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A New Species of the Genus *Phyllodistomum* (Braun, 1899) (Digenea: Gorgoderidae, Looss, 1901) from Freshwater Fish *Mastacembelus armatus* Aurangabad (M.S.) India

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Abstract

The present paper deals with a new species of the genus *Phyllodistomum* [2].Viz *Phyllodistomum triangulata* n.sp is reported from freshwater fish *Mastacembelus armatus* (L.) Jayakwadi dam, Dist Aurangabad. It differs from all the earlier reported species in having the body of the fluke is dorso-ventrally flattened, anterior portion of the body is long and narrow while the posterior portion of the body is broad, expanded and nearly triangular in shape, oral sucker is sub-terminal and oval in form, ventral sucker is circular, genital pore is prebifurcal, ovary is trilobed, laurer's canal is present.

Key Words: Phyllodistomum, *Mastacembelus armatus*, Jayakwadi dam, Aurangabad

Introduction

Braun [2] created the genus *phyllodistomum* with *Diplostomum folium v*. olfers as the type species. Looss [11] described *phyllodistomum acceptum,* described *Phyllodistomum pearsi* [19], described *Phyllodistomum mogrundae.* The genera *Phyllodistomum* [2] (Syn. *Spathidium*, [10] *Gorgodera* Looss, [10] *Gorgoderina* and *Catoptroides* were included by Looss [12] under the subfamily *Gorgoderinae*. Bhalerao [1] and Kaw [8] pointed out that the genus *Catoptroides* is synonym to *Phyllodistomum*. Yamaguti [19] and Bhalerao [1] regarded that *Microlecithus* as synonym to *Phyllodistomum*. A large well developed receptaculum seminis is a constant feature of the subfamily *Anaporhutinae* and so Gupta [5] does not agree with kaw [8] and considers that the genus is valid and places it under the sub-family *Anaporhutinae*. Various workers like Ward [18, 14, 9, 1] and have discussed the validity of the various species of *Phyllodistomum* and the allied genera in the family *Gorgoderidae* [11]. *Plesiodistomum callichrous* [3] from the kidneys of freshwater fish *Callichorus pabda* from Lucknow and *Phyllodistomum vachius* from the urinary bladder of freshwater fish *Eutropiichthys vacha* from Lucknow. [8] described *Phyllodistomum loosi* from *Schizothorax socinus* from Kashmir. Reported *Phyllodistomum singhiai* [4] from the intestine of fresh water fish, *Mastacembelus armatus* (Lacep.) from river [7] described *Phyllodistomum lysteri*. *Phyllodistomum chauhani* and *Phyllodistomum tripathi* [13] from the urinary bladder of *Mystus* (*Osteobagrus*) *aor* (Ham), *Mystus seenghala* (Skyes), *Bagarius bagarius* from Allahabad (U.P.). *Phyllodistomum spatulaeforme* [6] from the intestine of freshwater fish *Ophiocephalus punctatus* from River Gomti, Lucknow.

The present communication deals with the description of new species *Phyllodistomum triangulata* n.sp. from *Mastacembelus armatus*.

Material and Methodology

The worms were collected from intestine of freshwater fish *Mastacembelus armatus* at Jayakwadi dam Paithan, Dist. Aurangabad (M.S.) India. 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 were made with the help of a Camera Lucida. All measurements are in millimeters.

Description

The body of the fluke is dorso-ventrally flattened. The anterior portion of the body is long and narrow while the posterior portion of the body is broad, expanded and nearly triangular in shape. The anterior end is rounded and posterior end is pointed. It measures 1.9 x 0.64 (1.4-2.3 x 0.50-0.80) mm in breadth. The oral sucker is sub-terminal and oval in form. It measures 0.24 x 0.20 (0.21 – 0.27 x 0.18 – 0.23) mm

