

**A LIST OF HELMINTHS OF CERTAIN FISHES  
FOUND IN DIFFERENT LOCALITIES OF  
LANGTHABAL, MANIPUR**



**Zoology**

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**ABSTRACT**

*Manipur has diversified fish species and like all other vertebrates they do harbour a number of endo-parasites. To study the prevalence of endo-parasites, 300 fishes of both sexes and various ages were examined in different localities of Langthabal area from July, 2012 to June, 2014. Of them, 201 fishes were infested with one or more species of endo-parasites. The parasite fauna in the present study comprises a total of four different helminth parasites, three genera of trematode and one genus each of cestode, nematode and acanthocephalan. Among these, Procammallanus spp. was the most common. The present study suggests that endo-parasitic infestation is very common in the fishes of Langthabal region. The descriptions, dimensions and also the site of infestations of the parasites are given.*

**INTRODUCTION**

Fishes constitute one of the most nutritive, proteinaceous and delicious group of food item but no doubt they are infested by various parasites which is also one of the reasons for reducing their rate of likeliness by the people. The fish parasites encountered from the study site includes acanthocephala, cestodes, nematodes and trematodes. Acanthocephala or the spiny-headed worm has an elongated, cylindrical body tapering at both ends. The presence of a protrusible or retractile proboscis armed with rows of sharply pointed spines at the anterior end is one of the unique characters of the worm. The proboscis serves as the main holdfast organ. They are also dioecious in nature and lacks organ of alimentation throughout their life stages.

Cestodes are hermaphroditic tapeworms usually segmented and most predominant group of helminths parasitizing fishes in north-east India. They are devoid of a digestive system. They have a well developed attachment organ known as scolex at the anterior tip. Nematodes are highly diversified, colourless lower invertebrates and constitute an important group of organism inhabiting the different organs of their host. The digenean trematodes are usually hermaphroditic in nature. They are leaf-like, dorsoventrally flattened worms which commonly infect the intestinal tract, stomach and also the body cavity as endoparasites.

**MATERIAL AND METHODS**

Fishes were brought to the laboratory from different localities of Langthabal namely Awang, Makha and Mayai Leikais, anaesthetized and dissected in 0.7% normal saline solution for examination of helminth parasites. The recovered parasites were recorded and processed separately. After the preparation of the permanent slides the specimens were identified following Yamaguti's Systema Helminthum, CIH Keys, etc. All the measurements are in millimetres.

**RESULTS AND DISCUSSION**

A total of four different parasites were obtained which include three genera of trematodes and one genus each of cestode, nematode and acanthocephalan. The only species of acanthocephalan is Acanthocephalus bufonis, the cestodes include Lytocestus birmanicus, L. fossilis and L. indicus. The different genera of digenean trematodes are Astiotrema heterospinoso; Dollfustrema glyptothoraxum and Opisthorchis pedicellata and the nematodes are Procammallanus lucknowensis and P. sumusi. Their descriptions, dimensions and site of infestations are given in detail.

**Body dimensions of Acanthocephalus bufonis**

Male	Female
<b>Body length</b> 4.45 - 6.15	<b>Body length</b> 6.46 - 10.28
<b>Body width</b> 0.74 - 1.20	<b>Body width</b> 0.74 - 1.14
<b>Proboscis elongated</b> 12 to 14 rows of hooks containing 4 - 6 hooks per row.	<b>Proboscis elongated</b> consisting of 6 - 7 hooks per rows.
<b>Proboscis receptacles double layered</b> 0.77 - 1.02 in length and 0.12 - 0.37 in width	<b>Longest hook measures</b> 0.17 - 0.19 and the shortest hook measures 0.11 - 0.14 in length
<b>Longer hook measures</b> 0.09 - 0.12 and the smallest hook measures 0.08 - 0.10 in length	<b>Ovarian balls irregular</b> in shape lying scattered or in groups within the entire body
<b>Anterior testis</b> 0.42 - 0.51 in length and 0.24 - 0.56 in width	<b>Eggs elongated, fusiform,</b> numerous, measures 0.03 - 0.06 x 0.01 - 0.02
<b>Posterior testis</b> 0.38 - 0.54 mm in length and 0.24 - 0.56 mm in width	
<b>Cement glands</b> six in number, filliform and comprised of three groups each with two glands.	

