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Studies on helminth parasites of fresh water fishes of Loktak Lake Bishnupur District, Manipur

M. Shomorendra^{**}, Th. Ranibala^a, H. Puinyabati^b & Ng. Romen^c

^aDepartment of Zoology, Thambal Marik College, Oinam, Manipur, India

^bDepartment of Zoology, Pravabati College, Mayang Imphal, Manipur, India

^cDepartment of Zoology, Kumbi College, Kumbi, Manipur, India

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Abstract- The present paper deals with thirty one (31) species of parasites belonging to four (4) different groups collected from different fish hosts of Loktak Lake, Manipur. Ten (10) nematode, ten (10) cestode, nine (9) trematode and two (2) acanthocephala collected from different fish hosts. A list of host parasite species is included with particular reference.

Key words: Helminth parasites, fresh water fishes, Loktak Lake.

INTRODUCTION

Parasites had been reported from different parts of the globe. Fishes are known to host a large number of parasites belonging to different phyla. Studies on the helminth parasites of Indian fishes have assumed a special importance due to the vast and varied amount of fish potentialities available in the marine, brackish, estuarine and freshwater sources and their huge consumption.^{1,2} The present paper reports the helminth parasites of the fresh water fishes of Loktak Lake, Bishnupur District, Manipur.

MATERIALS & METHODS

The fish hosts examined for the helminth infection in the present study were collected during survey work in October to July from different areas of Loktak Lake, Bishnupur District, Manipur. Small fishes were killed by

pitthng and somewhat larger specimens by blow on the top of cranium. The external body surface as well as the internal body organs (alimentary canal, liver, heart, kidney, gonads, swim bladder) were thoroughly examined for the parasites. The parasites collected upon being fully relaxed and fixed in the fixatives prescribed for different parasite group. The trematodes were fixed in AFA (alcohol-formalin-acetic acid) solution and stored in 70% alcohol, acanthocephala fixed and preserved in AFA, cestodes in 5% formalin and nematodes after immersing in warm 70% alcohol were finally stored in 70% alcohol. To facilitate identification of the worms, the trematodes and the cestodes were stained in alum carmine, dehydrated in glacial acetic acid, cleared in methyl salicylate and mounted in Canada balsam while in the case of nematode and acanthocephala, worms were cleared in lactophenol and mounted in glycerine jelly.

*Corresponding author :

Phone : 9862490384

E-mail : smaibam90@gmail.com

RESULTS & DISCUSSIONS

The fishes are all fresh water species found in Loktak Lake, Manipur. During the present study thirty seven (37) species comprising sixteen (16) families and twenty four (24) genera were collected for examination of exo- and endo-parasitic infection. Out of 3206 individuals of fish

examined 764 (23.83%) fishes were infected by helminth parasites. Thirty one (31) species of helminth parasites were found to be infected in different fish hosts. They belong to four (4) diverse groups comprising ten (10) nematodes, ten (10) cestodes, nine (9) trematodes and two (2) acanthocephala were collected from different fish hosts. They are as follows:

