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The First Record of *Philometra lateolabracis* Yamaguti, 1935 (Nematoda: Spirurida; Philometridae) from teleost fishes of the Arabian Gulf

By
Mahmoud M. Kardousha
Department of Biology, Faculty of Science,
University of Qatar,
P.O. Box 2713, Doha, Qatar

أول تسجيل لطفيل فيلومترا لاتيولبراكس ياماجوتني 1935 (نيماتودا: سبيروريدا، فيلومتريدي) من الأسماك العظمية في الخليج العربي.

محمود محمود كردوشة
قسم العلوم البيولوجية – كلية العلوم – جامعة قطر – الدوحة – قطر ص. ب : ٢٧١٣

يعتبر طفيل فيلومترا لاتيولبراكس (ياماجوتي 1935) من الطفيليات الخيطية الشائعة بين أسماك الخليج العربي حيث يتواجد في مبايض الأسماك في كل حالات الإصابة. وقد جمعت عينات هذا الطفيل من مبايض ثمان أنواع من الأسماك الشائعة هي: البياح، الهامور، السمان، العصابة، الخوفعة، الكاسور، النيسر وأخيراً أسماك الكنعد وكان أعلى معدل للإصابة في النوع الأخير (20٪). ومما لاشك فيه أن وجود هذه الطفيليات الخيطية في داخل مبايض الأسماك يتسبب في ضمورها ويؤثر على خصوبتها وإنتاجيتها. ومما هو جدير بالذكر أن هذا الطفيل يسجل للمرة الأولى في منطقة الخليج العربي بالإضافة إلى أن الأسماك المذكورة – ما عدا الهامور – تعتبر عوائل جديدة لهذا الطفيل.

Key Words: Fish parasites, Nematoda, Spirurida, *Philometra*, Arabian Gulf

ABSTRACT

Philometra lateolabracis Yamaguti, 1935 was collected from the ovaries of *Liza macrolepis* (Mugilidae), *Epinephelus tauvina* (Serranidae), *E. areolatus* (Serranidae), *Trichiurus haumela* (Trichiuridae), *Psettodes erumei* (Psettodidae), *Saurida tumbil* (Synodontidae), *Lutjanus johni* (Lutjanidae) and *Scomberomorus commersoni* (Scomberidae). Fishes were caught mainly from coasts of the United Arab Emirates on the Arabian Gulf. The maximum prevalence was found among *Scomberomorus commersoni* (20 %). All hosts, except *E. areolatus*, represent new host records.

INTRODUCTION

Philometra lateolabracis Yamaguti, 1935 is a tissue parasitic nematode of teleost fish and is commonly known as fish filaria [1]. It is usually found in the ovaries of the host and also in other sites of the body. Yamaguti [2] described *P. lateolabracis* from *Lateolabracis japonicus* and *Epinephelus akaara* from Japan and synonymized the genera *Ichthonema* (Diesing, 1861) and *Sanguinofilaria* (Yamaguti, 1935) with it. Rasheed [3] revised the genus *Philometra* Costa, 1845 and described *P. lateolabracis* from *Otolithus ruber and Hemisphamphus georgi* from the Arabian sea, Indian Ocean. Schmidt and Kuntz [4] reported the same species from *Cephalopholis* sonnerati at Philippines. Rees [5] recorded *P. lateolabracis* during his survey at Bermuda from *Myceteroperca bonaci* while Crisp and Klein [6] reported the same species from *Otolithus ruber* in Brazil. Another report was provided by Parukhin [7] from *Epinephelus areolatus* from coasts of Oman and later *Moravec et al.* [8] described three species of nematodes from mullid fish *Parupeneus indicus* near Somalia and reported *P. lateolabracis* also from gonads. Some nematodes were described from the Arabian Gulf [9, 10, 11], but no information was available concerning *P. lateolabracis*.

MATERIALS AND METHODS

During a comprehensive survey on the helminth parasites of 40 species of economically important fishes from 1986 up to 1993 , 8 species of fish were infected with a very conspicuous nematode inside the ovaries. The fish specimens were caught off the United Arab Emirates coastal waters. The nematodes were fixed in hot 70% ethyl alcohol, cleared in lactophenol and investigated directly without staining. Drawings were made with the help of a Leitz drawing tube. All measurements are in millimeters unless otherwise indicated. The name of each host followed by the number examined and prevalence are given in parentheses. The following description is based on the examination and measurement of 10 specimens.

RESULTS

Philometra lateolabracis Yamaguti, 1935

(Figs. 1 to 6)

Hosts and Location

All specimens were collected only from ovaries of Liza macrolepis (60, 10%), *Epinephelus tauvina* (50, 4%), *E. areolatus* (45, 15%), *Trichiurus haumela* (50, 8%), *Psettodes erumai* (60, 5%), *Saurida tumbil* (75, 15%), *Lutjanus johni* (40, 8%) and *Scomberomorus commersoni* (30, 20%).

