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DIGENEANS INFECTING THE STRIPED RED MULLET (*MULLUS SURMULETUS*) FROM EGYPT

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ABSTRACT

Palaeocryptogonimus alexandrinus n. sp. was described from the striped red mullet, *Mullus surmuletus* (Mullidae), from the Mediterranean Sea at Alexandria, Egypt. It differs from the only known species of the genus, *P. claviformis*, by having a terminal oral sucker, a smaller ventral sucker, smaller testes, larger suckers –ratio, and an elongate body pointed posteriorly. *Hurleytrema pyriforme* Overstreet, 1969, *Proctotrema pritchardae* Nahhas and Cable, 1964 and *Anisocladium fallax* (Rud., 1819) Looss, 1902 were reported from the same host and the same locality, both are new to the three species.

INTRODUCTION

The striped red mullet *Mullus surmuletus* (Mullidae) is considered a very important economic marine fish in Egypt. This species is carnivorous, feeding on crustaceans, snails and other fish fry. Consequently, it is more exposed to infection by digenetic trematodes than other marine fish, and is therefore selected for the present investigation. The aim of the present investigation is to extend our knowledge about the distribution of the digeneans infecting red mullets in the Egyptian Mediterranean, and to describe *Palaeocryptogonimus alexandrinus* n. sp.

MATERIAL AND METHODS

Several adult fishes of the striped red mullet *Mullus surmuletus* were caught from the Mediterranean Sea at Alexandria, Egypt. They were examined for digeneans inhabiting the intestine as soon as possible. Trematode worms were left to relax, flattened then fixed in warm 70% alcohol or 5% formaline. The parasites were then stained using aceto-alum carmine stain. Drawings were made to the scale using a Camera Lucida. Measurements are in millimetres, unless otherwise stated. The identification of worms is made according to Yamaguti (1971). The methods followed in collection, fixation, staining, clearing and mounting are described in Al-Bassel (1990).

RESULTS AND DISCUSSION

In the present investigation species from four digenetic trematode genera were found infecting the striped red mullet (*Mullus surmuletus*). It is worth mentioning that no single, double, or triple infections with these digeneans were reported in the present work, but quadruple infections (with the four species). It has been always assumed that related hosts are infected with related members of the parasitocoeinosis (Dogiel, 1962). The validity of this assumption has been studied in Red Sea fishes (Saoud and Ramadan, 1983). The digeneans involved in the present study are:

1) *Palaeocryptogonimus alexandrinus* n. sp. (Figs. 1,2,3&4).

The following description is based on 10 specimens. The body is slender, spinulate, tapering posteriorly, 2.66-2.94 X 0.62-0.72. Oral sucker funnel-shaped, 0.16-0.21 X 0.32-0.38. Perpharynx short, 0.06-0.08. Pharynx well developed, 0.12-0.15 X 0.14-0.17. Ventral sucker smaller than the oral, 0.10-0.12 in diameter. Suckers ratio 1.75-2.10 : 1. Caecae long, each 1.60-1.70 long.

The testes are diagonal and elongate. Anterior testis 0.22-0.24 X 0.11-0.14. Posterior testis 0.26-0.28 X 0.11-0.13. No cirrus pouch or cirrus. Genital pore in front of ventral sucker. Seminal vesicle bipartite; each part 0.10-0.12 long (Fig. 2). The ovary is small, median, pretesticular and deeply branched, 0.12-0.14 X 0.13-0.16. Uterus voluminous. Genital atrium tubular and small. Vitellaria are a tree-like structure and lie in a lateral field between the ventral sucker and oral sucker. Excretory vesicle succular, 0.60-0.72 in length and ending by a subterminal excretory pore. Eggs (Fig. 3) very small, numerous, each 10-15 μ m long and 6-8 μ m wide.

