

برقات التريباتودا الموجودة في قوقع كليوباترا بوليمويدس في محافظة أسيوط

م . ع فهمي ، م . م . مندور ، م . م . عرفة ، كيل عمران

الملخص العربي

أظهر هذا البحث وجود ٦ أنواع من السركاريا في قوقع كليوباترا بوليمويدس . ويبدو أن كل هذه الأنواع ماعدا سركاريا تيفكس تعتبر جديدة . ولقد اكتفى الباحثون بوصف ٣ أنواع في هذا البحث وهي :

١ - سركاريا تيفكس سونسينو ١٨٩٢ . ولقد أعيد وصفها وتصويرها .

٢ - أميفستوم سركاريا .

٣ - بارا بلورولوفوسر كمي سركاريا .

رسالة في بيان أهمية العلم في حياة الإنسان
والدولة

تأليف د. محمد عبد الوهاب

مقدمة

إن العلم هو الأساس الذي تقوم عليه الحضارة
والدولة، وهو الذي يرفع الإنسان عن
حالة البداوة والجهل إلى حالة التقدم والوعي.

إن العلم هو الذي يفتح للإنسان آفاقاً جديدة
من المعرفة والفهم، وهو الذي يحرره من
عبودية الجهل والخرافة.

إن العلم هو الذي يبني
الدولة القوية والصالحة.

إن العلم هو الذي يرفع
الإنسان إلى رتبة الكرامة والحرية.

ON THE LARVAL TREMATODES RECOVERED FROM CLEOPATRA BULIMOIDES IN ASSIUT GOVERNORATE

PART I

(with 1 Table and 3 Figures)

By

M.A.M. Fahmy, A.M. Mandour, M.S. Arafa and Laila A.M. Omran

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SUMMARY

The present investigation has shown that six types of cercariae were recovered from *Cleopatra bulimoides*. All these six types with the exception of *Cercaria vivax* appear to be new. Three types will be discussed in this paper. These are :

1. *Cercaria vivax* Sonsino, 1892: This type has been redescribed and is well illustrated.
2. Amphistome cercaria.
3. Parapleurolocercous cercaria

INTRODUCTION

According to MALEK (1962) *Cleopatra bulimoides* is a common type of snail in Egypt, Syria and the Sudan; being the snail intermediate host of *prohemistomum vivax* in the dog, cat and kite and occasionally in man. The cercaria of this trematode has been discovered by SONSINO (1892). *Cleopatra bulimoides* is believed to be the snail intermediate host for *Gastrodiscus aegyptiacus* (FAUST and RUSSELL, 1964). No other larval trematodes have so far, been described from this snail. For this reason the present work has been conducted to evaluate the role played by *Cleopatra bulimoides* in transmission of trematode infections in Assiut Governorate.

MATERIAL AND METHODS

The snails have been tested for natural infections with larval trematodes. The snails were either exposed to bright light or crushed and examined microscopically. The cercariae were examined while fresh, and after being stained with acetic acid alum carmine. Many attempts were done to produce encystation of the cercariae for further experimental infections. Drawings were made with the aid of a Camera Lucida.

RESULTS

1—Monsostome cercaria

Cercaria vivax SONSINO, 1892

It is a pharyngeal longifurcate monostome cercaria recovered in old *Cleopatra bulimoides* collected from Koum Abu-Sheel and Bany Morr, about 6 and 3 kilometers respectively from Assiut. Its presence in this locality is governed by seasonal variations.

Morphological characters :

The body is oval or pear-shaped, measuring 250 by 100 μ . The tail is 350 by 50. The furcal rami each measures 350 μ . Other morphological characters are shown in Fig. 1 (A & B).

Biological Characters :

The cercaria is actively motile and attracted to light. It prefers to swim at the bottom of the container and could survive in tap water for about 24 hours.

Sporocyst:

Is actively motile. Large sporocysts of 2-7 mm \times in length could be seen by the naked eye. By naked eye, it looks like an insect larva, since it has got lateral expansions (Fig. 1,c). The presence of the characteristic cercariae inside the sporocyst, precludes the diagnosis.