Description

Only gravid females were observed in the ovaries of fish. The parasitized ovaries presented dark red coloration and through the semi- transparent ovarian walls some of the coils of the parasite within could be seen (Fig. 5). Each female has an elongated and slender body, being reddish to dark brown in color (Fig. 4). The dark brown structure inside the worm represents the intestine. Total length ranging from 335 upto 460 with width 1.2 to 1.5. One host ovary can harbor two worms inside which their coils filling most of it (Fig. 5). Many atrophied parts of the ovary can be seen. Cuticle smooth. The rounded anterior end has a simple circular mouth without lips (Fig. 1A and 2). The posterior end also rounded with an atrophied sub terminal anus (Fig. 1B and 3). Three oesophageal lobes are protruding out of the mouth as a flat surface. Oesophagus is narrow, swollen near mouth prior to the nerve ring forming a distinct muscular bulb which measures 0.044 to 0.052 in width. Posterior to nerve ring the oesophagus is narrow with two sides, one is muscular while the other is glandular (Fig. 1A). Entire length of oesophagus is 0.65 - 0.82 with width 0.033 - 0.045. Following the oesophagus is a small ventriculus which is followed by a dark brown straight intestine which is displaced laterally by the gravid uterus. Vagina and vulva are absent. The ovaries are two, each situated in both ends of the worm. The anterior ovary reaches the middle of oesophagus while the posterior one extends to a level of 0.26-0.32 from the posterior extremity. Since this worm is viviparous, the uterus occupies the major part of

the body cavity and is filled with large number of eggs and slender shaped larvae in different developmental stages. The young larvae varyies in length from 0.42 to 0.54 (Fig. 6).

DISCUSSION

Features of the specimens described above, particularly the smooth cuticle, shape and structure of oesophagus, absence of lip-like structure, uterus nature, location of ovaries and atrophied anus place them in the genus *Philometra* Costa, 1845. They can be identified as *P. lateolabracis* Yamaguti, 1935 following the descriptions given by Yamaguti [2] and Moravec *et al.* [8] who collected the same species from gonads of *Parupeneus indicus* near Somalia (Indian Ocean).

P. lateolabracis has a wide distribution mainly in the tropical region of the Pacific [2, 4], Atlantic Ocean [5, 6, 12] and Indian Ocean [3, 7, 8]. Moreover, it infects a variety of perciform fish. In the Indian Ocean, the hosts *Epinephelus areolatus, Otolithus ruber, Hemisphamphosis georgi* and *Parupeneus indicus* have been recorded harboring this viviparous nematode in their gonads. As previously pointed out, Parukhin [7] reported the presence of P. lateolabracis from the serranid fish *Epinephelus areolatus* from Gulf of Oman. In the present study the same host was also infected. Moreover, *Liza macrolepis, Epinephelus tauvina, Trichiurus haumela, Psettodes erumei, Saurida tumbil, Lutjanus johni* and *Scomberomorus commersoni* are new host records for *P. lateolabracis* and the geographical distribution of the species is extended to the Arabian Gulf. The presence of the parasite in the gonads is undoubtedly harmful to the host fish. The major parts of the ovaries except for the apical region in some cases become atrophied.

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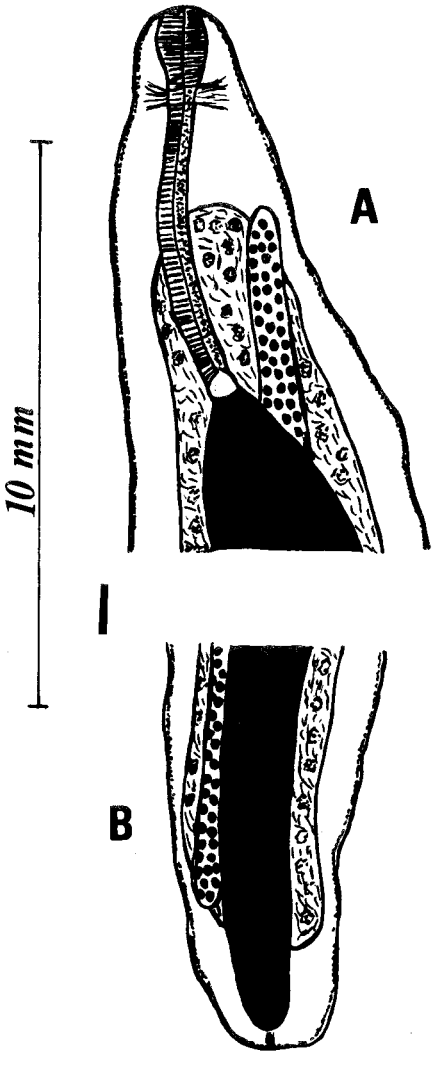
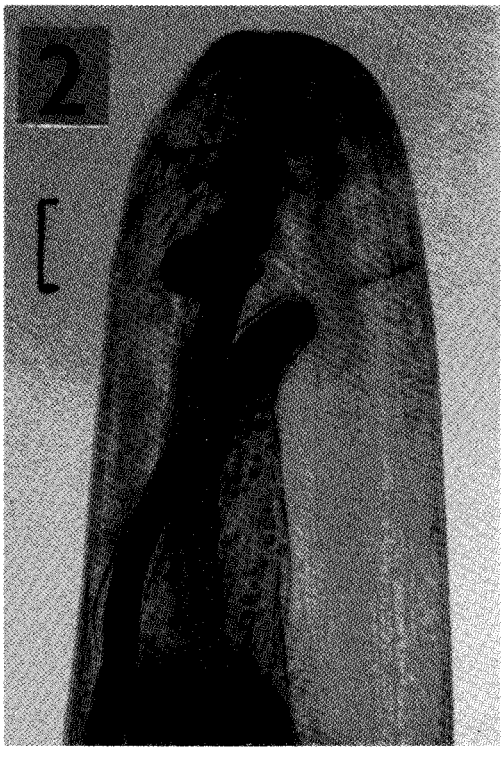


