

Helminth-Fauna of Air-Breathing Fishes of Utra Lake in Manipur

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Abstract

The study was done on the helminthes (nematodes, trematodes, cestodes and acanthocephalans) infecting the air-breathing fishes of Utra Lake, Bishnupur District, Manipur. Some of the species of helminth-fauna were collected from the air-breathing fishes found in the lake. They belong to four diverse groups comprising three species of nematodes (61.25%), two species of trematodes (18.1%), two species of cestodes (7.1%) and one species of acanthocephalan (13.4%). *Camallanus anabantis* (45.4%) gave the maximum percentage of abundance and the highest number of worms were collected from *Anabas testudineus*.

Key words : Air-breathing fishes, Helminth-fauna, Utra Lake.

Fish is a vital source of human food particularly in the North-East (NE) India. It not only provides proteins (upto 13-20%) but also provides fish meal, fish oil, isinglass. But its productivity is adversely affected by the parasitic infections and diseases. Such infections not only deteriorate the muscle quality, stunt growth but even sometimes prove fatal due to internal injury. The paper deals with the study of the helminth fauna i. e. nematodes, trematodes, cestodes and acanthocephalans infecting the air breathing fishes of Utra Lake, Bishnupur District, Manipur. Utra Lake is located in Bishnupur District, Manipur about 24 km from Imphal. It lies between a longitude of 93° 45' and 93° 55' E and a latitude of 24° 25' and 24° 25' and 24° 40' N. The Lake has a water spread area of 94 hectares (ha) and a depth of about 3 meters. A rich diversity of 35 species of fishes have been recorded in the lake, notably *Channa striatus*, *Channa orientalis*, *Channa punctatus*, *Anabas testudineus*, *Heteropneustes fossilis*, *Puntius sophore*, *Puntius manipurensis*, *Clarias batrachus*, *Amblypharyngodon mola*.

Work of Yamaguti (1,2) related to the occurrence of helminth parasites in vertebrate host is of immense importance. The influence of parasitic infections in relation to the length of fish has been described by many workers (3—6). Agarwal (7) studied on some nematode parasites of freshwater fishes water fishes

from Lucknow. Bhalerao (8) described on some metacercarial forms of Clinostomadae (Trematoda) from India. Chubb (9, 10) made detailed study on the seasonal occurrence of helminthes in freshwater fishes. Kar and Sen (11) studied on systematic list and ditribution of fish biodiversity in Mizoram, Tripura and Barak drainage in North East India. Kar et al. (12) studied on the panorama of fish diversity in certain rivers and wetlands in Manipur. Kar et al. (13) studied on the panorama of fish diversity in certain rivers, wetlands and protected areas in Assam. Kar et al. (14) studied on the Mahseer fishes of Barak Drainage, Mizoram and Tripura. Shomorendra and Jha (15,16) studies on acanthocephalan parasites of certain fishes from Manipur. Puinyabati et al. (17) studied on helminth parasites of fishes of Awangsoi fishery, Bishnupur, Manipur, India. Sangeeta et al. (18) studied on nematode parasites of fishes of Oinam lake, Bishnupur District, Manipur.

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Methods

Fishes were collected alive almost on every al-

Table 1. Helminth species showing the percentage of abundance in some air-breathing fishes found in Utra Lake, Manipur. (+) indicates presence, (—) indicates absence. A= *Anabas testudineus*, B= *Clarias batrachus*, C = *Heteropneustes fossilis*, D= *Channa punctatus*, E = *Channa striatus*, F = *Channa orientalis*.

	Name of the parasite	Name of the fish host						Total no. of worms found	Abundance (%)
		A	B	C	D	E	F		
1	<i>Camallanus anabantis</i>	+ (230)	-	-	-	-	-	230	45.4
2	<i>Paraquimparia manipurensis</i>	+ (45)	-	-	-	-	-	45	8.9
3	<i>Procamallanus succobranchi</i>	-	+ (13)	-	-	-	-	13	4.3
4	<i>Paragendria</i> sp.	-	-	-	-	-	+ (22)	22	2.6
5	<i>Allocreadium handia</i>	-	-	-	-	-	+ (8)	8	1.6
6	<i>Asteotrema reniferum</i>	+ (30)	+ (12)	+ (42)	-	-	-	84	16.6
7	<i>Djombangia penetrans</i>	-	+ (8)	-	-	-	-	8	1.6
8	<i>Lytocestus bishnupurensis</i>	-	-	+ (28)	-	-	-	28	5.5
9	<i>Pallisentis ophiocephali</i>	-	-	-	+ (34)	+ (30)	+ (4)	68	13.4
Grand total								506	

ternate 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 and the internal body organs were thoroughly examined for occurrence of parasites. The parasites collected, upon being fully relaxed, were fixed in the fixatives prescribed for different helminthic groups. The trematodes were fixed in AFA (alcohol-formalin-acetic-acid) solution and stored in 70% alcohol. Acanthocephalans were fixed and preserved in AFA, cestodes in 5% formalin and nematodes after immersing in warm 70% alcohol. To facilitate identification of the worms the trematodes and cestodes were stained in alum carmine and mounted in Canada balsam while for nematode and acanthocephalans, the worms were cleared in lactophenol and mounted in glycerine.

Results and Discussion

From the routine investigation of the air-breathing fishes, these fishes were found to be infected with diverse groups of helminth-fauna i.e. nematodes, cestodes and acanthocephalans. These helminthes were collected or retrieved from the intestine, body cavity and liver of the fishes. A grand total of 506 helminth species were collected and *Camallanus anabantis* (45.4%) gave the maximum percentage of abundance. Nematodes gave the maximum percentage of abundance (61.26%) and cestodes gave the

least percentage of abundance (7.1%) (Table 1). The infections caused by the helminth fauna may be a major problem in the mortality of fishes. We may also suffer from many diseases if we ingest improperly cooked fishes.

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