

Isolation of Pinworms from Laboratory Mice and abiurgaRATS of Basrah City

Suhair. R. Al-Adreesi

Dr. Suzan A. Abed Al-Azizz

Nadia. N. Thamer

Collage of Veterinary Medicine

University of Basrah

Abstract:

a total of (50) laboratory animals which divided into: (30) male and female mice (Balb/c) and (20) male and female rates (*Rattus rattus*) were dissected from animal house at both of Biology Department /Collage of Education and Collage of Veterinary Medicine in Basrah university from the period (2004-2006).anon

The dissected animals most of them showed a heavy nematodes infection in there intestine, this nematodes were staining with Kojarat solution, stain then, diagnosis and classify as *Syphacia obvelanta*. These nematodes were recorded as a first time in Basrah governorate.

Introduction:

The nematodes that infect mice and rats are Oxyurids, commonly called pinworms. There are *Syphacia obvelata*, *Aspicularis teraptera* and *Syphacia muris* that infected them both (1).

The host species of *Syphacia obvelata* mainly mice and has also been reported to infect human (2).

This parasite has a direct life cycle which requires only 11-15 days. The gravid females deposit their eggs in the perianal region, so, the eggs become infections within 6 hours by three possible infection routes: 1. direct by ingestion of embryonated eggs from the perianal region. 2. indirect by ingestion of food or water contaminated with embryonated eggs. And 3. Retoinfection when eggs hatch in the perianal region and the larvae migrate back into the colon by way of the anus (3).ini

Syphacia muris, the common pinworm of mice and rats were proposed by Yamaguti (1935) as *Enterobius muris* recovered from rats, which based on female specimens and was compared with *Entrobis vermicularis* considering their similarities, while, later investigations related and changed the original allocation to the genus *Syphacia* seurat in a new combination accepted(5).

The worldwide distribution and previous results on the prevalence of *S. muris* in laboratory and wild rats showed the worm burdens have been considered and the zoonotic importance emphasized taking into account that it may accidentally infect many by contamination of food with faces of infected marine hosts (6).

The present approach adds a new information to this parasite and is rated to the comparison of worm burdens in laboratory rats and mice from institutional animal houses at university of Basrah (collage of Education and collage of Veterinary Medicine) as well presents the first case report

on *S. obvilata* in Basrah city which is not reported before in this region.

Materials and methods:

A total of randomly (50) laboratory animals were killed which divided into: 30 mice (Balb/c) and 20 rats (*Rattus rattus*) were taken from culture of laboratory animals house from both animal house in Education and Veterinary Medicine Collages / Basrah University from the period (2004-2006).

Rats were killed or accidentally died from both houses taken, then, dissected and the alimentary tract were opened lengthwise in Petri dish contain normal saline. Nematodes worms were isolated in small vials with 10% formalin, later, worms were staining with Kojarat solution stain, while, some of worms were putt directly with lactophenol. After that worms were measured with ocular and compared the measurements with (5) for classification.

Results:

Measurements of worms:

The measurements of nematodes showed that the mean of eggs size were (89.9 μm) length and (38.73 μm) width. The mean of length and width of female's worms were found to be (4.25 mm) and (1.73mm) respectively, as compared with male which found (3.43mm) and (1.15mm) for both length and width.

The mean distance between anterior region of female body and nerve ring were found (1.68 mm), while the mean distance between anterior region of female body and genital pore were (1.71mm) and (6.09 mm) for the distance between anus till end body of female. Comparing with male which found (1.41mm) and (1.88mm) respectively.

