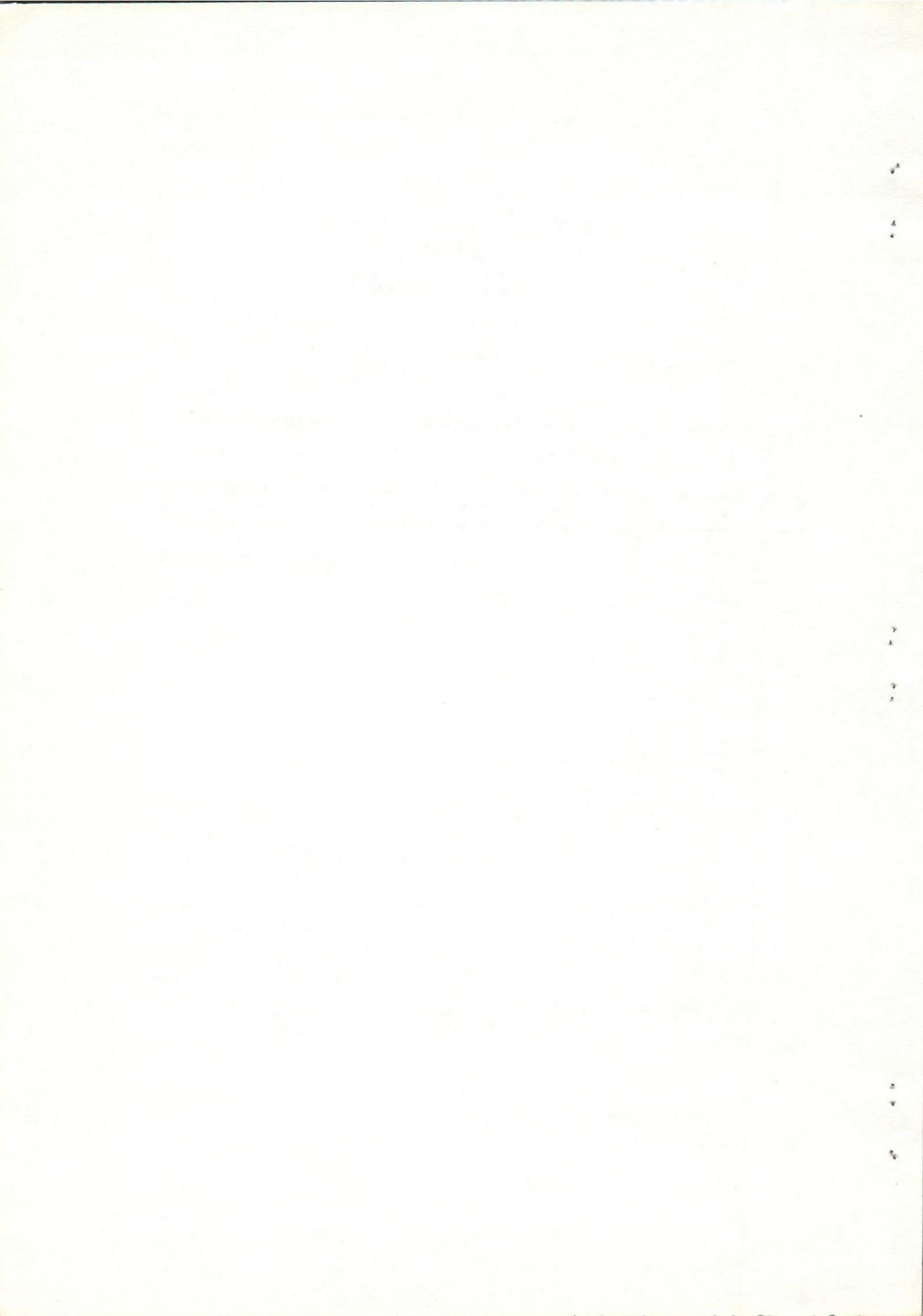


قسم : الطبفيليات والميكروبيولوجيا - كلية الطب - جامعة أسيوط  
رئيس القسم : أ.د / عماد كامل نافع