2—Amphistome Cercaria

This type of cercaria, has only been recovered from *Cleopatra bulimoides* collected from Koum Abu-Sheel in on occasion during the whole course of the present study.

Morphological Characters :

It is a fleshy, pinkish amphistome cercaria, provided with an anterior collar. The cuticle is smooth and the collar is spineless. The body is comparatively shorter than the tail, measuring 157-170 by 85-100 μ . The tail measured 314-320 μ by 36-37 μ . Other morphological characters are shown in Fig. 2.

Biological Characters:

It is actively motile cercaria that survives for about 12 hours after which it dies. No encystment could be produced on green vegetables or in water. Other biological characters could not be well studied since the material is quite rare.

Redia Stage:

The mature redia measures 800-1000 μ by 150-200 μ and possesses a short tail-like expansion (100 μ) at the posterior end. Other morphological characters are shown in Fig.2.

3—Parapleurolophocercous cercaria

It is a very rare type of cercaria, only recovered from *Cleopatra bulimoides* in Koum Abou Sheel, Assiut.

Morphological Characters :

The cercaria is pear shaped and its anterior end being narrow, while the posterior end is broad. The body measures 250-280 μ by 80-90 μ and the tail 280-285 μ .

The other morphological characters are shown in Fig. 3.

Redia:

The redia is motile, measuring from 0.5 mm to 1.5 mm in length. The oral sucker lies anteriorly, and the posterior end is provided with a knob-like protursion. The anterior end is retractile, hence the redia may acquire a sporocyst-like appearance. The chambers within the redia contain the cercariae which are arranged in a transverse manner. On some occasions daughter rediae could be detected within the mother rediae.

Biological Characters:

The cercaria is actively motile and attracted to light. It failed to encyst on vegetables ; probably it only encysts in the fish, the second intermediate host.

DISCUSSION**1— Identity of the monostome type of cercaria:**

From the present study, the cercaria under discussion could be classified under the "vivax" group of LUHE (1909) which is characterised by possessing a muscular pharynx, two long tail furcae, and one sucker, the ventral one being absent or rudimentary. DUBOIS (1929) regarded this group as transitional between Distome and Monostome furcocercariae. LOOSS (1900) described *Cercaria vivax* from *Cleopatra bulimoides* in Egypt. Later, AZIM (1933) could produce the adult trematode *Prohemistomum vivax* SONSINO 1892 in dogs experimentally fed with the encysted metacercariae in fish muscles. In 1938, AZIM found that 23% of the dogs in Upper Egypt harboured *prohemistomum vivax* in their intestine. Successful production of the adult *prohemistomum vivax* has been made in Assiut, when FAHMY, MANDOUR and EL-NAFFAR (1973) fed young puppies on the infected muscles of *Tilapia nilotica*.

The present work, has added more knowledge about the morphological characters of the cercaria and sporocyst. Moreover, it is the second time to recover *Cercaria vivax* in *Cleopatra bulimoides* in Egypt and it is considered the first record in Assiut Governorate.

NAGATY EL-GINDY and RIFAAT (1963), pointed out that the natural host in Egypt is the kite (*Milvus migrans aegyptiacus*) and perhaps the fish eating birds. They added that the adult worm has been recovered once from man. The present authors draw the attention that many more cases may be discovered in man, especially in localities where fishes are eaten undercooked.

2— Identity of the amphistome type of *Cercaria* :

Since the cercaria under discussion possesses a ventral sucker, lying at or near the posterior extremity it is considered as amphistome cercaria of LUHE (1909). SEWELL (1922) classified the Amphistome cercariae into "pigmentata" and "Diplocotylea" types. Both types possess eye spots which are lacking in the present material. Accordingly, the present cercaria cannot be compared with both types of SEWELL (1922). Its exact taxonomic position awaits further study when more material is available. For this reason it is considered as unidentified amphistome cercaria.

Moreover, it is the first time to report on this type of cercaria in Assiut Governorate and in Egypt.

TABLE 1. The difference between the different types of Parapleurolophocercous cercariae recovered from *Melania* and *Cleopatra*.

