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SURVEY ON NEMATODE INFECTION OF IRAQI FISHES

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The fishes from the families Cyprinidae and Mugilidae were surveyed for fish-nematodes in the southern part of Iraq especially inBasrah marshes. Khalil (1969) reported *Contracaeum* larvae from *Latis nilotious* in Sudan. Herzog (1969) was the first to report the presence of various parasites from Iraqi freshwater fishes. Shamsuddin *et al.* (1971) reported *Contracaeum* larvae from *Mugil abu* and *Silurus triostegus* in the middle region of Iraq. It was therefore considered important to study the nematode parasites of fishes in this region. The present work deals with the studies on the infection of *Aspius vorax* Heckel and *Mugil hishni* Misra in Basrah water by *Contracaeum* larvae.

MATERIAL AND METHOD

From May 1972 to June 1973 fishes were collected from fish market in Basrah.Weights of the fishes were first recorded and the scales were removed from each specimen, and kept in a small envelops for age determination. The larval nematodes collected from the fishes were divided into two groups, the first was fixed with formalin-acetic acid (Thorne 1961) for identification, and the second group was preseved in 70%alcohol for parasites count. The number of larvae in each fish was recorded and the fish-age determination was carried out using a special scale projector (Basrah 73, Yassin, personal comunication).

The calculations were made and the relation of age–weight, age–infection, and weight–infection were determined.At test was used in analysing the data The larval nematodes was identified as *Contracaeum* sp. by L.F. Khalil of the Commonwealth Institute of Helminthology. The *Contracaeum* larvae were found attached to the external surface of the alimentary canal and the mesentries.

RESULTS AND DISCUSSION

The results of the age–weight, age-infection, and weight infection analyses made on *A. vorax* and *M. hishni*, 50 spceimens each, are presented below .

Age :

Fishes were divided into four age groups, namely, 0, 1, 2, and 3 representing 0, 1, 2. and 3 years old respictively (0=less than 1 year). Weight infection relationship was studied for each age group

Tables 1 and 2 present the relation between age groups and weight for *A. vorax* and *M, hishni*, respectively. Table 1 shows that *A. vorax* infection incidence increased with the length of fish (age) and highly significant differences were found at age 2 and 3 (P=0.001). It is the same for *M. hishni* (Table 2, P2=0.05),the infection incidence increases up to the age of 2, but then it drops. This decrease of infection incidence with the increase of fish length may be due to the development of resistance with aging, as suggested by Khalil (1969), or owing to the death of already infected fishes in group 2 and the resultant survival of non–infected fishes. Figures 1 and 2 show weight, age, and infection incidence relationships for *A.vorax* and *M. hishni* respectively.

Weight:

Fishes of both species were grouped according to their weight and the weight infection relationships were determined for each group. Tables 3 and 4 show the weight–infection relationship for *A. vorax* and *M. hishni*

respectively. In *A. vorax,* the infection increased with the weight up to the group weighting 300–400 g. The significant differences were found to be (P=0.001). Regarding *M. hishni,* the infection increased rapidly with weight groups until it reached the second group weighing 20–30g and then decreased gradually. However, there was no significant difference.

Figure 3 shows the weight–infection relationship within the weight groups.

Table 1.

A. vorax : Age–Infcetion relationship.

Age group	Frequency	Nean No. of Nematodes
0	1	1.0
1	3	10.6
11	43	11.1
111	3	21.0

Table 2

M. hishni: Age–Infcetion relationship

Age group	Frequency	Mean No. of Nematodes
0	1	1.0
1	28	5.1
11	14	8.0
111	6	4.4

Table 3

A. vorax: Weight–Infection relationship

Group	weight (gram)	Frequency	Nean No. of Nematodes
1	200–300	14	7.7
11	300–400	21	15.9
111	over 400	14	7.9

Table 4

M. hishni: Weight–Infection relationship

Group	Weight (gram)	Frequency	Mean No. of Nematodes
1	10–20	8	3.0
11	20–30	11	10.1
111	30–40	32	4.4
IV	over 40	4	3.0

ACKNOWLEDGEMENTS

We would like to thank Dr. L.F. Khalil of the Commonwealth Institute of Helminthology for his help in the identification of the Nematode, and Mr.K.Yassin of the Basrah University for letting us using his scale projector. We are ndebted to the University of Basrah for a financial support.