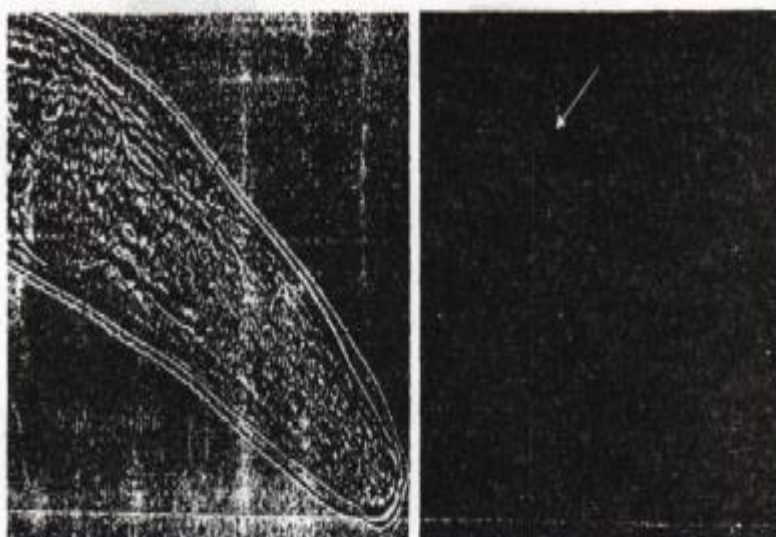
Description of worms:

The general diagnosis of worms shows that a clear cervical alae and mouth with three distinct lips in the anterior region, while, the buccal capsule absent, also, esophagus with a pharynx a prebulbar swelling and distinct posterior bulb contain a valvular apparatus (picture: 1: A and B).

Male with 2-3 mamelons on ventral surface as compared with a female which absent (picture: 2: A and B).

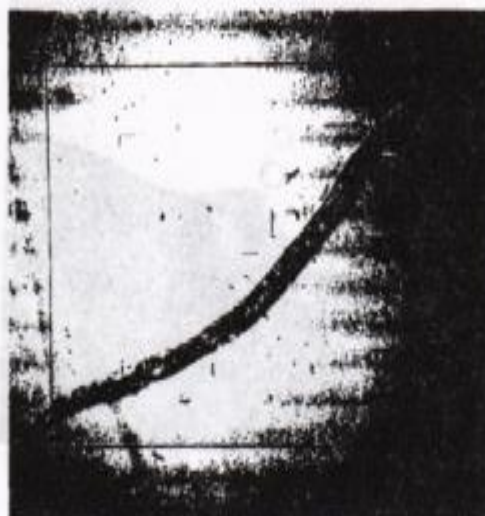
Female with long tail (picture: 1: C), vulva in anterior region found posterior to excretory pore (picture: 3).

The posterior end of male bent ventrally with a narrow caudal alae supported by a pair of large pedunculate postanal papillae, furthermore, a two pairs of sessile papillae present near a cloacae with spicule which single and slender without gubernaculum (picture: 5: A and B). Eggs a symmetrical which contained ova not yet fully embryonated in utero (picture: 6: A, B and C).

