قسم الطفيليات
معهد بحوث صحة الحيوان - سوهاج
رئيس القسم: د/ فوزي عبد السلام

بعض الدراسات على طفيل الميتاسكاريا المتحوطة في أسماك السلالة النيلية بمحافظة سوهاج
العدوى التجربية لصفار الحمام بولسطة الميتاسكاريا
الحياة الدورية البروزهيمستوم فيفاكس

فوزي عبد السلام، نشأت عبد المتعال، أحمد عبد الجواهري

حويصلات الميتاسكاريا الحية جمعت من أسماك مصابة بصورة كثيفة ومتوسطة من نوع أسماك السلالة النيلية المنتشر بمحافظة سوهاج. تم معرفة قدرة هذه الأطوار المتحوطة من ناحية القدرة على العدوى ونافذة الحيوية. تم أخذ نسب ثابتة من هذه الحويصلات الحية وتم استخدامها في عدوى صفار الحمام وكان متوسط نسبة الإصابة 75% ووجدت العينات صوديوم نوروبالتيتينا كان نوع واحدا تم الحصول عليه بعد أخذ النسيج المبطن للأمعاء وفحصه بعد أسبوعين من تاريخ العدوى وكانت تحتل نسب الصموم البروزهيمستوم فيفاكس.
Animal Health Research Institute,
Laboratory of Veterinary Medicines, Sohag,
Head of Lab. Dr. F.A. Abd El-Salam.

SOME STUDIES ON METACERCARIAL INFECTION IN SCHILBE MYSTIS
FRESH WATER NILE FISH AT SOHAG PROVINCE EGYPT
EXPERIMENTAL INFECTION IN SQUABS FEED WITH VIABLE
METACERCARIAE OF P. VIVAX
(With 2 Tables & One Plate)

By
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(Received at 17/8/1987)

SUMMARY

Isolated viable metacercariae were collected from a heavily
and moderately infected Schilbe mystis at Sohag province. These
metacercarial cysts were submitted to prove the viability and
the infective power. Constant number of viable metacercariae
were fed to one week old squabs. The recovery rate was 6.75%.
The digenetic trematode recovered from the intestinal mucosa
two weeks post infection is Prohemiatomum vivax, SONSINO,
1892.

INTRODUCTION

Larval parasitic fish infection to day has played a specific role in fish tissues (MAHMOUD,
1983) that hyper infection may cause functional damage when the active tissue was displaced
by the encysted parasite (JOHN, 1966) and (HAN PAPERNA, 1980). It will be obvious that
these parasites in fresh water Nile fish are more important than the parasites which are merely
attached to the fish surface (HAN PAPERNA, 1980). Fish food consumers have expressed much
hazards upon eating larval digenetic stages in the musculature of several food fishes caught
in local waters. Public health interest among these parasites localized in tissues yields to clear
the role played by these types of Nile fish in transmitting parasitic diseases through possibilities
of infection to human, animals and birds. Our studies on Schilbe mystis fresh water Nile fish
a common species in markets of Sohag province proved to be heavily infected with metacercariae
of unknown trematodes, MAHMOUD, et al. (1987). Our aim in the present work is to infect
squabs by feeding them on encysted metacercariae to recover adult worms.

MATERIAL and METHODS

A total of 70% fresh heavily and moderately infected Schilbe mystis. Fish was collected
from Sohag Province markets looking for viable metacercarial cysts. The isolated viable metacercariae
from tissues and organs were asscrted with compression technique (MORISHITA, et al.
1965) then submitted again to the digestive technique to recover the motility and viability
(HAN PAPERNA, 1980). The highly active metacercariae were picked up and fed to squabs

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of one week old (MARTIN and KUNTZ, 1955) at a rate of 100 metacercariae per squab. Faecal examination was done using sedimentation technique for samples 10 squabs (8 squabs used in experiments; 2 squabs served as control fed with parasite free ration). Eggs released in faecal samples were recovered two weeks post infection. The eggs were fixed with formal saline 10% and measured. The squabs were immediately sacrificed and the adult trematodes were recovered by intestinal mucosal membrane scraping. Recovered digenetic trematodes were fixed with formol-saline 10%, then stained with acid alun carmine, identified and drawn with the aid of camera lucida.

