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DISTRIBUTION OF *HADJELIA TRUNCATA* CREPLIN, 1825 (HABRONEMATIDAE,SPIRURIDEA) AMONG MEMBERS OF THE AVIAN FAMILY COLUMBIDAE IN AL-DIWANIYA PROVINCE, CENTRAL IRAQ

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ABSTRACT

A total of 28 birds were examined to investigate about the distribution of the nematode *Hadjelia truncata* among some members of the avian family Columbidae in Al-Diwaniya Province, Central Iraq. The percentages of the infection rate with this nematode were 27.27, 37.5, 14.28 and 0 in *Columba livia*, *C. palumbis*, *Streptopelia decaocto*, and *S. turtur* respectively. Reporting *Hadjelia truncata* from *Streptopelia decaocto* constitutes a new host record.

INTRODUCTION

The nematode *Hadjelia truncata* Creplin, 1825 (Habronematidae, Spiruridea) is a parasite of gizzard of wide range of birds from different families and orders, as well as vast geographical distribution throughout Africa, Asia, and Europe (Chabaud and Campana, 1950; Yamaguti, 1961; Yorke and Maplestone, 1962; Tadros and Iskander, 1975; Esmaeil, 2004;Junker and Boomker, 2007; Razmi *et al*., 2007; Junker *et al.*, 2008; Al-Moussawi, 2008; Al-Saffar, 2009). In Iraq, it was reported from the rock dove, *Columba livia* by Al-Attar and Abdul-Aziz (1985) and Al-Saffar (2009), then from the Blue-cheeked bee-eater, *Merops superciliosus persicus* (Coraciiformes) by Al-Moussawi (2008).

Since the avian family Columbidae is well established in Iraq with 8 species belonging to 3 genera and widely distributed throughout the country except for the recently recorded Namaqua dove, *Oena capensis* which has rather a limited but steadily growing range of dispersion in the far most southern borders of Iraq with Kuwait (Allouse, 1961; Salim *et al.*, 2006), the present work is designed to investigate about the distribution of the nematode *Hadjelia truncate* among some members of the avian family Columbidae in Al-Diwaniya Province, Central Iraq, in which seven columbid species were recorded.

MATERIALS AND METHODS

A total of 28 columbid birds representing 11 rock doves, *Columba livia*; 8 wood pigeons, *C.palumbus*; 7 collared dove, *Streptopelia decaocto*; and 2 turtle doves, *S. turtur* were captured alive or shot around Al-Diwaniya City at the period between July 2008 and November 2009. The birds were immediately dissected and their alimentary tracts were removed and searched carefully for the parasites. The recovered *Hadjelia truncata* specimens were washed and cleaned with 0.9% saline and then immersed in lactophenol for clearing. The other parasites were kept for future study.

RESULTS AND DISCUSSION

The nematode *Hadjelia truncata* (figs. 1-3) is easily recognized by its mouth has two large trilobed lips with two small rather triangular crests on the external surface (Yorke and Maplestone, 1962), and the caudal region of male is characteristic of spirurid-type with two unequal spicules (Razmi *et al.*, 2007).

Table.1 summarizes the results on the examined birds, infection rate, parasite burden and range. This would show that the percentage of the infection rate with this nematode are 27.27, 37.5, 14.28 and 0 in the hosts *C. livia, C. palumbis*, *S. decaocto*, and *S. turtur* respectively. These results differs drastically from that reported by Al-saffar (2009) who mentioned infection rate of 1.3% in *C. livia* collected at Baghdad City. This is may be related to the smaller sample size of the present study.

Reporting *Hadjelia truncata* from *Streptopelia decaocto* in this study considered to be first time for the parasite to be reported from this host, therefore it constitutes a new host record.

Table 1: Bird species, No. examined, No. infected, % infection, parasite burden and range.

Bird species	No. examined	No. infected	% infection	Parasite burden (range)
Columba livia	11	3	27.27	6(5-7)
Columba palumbis	8	3	37.5	3
Streptopelia decaocto	7	1	14.28	2
Streptopelia turtur	2	-	0	-

Surprisingly, Al-Shaibany (2008) who examined the alimentary tracts of 200 specimens of wild rock doves from Al-Diwaniya area found no *Hadjelia* specimens. The probable reason for this was he paid no attention to search under the lining of the gizzard of his examined birds.

Macroscopic examination showed that the infected gizzards were distorted. This is rather in accordance, partly, with Appleby *et al.* (1995) and Razmi *et al.* (2007) who noticed severe disease, enlargement, distortion, and necrosis of the infected gizzards of *C. livia*.

The present results on the distribution of *Hadjelia truncata* among columbid birds suggests that this parasite is more frequently infect members of *Columba* spp. compared with *Streptopelia* spp. However, the small sample size of the present study does not allow withdrawing a firm conclusion from this result.

In regard to the intermediate host/s of this nematode, it is known that members of the family Columbidae eat, sometimes, small insects (Allouse, 1961). This may be correlated directly to the fact that the larval beetles act as intermediate hosts (Anderson, 2000; Esmaeil, 2004). However, more work is needed to reveal the specific identity of the local intermediate host/s in the Iraqi environments.