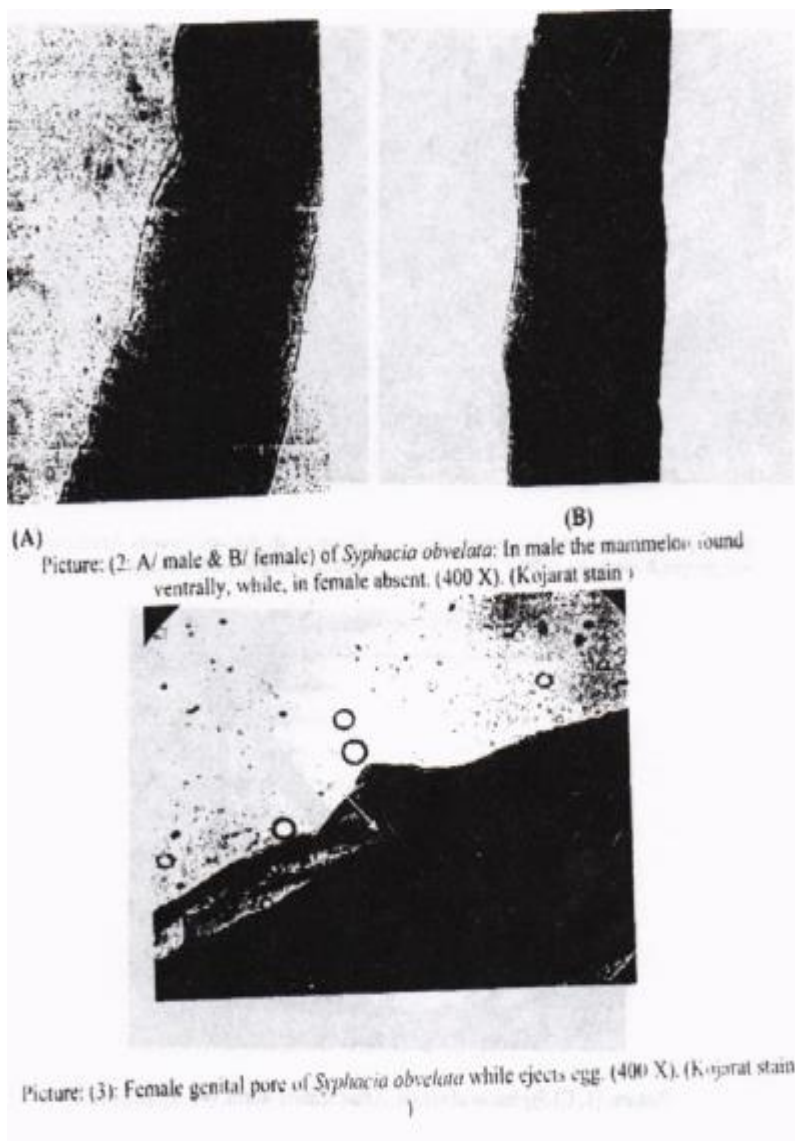


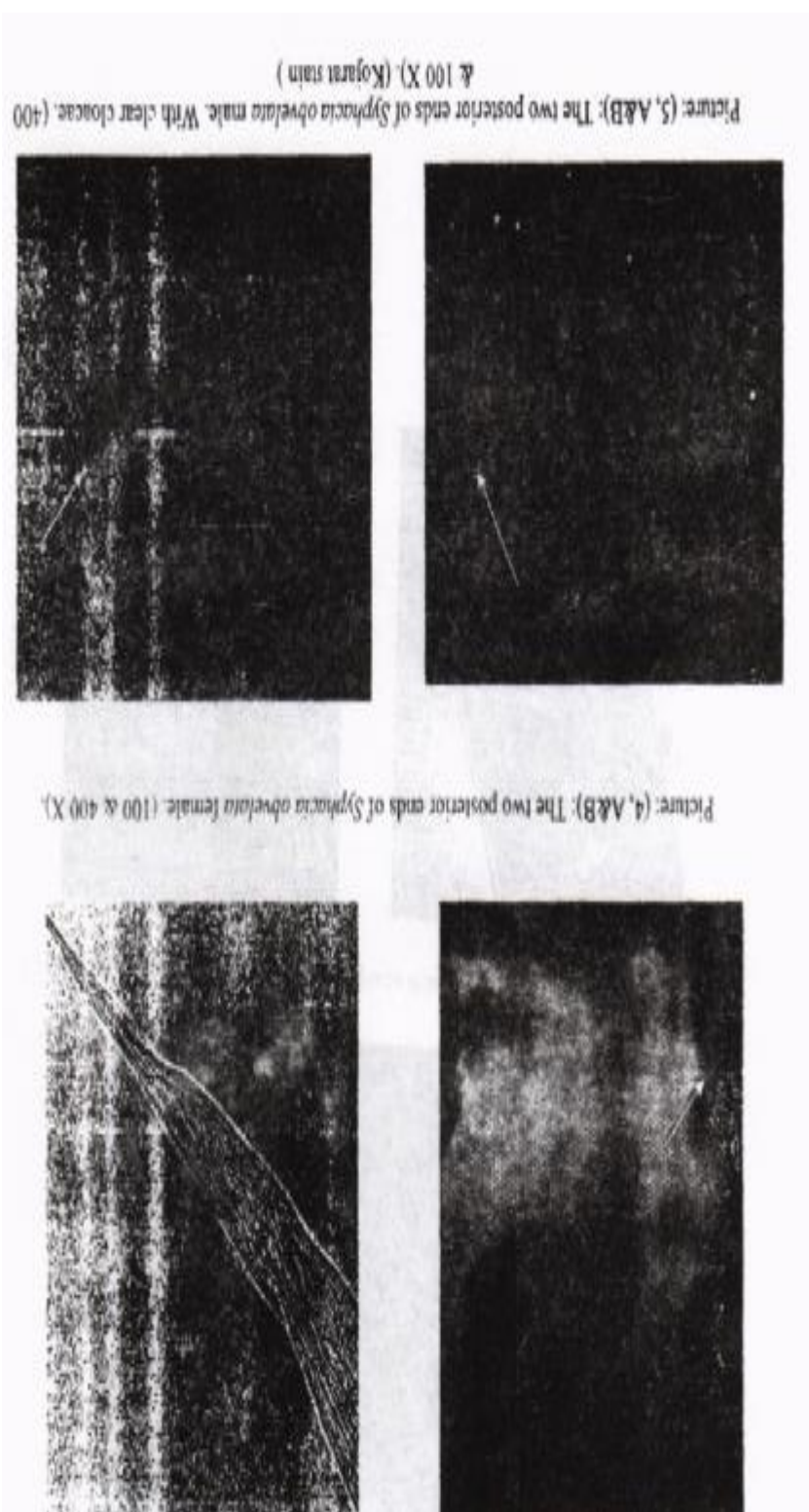
Picture: (1, A): *Syphacia obvelata*, Anterior end with pharynx & esophagus. (100X).