	Para. p.l.c.* (type A) EL-GINDY AND HANNA (1963) and that of OMRAN (1973)	Para. p.l.c. (type B), of EL-GINDY and HANNA (1963)	Para p.l.c. (type B) of OMRAN (1973)	Present material
Snail host	<i>Melania</i>	<i>Melania</i>	<i>Melania</i>	<i>Cleopatra</i>
Cercaria :				
Body . . .	120-220 by 50-65 μ	70-100 by 28-60 μ	227-255 by 90-100 μ	250-280 μ by 80-90 μ
Oral sucker	20 — 35 μ	18 by 15 μ	45 by 30 μ	80 by 30 μ
Tail . . .	390-560 by 20-35 μ	310-400 by 12-18 μ	375-400 by 35-37 μ	280-285 μ
Exc. vesicle	rounded and lined with cuboidal cells	rectangular and lined with cuboidal cells	rounded and lined with cuboidal cells	triangular not lined with cells.

* Para. p.l.c. = Parapleurolophocercous cercaria.

3—Identity of the *parapleurolophocercous* cercaria:

Two different types parapleurolophocercous cercariae (type A and B) have been recovered by OMRAN in 1973 from *Melania tuberculata*. When the cercaria under discussion is compared (Table 1) with these found in *Melania*, it is found that the body is more or less larger in size than the body of type (A), although it lies within the range of size of the body of type (B). The tail is much shorter than the tail in both types (A&B). Moreover the present cercaria has got a triangular excretory bladder devoid of lining epithelial cells, a character which may be enough to distinguish the present cercaria from any other parapleurolophocercous cercaria. In addition the cercaria under discussion appears to be devoid of the peak-like apparatus which was observed protruding from the mouth opening of type (A). The oral sucker in the present cercaria is nearly twice the size of that in type (B). On the other hand the present cercaria is quite different from those described by EL—GINDY and HANNA (1963) in *Melania tuberculata*, (Table 1). According to those differences, it is quite clear that the cercaria recovered from *Cleopatra bulimoides* is quite distinct, and it is the first time to be recorded in Egypt. Further work is still required to obtain the adult trematode. Encystment may take place in the fishes as what happens in other parapleurolophocercous cercaria and when fed to experimental animals like dogs and cats, they may result in a heterophyid worm.

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3—Points of the para-substituted chlorine atom.

The chemical synthesis of the above compounds (Type A and B) have been reported by GARA in 1933 from methyl amide. When the compounds under discussion (Table I) were first found, the authors found a target in six days (e.g., $Cl-CH_2-CH_2-Cl$) while the time of synthesis of the other compounds (Table II) was more than 2 months (e.g., $Cl-CH_2-CH_2-Cl$) and the time of synthesis of the other compounds (Table III) was more than 3 months (e.g., $Cl-CH_2-CH_2-Cl$). It is not clear that the difference in the time of synthesis of the other compounds is due to the difference in the chemical synthesis of the other compounds or to the difference in the time of synthesis of the other compounds. It is not clear that the difference in the time of synthesis of the other compounds is due to the difference in the chemical synthesis of the other compounds or to the difference in the time of synthesis of the other compounds. It is not clear that the difference in the time of synthesis of the other compounds is due to the difference in the chemical synthesis of the other compounds or to the difference in the time of synthesis of the other compounds.