The genus *Palaeocryptogonimus* (Ward, 1917) (Cryptogonimidae) was established by Szidat (1954) with *P. claviformis* as the type species, from *Rhinodoras dorbignyi* in Argentina. *P. alexandrinus* differs from the only known species, *P. claviformis* Szidat, 1954 by having a funnel-shaped terminal oral sucker (not rounded and subterminal); caecae ending at the last one-fourth of the body (at the middle one-third in *P. claviformis*); testes small (moderately large in the former); body pointed posteriorly (broad posteriorly); ventral sucker large (small in *P. claviformis*).

The author finds the above differences sufficient to designate *P. alexandrinus* as a new species. The holotype and paratype of this species were deposited in the Department of Zoology, Faculty of Science, Fayoum Branch, Cairo University.

2) *Proctotrema pritchardae* Nahhas&Cable,1964 (Monorchiidae) (Figs. 5,6&7)

The genus *Proctotrema* was founded by Odhner,1911 with *P. bacilliovatum* from *Mullus barbatus* in Triest as the type species. Nahhas&Cable (1964) described *P. pritchardae* from *Haemulon album* from Jamaica. Fischthal and Thomas (1969) added *P. amphitruncatum* from *Pomadasy jubelini* in Ghana.

The present specimens agree with the original description in all characteristics, but the present report extends the range of infection to *Mullus surmuletus* as a new host and Egypt as a new locality.

3) *Hurleytrema pyriforme* Overstreet, 1969 (Monorchiidae) (Figs. 8,9&10).

The genus) *Hurleytrema* Srivastava,1939 was established by Srivastava (1939) with *H. ovocaudatum* from *Teuthis margaritifera*, from the Arabian Sea, as the type species. Bravo-Hollis (1956) added *H. longitestis* from *Gitula dorsalis* in Sinaloa. Overstreet (1969) described *H. pyriforme* from *Trachinotus falcatus* from Florida.

The present material is similar in the main characteristics to *H. pyriforme* Overstreet,1969 from *Trachinotus falcatus* from Florida. *Mullus surmuletus* is presented here as a new host and Alexandria, Egypt, as a new locality record for this species.

4) *Anisocladium fallax* (Rud,1819) Looss, 1902 (Acanthostomidae) (Figs. 11,12,13 &14). Syn. *Anisogaster fallax* Looss,1901.

The genus *Anisocladium* was established by Looss (1902) with *A. fallax* (Rud., 1819) Looss, 1902 from *Uranoscopus scaber* in the Adriatic Sea as the type species. *Anisocladium gracile* (Looss,1901) Looss, 1902 is another species recorded only from the same host in Triest and the Black Sea.

The present material is similar to the specimens described by Looss (1902) from *Uranoscopus scaber* in Adriatic Sea. The Egyptian Mediterranean is a new locality and *Mullus surmuletus* is a new host.