دراسة على السركاريا التي قد توجد فى قوقع ميلانيا تيويركيولاتا  
فى محافظة أسيوط  
ب. وصف نوع جديد من الزيفيد يوسركاريا

عاطف سوكلا ، رفعت خليفة

لاحظ الباحثون خروج نوع من الزيفيد يوسركاريا من قوقع ميلانيا تيويركيولاتا . وقد وصف  
الباحثان السركاريا والسبوروسيستات التي تتكون داخلها ، وتوصلا الى أن هذه السركاريا نوع  
جديد من الزيفيد يوسركاريا لم يسبق وصفه . ولكن فضل الباحثان الا يعطيا السركاريا اسما  
جديدا لأنهما يعتقدان أن دراسة متكاملة لدورة حياة أى سركاريا يجب أن تسبق وضع  
السركاريا فى موضعها الصحيح .



STUDIES ON CERCARIAE FROM MELANIA TUBERCULATA SNAIL IN ASSIUT GOVERNORATE  
II. DESCRIPTION OF A NEW XIPHIDIOCERCARIA  
(With 3 Figures)

By  
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(Received at 12/12/1981)

SUMMARY

Xiphidiocercariae were noticed to emerge from the snail Melania tuberculata. They were fully described particularly in relation to morphology and behaviour. The present cercaria was compared with other locally described forms as well as xiphidiocercariae recorded from different parts of the world, and was found to be a hitherto unknown species. However, it was not given a specific name waiting for exploration of its life cycle.

INTRODUCTION

Xiphidiocercariae were recorded from Egypt on different occasions, but owing to their difficult life cycles, they were usually given generic names with the exception of Cercaria pyramidum described by AZIM (1936) who suggested that it might be the larval stage of Lecithodendrium pyramidum, and cercaria of Lecithodendrium granulatum described by EL-NAFFAR *et al.* (1979). This work was done as a continuation of a series of studies to survey the larval trematodes inhabiting fresh water snails in Assiut Province, with an aim of relating each cercaria to its adult stage.

MATERIAL and METHODS

Cercariae were examined both in the living state as well as after fixation and staining either in acetic acid alum carmine or borax carmine. Supervital staining in weak solutions of Nile blue and neutral red was also of great help to study the excretory system and pattern of penetration glands. Measurements were taken from 20 specimens killed in moist heat. All drawings were made by camera lucida.

RESULTS

Behaviour:

Cercariae emerge from the infected Melania tuberculata snails day and night without any apparent periodicity. They appear to be indifferent for light or temperature and they are usually found in all depths of infected water. They were noticed not to encyst on vegetations or on glass or on other surrounding snails. Life span of the cercaria is 24-36 hours at room temperatures between 18-22°C. Cercariae develop in elongated sporocysts.

Morphology:

This is a medium-sized cercaria. It is greyish white in colour. Body is oval in shape, covered with thick cuticle armed with short spines which are homogeneously arranged, but they are more prominent on the oral sucker (Fig. A). It measures 231.8-280.8 U (average 250 U) in length and 97.5-109.2 U (average 101.42 U) in maximum width. Oral sucker is subterminal, slightly bigger than the ventral sucker. It measures 48.8-52.7 U (average 50.8 U) in diameter. It is provided with a sharp stylet (Fig. B) which measures 19.5-23.4 U (average 21.6 U) in length and 3.9-5.4 U (average 4.6 U) in width. Virgula is lacking. Ventral sucker is post-equatorial (Fig. A), roughly circular in outline and measures 42.9-46.8 U (average 44 U) in diameter. Distance between the two suckers is 117-125 U (average 121 U). After a short prepharynx, a small pharynx could be encountered. It measures 23.4-25 U (average 23.9 U) in length and 19-21 U (average 20 U) in width. Oesophagus and intestinal caeca are lacking. The body contains 3 pairs of penetration glands. They surround the upper half of the ventral sucker. Anterior two pairs are hyaline and non-granular while the posterior pair contains finely granular cytoplasm (Fig. A). The ducts of the penetration glands open on the tip of the oral sucker near the tip

