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ISOLATION OF PINWORM *Aspiculuris tetraptera* (NITZSCH, 1821) FROM LABORATORY MICE IN BASRAH GOVERNORATE

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عزل الدودة الدبوسية *Aspiculuris tetraptera* (Nitzsch, 1821) من الفئران المختبرية في محافظة البصرة

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الخلاصة:

تم خلال هذه الدراسة عزل (٦٣) دودة خيطية من منطقتي القولون والأعور في الفئران المختبرية المتواجدة في البيوت الحيوانية المخصصة لطلبة الدراسات العليا في (Balb/ c) *Mus Musculus* كليتي التربية والطب البيطري في جامعة البصرة.

تم تصبيغ الخيطيات المعزولة بصبغة الكارمن الحامضية، ثم آخذت قياساتها (الطول، العرض وقياسات البيوض). تم اعتماد الكتب التصنيفية الخاصة بذلك بالرجوع للصفات المظهرية والتشريحية. لوحظ بأن هذه الخيطيات تعود تصنيفياً الى نوع من الديدان الدبوسية هي *Aspiculuris tetraptera*، يعتبر هذا التسجيل الأول على نطاق محافظة البصرة لهذا الطفيلي من الحيوانات المختبرية.

ABSTRACT:

A total of (63) nematodes worms were isolated from the cecum and colon of laboratory mice (Balb/ c) *Mus Musculus* which cultured in animals house in both college of Education and college of Veterinary Medicine at Basrah university.

These isolated nematodes were stained and cleared, then measured (length, width, ova). Later, classified and compared with many scientific books in taxonomy, then related that these nematodes are *Aspiculuris tetraptera* as a first record of this parasite in laboratory mice at Basrah governorate.

INTRODUCTION:

Nematodes are the roundworms and the nematodes that parasitizing wild mice and rats are the Oxyurids, commonly called pinworms. Syphacia

obvelata, Syphacia muris and Aspiculuris tetraptera are the species that infect them both (1).

(2, 3, 4, 5) Founded that these pinworms above are commonly infected laboratory animals and make a persistent problem of well- managed animal's colonies.

The pinworms life cycle is direct, adult worms inhabit the colon and cecum, eggs are shed in the feces in *A. tetraptera*, or deposited on the perianal region of the rodent in *S. obvelata and S. muris*. Eggs are very light and aerosolize easily, facilitating infection and embryonated eggs are ingested, so, resulting infection (6, 7).

Infection are usually subclinical, rectal prolepses, intussusceptions, fecal impaction, poor weight gain and rough coat have been reported in heavily infected rodents, furthermore, heavy parasites loads may lead to catarrhal enteritis, liver granulomas and perianal irritation (8).

The present study reports the necropsy findings in laboratory mice from animal houses at Basrah University, and is under taken the distribution and morphology of nematode *A. tetraptera* as a first record in Basrah governorate.

MATERIALS & METHODS:

A total of (20) laboratory mice (Balb/ c) *Mus Musculus* were necropsied for intestinal parasites investigation which taken from animals house in both college of Education and college of Veterinary Medicine at Basrah University.

Sixty three nematodes isolated from mice and stained by acetocarmine stain, others were putted with lactophenol.

The measurements of these nematodes were taken by camera Lucida at college of Education/ University of Basrah. A taxonomical comparison was taken depending on (9, 10).

RESULTS:

- Description of samples:

Morphometrics (based on 20 specimens, 10 males and 10 females), small round worms white when alive.

- Measurement of samples:

The mean length of males and females were varied between (2.5- 3.0 mm, 3.0- 3.5 mm) respectively. While, the width were (1.75 mm, 2.45 mm) in both males and females.

Ova were measured and found that the length and width varied between (72- 90 X 35- 50 µm).

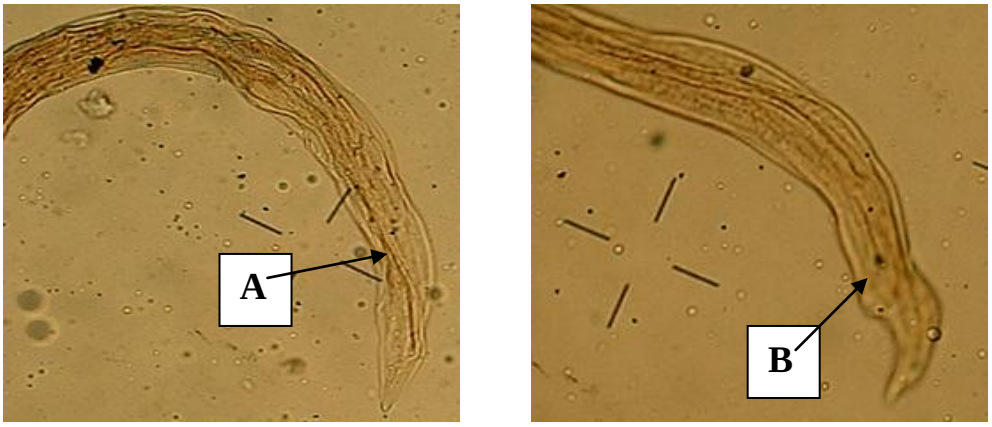
Esophagus with bulb at both sexes, the distance between nerve ring and anus from the anterior end in males were (1.25 mm and 1.86mm) respectively, while, the cloacae aperture from the posterior end were found (1.72 mm).