The species was recovered from the intestine of *Clarias magur* and *Glossogobius guiris*.

**Body dimensions of Lytocestus birmanicus**

<b>Body length</b> 10.8 - 12.4
<b>Body width</b> 0.6 - 0.9
<b>Number of testes</b> ranges from 170 - 384 measures 0.09 - 0.25 x 0.10 - 0.16
<b>Cirrus sac</b> oval in shape. Ovary H-shaped and wing-like, near posterior end of body
<b>Vagina</b> tubular, no seminal receptacle.
<b>Vitellicial follicles</b> transversely elongated measures 0.10 - 0.12 x 0.04 - 0.06

The present species was recovered from the intestine of *Clarias magur* and *Puntius* spp.

**Body dimensions of Lytocestus fossilis**

<b>Body length</b> 16.0 - 20.5
<b>Body width</b> 1.6 - 2.4
<b>Scolex</b> 0.30 - 0.60 x 0.20 - 0.50
<b>Neck</b> 0.50 - 1.24 x 0.36 - 0.73
<b>Cirrus sac</b> ovoid 0.72 - 0.8 x 0.52 - 0.62
<b>Testicular follicles</b> round or oval, numerous in number
<b>Ovary</b> H-shaped
<b>Eggs</b> oval, non filamentous 0.03 - 0.04 x 0.02 - 0.03

The present species was recovered from the intestine of *Hetero-*

pneustes fossilis and Puntius spp.

#### Body dimensions of *Lytocestus indicus*

<b>Body length</b> 14.8 – 29.0
<b>Body width</b> 1.65 – 2.75
<b>Scolex smooth, undifferentiated from remaining part of the body</b>
<b>Testes numerous (112 – 600 in number) ovoid or rounded</b>
<b>Testicular follicles measure 0.06 – 0.13 mm in length and 0.002 – 0.006 mm in width.</b>
<b>Cirrus sac prominent, open to the antero-vaginal pores</b>
<b>Ovary bilobed and H-shaped. Receptaculum seminis absent</b>
<b>Vitellaria spherical or oval in shape and numerous</b>
<b>Vitelline follicles measures 0.04 – 0.09 x 0.03 – 0.05</b>
<b>Eggs are numerous, oval in shape and operculated, measures 0.03- 0.05 x 0.02 – 0.03</b>

The present specimen was recovered from the intestine of *Channa punctatus* and *Mystus ngasep*.

#### Body dimensions of *Astiotrema heterospinosa*

<b>Body length</b> 2.19 – 2.23
<b>Body width</b> 0.49 – 0.50
<b>Oral sucker</b> 0.11 – 0.12 x 0.11 – 0.14
<b>Pharynx</b> 0.07 – 0.09 x 0.08 – 0.10
<b>Oesophagus</b> 0.21 – 0.27 x 0.02 – 0.04
<b>Ventral sucker</b> 0.13 – 0.14 x 0.13 – 0.14
<b>Anterior testis</b> 0.18 – 0.19 x 0.20 – 0.21
<b>Posterior testis</b> 0.18 – 0.21 x 0.23 – 0.24
<b>Ovary</b> 0.13 – 0.17 x 0.10 – 0.13

The present specimen was recovered from the intestine of *Anabas testudineus*, *Clarias magur* and *Mystus ngasep*.

#### Body dimensions of *Dollfustrema glyptothoraxum*

<b>Body length</b> 1.57 – 2.47
<b>Body width</b> 0.79 – 0.88
<b>Rhynchus</b> 0.09 – 0.10 x 0.15 – 0.16
<b>Pharynx</b> 0.03 – 0.04 x 0.02 – 0.03
<b>Cirrus sac</b> 0.35 – 0.40 x 0.15 – 0.20
<b>Anterior testis</b> 0.15 – 0.17 x 0.14 – 0.17
<b>Posterior testis</b> 0.15 – 0.17 x 0.14 – 0.17
<b>Ovary</b> 0.13 – 0.18 x 0.15 – 0.20

The specimen was recovered from the intestine of *Glossogobius giuris* and *Trichogaster fasciata*.

