

Some New Species of *Ophioorchis* from Freshwater Fish

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Abstract : Living organisms are very important biotic component of life on this earth which includes all plants and animals from micro-organisms upto huge plants and animals. Many animals like birds, reptiles, mammal, amphibians and fishes are useful for food, skin, bones, teeth, fossil fuel etc. But under certain circumstances, all living organisms are susceptible to diseases and fishes are no exception. A majority of fishes carry heavy infestation of Helminth parasites which cause deterioration in their food value and may result in heavy mortality. Besides, infected fishes act as a very potent source of helminth infection of man and they are transmitted to man only through eating of fish. The faunal morphophology of four species belonging to genus *Ophioorchis* was investigated. It reveals that four sub-species were found to be new. The main objective of the study was to find out the taxonomy of trematodes found in freshwater fish *Ophiocephalus gauchua* from Jayakwadi Dam in Paithan (M.S.). This parasite is found in large number specially in summer season while it is less in winter and rarely seen in monsoon.

Key words : *Ophioorchis*, trematodes, Jaykwadi, infestation, helminth.

Introduction

Looss (1899) created the genus *Progonus* to include *Genarches mulleri* Levinsen, (1881). Ozaki (1925) described the genus *Genarchopsis* for his species *Genarchopsis gappo*. Srivastava (1933) synonymised *Genarchopsis* with *progonus* and described *Progonus piscicola* and *Progonus ovacaudatum*. In the same year Srivastava created the genus *Ophioorchis* to describe *Ophioorchis lobatum* and *Ophioorchis singularia* on account of the presence of oesophageal pouch. Gupta (1951) emended the diagnosis of the genus *Ophioorchis* and added three more species *Ophioorchis dasus*, *Ophioorchis indicus* and *Ophioorchis faruquis*. The genus *Genarchopsis* was erected by Ozaki (1925) from *Mogurnda obscura* in Japan as the type species. Srivastava, 1933 described *Genarchopsis singularis* from the intestine of *Channa striata* from United Province, India. Yamaguti (1958) taking into consideration one common character the presence of caudal anastomosis in all the genera synonymised the genus *Ophioorchis* Srivastava, (1933) (*Genarches* Looss, (1902), preoccupied and *Progonus* Looss 1899 preoccupied) with *Genarchopsis* Ozaki (1925), retaining *G. goppo* as genotype. He maintains eleven species under the genus *Genarchopsis* viz. *Genarchopsis goppo* Ozaki, (1925); *Genarchopsis anguillae* Yamaguti, (1938); *Genarchopsis dasus* Gupta, (1951); *Genarchopsis faruquis* Gupta (1951); *Genarchopsis gigi* Yamaguti, (1919); *Genarchopsis indica* Gupta, (1951); *Genarchopsis lobata* Srivastava, (1933); *Genarchopsis mulleri* (Levinsen, 1881) *Progonus* m. (L.) Looss; *Genarchopsis ovacaudata* Srivastava, (1933); *Genarchopsis piscicola* Srivastava, (1933), and *Genarchopsis singularis* Srivastava, (1933). All these species were reported from fishes. Gupta (1951) reported *Ophioorchis dasus*, *Ophioorchis indicus* from the