SUMMARY

A. vorax and *M. hishni* were surveyed for the infection with *Contracaeum* sp. larvae, in Basrah waters.

It was found that the infection increased with the age of the fish until second year in both *A. vorax* and *M. hishni* and then dropped .While in case of the weight the infection increased between 300 and 400 g in *A. vorax* and 20–30 g in *M. hishni* and then decreased.

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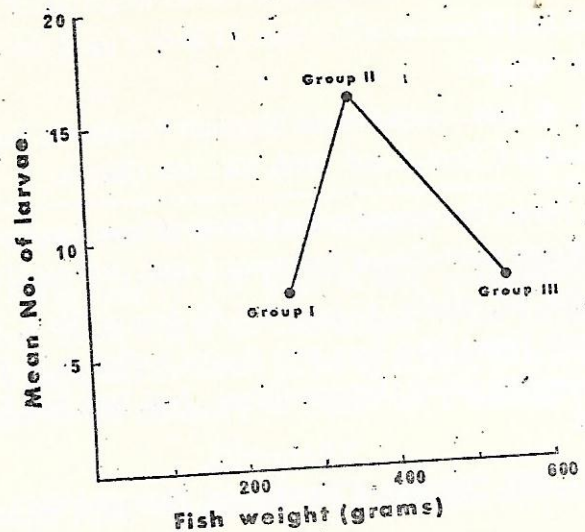
الخلاصة

يتضمن هذا البحث مسح لاصابة اسماك الخشني والشلج بيرقات الديدان الخيطية المعروفة باسم *Contracaeum* sp. في مياه شط العرب والأهوار المجاورة لمحافظة البصرة .

وقد وجد بان الاصابة بالديدان تزداد بازدياد عمر السمكة حتى السنة الثانية ثم تقل بعد ذلك بالنسبة لاسماك الخشني والشلج .

وكذلك وجد بأن الاصابة تزداد كلما ازداد وزن السمكة حتى يصل مابين ٣٠٠ــ٤٠٠ غرام حيث يكون اعلى نسبة من الاصابة بالنسبة لسمكة الشلج ثم يقل بعد ذلك . أما بالنسبة لسمكة الخشني فإن الاصابة ترداد كلما ازداد وزن السمكة حتى يصل مابين ٢٠ــ٣٠ غرام حيث يكون أعلى نسبة من الاصابة ثم يقل بعد ذلك .