RESULTS

1- Experimentally isolated digenetic trematode is identified according to YAMAGUTI (1958). Prohemistomum vivax SONSINO, 1892. Plate 1.

2- Average measurements in millimeters for adult recovered from one week old squabs experimentally infected with isolated viable metacercariae. Table 1.

3- Result of feeding isolated viable metacercariae to one week old squabs Table 2.

<table>
<thead>
<tr>
<th>Family</th>
<th>Sub-family</th>
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<th>Species</th>
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<td>Cyathocotylidae</td>
<td>Prohemistomum</td>
<td>Prohemistomum</td>
<td>POCHE, 1926.</td>
<td>LUTZ, 1935.</td>
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Generic diagnosis

Body not bipartite, oval with deep ventral pouch, in which comparatively small tribocytic organ with median slit situated at middle of body. No dorso-terminal appendage. Acetabulum well developed. Testes tandem, Cirrus pouch well developed, genital pore subterminal. Ovary submedian or lateral, in zone of anterior testis. Vitelline follicles fairly large, confined to post acetabular region lateral and posterior to tribocytic organ. Parasitic in Raptatore, experimentally in cats and dogs. Genotype; Prohemistomum vivax SONSINO, 1892.

DISCUSSION

In the present work the prepatent period is more or less similar to that recovered by FAHMY, et al. (1976) who fed puppies and kittens with metacercariae. These findings indicate that the prepatent period is the same in different hosts. The adult trematodes recovered coincided with the findings of FAHMY, et al. (1976). Accordingly the change of different hosts did not affect the morphological characters of the worms. The identification was done according to systematic diagnosis by YAMAGUTI (1958). The recovery rate in the present study (6.75%) is lesser than the recovery rate (8.27%) recorded by MAHMOUD (1983). Who fed the metacercariae to cats and dogs. This indicates that the cats and dogs are the naturally suitable hosts than squabs which are not fish eaters. In addition the parasite may need more acidic fluid to grow well to the mature stage as the case with dogs and cats. Human beings may be susceptible in the same way as dogs and cats. However, human beings do not feed on raw fishes, that is why the incidence appears to be very low in human beings.

Our results explained that squabs are easily used as experimental hosts for fish parasites and more sensitive than newly hatched one day old chicks and it is the first time to use squabs as new hosts in experimental infections.

METACERCARIAE IN SCHILBE MYSTIS

In the present study, *P. vivax* is isolated from infected newly hatched squabs two weeks post-infection. This parasite morphologically coincides with the morphological characters of the parasites isolated from dogs and cats fed on different fish species (*Tilapia nilotica*, *I. zilli*, Mormyrus kannume, Schilbe mystis, Clarias lazera, Hydrocyon forskali and Alestes nurse) collected from Cairo markets (MAHMOUD, 1983). The parasites appear to have a public health significance as explained by NASR (1941) who isolated the parasite from the small intestine of man.

In new localities as Sohag province, the present authors could isolate this parasite from experimentally infected newly hatched squabs. The ecology of this parasite was studied by FAHMY, et al. (1976) who found that Cleopatra bullomds snail was a usual intermediate host for *P. vivax* since it released *Cercaria vivax* which encysts in the tissues of the fresh water fish in Upper Egypt.

REFERENCES


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Schlumberger 1 squared Number

Results of feeding Helostia viridescens to one week old nymphs

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<td>Epg (0.207 - 0.266)</td>
<td>Oval in shape, yellow in colour, large in size, apareccribed.</td>
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<td>Average measurements in millimeters for males recovered from one week old nymphs</td>
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Table (1)
Plate 1 - Prohemistomum vivax (Sonsino, 1892)