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CLEOPATRA BULIMOIDES

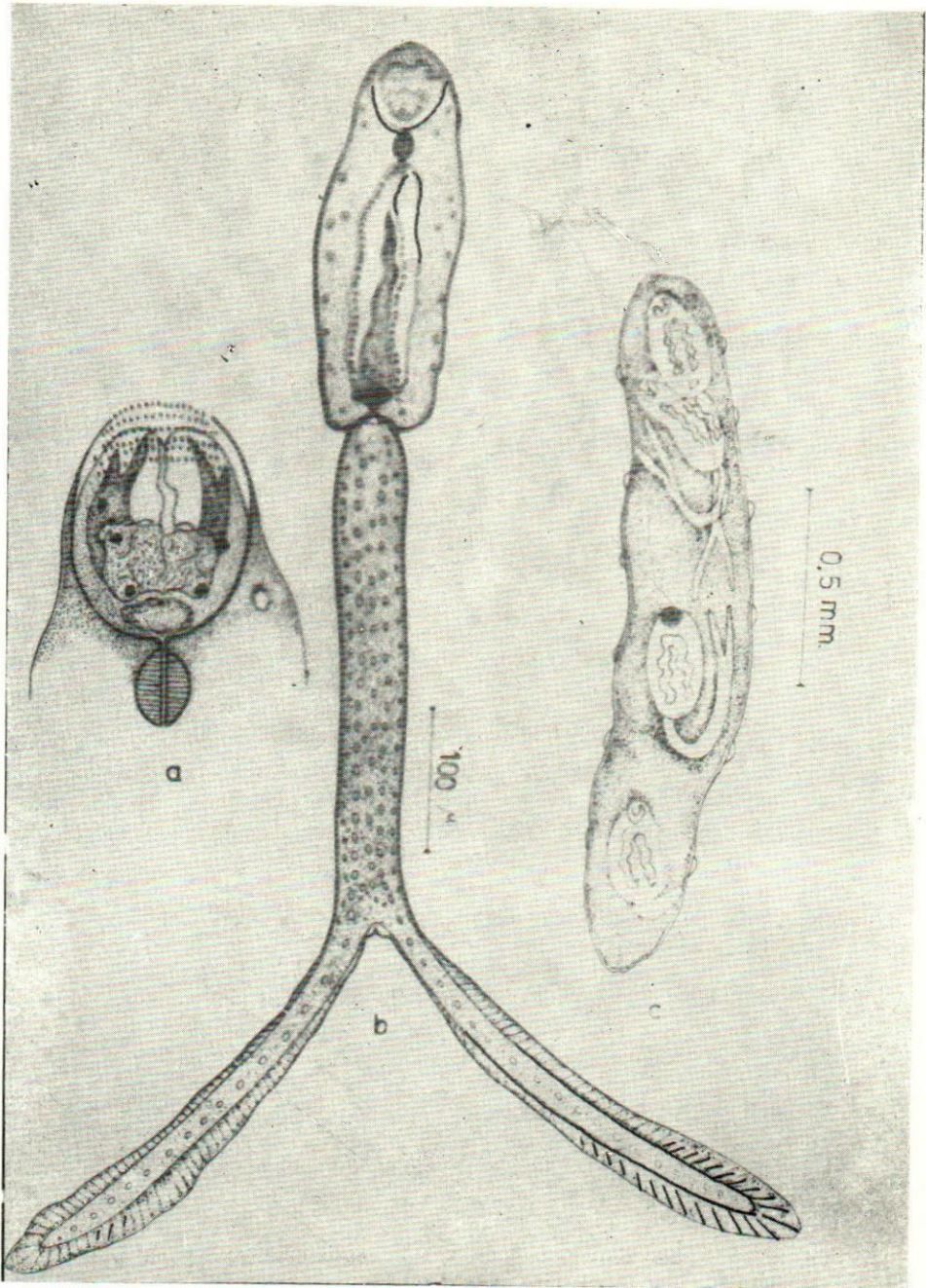


Fig. 1. *Cercaria vivax* (a) Magnified anterior end
(b) Mature cercaria
(c) Sporocyst