intestine of *Ophiocephalus punctatus* (Bloch) and *Ophioorchis faruquis* from the intestine of freshwater fish *Mastacembelus armatus* (Lacep) from Saharanpur. Rai (1971) synonymized eight Indian species of the genus with *Genarchopsis gappo*. Pande (1973) concurred with a view and further synonymized the remaining Indian species as well as *G. ozakii* Basherullah *et.al.* (1972). Mulay (1972) reported *Genarchopsis pisciola* Srivastava, (1933) from the intestine of freshwater fish *Ophiocephalus guachua* (Bloch) from Aurangabad, (M.S.), India. Bashirulla *et.al.* (1972) described *Genarchopsios ozaki* and *Genarchopsis bangladensis* from the intestine of *Channa (Ophiocephalus) punctatus* (Bloch) from Dacca, Bangladesh. Bhadauria *et.al.*, (1984) described *Genarchopsis (Ophioorchis) folliculata* from the stomach of freshwater fish *Mastacembelus armatus (Lacepede)* and *Channa punctatus* (Bloch) from Gwalior. Bilqees and Khan (1991). collected from the small intestine of fish *Channa* and identified as *G. kalriai*. M. P. Chandra *et.al.*, (1993) described *Genarchopsis wallagonia* from the Intestine of freshwater fish *Wallago attu* from Mymensingh, Bangladesh. Ghulam s.s. *et.al* 2011 described collected from the small intestine of fish *Channa (Ophiocephalus) striatus* (Bl.) and *Channa (Ophiocephalus) maculatus* (Bl.) and identified as *Genarchopsis gibsoni* new species and *G. kalriai* Bilqees and Khan, 1991. Pardesi (2012) described *G. paithainensis* n.sp. from freshwater fish *Mastacembelus armatus* from Jayakwadi reservoir in Paithan, Aurangabad.

Material and Methods

The trematodes were studied in live condition using Neutral Red and Methylene Blue. For morphological studies, specimens were fixed in 4% formalin or 70% alcohol. They were stained in Delafield's haematoxylin and Acetocarmine.

After staining the specimens were dehydrated in graded alcohols i.e. 30%, 50%, 70%, 90% and absolute alcohol. In order to remove traces of moisture they were passed through 50% absolute alcohol + 50% Acetone and then they were passed through 50% Acetone + 50% Benzene and then Benzene. Finally they were passed through 50% Benzene + 50% Xylol. They were cleared in Clove oil and finally mounted in D.P.X. mountant. For the study of cuticular structures, Glycerine – alcohol of various percentages was found to be suitable. The drawings are made with the help of a Camera Lucida. All measurements are in millimeters unless otherwise mentioned. In the present collection numerous specimens belonging to the genus *Ophiochorchis* were collected from the fish *Ophiocephalus gachua* from Paithan region, (M.S.), India in the year 2009-10

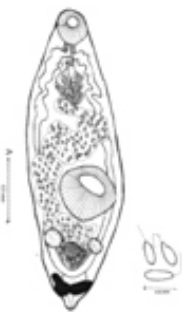
Results and Discussions

The present specimen differs from the other in the presence of different course of uterus, position of vitelline gland and measurement.



Host : *Ophiocephalus gachua*
Habitat : Intestine
Locality : Paithan, (M.S.), India.
Type species : *Ophiochorchis acetabuli*. N.sp.

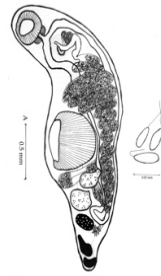
Fig No 1: *Ophiochorchis acetabuli*. N.sp.s



Host : *Ophiocephalus gachua*
Locality : Intestine
Habitat : 1 Paithan., M.S., India
Type Species : *Ophiochorchis caudli*.n.sp.

Fig No 2: *Ophiochorchis caudle*.n sp.

The present specimen differs from the other form in the position of testies, vitelline glands outside caeca and a tail like projection.



Host : *Ophiocephalus gachua*
Locality : Intestine
Habitat : Paithan., M.S., India
Type Species : *phiocorchis extracaeae*. N..sp.

Fig No 3 : *Ophiochorchis extracaeae* .n.sp.

The present species differ from all the other in the presence of position of testes, ovary and vitelline gland which are all extracaecal in position.



Host : *Ophiocephalus gachua*
Habitat : Intestine
Locality : Paithan (M.S.), India.
Type species : *Ophiochorchis twisti*. N.sp.

Fig No 4: *Ophiochorchis twisti*.n.sp.

The present species differ from all the other in the position of caeca which is below seminal vesicle, acetabulum which is partly extracaecal and vitelline glands nearly stuck together.

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