Nematode

Sl. no.	Name of parasite	Location of body part	Fish host	Remarks
1	<i>Camallanus anabantis</i> ^{3,4}	Intestine	<i>Channa orientalis</i> , <i>C. punctatus</i> , <i>C. striatus</i> and <i>Anabas testudineus</i> .	<i>C. striatus</i> (new host record)
2	<i>Procamallanus (Procamallanus) saccobranchii</i> ⁴	Intestine	<i>Clarias batrachus</i>	
3	<i>Paraquimperia manipurensis</i> ⁵	Intestine	<i>A. testudineus</i> .	
4	<i>Spirocamallanus gubernaculus</i> ⁴	Intestine	<i>A. testudineus</i> and one juvenile from <i>Mystus tengana</i> .	<i>A. testudineus</i> (new host record)
5	<i>Paragendria</i> sp. ⁴	Intestine	<i>Notopterus notopterus</i> , <i>Puntius sophore</i> , <i>C. orientalis</i> and <i>Mystus bleekeri</i>	
6	<i>Haplonema</i> sp. ⁴	Intestine	<i>Mystus bleekeri</i>	<i>Mystus bleekeri</i> (new host record and new locality).
7	<i>Philometra</i> sp. ⁴	Intestine	<i>M. bleekeri</i> and <i>C. batrachus</i> .	Both the hosts are new host record and new record from the state of Manipur.
8	<i>Spinitectus</i> sp. ⁴	Intestine	<i>C. striatus</i>	
9	<i>Syphacia</i> sp. ⁴	Intestine	<i>Colisa fasciatus</i> .	This is the second report from fish host.
10	<i>Rhabdochona</i> sp. ⁴	Intestine	<i>C. punctatus</i>	<i>C. punctatus</i> (new host record)

Cestode

Sl. no.	Name of parasite	Location of body part	Fish host
1	<i>Capingentoides singhi</i> ⁶	Intestine	<i>C. batrachus</i>
2	<i>Djombangia penetrans</i> ⁷	Intestine	<i>C. batrachus</i>
3	<i>Lytocestus birmanicus</i> ⁷	Intestine	<i>C. batrachus</i>
4	<i>L. bishmupurensis</i> ⁸	Intestine	<i>Mystus bleekeri</i>
5	<i>L. fossilis</i> ⁹	Intestine	<i>Heteropneustes fossilis</i>
6	<i>L. longicollis</i> ¹⁰	Intestine	<i>Clarias batrachus</i> , <i>Mystus bleekeri</i>
7	<i>L. indicus</i> ⁷	Intestine	<i>Clarias batrachus</i> , <i>H. fossilis</i>
8	<i>L. attenuates</i> ¹¹	Intestine	<i>Clarias batrachus</i>
9	<i>Introvertus raipurensis</i> ⁸	Intestine	<i>Clarias batrachus</i> and <i>Mystus bleekeri</i>
10	<i>Ophiotaenia</i> sp. ⁷	Intestine	<i>Glossogobius giuris</i>

Digenetic Trematode (Metacercaria)

Sl. no.	Name of parasite	Location of body part	Fish host	Remarks
1	<i>Clinostomum complanatum</i> ^{12,13}	Body cavity	<i>Colisa fasciatus</i> , <i>C. labiosus</i> and <i>Channa orientalis</i>	
2	<i>Isoparorchis hypselobagri</i> ¹²	Body cavity	<i>C. orientalis</i>	
3	<i>Metaclinostomum srivastavai</i> ¹⁴	Liver	<i>Channa punctata</i>	
4	<i>M. thaparui</i> ¹⁵	Liver	<i>Channa punctata</i>	
Adult				
5	<i>Genarchopsis goppo</i> ¹²	Body cavity	<i>Channa orientalis</i>	<i>Channa orientalis</i> (new host record).
6	<i>Phyllodistomum guptai</i> ¹⁶	Body cavity	<i>C. orientalis</i>	
7	<i>Astiotrema reniferum</i> ¹²	Intestine	<i>C. batrachus</i>	
8	<i>Allocreadium handiai</i> ¹²	Intestine	<i>C. punctatus</i>	
9	<i>A. fasciatusi</i> ¹⁷	Intestine	<i>C. orientalis</i>	
Acanthocephala				
1	<i>Pallisentis ophiocephali</i> ¹⁸⁻²⁰	Intestine	<i>C. orientalis</i> , <i>C. punctatus</i> , <i>C. striatus</i> and <i>Colisa fasciatus</i>	
2	<i>Acanthocephalus loktakensis</i> ²⁰	Intestine	<i>C. orientalis</i>	

CONCLUSION

During the study period some nematode specimens cannot identify upto species level because the collected worms are all juvenile stage. Some specimens are host specific and some specimens are new host record as well as new locality report.

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