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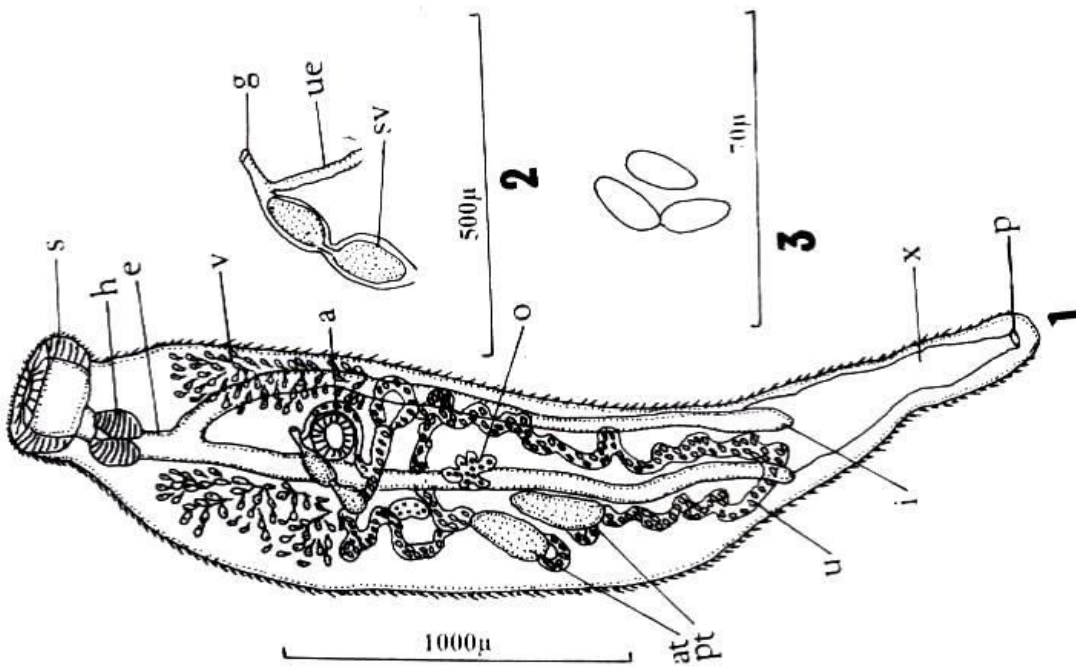
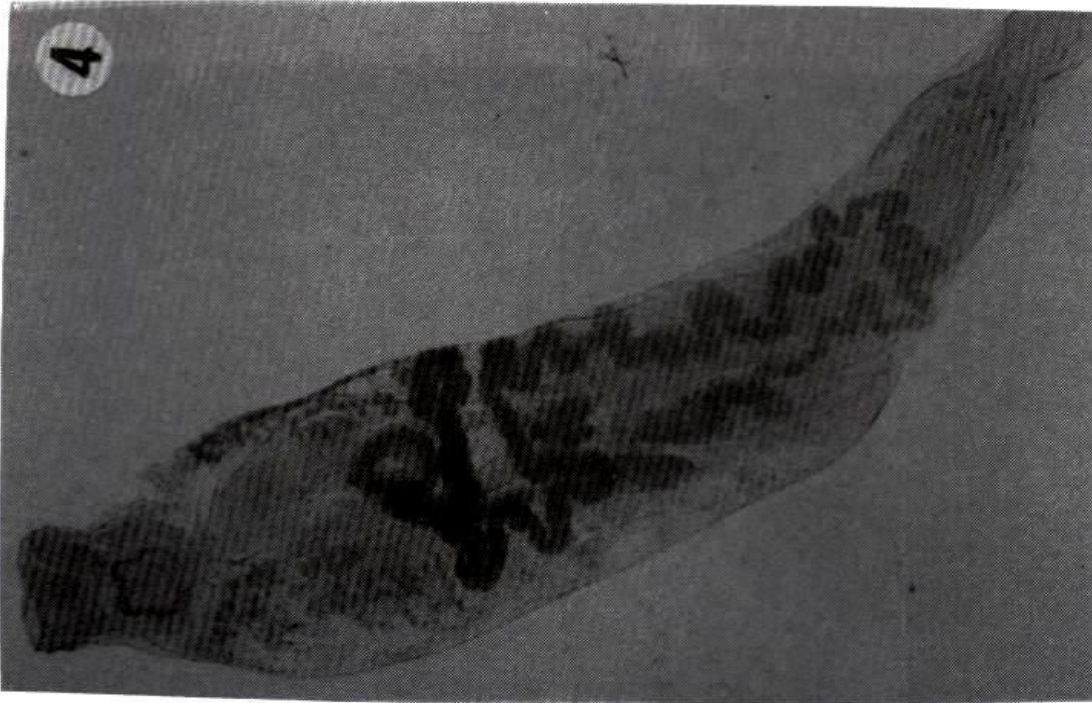
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