CLEOPATRA BULIMOIDES

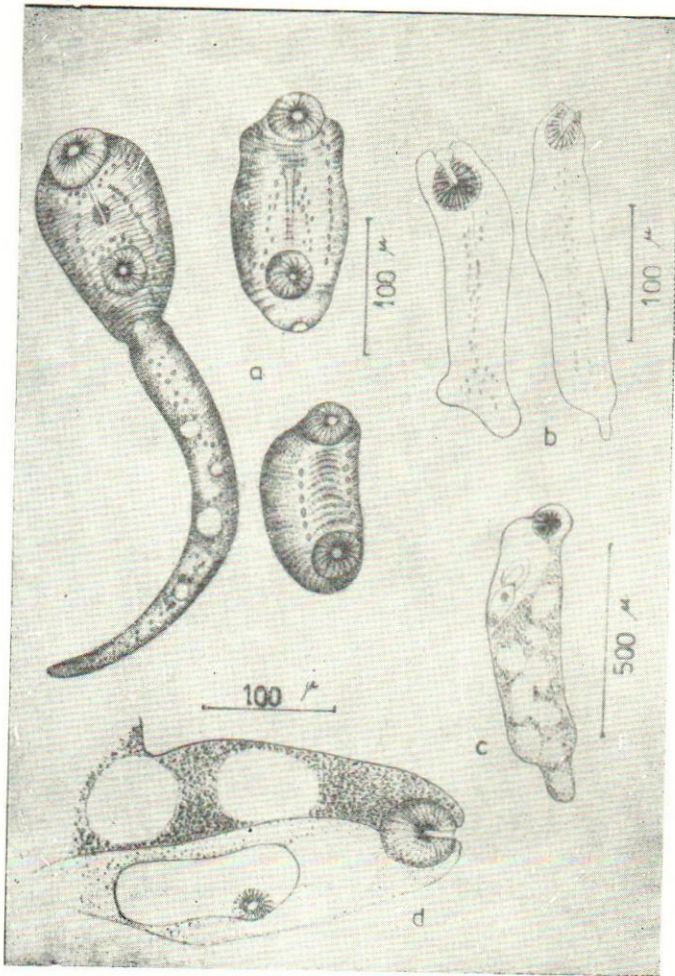


Fig. 2. Amphistome type of cercaria
(a) Different shapes of the cercaria
(b) Daughter rediae
(c,d) Redia containing one mature cercaria



CLEOPATRA BULIMOIDES

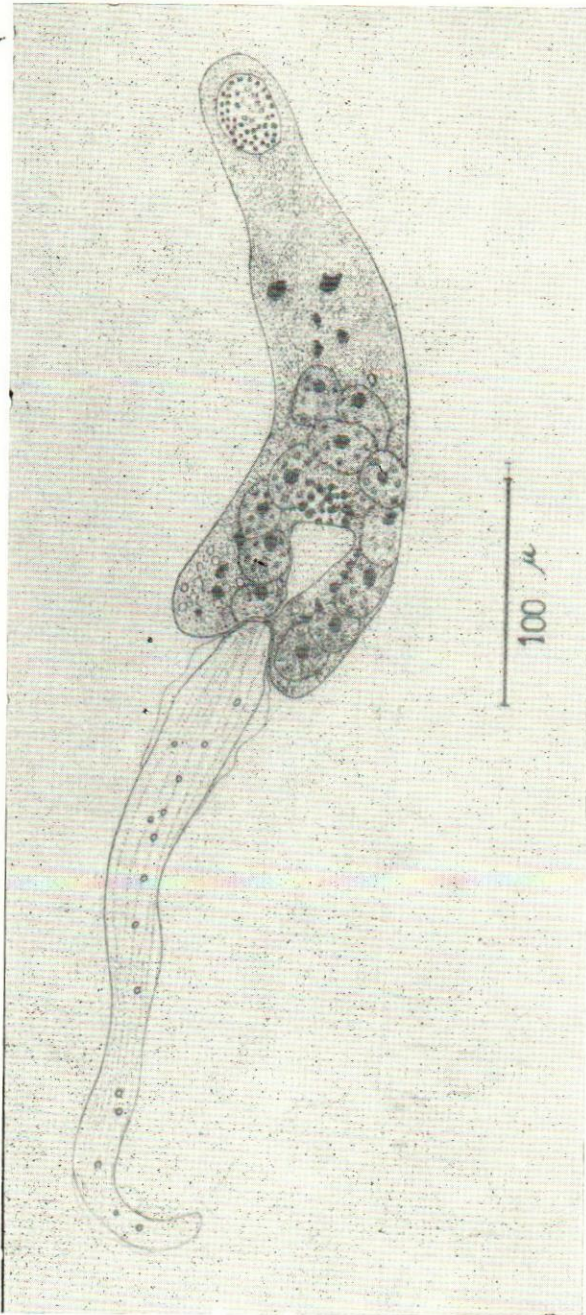


Fig. (3). *Farapleurophococcus vearii*.

