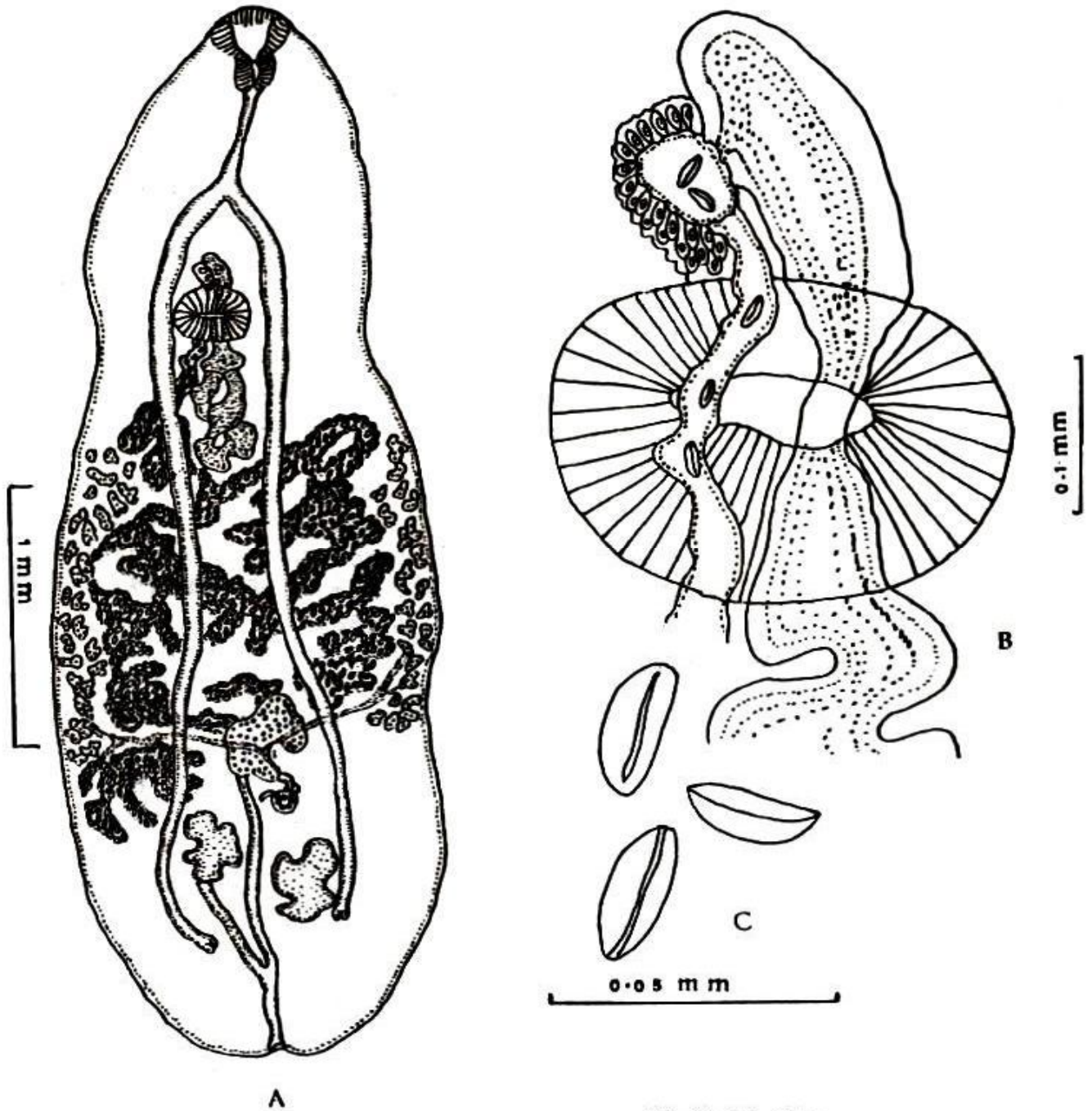
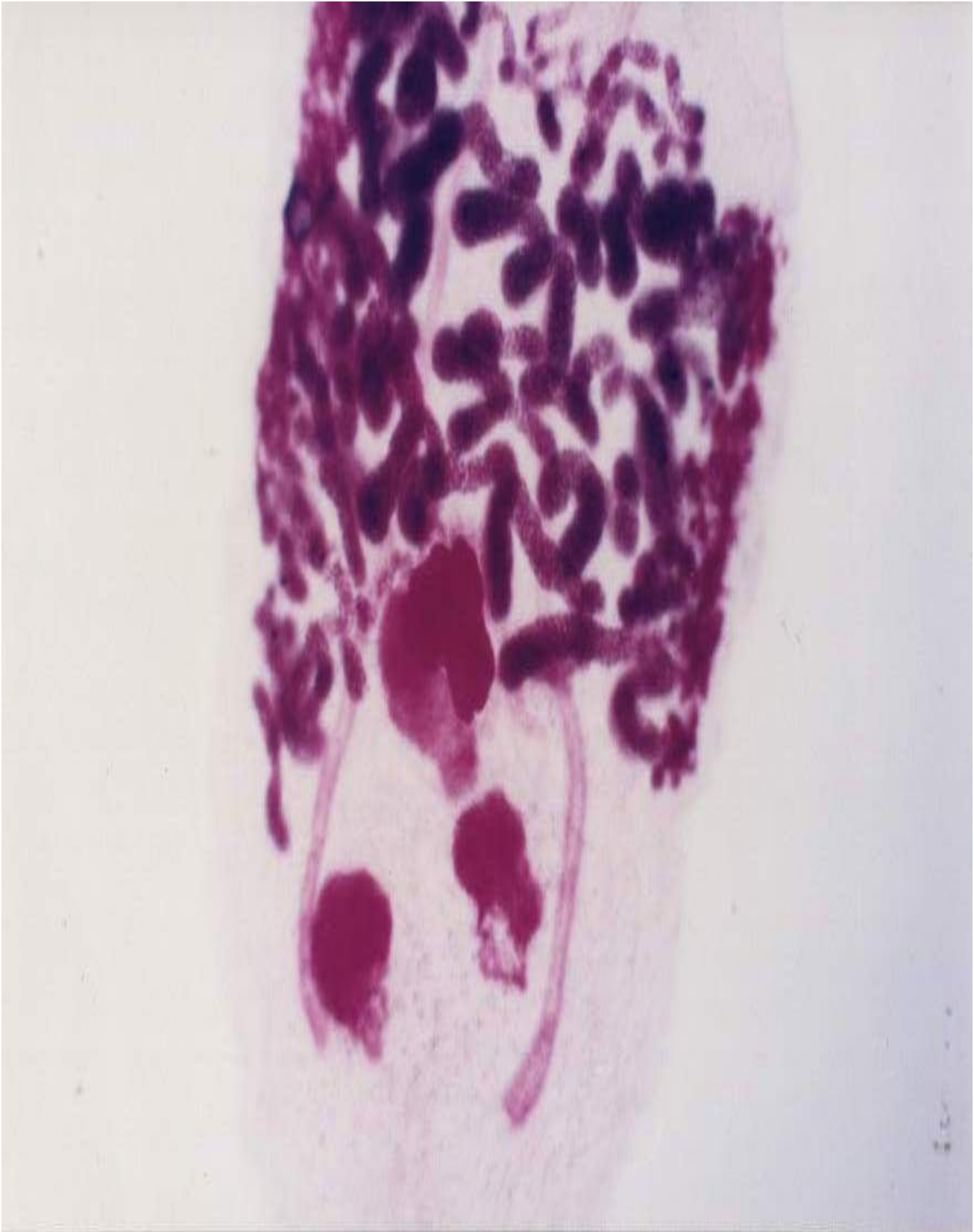


FIG.1

- A) Adult worm
- B) Cirrus pouch
- C) Eggs.





وصف نوع جديد من التريماتودا المتطفلة (سيكلوركس فينومينسيس) فى الحوصلة الصفراوية للكوبرا المصرية من محافظة الفيوم فى مصر مع مراجعة لجنس سيكلوركس لوهى ، ١٩٠٨.

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ديهوم عبد الحميد منصور الباسل

قسم العلوم البيولوجية بكلية التربية بالفيوم

فرع جامعة القاهرة - مصر

—
سيكلوركس فينومينسيس نوع جديد من ديدان التريماتودا وجد متطفلا داخل الحوصلة الصفراوية للكوبرا المصرية من محافظة الفيوم فى مصر وهذا النوع يختلف عن النوعين المعروفين فقط لهذا الجنس فى كبر حجم الجسم وصغر حجم البيض وتفصص عميق فى المناسل والاختلاف فى موضع كلا من الثقب التناسلى ومكان تفرع القناة الاخراجية الرئيسية بالإضافة إلى وجود انغماد مميز فى نهايتى الرديين المعويين وتم عمل مراجعة موجزة للجنس.

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