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PARASITIC HELMINTHS OF THE STARLING *STURNUS VULGARIS* LINNAEUS, 1758 IN BAGHDAD CITY, CENTRAL IRAQ

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ABSTRACT

Twenty-two of the Starling *Sturnus vulgaris* Linnaeus, 1758 were collected in Baghdad city during the period from January to September, 2014, and examined for endoparasites. Ten (45.45%) were found infected with either the cestode *Passerilepis crenata* (Goeze, 1782) (31.81%) or the nematode *Dispharynx nasuta* (Rudolphi, 1819) (13.63 %). Morphometric and meristic features for these worms were expressed. *D. nasuta* is recorded here for the first time from *S. vulgaris* for Iraq.

Key words: Starling, *Sturnus vulgaris*, *Passerilepis crenata*, *Dispharynx nasuta*, Baghdad, Iraq.

INTRODUCTION

The worldwide spread Starling *Sturnus vulgaris* Linnaeus, 1758 is native in Africa, Asia and Europe (Linz *et al*., 2007). It is a common winter visitor in Iraq (Allouse, 1962 and Salim *et al*. (2006). It harbors and spreads parasites for other birds (Pearl, *et al*., 1915).

The widespread cestode *Passerilepis crenata* (Goeze, 1782), which usually infects land birds, was recorded from *Sturnus* in Africa, Asia, Europe and Australia (Yamaguti, 1959).

In Iraq, many helminthes were isolated from *S. vulgaris*: the cestode *Choanotaenia musculosa* by Molan *et al*. (1986), the cestodes *Dilepis longisaccata*; *D. undula* and *Passerilepis acollaris* by Sawada *et al*. (1987), the nematode *Diplotriaena sturni* by Chabaud and Mohammad (1988), the nematode *Microtetrameres inermis* and the acanthocephala *Prosthorhynchus gracile* by Abdullah *et al*. (1993), the cestode *Passerilepis crenata* was isolated by (Abdullah *et al*., 1993; Abdal-Razak, 1998 and Abdulabas, 2005), also the trematode *Brachylaema fuscata*, the cestode *Choanotaenia muscolosa*, the nematode *Diplotriaena tricuspus* and the acanthocephalan *Plagiorhynchus sp*. were isolated by Saeed *et al*. (2003) and the nematode *Diplotriaena tricuspus* by Abdulabas and Hammadi (2008).

The cosmopolitan nematode *Dispharynx nasuta*, found parasitizing several orders of birds: Passeriformes, Galliformes and Columbiformes with widespread geographical distribution: Asia, America and Europe (Goble and Kutz, 1945; Anderson, 2000). In Iraq, *D. nasuta* was previously isolated from local chickens in Al-Diwaniya by Al-Mayali (2009) and from *Passer domesticus biblicus* in Baghdad by Mohammad and Al-Moussawi (2012).

This paper aims to throw light on the parasitic helminthes in *S. vulgaris* which collected in Baghdad city.

MATERIALS AND METHODES

Twenty-two specimens of the Starling *S. vulgaris* were collected in Baghdad city by mist net during the period from January to September, 2014. Birds were identified according to Allouse (1962) and Salim *et al*. (2006), dissected and the recovered elementary canals were searched carefully for the nematodes and cestodes. The recovered nematodes were washed thoroughly with normal saline then kept in 70% alcohol and cleared with lactophenol before examining, cestodes were stained with acetocarmine, dehydrated with graduated alcohol concentrations, fixed on slides with Canada balsam. Parasites identified according to Yamaguti (1959, 1961) and York and Maplestone (1962).

Measurements are in millimeters given as means followed by the range in parentheses, calculated using ocular and stage micrometers. Micrographs were taken with digital camera Infinity lite-K100 attached to compound microscope Micros MCX100.

RESULTS AND DISCUSSION

The results of examining 22 starlings for endoparasites showed that ten (45.45%) were infected with either the cestode *P. crenata* (Goeze, 1782) or the nematode *D. nasuta*.