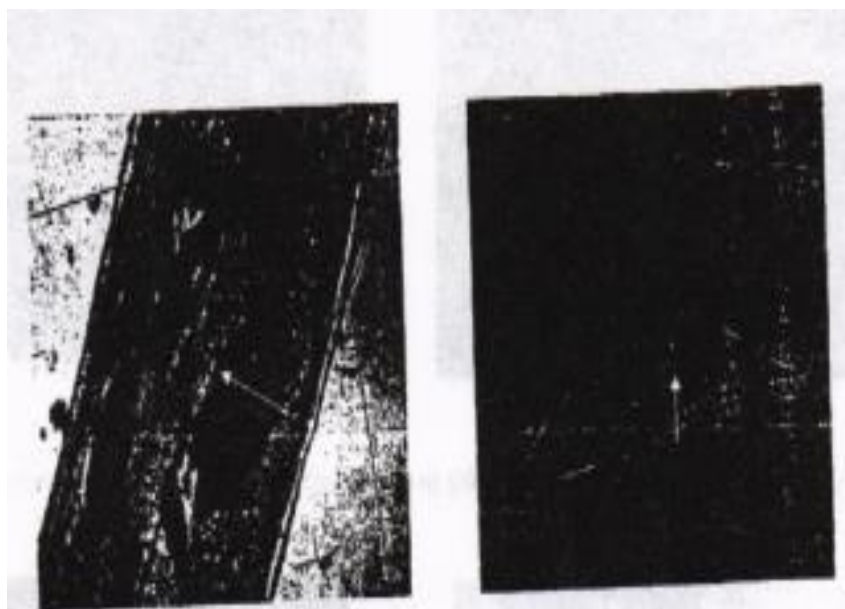
Picture: (1, B): *Syphacia obvelata*, Anterior end with cervical alae. (400X). (Kojarat stain)



Picture: (1, C) *Syphacia obvelata*, Adult female worm. (40 X). (Kojarat stain)







Picture: (6, A&B): Eggs of *Syphacia obvelata* in uterus. (100 & 400 X). (Kojarat stai



Picture: (6, C): Egg of *Syphacia obvelata*. (150 X).