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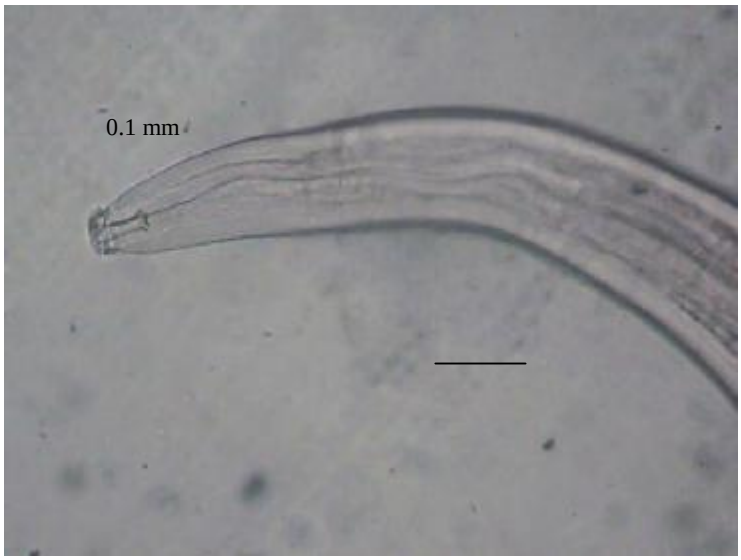

Fig.1: The anterior extremity of *H. truncata*.

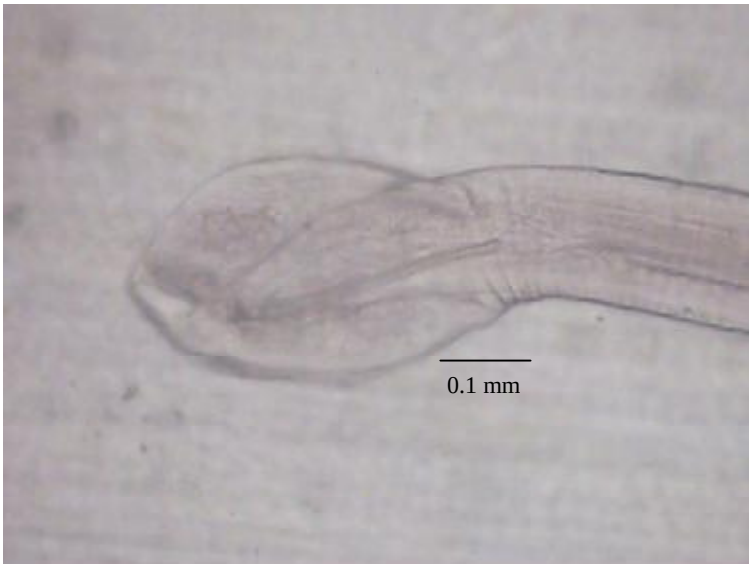

Fig. 2: The posterior extremity of male *H. truncata*

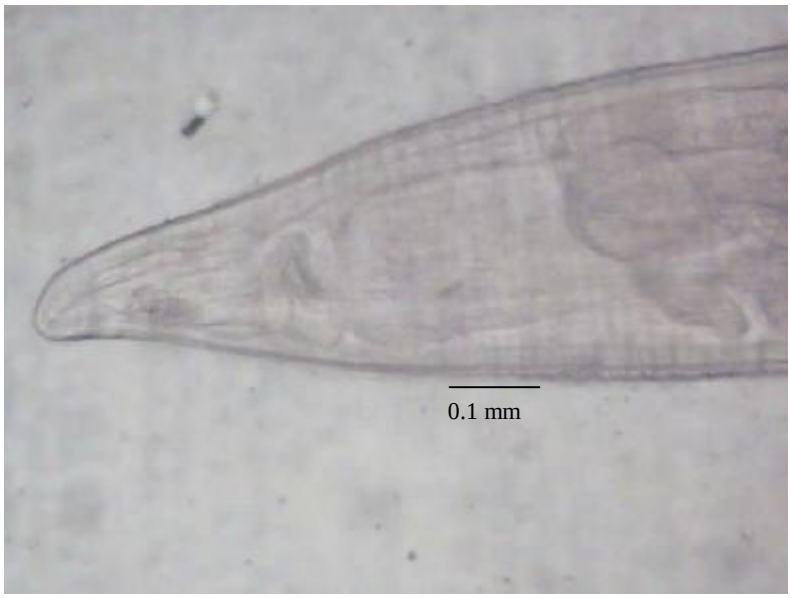

Fig. 3: The posterior extremity of female *H. truncata*

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انتشار الدودة الخيطية *Hadjelia truncata* بين أفراد العائلة الحمامية في الديوانية وسط العراق

حبيب وسيل كاظم شبّر

كلية العلوم/ جامعة القادسية

الخلاصة

تم جمع ٢٨ نموذجا من الطيور من المناطق المحيطة بمدينة الديوانية بهدف التعرف على مدى انتشار الدودة الخيطية *Hadjelia truncata* بين افراد العائلة الحمامية. بينت الدراسة ان النسبة المئوية للاصابة بهذا النوع من الطفيليات كانت ٢٧،٢٧% ، ٣٧،٥% ، ١٤،٢٨% و ٠% في كل من الحمام الطوراني، الطبان، الفاختة المطوقة و القمري على التوالي .

وقد بينت الدراسة ان تسجيل هذا النوع من الديدان الخيطية من طير الفاختة المطوقة يعتبر تسجيل مضيف جديد.