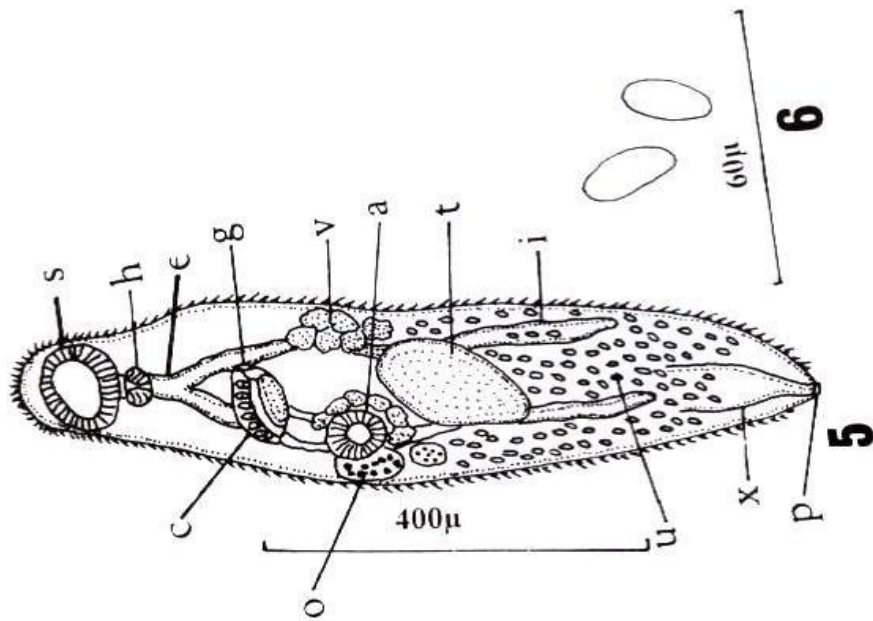
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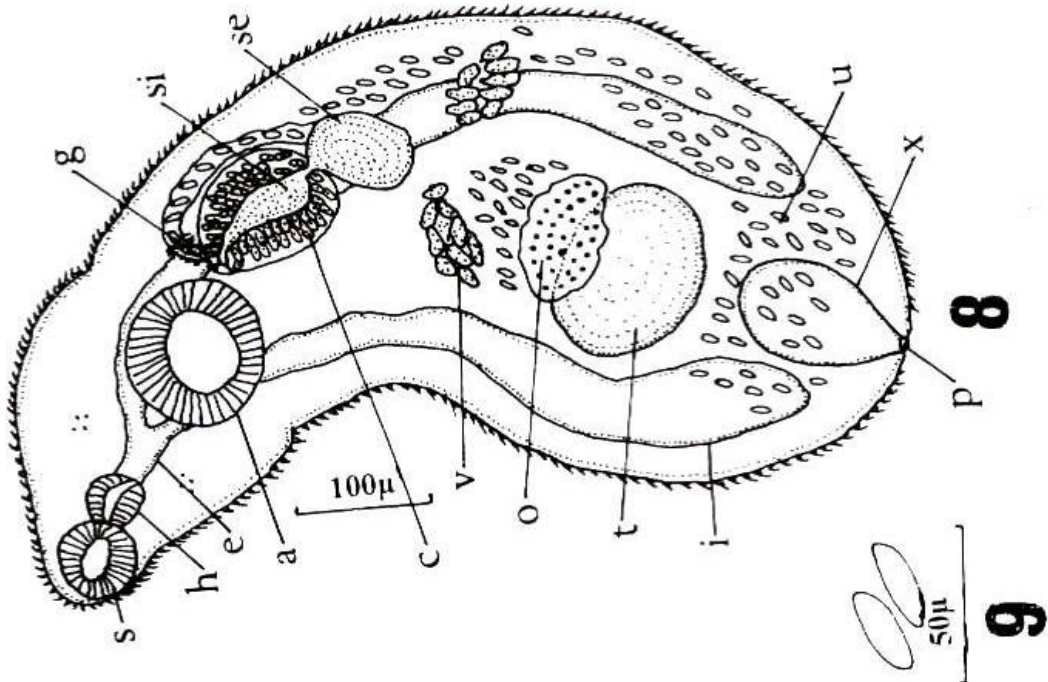
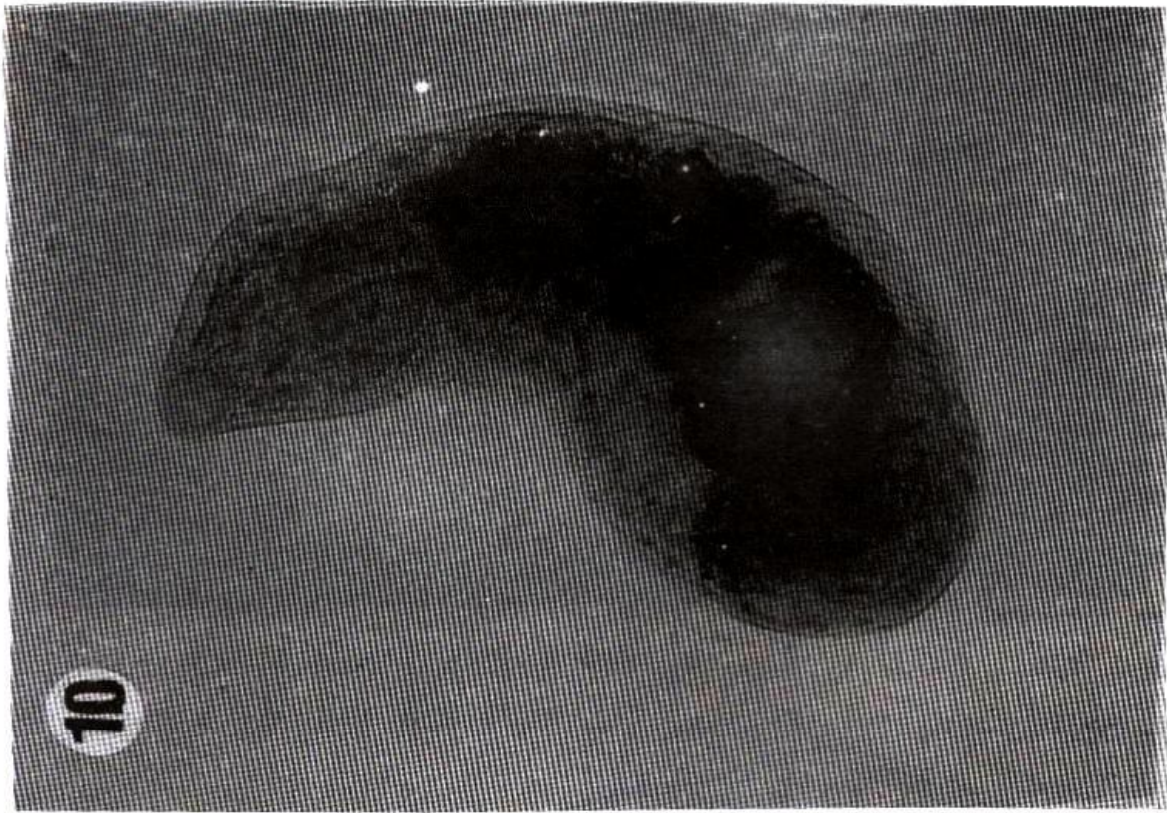
EXPLANATION OF FIGURES

