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ENDOPARASITES OF SEVEN FISH SPECIES FROM AL-HUSAINIA CREEK, KARBALA PROVINCE, MID IRAQ

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SUMMARY

Seven fish species (*Aspius vorax*, *Barbus grypus*, *B. luteus*, *B. sharpeyi*, *B. xanthopterus*, *Cyprinus carpio* and *Liza abu*) belonging to two families (Cyprinidae and Mugilidae) were collected from Al-Husainia creek, Karbala province, mid Iraq, during the period from May 2005 till April 2006. These fishes were infected with seven endoparasitic species, which included one cestode (*Polyoncobothrium magnum*), two nematodes (larvae of *Contracaecum* sp. and adults of *Cucullanus cyprini*), and four acanthocephalans (*Neoechinorhynchus cristatus*, *N. iraqensis*, *N. rutili* and *Paulisentis fractus*). Four fish species are considered as new hosts for three parasite species in Iraq. These included *B. grypus*, *B. sharpeyi* and *L. abu* for *C. cyprini* and *A. vorax* for both *P. magnum* and *P. fractus*. Among these fishes, *L. abu* harbored the highest number of parasite species (six species), followed by *A. vorax* (five species), while both *B. luteus* and *C. carpio* were free of endoparasites. This study represents the first account on the endoparasites of fishes of Al-Husainia creek.

Key words: Al-Husainia creek, Iraq, Cestoda, Nematoda, Acanthocephala

introduction

Knowledge of the parasitic fauna of freshwater fishes of Iraq in their natural habitats showed increased attention from different researchers through their surveys since the publication of the results of the first survey in 1969 by Herzog (23). According to Mhaisen (27), a total of 304 accounts are, so far, available on the parasites of freshwater fishes of Iraq. Among these accounts, 28.9% were concerned with farm fishes, 25% with fishes from Shatt Al-Arab river and the marshy area of Basrah province, 40.5% with fishes from Tigris river, its branches and allied lakes and dam lakes,

while only 5.6% were concerned with fishes from Euphrates river, its branches and allied lakes, dam lakes and Bahr Al-Najaf depression.

Survey from Euphrates river covered the following provinces: Anbar (3, 28, 4, 18, 20), Karbala (12, 14), Babylon (13, 16, 24), Al-Najaf Al-Ashraf (30, 5, 6), Al-Qadisia (9, 15) and Thi-Qar (29).

It is clear from the above information, that the parasitic fauna of fishes of Euphrates river in general and Karbala province in particular were poorly studied. For this reason, the present article was aimed to through the light upon the endoparasites of fishes from Al-Husainia creek as no previous account was done on the parasitic fauna of fishes of this creek except that of Al-Saadi et al. (14) on five ectoparasitic species.

materials and methods

During the period from May 2005 till April 2006, fish samples were collected from Al-Husainia creek, north east of Karbala province, mid Iraq. The length of this creek from its junction with the Euphrates river to the boundaries of Karbala city is about 29 km. It has a width of 8-13.4 (11) m and a depth of 1.5-1.9 (1.7) m. Detailed description of this creek, its branches and the sampling area are shown in Al-Saadi (12).

Gill nets (mesh size of 2.5, 4.5 and 6.5 cm), cast nets (mesh size 1.5 cm) and electrofishing were applied to catch fishes.

Fishes were transported alive to the laboratory where they were examined for parasites according to Amlacher (17). The index-catalogue of parasites and disease agents of fishes of Iraq (27) was followed to indicate number of host records for each parasite species in order to minimize number of references for each parasite species. Coad's (21) list was followed for the scientific names of captured fishes.

results and discussion

During the present study, a total of 2615 fish specimens were captured. These included the following species with their numbers:

412 *Aspius vorax* Heckel, 1843
311 *Barbus grypus* Heckel, 1843
397 *Barbus luteus* (Heckel, 1843)
286 *Barbus sharpeyi* Günther, 1874
317 *Barbus xanthopterus* (Heckel, 1843)
366 *Cyprinus carpio* L., 1758
526 *Liza abu* (Heckel, 1843)

Through the internal examination of the above-named fishes, seven endoparasite species were recorded. These included one cestode (*Polyoncobothrium magnum*), two nematodes (*Contracaecum* sp. and *Cucullanus cyprini*) and four acanthocephalans (*Neoechinorhynchus cristatus*, *N. iraqensis*, *N. rutili* and *Paulisentis fractus*). The following is a brief account on the occurrence of these parasites.

1- *Polyoncobothrium magnum* (Zmeev, 1936):

The adult tapeworms of this species were recorded from the intestine of *A. vorax* with an incidence of 1.5%. This worm was reported for the first time in Iraq from *Cyprinion macrostomum* in Al-Nibaee artificial ponds, north of Baghdad (8). Later, it was reported from *Silurus triostegus* from Tigris river at Al-Zaafaraniya, south of Baghdad (2) and from *Mastacembelus mastacembelus* from Euphrates river at Al-Musaib (13). According to Mhaisen (27), no more reports on this worm are available in Iraq. So, *A. vorax* of the present study represents a new host record for *P. magnum* in Iraq.

