The first record of genus *Pseudophyllodistomum* Cribb, 1987 from Siluriform catfish *Mystus cavasius* (Hamilton, 1822) of River Indus Sindh, Pakistan

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Abstract

During current studies on helminth parasites of Siluriform catfish *Mystus cavasius* of river Indus at Jamshoro, Sindh, Pakistan. Total of 67 host fishes were collected from different habitats of study area. During examination of visceral organs, the 7 trematodes belong to genus *Pseudophyllodistomum*, Cribb, 1987 were collected from gallbladder of catfish *Mystus cavasius*. Trematodes collected from intestine have close resemblance with species *Pseudophyllodistomum johnstoni* Cribb, 1987 in having body shape, size and other diagnostic features and identified as such. Previously *Pseudophyllodistomum johnstoni* Cribb, 1987 collected from urinary bladder of freshwater fishes of Australia, and Japan. Whereas present species recorded from Siluriform catfish *Mystus cavasius* of river Indus, Jamshoro, Sindh, Pakistan. This is first record of genus *Pseudophyllodistomum*, Cribb, 1987 from Pakistan.

Keywords: Catfish, *Mystus cavasius*, Trematodes, River Indus

1. Introduction

Fishes are beneficial for human being in various ways, belongs to most important group of vertebrates, used even at prehistoric ages as long life and intelligence [1]. Fish are main source of food and provides high quality protein and minerals to humans. Human beings for healthy functioning of the body needs vitamins A, D, E, K and vital fatty acids, which can be provided by fishes [2]. The significance of fish parasites depends on the commercial significance of fish they affect. *Mystus cavasius* Hamilton, 1822 catfish species belong to family Bagridae and order Siluriformes, commonly known as Gangetic Mystus which has been reported to be distributed in India, Bangladesh, Pakistan, Nepal, Sri Lanka, Thailand and Myanmar [3-8]. It has high market request as food fish with high market price, due to good protein content in its flesh [5, 7, 10, 11, 9, 12].

The reports on trematodes of catfishes in Pakistan are limited to those of Ahmad et al. [13], Ayaz et al. [14], Khanum et al. [15], Nazir et al. [16], Shakir and Khan [17] and Soofi et al. [18-19]. Whereas, no attempt has been made to undertake research on the helminth parasites of catfishes especially catfish *Mystus cavasius* in Pakistan.

2. Materials and method

During current studies on helminth parasites of Siluriform catfishes collected from river Indus Jamshoro district, Sindh, Pakistan, total of 67 host fishes *Mystus Cavasius* were collected from different habitats of study area and brought to the Department of Zoology, University of Sindh, Jamshoro. Fishes were dissected, visceral contents separated in Petri dishes examined under dissecting microscope. During examination of visceral organs, 7 trematode belongs to the genus *Pseudophyllodistomum* Cribb, 1987 were collected from gallbladder of the host fish. Methods described by Garcia and Ash [20] and Schmidt [21] were followed for collection and processes of trematodes for detailed study. Diagrams were made with the aid of Camera Lucida, photographs taken with Olympus DP12 camera and identified with help of keys and literature. Specimens deposited in the Department of Zoology University of Sindh, Jamshoro, Pakistan.
3. Results

*Pseudophyllodistomum johnstoni* Cribb, 1987  
**Family:** Gorgoderidae Loss, 1899  
**Genus:** *Pseudophyllodistomum*, Cribb, 1987  
**Type host:** *Mystus cavasius*  
**Site of infection:** Gallbladder  
**Type locality:** River Indus at Jamshoro, Sindh, Pakistan  
**Number of specimen:** 7 from 5 hosts  

**Description:** (Fig. 1 and 2)

Body of worm thick, flattened, measures 4.44-5.03 X 1.2-1.66, spatulate at posterior end, cuticle with undulations on body with small striations or ring shape structures on tegument. Oral sucker large, rounded to cup shape, well developed, terminal measures 0.48-0.67 X 0.5-0.9. Ventral sucker small, rounded and at sub- median measures 0.32-0.35 X 0.32-0.33. Prepharynx absent and pharynx square shape measures 0.1 X 0.16-0.17. Esophagus small and broad measures 0.12-0.17 X 0.24-0.28. Caeca extended from oral sucker to the posterior extremity of hind body. Seminal vesicle saccular just anterior to ventral sucker measures 0.22-0.23 X 0.22-0.26. Genital pore posterior to oral sucker at fore-body. Ejaculatory duct long, genital atrium rounded. Testes two intra-caecal, irregular shape, post-ovarian, posterior testis rounded posteriorly and groove at anteriorly measures 0.22-0.25 X 0.18-0.19, anterior testis large oval shape measures 0.28-0.31 X 0.16-0.21, both testes separated by vitellaria. Ovary rounded anterolateral to posterior testis measures 0.22-0.25 X 0.2-0.3. Vitellarium two in the form of compact masses, one at right side to the ovary anteriorly and pointed posteriorly and other in between testes large, bean shape with groove at dorsal side. Uterus intra-caecal somehow overlapped by cecum at hind body, loops extended from ventral sucker to posterior extremity. Eggs oval to round in shape measures 0.051-0.076 X 0.018-0.057. Excretory pore terminal.

4. Discussion

Genus *Pseudophyllodistomum* Cribb, 1987 contain flattened trematodes, parasites of urinary bladder and intestine of freshwater fishes [22]. Genus *Pseudophyllodistomum* Cribb, 1987 separated from genus *Phyllodistomum* on the basis of type species in having a simple uterus restricted to the intra-caecal and post-caecal fields of the hind-body, a saccular excretory vesicle [22-23]. Type species of genus *Pseudophyllodistomum* is *P. johnstoni* Cribb and Bray [22-23]. Other species of genus recorded from world are *P. murrayense* Cribb and Shimazu [23], *P. mingense* Tang and Shimazu [23], *P. macrobrachicola* Cribb and Shimazu [23]. Present species *Pseudophyllodistomum johnstoni* compare with following species:

*P. johnston* Cribb [23] collected from urinary bladder of freshwater fishes of Australia similar with species but some characters differs from present in having pharynx absent; testes diagonal; seminal vesicle dorsal to genital atrium; ovary distinctly lobed; laurels canal present; uterus intera-caecal, descending and ascending loops; eggs oval in shape; excretory vesicle I-shaped.

*P. macrobrachicola* yamaguti, Cribb and Shimazu [22-23] collected from urinary bladder of *Odontobutis obscura*, *Cottus reiniti*, *Silurus asotus*, of Japan differs from present species in having ventral sucker large and wider; intestinal bifurcation at about junction of fore body, diverticular; testes irregular and diagonal; seminal vesicle pyriform; ovary globular; uterus much folded at hind body; seminal receptacle present; eggs elongate; excretory pore postero-terminal.

5. Conclusion

Specimens of genus *Pseudophyllodistomum* have close resemblance with *Pseudophyllodistomum johnstoni* Cribb, 1987 and identified as such. Previously this species is reported from Australia and Japan. Whereas present species recorded from catfish *Mystus cavasius* of river Indus, Jamshoro, Sindh, Pakistan. This is first record of genus *Pseudophyllodistomum*, Cribb, 1987 from Pakistan.
References

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