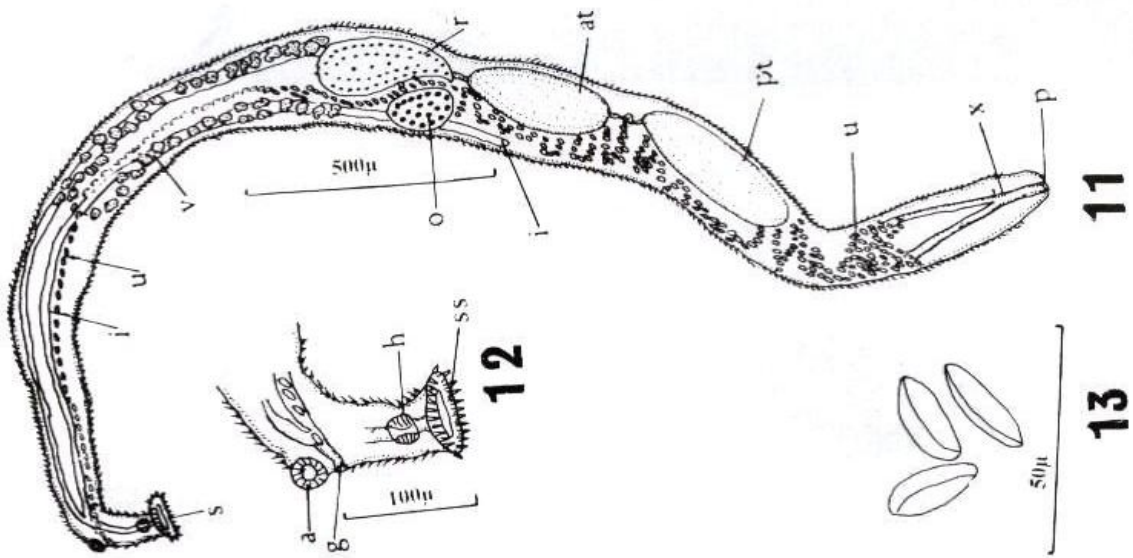
- 1) *Palaeocryptogonimus alexandrinus* n. sp. entire worm (ventral view). (2) Terminal genitalia (3) Eggs (4) Photo to show ventral view.
- 5) *Proctotrema pritchardae* Nahhas&Cable, 1964 entire worm (ventral view) (6) Eggs (7) Photo to show ventral view.
- 8) *Hurletrema pyriforme* Overstreet, 1969 entire worm (ventral view) (9) Eggs (10) Photo showing ventral view.
- 11) *Anisocladium fallax*, (Rud,1918) Looss,1902 entire worm (ventral view) (12) Anterior end showing oral spines (13) Eggs (14) Photo showing ventral view.

