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OCCURRENCE OF *PALLISENTIS SINDENSIS* KHAN & BILQEES, 1987 FROM THE COMMON EDIBLE FISH *CHANNA. (O) STRIATUS* IN SINDH

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ABSTRACT

Male and female *Channa. (O) striatus* (Bl.) were examined monthly for *Pallisentis sindensis* Khan and Bilqees, 1987 for a period of over two years (May, 1997 – August, 1999). *Channa. O striatus* showed greater proportion of infection during September to December. Infection was mostly absent from January to March both in male and female fishes. Percentage of infection was 13.7 and 12.3 and ratio of occurrence of male and female parasites was 01:01.2 and 01:01.9 in male and female fish respectively.

Key words: *Pallisentis sindensis; Channa O. striatus;* Edible fish, Sindh.

INTRODUCTION

Pallisentis sindensis Khan & Bilqees, 1987 is a common Acanthocephalan-parasite occurring in the small intestine of the Fresh Water fish *Channa O.striatus* in Sindh, Pakistan. *Channa (O.) striatus* is a delicious edible, fresh water fish reaches upto 90 cms in its maximum size and over two kg. in weight. It is highly predaceous and hence parasitized by a number of helminth parasites. In order to have an insight on the parasitic infections of the fish especially with Acanthocephala, the thorny headed worms, a study was conducted for a period of twenty eight months, i.e. from May 1997 to August 1999 to determine the frequency of occurrence of the said worms.

However, besides *P. sindensis* the fish was also found infected with a number of additional helminth parasites in Pakistan, which include: *Pallisentis ophiocephali* (Tahpar, 1930) Saeed & Bilqees, 1972, (Acanthocephala) *Neocamallanus ophiocephali* Rehana and Bilqees, 1972 (Nematoda); *Clinostomum mujibi* Bilqees, 1972 (Trematoda); Bilqees *et al*., 1976; *Senga striatus*, Rehana & Bilqees, 1979 (Cestoda); *Genarchopsis macrocirrus* (Trematoda) Rehana & Bilqees, 1980; Khan *et al*., 1991.

Present paper is an addition to the occurrence studies of the thorny headed worms, the Acanthcephala found in freshwater fish of Sindh.

MATERIALS AND METHODS

The fish *Channa O. striatu*s were randomly purchased from Landhi fish Market, Karachi, these fish were originally caught from Kalri Lake, district Thatta Sindh, Pakistan. A total of 351 fish *Channa O. striatus* were examined monthly for *Pallisentis sindensis* (Khan and Bilqees, 1987) for a period of over two years i.e. form May, 1997 to August 1999 (Twenty eight months).

Each fish was sexed and the body was then opened by mid ventral incision. The gut was then removed and cut into sections corresponding to its natural regions. Each section was separately dissected, parasites removed and notes on their sex, exact location, and related observations were made for the purpose of identification, some of the specimens recovered were fixed in F.A.A., stained with Mayer's Carmalum, dehydrated and mounted in Canada balsam. All the specimens recovered are deposited with the third Author's collection.

RESULTS

A total of 351 fish *Channa O. striatus* were examined for Acanthocephalan parasite *Pallisentis sindensis* Khan and Bilqees, 1987 over a period of 28 months starting from May, 1997 to August 1999. Out of 351 fish 48 male and 43 female fish were found infected. Overall percentage of infection was 13.7 and 12.3 respectively.

Data was collected regarding occurrence of male and female parasites in male fish host and occurrence of male and female parasites in female fish hosts during the period mentioned. A total of 90 male parasites (*Pallisentis sindensis*) were recovered from male fish host during the whole study period, while minimum number occurred was a single male specimen during August 1998. Maximum number of male parasites occurred were 19, during

November 1997. Infection was absent during June, July, August and December 1997, it was also found absent during January, February, March, June, July, October, 1998 and January to April, 1999.

Total female parasites recovered from male fish host during the whole study period were 108. Minimum number recovered was 1, during June, September, 1998 and April 1999, while maximum number occurred were 26 during November 1998. Infection was absent during June, July and December, 1997 and January, February, July, October, 1998 and January, February, March, July and August, 1999. Male and female parasite ratio recorded was 01 : 012 in male fish host, while it was 01:01.9 in female fish host. Total number of male parasites recovered from female fish hosts during the whole study period was 81. Minimum number was 1, recovered during August, 1997; April and July 1998. Maximum number of parasites recovered were 25 during November, 1997. Infection was absent during December 1997, February, May, August, 1998 and it was totally absent during January to August, 1999. Total number of female parasites recovered from female fish host during the whole study period was 150. Minimum number occurred was 1, during August 1997 while maximum number occurred were 29 during October, 1998. Infection was absent during December, 1997, January, February and May, 1998. It was also absent during January to April and July, August, 1999 (Table I).

Minimum infection occurred during May in male fish and during August in both male and female fish. Minimum number was found infected during December, 1998. Maximum percentage of male and female infected fish during May, 1999. Minimum percentage of male and female infected fish was during June and July, 1999 respectively.