Fig.1. Weight, age and infection incidence relationships of Aspius vorax



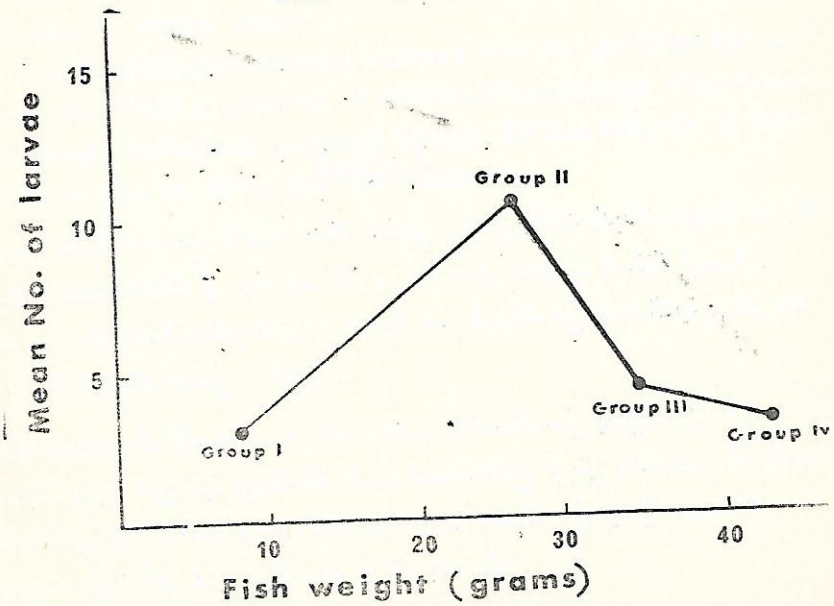


Fig. 2. Weight, age and infection incidenee relationships of *Mugil hishni*.

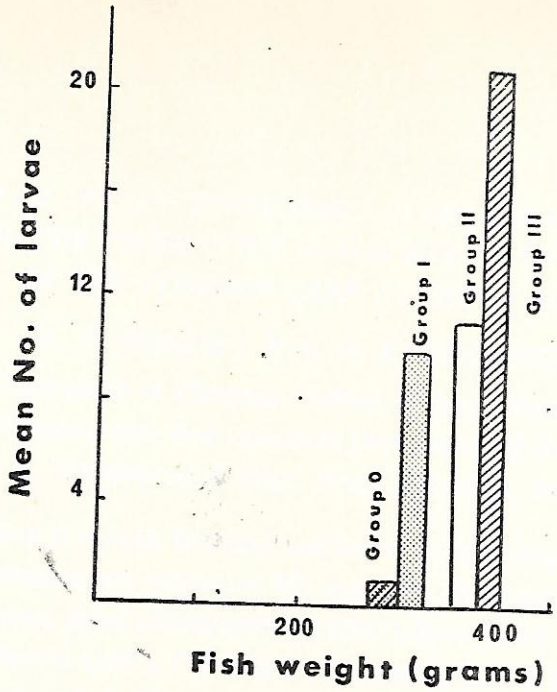


Fig.3. Weight-infection relationships with in the weight groups of *Aspius vorax*

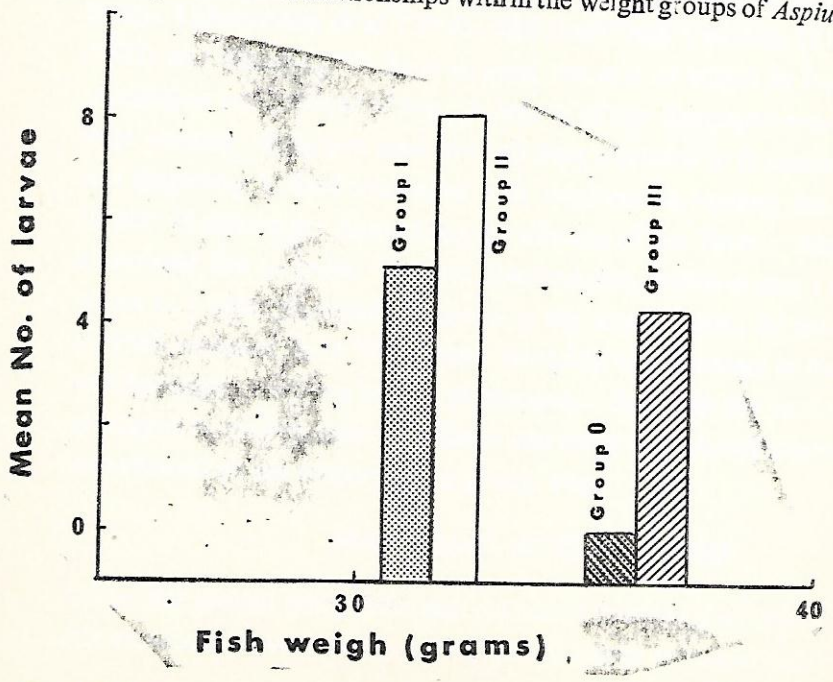


Fig.4. Weight-infection relationships within the weight groups of *Mugil hishni*.