

## Record birds *Larus argentatus* as new host for the cestoda *Echinocotyle longirostris* ( Rud,1819)in Thi-Qar /Iraq

**Ruqia abd Al\_Rheem**

*Department of Biology, College of science, University of Thi-Qar, Thi-Qar, Iraq,  
ruqai.al.bio@sci.utq.edu.iq*

**Nuha Jabbar Al- Rikaby**

*Department of Biology, College of science, University of Thi-Qar, Thi-Qar, Iraq*

### Abstract

*Larus argentatus* birds were collected from the marshes of Suq Al-Shuyukh area in Thi -Qar Governorate / Iraq from November 2021 to May 2022. These birds were considered a new final host for the tapeworm *Echinocotyle longirostris*, with a rate of (38.4%) and an infection severity of ( 6.5) Significant differences were recorded no differences in the infection between males (88.8 % ) and females (86.6% )at the level of probability  $P>0.05$

**Keywords:** *Cestoda, Larus argentatus, Echinocotyle longirostri.*

### INTRODUCTION

The *Larus argentatus* is one of the birds residing in the marshes of southern Iraq, and it constitutes a food source for the local population of the region, albeit in a limited way. *Echinocotyle longirostris* this cestoda belongs to the family Hymenolepididae are an order of cyclophyllidea tapeworms. Their characteristic feature is the small number of testes (one to four). The unilateral genital pores and large external seminal vesicles allow for easy recognition. Most species are small, transparent, and easy to study. The family contains over 90 genera with over 900 species, having as their definitive host birds 700 species of mammals about 250 0 species . Most reside in the intestines of their definitive hosts. The majority of species with known life cycles have arthropods as intermediate hosts.

(Deblock and Vaucher, 1995), they recorded the species *E. Flavipedis* sp was found in Paraguay as a new species isolated from the small intestine of the *Tringa flavipes* , also

similar to the species *Echinocotyle* sp which was isolated by (Swadi, 2013) of the white-tailed plovers .

### MATERIALS AND METHODS

Twenty six specimens (9 males and 15 females) of the bird *Larus argentatus* were captured or killed with gun shots during November 2021 to May 2022 to the marshes area Souq Al-Shuyoukh area south of Thi -Qar Governorate central Iraq. Birds were identified according to (Allouse, 1961 ; Salim et al. , 2006) immediately dissected and examined for helminthes, The recovered cestoda were washed extensively in physiological saline, fixed in 70% ethanol, stained with aceto carmine, dehydrated in an alcohol series and mounted in Canada balsam. Photos were taken with the aid of a digital camera. Measurements were taken using (Olympus ) compound microscope calibrated with ocular and stage micrometers.. Identification was done according to the available key presented by

(Yamaguti, 1959 )was followed to identify *Echinocotyle longirostris*.

Family : Hymenolepididae

Genus : *Echinocotyle*

## Result

Species : *E. longirostris* (Rud.,1819)

Rely on (Yamaguti, 1959) in the classification of tapeworm in the current study is as follows:

11 samples of this parasite were found in the small intestine of a *Larus argentin* , with an infection rate of 38.4% and severity 6.5 .

Class : Cestoda

Order : Cyclophyllidea

**Table (1) Shows the incidence and severity of infection with the parasite *Echinocotyle longirostris* in *Larus argentin***

| Months   | Birds NO | Infected | Presentage % | Nomber Tapeworms | Intensity |
|----------|----------|----------|--------------|------------------|-----------|
| November | 3        | 2        | 66.6         | 1                | 0.5       |
| December | 3        | 2        | 66.6         | 2                | 1         |
| February | 3        | 1        | 33.3         | 1                | 1         |
| March    | 8        | 2        | 25           | 2                | 1         |
| April    | 3        | 2        | 4.6          | 4                | 2         |
| May      | 6        | 1        | 16.6         | 1                | 1         |
| Total    | 26       | 10       | 38.4         | 11               | 6.5       |

Statistical analysis showed that there were no significant differences between males and females in the incidence with special of parasites at the level of probability ( $p>0.05$ )

**Table (2): Infection rate of bird according to gender.**

| gender | No extamined | No Infected | Percentage |
|--------|--------------|-------------|------------|
| Meal   | 9            | 8           | 88.8       |
| Female | 15           | 13          | 86.6       |
| Total  | 26           | 23          | 88.4       |

Eleven samples of this parasite were found in the intestines of ten infected birds of the *Larus*