DISCUSSION

Total infection with male and female Acanthocephala parasite in 48 male *Channa O. striatus* was 198 worms, while total infection in 43 female fish was 231 worms, which indicates greater infection in female fishes during the study period. Percentage of infections in male fish host was 13.7 while it was 12.3 in female fish host. Ratio of infection in male fish was 01:01.2 and that in female fish it was 01: 01.9.

Present study indicates more infection in female fish than in the male fish with *P. sindensis*, these findings agree with Tellervo (1983) who recorded higher infection rate in female fish as compared with male fish viz. *Gadus morhua*; *Gymnocephalus cernua*; *Clupes harengus*; *Osmerus eperlanus* and *Zoarces viviparus* with Acanthocephala parasite *Corynosoma semerme* and *C. strumosum.*

Amin and Burrows (1977) reported *Echinorhynchus salmonis* Muller, 1784, females were proportionately more numerous than males Further, Burlingame and Chandler (1941) Awachie (1966) and Amin (1975) observed that male *Moniliformis dubius, Echinorhychus truttae* and *Acanthocephalus parksidei* were eliminated due to mortality earlier than female, resulting in a sex ratio in favour of more female towards the end of the infectious period.

Later Amin (1986) observed that host sex did not affect the intensity of infection of *Neoechinorhynchus prolixoides* Bullock, 1963; N. *strigosus* Van Cleave, 1949; *N.salmonis* Ching, 1984 and *N. rutili* (Muller, 1970) Hamann, 1982. Khan and Bilqees, (1987) reported two new Acanthocephala species from Freshwater fishes of Kalri lake, Sindh including *Pallisenlis sindensis*.

Khan *et al*., (1991) observed seasonal pattern in the occurrence of acanthocephala in relation to their host. *Pallisentis ophiocephali* infection in male *Channa O. striatus* was significantly greater than in female, while in *Labeo rohita* sexes were not differentially infected with *Acanthosentis betwai* (Tripathy, 1959). The overall observations tend to suggest a ratio of 1:1 while in present studies ratio of infection recorded was 1: 01.2 and 01:01.9 in male and female hosts respectively.

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Table 1. Occurrence of *Palisentis sindensis* Khan & Bilqees, 1987 from the common edible fish *Channa.(o) striatus* in Sindh.

Month & Year	No. of Examined	Infected Fish		Infected Fish		Parasite Recorded (Male Fish)		Ratio M. Fish Male : Fish	Parasite Recorded (Female Fish)		Ratio M. Fish Male : Fish
		Male	Female	%Male	%Female	M. Parasite	F. Parasite	1:00	M. Parasite	F. Parasite	1:00
May, 1997	16	1	2	6.3	12.5	2	6	3	4	2	0.5
June, 1997	10	0	2	0	20	0	0		3	3	1.3
July, 1997	11	0	1	0	9.1	0	0		3	5	1.7
August, 1997	14	1	1	7.1	7.1	0	3		1	1	1
September, 1997	4	2	1	50	25	2	7	3.5	3	13	4.3
October, 1997	11	7	4	63.6	36.4	18	16	0.9	5	13	2.6
November, 1997	26	8	6	30.8	23.1	19	8	0.4	25	20	0.8
December,1997	8	0	0	0	0	0	0		0	0	
January, 1998	18	0	1	0	5.6	0	0		2	0	0
February, 1998	10	0	0	0	0	0	0		0	0	
March, 1998	7	1	1	14.3	14.3	0	4		3	10	3.3
April, 1998	12	3	1	25	8.3	2	5	2.5	1	4	4
May, 1998	17	3	0	17.6	0	4	5	1.3	0	0	
June, 1998	16	1	3	6.3	18.8	0	1		5	2	0.4
July, 1998	10	0	2	0	20	0	0		1	3	3
August, 1998	10	2	1	20	10	1	5	5	0	7	
September, 1998	3	2	1	66.7	33.3	4	1	0.3	3	3	1
October, 1998	7	0	7	0	100	0	0		14	29	2.1
November, 1998	14	8	4	57.1	28.6	4	26	6.5	5	16	3.2
December,1998	28	1	2	3.6	7.1	5	14	2.8	3	9	3
January, 1999	10	0	0	0	0	0	0		0	0	
February, 1999	26	0	0	0	0	0	0		0	0	
March, 1999	14	0	0	0	0	0	0		0	0	
April, 1999	3	1	0	33.3	0	0	1		0	0	
May, 1999	6	2	2	33.3	33.3	13	2	0.2	0	5	
June, 1999	16	2	1	12.5	6.3	5	4	0.8	0	4	
July, 1999	14	1	0	7.1	0	4	0	0	0	0	
August, 1999	10	2	0	20	0	7	0	0	0	0	
	351	**48**	**43**	**13.7**	**12.3**	**90**	**108**	**1.2**	**81**	**150**	**1.9**