Discussion:

The vast majority of vertebrate pests are from amongst the classes of mammals and bird. Any animal within these (6) classes becomes a vertebrate pest if by reason of its food habits, population numbers or disease harboring properties it adversely affects man's resources and wellbeing. On a world scale the most serious vertebrate pests are rats and mice, respectively those kinds adapted to live closely with man (8).

The present study showed that laboratory animals (any kind) may be infected with many parasites, which mean that there is contact (by any way) between this and wild animals, so, this gives an interaction and lead to wrong results in some cases. Furthermore, the contact between laboratory animals and researcher may lead to transmit the infection to the human.

(8) Found that some rodents live in a close proximity with man infect they are attracted to his houses and food stores, because these small mammals harbors many diseases which can be harmful to the human race.

Different species of nematodes are found in the intestine of the rodent, one of them, *S. obvelata* (8).

(1) report that pinworms in mice and rats are basically commensally (means they neither harm nor benefit the host) and these animals normally carry light to medium loads of pinworms with so signs of disease, but heavy load can cause rectal prolapsed, enteritis, intestinal impaction, sticky stools and prurities (itchy skin).

Acknowledgment

Special thanks to Ass. Prof. Mr. Basim, H. Abdullah. Biology Department, College of Education / Basrah University for his helping in measured samples.

References:

1. Macarthur, J. (2000). Medical cancer: The Worms Crawle in, the worms crawl out. Internet: The rat and mouse club of America.
2. Internet, (2005). Pinworms of the rat and mouse. [www.http//pinworms.htm](http://pinworms.htm).
3. Internet, (2005) Oxyurina. Committee for hygiene/working group on hygiene. Society for Animal Science.
4. Yamaguti, S. (1935) Studies on the helminthes fauna of Japan. Part 13. Mammalian nematodes. Jpn. J. 6: 433-457.
5. Yamaguti, S. (1961). Systema helminthum, III the nematodes of vertebrates. Part I and II. Inter science Publishers inc., New York and London, Pp: 1261.
6. Pinto, R. M.; Gon Calves, L.; Noronha, D. and Gomes, D. C. (2001). Worm Durdens in out bred and inbred laboratory rats with morph metric data on Syphacia muris (Yamaguti, 1935) Yamaguti, 1941 (Nematoda, Oxyurodea).Men. Inst.Oswaloda Cruz Roide Janeiro. 96 (1): 133-136.
7. Jueco, N. L. and Zabala, Z. R. (1990). The Nematodes of Rattus norvegicus and Rattus rattus mindanensis. Phil. vet. Med. 27: 39-46.
8. Khtoon, N.; Bilges, F. M.; Rizwana , A. G. and Jaffery , D. S. (2004). Assocation of histopathological alterations with Syphacia sp. (nematode) in the intestine of Nesokia indica.Turk. J. 28: 345–351.

عزل الديدان الدبوسية من الفئران والجرذان المختبرية في

مدينة البصرة

سهير رياض الإدريسي

د. سوزان عبد الجبار عبد العزيز

م. نادية كاظم ثامر

كلية الطب البيطري - جامعة البصرة

الخلاصة: ما مجموعه (٥٠) حيوان مختبري مقسم الى (٣٠) (ذكور و إناث) فئران مختبرية نوع Balb/c و (٢٠) (ذكور وإناث) جرذان مختبرية نوع Rattus rattus تم جلبها وتشريحها من ضمن الحيوانات المختبرية في البيت الحيواني لقسم علوم الحياة كلية التربية وكلية الطب البيطري في جامعة البصرة خلال الفترة ٢٠٠٤-٢٠٠٦.

الحيوانات التي تم تشريحها أظهرت أغلبها أصابة شديدة بالخييطيات في الأمعاء، بعد حفظ وتصبيغ الديدان الخيطية بصبغة الكجرات شخصت و صنفت على أنها تعود إلى دبوسيات الجرذان Syphacia obvilata، يعتبر هذا هو التسجيل الأول لهذا النوع من الديدان الخيطية في محافظة البصرة .