2- *Contracaecum* spp.:

The third stage larval forms of this genus were recorded from mesenteries and liver of *A. vorax* with an incidence of 0.7%, intestinal wall of *B. grypus* with an incidence of 0.6%, body cavity of both *B. sharpeyi* and *B. xanthopterus* with an incidence of 0.4% and 0.3%, respectively, and from the intestinal wall and gonads of *L. abu* with an incidence of 0.8%. *Contracaecum* spp. larvae were reported for the first time in Iraq from 10 fish species from different parts of Iraq by Herzog (23). According to Mhaisen (27), these larvae were, so far, recorded from 33 fish species in Iraq inclusive of the five above-named host species of the present study. The adult worms of *Contracaecum* were reported from some piscivorous birds (7, 19, 5).

3- *Cucullanus cyprini* Yamaguti, 1941:

Adults of this nematode were recorded from the intestine of *B. grypus*, *B. sharpeyi* and *L. abu* with an incidence of 0.3%, 0.4% and 0.4%, respectively. This nematode was reported for the first time in Iraq from both *Alburnus caeruleus* and *B. xanthopterus* from Al-Tharthar lake (11). Later on, eight other hosts were also reported for this parasite from north, mid and south of Iraq exclusive of the above-named hosts of the present study and hence *B. grypus*, *B. sharpeyi* and *L. abu* are now represent new hosts for *C. cyprini* in Iraq (27).

4- *Neoechinorhynchus cristatus* Lynch, 1936:

This spiny-headed worm was recorded from the intestine of *L. abu* with an incidence of 16.4%. *N. cristatus* was reported for the first time in Iraq from the intestine of *Varicorhinus trutta* from Tigris river at Salah Al-Dien province (1). Its later records from fishes of Iraq were from two fish hosts inclusive of *L. abu* (27).

5- *Neoechinorhynchus iraqensis* Amin, Al-Sady, Mhaisen *et* Bassat, 2001:

This acanthocephalan was recorded from the intestine of both *A. vorax* and *L. abu* with an incidence of 43.2% and 45.3%, respectively. According to Mhaisen (26), this species was erroneously identified as *N. agilis* for the first time in Iraq by Habash and Daoud (22) from the intestine of *Mugil hishni* (a synonym of *L. abu*) from Shatt Al-Arab river. The present host list of *N. iraqensis* together with *N. agilis* in Iraq comprises 17 fish species inclusive of the two above-named hosts of the present investigation (27). In cases of intensive infection, *N. iraqensis* causes intestinal blockage of *L. abu* (25).

6- *Neoechinorhynchus rutili* (Müller, 1780):

This acanthocephalan was recorded from the intestine of both *A. vorax* and *L. abu* with an incidence of 15.3% and 35.6%, respectively. This parasite was reported for the first time in Iraq by Herzog (23) from *B. xanthopterus* from Tigris and Diyala rivers and from *L. abu* from Euphrates river. According to Mhaisen (27), the present host list of *N. rutili* comprises 15 host species inclusive of the two above-named hosts of the present study.

7- *Paulisentis fractus* Van Cleave *et* Bangham, 1949:

This acanthocephalan was recorded from the intestine of both *A. vorax* and *L. abu* with an incidence of 1% and 1.7%, respectively. Its first record in Iraq was from the intestine of *Barbus barbulus* from Tigris river at Salah Al-Dien province (10). According to Mhaisen (27), only one additional host (*L. abu*) was reported for this parasite in Iraq, and hence, *A. vorax* of the present study represents the third host for *P. fractus* in Iraq.

Finally, to sum up on the findings of the present investigation, it is clear that *L. abu* harbored the highest number of endoparasitic species (six parasite species out of a total of seven recorded parasite species), followed by *A. vorax* (five parasite species), *B. grypus* and *B. sharpeyi* (two parasite species each) and *B. xanthopterus* (one parasite species). Both *B. luteus* and *C. carpio* showed no infection with endoparasites.

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الطفيليات الداخلية في سبعة أنواع من الأسماك من جدول الحسينية، محافظة كربلاء، وسط العراق

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الخلاصة

تم جمع سبعة أنواع من الأسماك (الشلك، الشبوط، الحمري، البني، الكطان، الكارب الإعتيادي والخشني) العائدة لعائلتين (العائلة الشبوطية وعائلة البياح) من جدول الحسينية، محافظة كربلاء أثناء المدة من شهر أيار 2005 ولغاية نيسان 2006. كانت هذه الأسماك مصابة بسبعة أنواع من الطفيليات الداخلية ضمت نوعا" واحدا" من الديدان الشريطية البالغة (*Polyoncobothrium magnum*)، ونوعين من الديدان الخيطية (يرقات الطور الثالث للجنس *Contracaecum* وبالغات *Cucullanus cyprini*) وأربعة أنواع من الديدان شوكية الرأس البالغة (*Neoechinorhynchus cristatus*، *N. iraqensis*، *N. rutili* و *Paulisentis fractus*). لقد عدت أربعة أنواع من الأسماك مضيفات جديدة لثلاثة أنواع من الطفيليات في العراق وهي الشبوط والبني والخشني بالنسبة لطفيلي *C. cyprini* والشلك بالنسبة لكل من *P. magnum* و *P. fractus*. من بين هذه الأسماك كانت سمكة الخشني مصابة بأكبر عدد من الأنواع المتطفلة (ستة أنواع)، تلتها أسماك الشلك (خمسة أنواع) في حين كانت كل من أسماك الحمري والكارب الإعتيادي بدون طفيليات داخلية. هذه الدراسة تمثل أول بحث عن الطفيليات الداخلية للأسماك في جدول الحسينية.