Passerilepis crenata (Goeze, 1782) (Fig.1A, B, C&D)
Synonyms: *Hymenolepis phasianina* Fuhrman, 1907 (EUNIS, 2014), *Mayhewia serpentulus* Sehrank, 1788 (Spassky and Spasskaya, 1964).
Seven (31.81%) of *S. vulgaris* found infected with twenty *P. crenata*. Small to medium cestode, 10.83 (8.93-13.3) long. Head 0.140 (0.10-0.15) long, 0.185 (0.17-0.21) wide. Suckers unarmed 0.084 (0.073-0.097) long, 0.08 (0.06-0.10) in diameter. Neck 0.261 (0.12-0.288) long. Rostellum with 10 small wrench-shaped hooks, each 0.024 (0.020-0.0264) long. Rostellar sac 0.120 (0.100-0.126) long, 0.084 (0.080 -0.120) wide. Cirrus sac on one side, opens in the half of the segment 0.20 (0.164-0.210) long, 0.022 (0.019-0.026) in diameter. Three testis, arranged in a triangle. The lobed ovary is located in the middle of the segment almost 0.082 (0.068-0.089) long, 0.098 (0.065-0.010) wide.

Dispharynx nasuta (Rudolphi, 1819) (Fig.2 A, B & C)
Synonyms: *D. spiralis* Molin, 1858; *Filaria nasuta* (Rudolphi, 1819) Schneider, 1866, *Spiroptera nasuta* Rudolphi, 1819 and *Acuaria* (*Dispharynx*) *nasuta* (Rudolphi, 1819) Railliet, Henry and Sisoff, 1912 (Goble and Kutz, 1945).

Only three starlings (13.63%) found infected with three females of *D. nasuta*. Body stout, two pseudolabia present, four recurrent cordons, beginning at dorsal and ventral sides of oral opening, extending posteriorly to posterior part of muscular esophagus, recurrent anteriorly to anterior part of muscular esophagus. Buccal capsule cylindrical, transversely striated. Esophagus consisting of two parts, short anterior muscular and long posterior glandular (Yamaguti, 1961; Zhang *et al*., 2004).

Body 5.510 (3.81-7.34) long. 0.403 (0.306-0.533) wide. Buccal capsule 0.108 (0.102-0.121) long, 0.021 (0.020-0.022) wide. Ascending cordon 0.203 (0.222- 0.247) long. Muscular esophagus 0.516 (0.431-0.732) long, 0.078 (0.073-0.085) wide. Glandular esophagus 1.602 (1.294-1.74) long, 0.187 (0.140-0.225). Nerve ring at distance of 0.310 (0.228- 0.346) from anterior end. Vulva in the posterior part of the body. Eggs thick shelled 0.030 (0.230-032) long, 0.021 (0.022-0.0216) wide. Anus at a distance of 0.121 (0.103-0.127) from body posterior end. Tail short, 133(114-156) long.

Examination for stomach contents of *S. vulgaris* reveals presence of fruits, grain seedlings and arthropods remains (insect: flies, bees, bugs and beetles) which acts as intermediate hosts for *D. nasuta* and *P. crenata* (Alicata, 1964; Gubanyi *et al*.,1993; Anderson, 2000 and Halajian *et al*., 2011). This explain being *S. vulgari*s a host for these helminths in the present study.

Severe infections with *D. nasuta* may lead to the host death, as cleared in the results of Goble and Kutz (1945) who found that 32.5% of infected cases in the adults of grouse were fetal.

Earlier, two species belong to the genus *Passerilepis* found in *S. vulgaris* in Iraq, *P. acollaris* reported by Sawada *et al*. (1987) at Arbil Province and *P. crenata* which isolated by Abdullah *et al*. (1993) at Basrah Province with lower infection rate than it in the present study.

To the best of our knowledge, *D. nasuta* is recorded here for the first time from *S. vulgaris* for Iraq.