Fig. 1 (A and B). Drawings of *Philometra Lateolabracis* anterior and Posterior ends respectively.

A. Anterior end showing the oesophogeal bulb, muscular and glandular sides of oesophagus, small ventriculus and intestine. A part of anterior ovary and the gravid uterus with larvae can be seen clearly.

B. Posterior end showing the end of intestine with atrophied anus. A part of posterior ovary and the uterus can be seen.



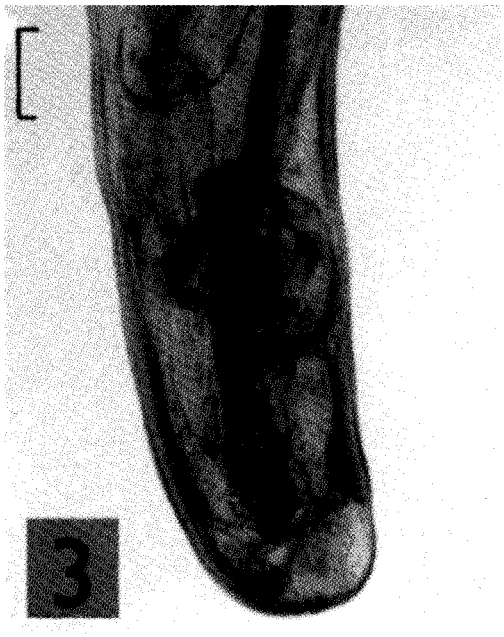
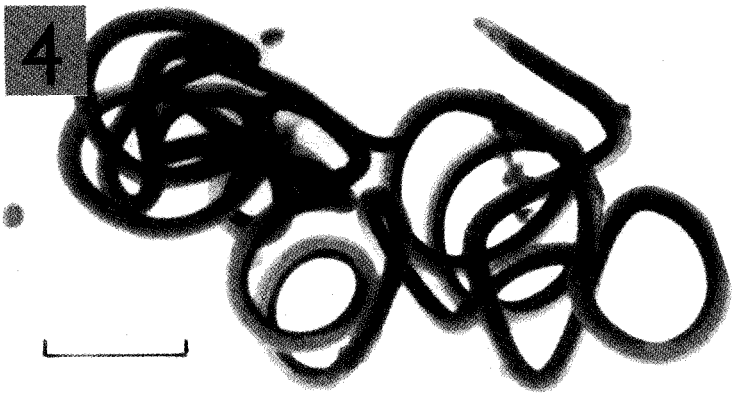


Fig. 2. Anterior part of P. *lateolabracis*. Scale bar equal 1 mm.

Fig. 3. Posterior part of P. *lateolabracis*. Scale bar equal 1 mm.



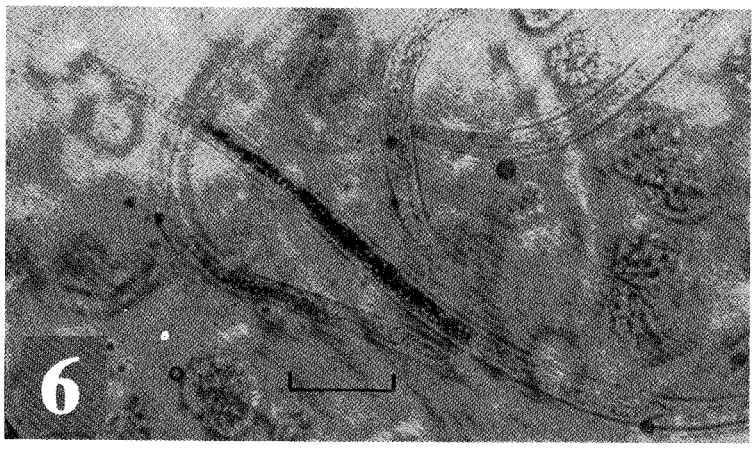


Fig. 4. The entire worm of P. *lateolabracis* dissected out from infected ovary of the *Liza macrolepis*. The two blunted ends and the dark intestine are clearly obvious. Scale bar equal 2 mm.

Fig. 5. An infected ovary of *Liza macrolepis* dissected out revealing 2 worms inside. One of them can be easily seen from outside.

Fig. 6. Different stages of larvae development inside the gravid uterus. The scale bar equal 0.05 mm.