



Studies on Intensity of Cestodes Parasite Infecting *Monopterus cuchia* in Cachar District, Assam

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(Received 15 October, 2012, Accepted 25 November, 2012)

ABSTRACT: Cestode parasites are generally found in almost all freshwater fishes. In this study thirty specimens of *Monopterus cuchia* were examined for parasitic cestode fauna and out of this fourteen specimens were found to be infected with cestodes. All cestode infection observed and recorded in the present study were restricted to the intestine of the fish. The female specimens show higher prevalence of about 75% than the male specimens of only 14:3. The intensity of infection in male is 3.5 and that of female is 1.75. The fish specimen with intermediate weight group shows highest (66.7%) prevalence of infestation. However, further study is still required to reveal many enclosed parasitic infection of fishes and its causation, particularly in this region with high diversity of fishes.

Keywords: Cestode, Intestine, *Monopterus cuchia*, North – East, Lactophenol

INTRODUCTION

One of the freshwater fishes of North – East India, also found in some wetlands of Barak Valley, is *Monopterus cuchia*, commonly known as Gangetic mud-eel, is a mud dwelling fish with snake like appearance and smooth, slimy skin. *M. cuchia* belongs to the family Synbranchidae and order Synbranchiiformes. It is an indigenous fish species of N.E. India and locally known as 'kuchia'. Rivers, ponds, beels and other fresh water bodies are the natural habitat of this eel. The natural population of *M. cuchia* has dwindled to a considerable extent mainly due to parasitic infection. Parasites are small players with crucial role in ecological system. Parasites are metabolically dependent on their hosts mainly for their nutritional requirements. However, it is an established fact that many species of parasites provoke pronounced or subtle effects on hosts affecting their behaviors, growth, fecundity and mortality.

Moreover, parasites may also regulate host population dynamics and influence community structure. Among fresh water fishes, there are 1211 species of different parasites representing 5 phyla and 11 classes of invertebrates (Baylis, 1934). Parasitic diseases, either alone or in conjugation with other environmental stresses, may influence length, weight or reproduction of the host. The major parasitic groups found in freshwater fishes are Cestode parasites. Cestode infections in fishes are major parasitic disease in India. Cestodes damage health of fish by inducing variable intensity of infection depending upon the quality of environmental conditions. Four major classes parasites are found in fresh water fishes viz, trematodes, cestodes, acanthocephalans and nematodes. Among all this four major classes, cestodes are well known to produce certain adverse effects on their piscine hosts.

These include mechanical blockage at the gut lumen and in the physiological state of the host thereby predisposing it to other infections. Many Cestode parasites study on freshwater fishes of Northeast India reveals that most freshwater fishes of this area mainly infected by cestodes. Other classes of Cestode parasites are also able to cause dreadful infection to the fishes, sometimes causing fatal. Chubb (1980, 1982) illustrated that the most meaningful comparison of data for incidence and intensity of occurrence will be with the length of the fishes. The influence of parasitic infection in relation to the length of fish has been described by many workers Baylis (1947), Firadaus (1988), Hiware (2010). Cestode parasitic infection of fishes from Okhuaihe river, Nigeria was studied by Kar (2007, 2010) made detailed study of the limnology and ichthyofauna of water bodies of North East India including diseases in fishes. Shomorendra *et. al.* (2007) studied the effect of length of fish on the occurrence of Cestode parasites. Ratnabir *et. al.* (2010) studied on the Cestode parasites in relation to length of three freshwater fishes of Dolu Lake of Silchar, Assam, India. Binky, (2010, 2011) worked on the Cestode parasites and intensity of parasitization among fishes of Karbhala wetland in Cachar District of Assam.

MATERIAL AND METHODS

The fishes were different sizes were routinely collected alive and carried in containers to the laboratory containing water of the same locality. The identification of each fish was done following Jayaram (2010). The external and internal organs were thoroughly examined for the Cestode parasites. After being fully relaxed the collected Cestode were fixed and stored in 70% alcohol. To facilitate identification of the worms they

were cleared in Lactophenol and mounted in Glycerin jelly.