of the stylet. Cystogenous glands are dispersed in the lateral fields of the body. Just posterior to the ventral sucker, there is an opened book-like genital primordial mass. There is a more or less spherical excretory vesicle near the posterior end of the body. Flame cell formula could not be traced due to the surrounding thick integument. The tail is shorter than the body and is attached to the latter by firm lodgement into a ventral socket. It measures 187.2-202.8 U (average 195.5 U) in length and 23.4-27.3 U (average 25 U) in maximum width.

#### DISCUSSION

EL-GINDY and HANNA (1963) described a xiphidio-cercaria from Melania tuberculata snail in Lower Egypt, while OMRAN (1973) recorded two other xiphidiocercariae from the same snail in Assiut city, Upper Egypt. All these cercariae are different from the cercaria under discussion which has different pattern and number of penetration glands, different position and shape of genital primordium, different shape of excretory vesicle and lack of a virgular apparatus supporting the stylet. EL-NAFFAR *et al.* (1979) described the life cycle of a xiphidiocercaria experimentally by infecting Melania tuberculata and showed that it is the larval stage of Lecithodendrium granulorum LOOSS, 1907. The cercaria was also reported to have a virgular apparatus which is lacking in the present material. The present cercaria is also different from Cercaria cellulosa described by LOOSS (1896) in having 3 pair of penetration glands and in being generally bigger in size. Thus it seems that the present cercaria had not been described before from Upper or Lower Egypt. It was also compared from a group of xiphidiocercariae described by WESENBERG - LUND (1932), KHAN (1961) and PROBERT (1965) from different parts of the world and it was found that the present cercaria differs in particular in the low number of penetration glands. However, the present authors stopped in their identification at the generic level, because they are of the opinion that studying the life cycle should precede any description of a new species of cercaria.

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#### EXPLANATION OF FIGURES

- Fig. (A): Camera lucida drawing of living cercaria supervivally stained with Nile blue or neutral red.
- Fig. (B): Stylet of the cercaria.
- Fig. (C): Cercaria in lateral position after fixation in 70% alcohol and staining with borax carmine.

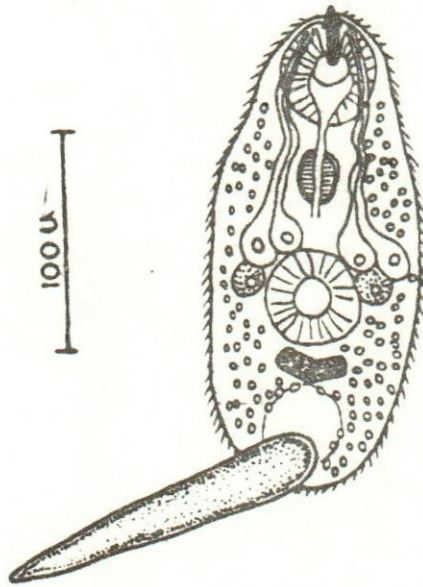


Fig. A

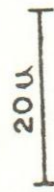


Fig. B

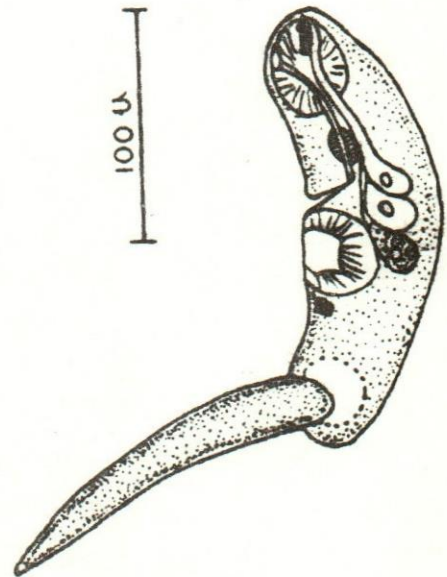


Fig. C