In female the distance between nerve ring and excretory pore (2.15 mm) and (2.36 mm) from anterior end respectively. By the other hand, the distance between vulvas from anterior region was (1.5 mm) and the distance between anus and posterior end were (1.86 mm).

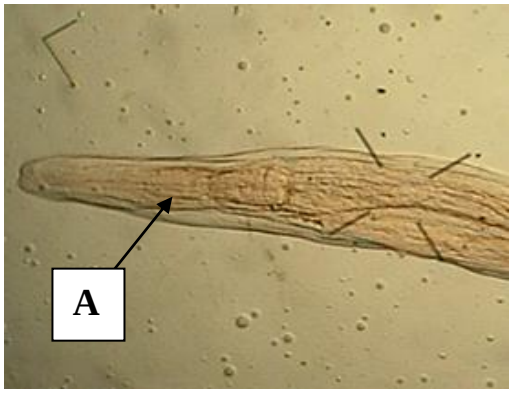
In picture (1) ova were not fully embryonated, morphologically this ova was similar with ova of *E. vermicularis*. In picture (2) male with posterior end with a single spicule, slender and gubernaculums.

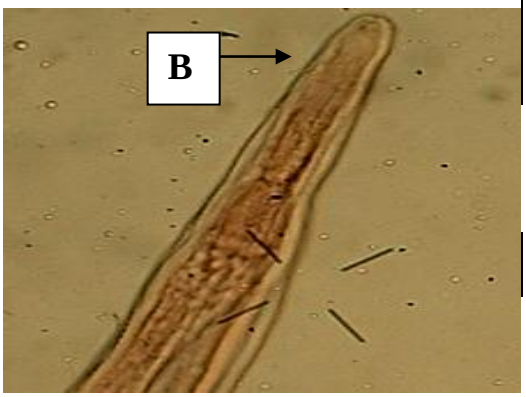
In pictures (3, 4) female with anterior end with clear pharynx and lips. and Female with posterior end found in picture (5),

Picture (1): Unembryonated ovum of *Aspiculuris tetraptera*.



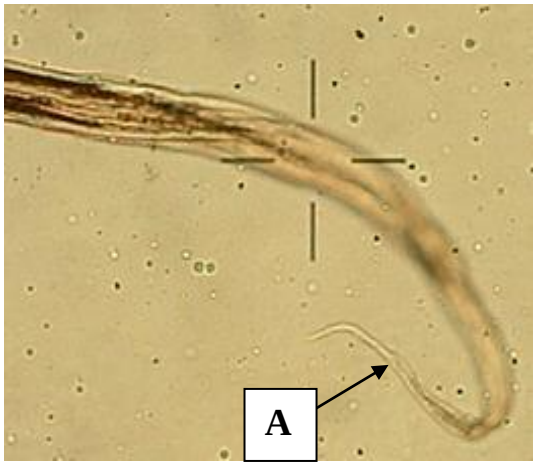
Picture (2): The posterior end of male *Aspiculuris tetraptera*, (A) with single spicule and (B)gubernaculums.

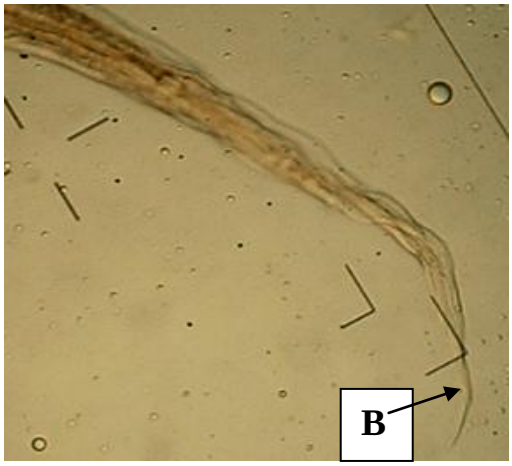




(3) **(4)**

Pictures (3, 4): The anterior end of *Aspiculuris tetraptera* with clear pharynx (A) and lips (B).





Picture (5, 6): The posterior end of female *Aspiculuris tetraptera* with clear spine (A, B).

DISCUSSION:

Experimental animal models maintained in laboratories are subject of concern, considering the role they play in the evaluation of biological parameters in the different fields of scientific research. Taking this into account and depending on the assay under development (11). So, the presence of nematode in these hosts, for example, must be regarded as a restricting factor for the proper attainment of experimental protocols.

Under this study the result showed that even laboratory animals can infected accidentally with helminthes (cestodes, nematodes) and this infection came from wild animals (mice, rats) which contact with laboratory animals at animal houses. So, these parasites if undetected may significantly interfere with the experimental settings and alter the interpretation of final results, even these nematodes harmless but the interfere event.

In Iraq generally and Basrah governorate especially there were a few studies on laboratory animals and parasites inside these animals, although, hundred of post graduate student were used these animals for researches in many biological fields.

(12) Observed both *S. obvelata* and *A. tetraptera* in outbreed and inbred mice, while, (13) reported a competition but not related to the habitat since the site of infection of *S. obvelata* in the cecum, while, *A. tetraptera* mainly in the colon.

The distribution of the nematode in the present study agrees with previous data (5, 14), while, the description and measurement of these nematodes agrees with (11, 13).

(15) Founded that *S. obvelata* is a high frequency infection of laboratory mice and rodent as compared with *A. tetraptera*. By the other hand, (5) reported that there was a high effect of moxidectin at dose 0.2 mg/ kg against *A. tetraptera* in laboratory animals.

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