RESULTS AND DISCUSSION

Thirty specimens of *Monopterusuchia* were examined for parasitic helminth fauna. All helminth infection observed and recorded were restricted to the intestine of the fish. Fourteen specimens were found to be infected with cestodes. Total of 128 cestodes were found in the host fishes, Helminth parasites infection in *M. cuchia* with relation to length, weight and sex of the host are recorded in Table I.

Monopterusuchia. A total of fourteen male specimens were examined and two were infected with seven helminthic parasites which shows prevalence (%) of 14.3, with abundance of 0.5 and intensity of infection is 3.5. In case of female, sixteen host specimens were examined among them twelve were found infected with twenty-one helminthic parasites, which shows an prevalence (%) of 75 of the total sample, having abundance of 1.31 and intensity of infection is 1.75.

The parasite prevalence, abundance and intensity depend on many factors like parasite its life cycle, host and its feeding habits and the physical factors of water body where the fish inhabit. It also depends upon the presence of intermediate host such as piscivorous birds mainly for the spread of cestodes infection. The hygienic conditions are also very important for the healthy environment where fish are raised. The birds living in the vicinity of the water bodies eating fishes acts as intermediate host for internal parasites particularly cestodes. When life cycle of any parasite is completed its prevalence and intensity increases significantly in the piscine host.

Table 1. Data showing parasite infection in *Monopterusuchia* with relation to Length, Weight and Sex of the Host.

No. of Fish Specimen	Site of collection	Length (cm)	Weight (gm)	Sex	Parasite Location	HELMINTH PARASITES			
						Trematode	Cestodes	Acantho	Nema tode
1	Srikona	55	158 60	M	-	-	-	-	-
2	Dhowarbond bazaar	52	131.84	M	-	-	-	-	-
3	Dhowarbond bazaar	49	126.5	M	-	-	-	-	-
4	Dhowarbond bazaar	72	215.8	F	Gut	-	1	-	-
5	Dhowarbond bazaar	54	124.3	F	Gut	-	1	-	-
6	Dhowarbond bazaar	65	224.5	M	-	-	-	-	-
7	Srikona	53	136.82	F	Gut	-	7	-	-
8	Srikona	61	182.3	F	Gut	-	1	-	-
9	Srikona	47	118.8	M	-	-	-	-	-
10	Dhowarbond bazaar	71	256.7	F	Liver (1egg)	-	-	-	-
11	Dhowarbond bazaar	74	246	F	Gut	-	3	-	-
12	Dhowarbond bazaar	71	296.2	F	-	-	-	-	-
13	Dhowarbond bazaar	63	232	M	-	-	-	-	-
14	Dhowarbond bazaar	40	78.83	M	-	-	-	-	-
15	Srikona	46	96.7	M	Gut	-	2	-	-
16	Srikona	64.5	247.6	F	Liver	-	-	-	-
17	Srikona	48	86.4	M	-	-	-	-	-
18	Dhowarbond bazaar	50	131.8	F	Gut	-	1	-	-
19	Dhowarbond bazaar	70	26.8	F	Gut	-	1	-	-
20	Dhowarbond bazaar	73	242.9	F	Gut	-	1	-	-
21	Dhowarbond bazaar	54	116.5	M	-	-	-	-	-
22	Dhowarbond bazaar	52	115.6	M	-	-	-	-	-
23	Dhowarbond bazaar	69.5	278.3	M	-	-	-	-	-
24	Srikona	40.5	112.3	F	Gut	-	1	-	-
25	Srikona	64	239.8	F	Gut	-	1	-	-
26	Dhowarbond bazaar	40.5	94.4	F	Gut	-	2	-	-
27	Dhowarbond bazaar	73.5	282	M	Gut	-	5	-	-
28	Dhowarbond bazaar	57	124.8	F	-	-	-	-	-
29	Dhowarbond bazaar	55	143.74	M	-	-	-	-	-
30	Dhowarbond bazaar	80	286	F	Gut	-	1	-	-

ACKNOWLEDGEMENT

The authors are thankful to the Assam University, Silchar for providing the laboratory facilities and to Professor Devashish Kar for his valuable suggestions from time to time and also his expert guidance and valuable suggestions.

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