#### Body dimensions of *Opisthorchis pedicellata*

<b>Body length</b> 6.55 – 8.09
<b>Body width</b> 1.2 – 1.4
<b>Oral sucker</b> 0.22 – 0.28 x 0.24 – 0.29
<b>Ventral sucker</b> 0.50 – 0.54 x 0.51 – 0.55
<b>Pre-Pharynx</b> 0.21 – 0.23 x 0.1 – 0.4
<b>Pharynx</b> 0.12 – 0.15 x 0.1 – 0.2
<b>Oesophagus</b> 0.12 – 0.30
<b>Anterior testis</b> 0.54 – 0.62 x 0.68 – 0.80
<b>Posterior testis</b> 0.56 – 0.59 x 0.66 – 0.84
<b>Ovary</b> 0.23 – 0.28 x 0.30 – 0.34

The present specimen *Opisthorchis pedicellata* was recovered from intestine of *Trichogaster fasciata*.

#### Body dimensions of *Procamallanus lucknowensis*

Male	Female
<b>Body length</b> 3.02 – 5.23	<b>Body length</b> 5.23 – 7.66

<b>Body width</b> 0.13 – 0.15	<b>Body width</b> 0.12 – 0.13
<b>Buccal capsule</b> 0.04 – 0.05 x 0.03 – 0.04	<b>Buccal capsule</b> 0.06 – 0.07 x 0.04 – 0.06
<b>Oesophagus</b> 0.65 – 0.72	<b>Oesophagus</b> 0.61 – 0.69
<b>Nerve ring extends at</b> 0.13 – 0.15	<b>Nerve ring extends at</b> 0.98 – 1.2
<b>Tail length</b> 0.06 – 0.09	<b>Tail length</b> 0.04 – 0.05
<b>Right spicule</b> 0.28 – 0.30	<b>Vulva markedly at</b> 2.60 – 3.12
<b>Left spicule</b> 0.08 – 0.10	<b>Extension of excretory pore from anterior extremity</b> 0.21 – 0.24

The present species *Procamallanus lucknowensis* was recovered from the intestine and stomach of *Heteropneustes fossilis*, *Anabas testudineus* and *Trichogaster fasciata*.

#### Body dimensions of *Procamallanus sumusi*

Male	Female
<b>Body length</b> 2.86 – 3.28	<b>Body length</b> 5.10 – 9.11
<b>Body width</b> 0.06 – 0.12	<b>Body width</b> 0.13 – 0.21
<b>Buccal capsule</b> 0.06 – 0.08	<b>Buccal capsule</b> 0.08 – 0.09
<b>Oesophagus</b> 0.52 – 0.64 x 0.03 – 0.05	<b>Oesophagus</b> 0.77 – 0.99 x 0.05 – 0.10
<b>Nerve ring extends at</b> 0.13 – 0.15	<b>Nerve ring extends at</b> 0.15 – 0.19
<b>Tail length</b> 0.07 – 0.08	<b>Tail length</b> 0.09 – 0.13
<b>Spicule</b> 0.28 – 0.32	

The present species *Procamallanus sumusi* was recovered from the intestine of *Clarias magur*, *Heteropneustes fossilis* and *Mystus ngasep*.

Investigation carried out revealed that helminth parasitic infestations were quite common in the fishes collected from Langthabal. The rate of infestations done by the helminths was carefully recorded in order to further study their population dynamics in all the three localities or Leikais. Amongst the fishes, *Clarias magur* was found infested by all the four types of helminth parasite namely *Acanthocephalus bufonis* (Acanthocephala), *Lytocestus birmanicus* (Cestode), *Procamallanus sumusi* (Nematode) and *Astiotrema heterospinosa* (Trematode). *Mystus ngasep* was also infested by three types of parasite viz. *L. indicus*, *A. heterospinosa* and *P. sumusi*. Small ulcerative lesions were commonly observed in *Procamallanus* spp. infested fishes in which the engorged, red parasites stacked tightly. Fishes infested with the other types of parasite were not severely attacked; they did not bear any signs of superficial injuries.

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