in breadth. The mouth leads into an esophagus measuring 0.1mm in length. The ventral sucker is circular in form and larger than oral sucker and is situated in the equatorial region of the body. It is 0.28mm in diameter and is situated at a distance of 0.68 mm from the anterior end of the body. The excretory pore lies at the posterior end of the body on the dorsal side and leads into an excretory bladder lying dorsal to the uterus. The bladder is long and tubular extending upto posterior testis. It gives out three lateral branches near testicular region. The genital pore is prebifurcal and is at a distance of 0.44 from the anterior end of the body. The testes are two in numbers, deeply lobed, intercaecal and lies obliquely one behind the other. Each testis posses six or seven lobes. The anterior testis is bigger than posterior one. The anterior testis is 0.26 x 0.14 (0.23 – 0.28 x 0.12 – 0.15) mm broad and is situated at a distance of 1.05 mm from the anterior end of body. The posterior testis is 0.23 x 0.12 (0.21 – 0.25 x 0.10 – 0.15) mm broad and is situated at a distance of 1.1 mm from anterior end of the body. The cirrus sac is absent and vesicula seminalis lies free in the parenchyma. It measures 0.12 x 0.05 (0.09 x 0.14 by 0.13 to 0.18) mm. It appears like a sac and opens by a short duct at the genital pore. Female reproductive organ consists of a single ovary with its duct and a number of accessory organs associated with it. The ovary is trilobed. It is situated just behind the left vitelline gland. It is situated at a distance of 0.95 mm from the anterior end of the body. The ovary measures 0.12 x 0.11 (0.10 – 0.14 x 0.09 – 0.13) mm in breadth. From its anterior side arises the oviduct which opens at the ootype. The vitelline glands are two compact lobes on either side of the ootype. The left vitelline gland is situated at a distance of 0.99 mm from the anterior end of the body. The right vitelline gland is 0.05 x 0.014 (0.04 – 0.06 x 0.12 – 0.16) mm in breadth and is situated at a distance of 0.98 mm from anterior end of the body. The ducts from the two vitelline glands opens separately at the ootype. A Laurer's canal is present. The ootype is surrounded by a large number of shell gland cells. The uterus is not distinct. The eggs are absent.

Discussion

The present form resembles to *Phyllodistomum lewisi*, [17], *P. vachius*, [3], *P. Singhi* [4] in having excretory bladder with lateral branches., to *P. semotili*, *P. notropidus* [7], *P. nocomis* [7], *P. loosi* [8], *P. singhi* [4], *P. lysteri* [7], *P. tripathi* [13], *P. spatulaeforme* [6] in having oral sucker smaller than ventral sucker, to *P. notropidus, P.semotilli, P. Singhi, P. tripathi, P. vachius*, [3] in having less lobular testes but however the present form differs from *P. vittatusi* [5] *P. spatulaeforme* in not having almost round to oval testes and ovary, from *P. semotili P. notropidus, P. nocomis* and *Plesiodistomum callichrous* [3] in not having vitelline follicles immediately posterior to acetabulum, from *P. vittatusi* in not having both vitelline gland and ovary in similar line.

The present form resembles to *P. singhi* in the outline of the body which is attenuated, to all the known species in having a prebifurcal genital pore but differs from all the known species in not having a distinct uterus, no eggs seen, and in the different position and shape of vitelline glands. So on the basis of the above characters, a new species is established as *P. triangulata* as the posterior body is triangular in shape.

Genus : *Phyllodistomum* Braun, [2]
Type species : *Phyllodistomum triangulata* n.sp
Host : *Mastacembelus armatus* (L.)
Habitat : Intestine
Locality : Paithan, Aurangabad, (M.S.), India.
Etymology : Posterior body is triangular in shape.

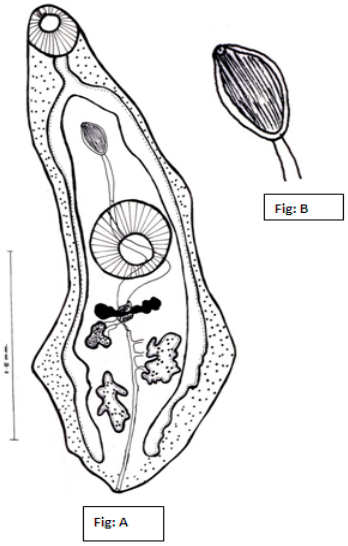

Fig: A: *Phyllodistomum tringulata*
B : Vesicula Seminalis

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