



Studies on trematode parasites of air breathing fishes of Awangsoi Lake, Manipur

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Abstract: The present investigation deals with a systematic survey of trematode parasites of air breathing fishes from Awangsoi Lake collected during 2008-2009. The air breathing fishes found in Awangsoi Lake are *Channa punctatus*, *Clarias batrachus*, *Channa striatus*, *Channa orientalis*, *Anabas testudineus* and *Heteropneustes fossilis*. During the study period the following 5 species of trematodes were collected: *Clinostomum complanatum*, *Allocreadium handia*, *Allocreadium fasciatusi*, *Astiotrema reniferum* and *Genarcopsis goppo*. The percentage of abundance was found to be maximum in *Astiotrema reniferum* and *Anabas testudineus* harbours the maximum number of parasites.

Keywords: Trematode, Air breathing fishes, Awangsoi Lake, Manipur

INTRODUCTION

Fish is a vital source of human food particularly in terms of high quality proteins. For the people of Easter India in general and North East India in particular fishes constitute a major component of diet. With the increasing demand for fish, practice of pisciculture has been intensified. Consequently, pisciculturist have been facing various hazards. One among such hazards is the diseases resulting from parasitic infections. The present study aims at determining the trematode parasites of air breathing fishes from Awangsoi Lake, Manipur, which will further contribute to our understanding of helminth community diversity.

Work of Yamaguti (1958, 1959, 1961, 1962 and 1963) related to occurrence of helminth parasites in vertebrate host is of immense importance. Further Chubb (1979, 1980) illustrated the studies of seasonal occurrence of helminths in fresh water fishes in different climate zones of the world. Considerable work has been done on the systematics of monogenetic trematodes of fishes by many Indian workers. Many workers like Bhalerao (1942), Dayal (1949), Gupta (1951), Srivastava (1960), made substantial contribution to the taxonomy of digenetic trematode parasites. Kar and Sen (2007) studied on systematic list and distribution of fish biodiversity in Mizoram, Tripura and Barak drainage in North East India. Kar *et al.* (2008) studied on the panorama of fish diversity in certain rivers, wetlands and protected areas in Assam. Kar and Barbhuiya (2009) studied on the Mahseer fishes of Barak

Drainage, Mizoram and Tripura. Barbhuiya *et al.* (2009) worked on fish biodiversity in certain rivers of Tripura. Shomorendra and Jha (2003) reported a new nematode parasite *Paraquimperia manipurensis* n.sp. from the intestine of *Anabas testudineus*. The present study deals with a systematic summary and abundance of tremendous parasites of air breathing tissues from Awangsoi Lake, Manipur.

MATERIALS AND METHODS

Awangsoi Lake is located to the south of Keinou village in Bishnupur District about 22 km. from Imphal. It has an area of about 100 ha. and a depth of about 2.5 meters. Fishes were collected alive almost every alternate day from the fishing sites and brought to the laboratory in the polythene bags containing water of the same locality. Small fishes were killed by pithing and somewhat larger specimens by blow on the top of the cranium. The external body surface as well as the internal body organs were thoroughly examined for the parasites. The trematodes were fixed in AFA (alcohol-formalin-acetic-acid) solution and stored in 70% alcohol. To facilitate identification of the worms the trematodes were stained in alum carmine and mounted in Canada balsam.

RESULTS AND DISCUSSION

The results of the present study are given in Table 1. A rich diversity of about 40 species of fishes have been recorded from the study site. The knowledge of the trematode fauna of the air breathing fishes along the

Table 1. Host parasite list showing percentage of abundance of parasites, (+) indicates presence of parasites, (-) indicates absence of parasite.

S. No.	Name of parasite	Name of fish host						Total no. of parasite found	% abundance
		<i>Channa punctatus</i>	<i>Channa orientalis</i>	<i>Channa striatus</i>	<i>Anabas testudineus</i>	<i>Heteropneustes fossilis</i>	<i>Clarias batrachus</i>		
1	<i>Clinostomum complanatum</i>	+(71)	-	-	-	-	-	71	18.58
2	<i>Allocreadium handia</i>	+(19)	+(33)	-	-	-	-	52	13.61
3	<i>Allocreadium fasciatusi</i>	+(15)	+(13)	-	-	-	-	28	7.32
4	<i>Astiotrema reniferum</i>	-	-	-	+(104)	+(86)	+(12)	202	52.87
5	<i>Genarcopsis goppo</i>	+(15)	-	-	-	+(14)	-	29	7.59
Grand total =								382	

study site is recent. Almost all the air breathing fishes studied were infected with one or more species of trematode parasites. *Clinostomum complanatum* was found to infect the liver of *Channa punctatus*. *Allocreadium handia* and *Allocreadium fasciatusi* were collected from the intestine of *Channa orientalis* and *Anabas testudineus*. *Astiotrema reniferum* was found to infect the liver of *Anabas testudineus* and also in the intestine of *Heteropneustes fossilis* and *Clarias batrachus*. *Channa punctatus* and *Heteropneustes fossilis* were also infected by *Genarcopsis goppo*. The percentage of abundance was found to be maximum (52.87 %) in *Astiotrema reniferum* and minimum (7.32 %) in *Allocreadium fasciatusi*. *Clarias batrachus* and *Anabas testudineus* harbours the minimum (1) species of trematode while *Channa punctatus* harbours the maximum(4).

Diseases affect the normal health conditions and cause and reduction of growth, abnormal metabolic activities and even death, thus results great economic loss. Healthy of a population depends on the control of diseases and maintenance of a healthy relationship between living creatures and their environment (Snieszko, 1983). Five factors directly influence the parasite fauna of fishes like age, diet, abundance of fishes, independent number of a parasite within fish and season (Kabata, 1985). Srivastava (1975) stated that the characteristic of any water body can influence and determine its parasitic fauna and when environmental conditions such as water, food and temperature become favourable for mass reproduction of parasites, the disease may spread very quickly.

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