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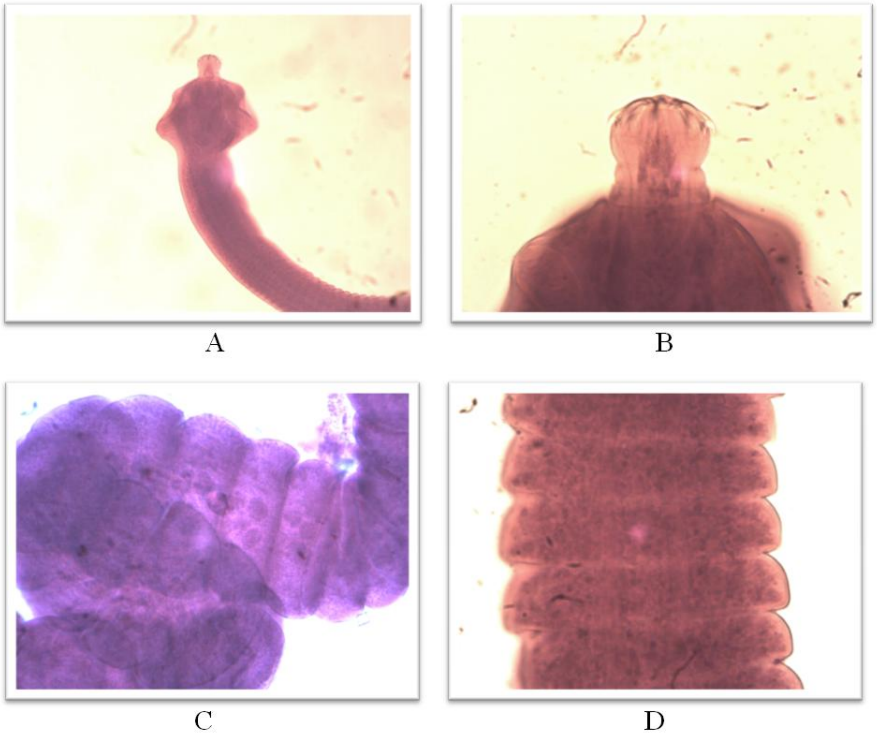

Fig.1 : Photomicrographs of *Passerilepis crenata* (Goeze, 1782)
A- Anterior end,
B- Rotellum with rostellar hooks.
C- Mature segment.
D- Gravid segment.

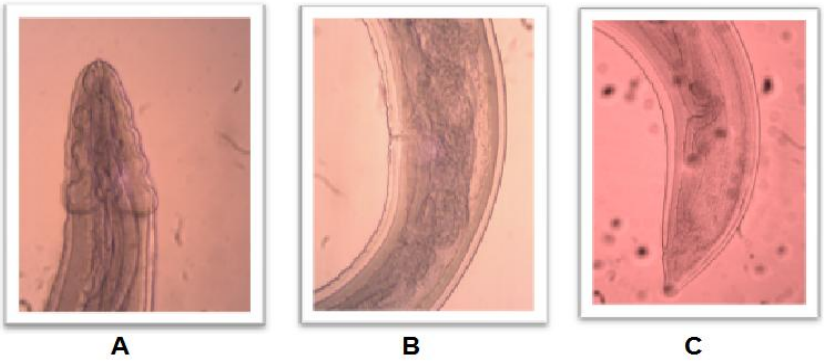

Fig. 2: Photomicrographs of female of *Dispharynx nasuta* (Rudolphi, 1819)
A- Cephalic region with cordons.
B- Vulva region.
C- Posterior end.

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الديدان المتطفلة للزرزور الشائع في مدينة بغداد ، وسط العراق

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الخلاصة

أظهرت نتائج البحث عن الديدان المتطفلة في الزرزور الشائع *Sturnus vulgaris* Linnaeus, 1758 الذي تم جمعه في مدينة بغداد للفترة ما بين كانون الثاني وأيلول من العام ٢٠١٤ إصابة ١٠ من مجموع ٢٢ فردا منه بنسبة إصابة بلغت (٤٥,٤٥%) اما بالدودة الشريطية *Passerilepis crenata* (Goeze,1782) بنسبة إصابة (٣١,٨١%) او بالدودة الخيطية *Dispharynx nasuta* (Rudolphi, 1819) بنسبة إصابة (١٣,٦٣ %).

تم تقديم الصفات المقاسة والمعدودة للديدان الطفيلية. يعتبرهذا هوالتسجيل لأول مرة للدودة الخيطية *D. nasuta* من الزرزور الشائع في العراق.