S, Oral sucker; h, Pharynx; e, Oesophagus; g, genital pore; c, Cirrus pouch; v, Vitellaria; a, Acetabulum; o, Ovary; t, Testis; u, Uterus; x, Exceytery bladder; p, Excretory pore; i, Intestine; ue, Metraterm; sv, Seminal vesicle; at, Anterior testis; pt, Posterior testis; ss, Oral spines.









**تريوماتودا ثنائية العائل متطفلة على سمكة البوري الاحمر
(مياس سيرميوليتس) من مصر**

ديبومر عبد الحميد الباسل

قسم علم الحيوان- كلية العلوم بالفيوم- فرع جامعة القاهرة

تم وصف نوع جديد، *باليوكربتوجونيمس الكسندينس*، من أمعاء سمكة البوري الأحمر (*مياس سيرميوليتس-ميايدي*) من البحر المتوسط بالاسكندرية في مصر. ويختلف النوع الجديد عن النوع الوحيد المعروف من هذا الجنس (*باليوكربتوجونيمس كلايفورمس*) باحتوائه على ممص في طرفي وممص بطني صغير مع صغر في حجم الخصيتين وكبير النسبة بين الممصين مع استطالة في الجسم ونهاية مستدقة للطرف الخلفي. كما تم التعرف على ثلاثة انواع اخرى: *هيرليترما بيرفيورم*، *بروكستوترما برينشاردي*، *انيزوكلايم فالكس*. وهذه الانواع الثلاثة تسجل لأول مرة من هذا العائل وهذا الموضع الجغرافي.

المجلة المصرية لعلم الحيوان

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يونيه ٢٠٠٢

دورية علمية تصدر عن جمعية علم الحيوان بجمهورية مصر العربية