*argentatus*. the following is a description and average of measurements (4 sample) Figure and Picture (1) the lengths of the worms were measured in millimeters, It is measured in micrometers. Tapeworm small white with a total length of (2.55-4.64) (2.98) mm, and a total width of(0.16-0.11) (0.13) mm, and the heads are small, length (125.62-342.24) (195.14) and width(288.53-118.42) (166.87), and their sucker length ( 96.14-252)(134,93) and width(27.92-82)(58.71) Equipped with numerous outer and inner spines, rostellum length(187.94–266.81)(244.02) and width (19.69–33)(29.34) with 10 large spines, The rostellum pouch is length (177.23-286.3) (234.59) width (51.71-78.48) (69.21) the

rostellum is equipped with hooks length (25.62-41.22) (39.87) width (2.73-2.88) (2.83), The length of the body parts is less than its width. The immature pieces are length (21.72-78.59) (52.21) and width (112.31-88.62) (81.69) The mature piece is (68.57-96.18) (81.45) long and (223.99-145.34) (177.76) contains a muscular cirrus sac that reaches the midline the length of the piece or its back is (96.06-144.14) (127.58) and its width (15.7-21.49) (19.27). The mature pieces contain three testes length (54.81-17.23) (23.28) and width (26.55-18.27), (19.71), the pregnant piece length (112.93-179.4) (132.91) width (199.17) (227.52-176.41) ovary length (55.91-63.69) (68.30) width (25.99-27.58) (28.76), the inner shell of the egg is elongated and reticulated shape.

**Figure (1) Tapeworm *Echinocotyle longirostris***

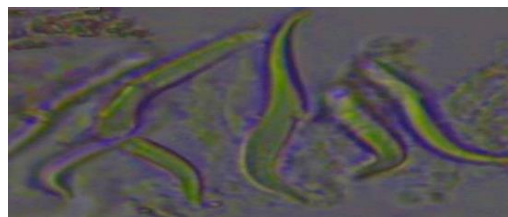
A. Scolex, B. Reveal the segments showing the cirrus and cirrus sac, C. Reveal the rostellum hooks, D. Reveal the segment adult worm



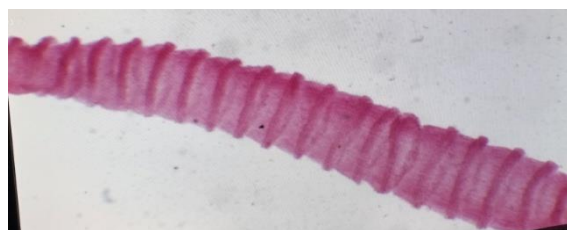
A



B



C



D

## Discussion

### 1. *Echinocotyle longirostris*

The characteristics of the species recorded in the current study are similar, especially the presence of 10 large spines on the rostellum and the oval shape of the dictionaries and their sucker with internal and external spines, and the fact that the genital openings are unilateral and the testes three spherical a large, the species *E. Longinestrus* which was isolated by (Kornyushin and Greben, 2010) from the bird *Phatomachus magmar* in Ukraine the species recorded in the current study is similar to the species with some differences in measurements as the length of the rostellum of the above species is less wide and the rostellum is longer, these differences may be due to the change in the species of the host and the change in its food type, Recorded the species *E. rosserri* for the first time in Iraq from the *Anas Crecca* birds the distinguishing feature of the species was the number of rows of spines on the suckers (Al-Mayah, 1999).

(McLaughlin and Burt, 1979) recorded a number of tapeworms including *E. rosseteri*

from water birds of the species *A. crecca* , *A. discors* , *Anas rubripes*in Canada.

(McLaughlin et al, 1997) , also recorded *F. capensis* sp from *A. smithii* and *A. capensis* in southern Africa the length of the tapeworm was 1.62 mm and the number of rostellum hooks 10, 50-55  $\mu$ m in length, Isolated (Dronen and Blend, 2005) species *Echinotyle voiteki* of the *L. ridibundus* in South Moravia in the Czech Republic. The species differs in the shape of the rostellum hooks, the number of sucker hooks the length of the cirrus and the composition of the genital vestibule.

(Rzayev et al., 2021) was able to describe the species *E. Anatine* in *Anser anser* dom there were found in Azerbaijan , (Geben, 2013) isolated *E. dubininae* from *Callidris ferrugineathis* species was first recorded in Ukraine. Its characteristics are oval shaped sucker and the edges of the lateral chambers are equipped with a transverse crown consisting of 5-6 spines and along the inner edge of the suckers . By comparing the measurements of the species recorded in the current study with the species recorded previously "inside and outside Iraq, we find that the species recorded in the current study is quite close to species recorded by (Awad and Al-Mothafer, 2016) which was isolated from the *Larus genei*.

Statistical comparison showed no significant differences between Males and females in the incidence with types of parasites at the level of Probability ( $p > 0.05$ ). The result agrees with result of Senlik et al., (2005) in his study on *Columba livia* in Turkey, he mention that both males and females were involved in incubation of eggs. Mahmoud, (2001) recorded the same result in her study on *Anas platyrhynchos*.

This results also differed with some researchers, such as (Biu and Haddabi, 2005) claimed that males were more susceptible to

infection when a higher parasite infection rate was recorded in male chicks comparison of females. In Nigeria Fedynich et al., (2005) who observed a higher rate of parasite infection in male geese compared to females and gave the reason that males consume more food than females because they moved away from the nests and flew long distances while females stayed close to the nest.

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