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STUDY OF A NEW TAPEWORM, *APICOBOTHRIUM BHARUAENSIS* N.G.,N.SP. FROM, *MASTACEMBELUS ARMATUS* FROM BLOCK BHARUA DISTRICT HAMIRPUR (U.P.) INDIA

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ABSTRACT

Eight fishes, *Mastacembelus armatus* were purchased from block Bharua, district Hamirpur (U.P.) India . Two alike cestodes were reported in its intestine. Scolex elongated with two elongated spined bothria. Apical disc armed with bothrial spines. Ovary bilobed, medial and post equatorial.

Figures : 05 References : 08 Table : 01
KEY WORDS : *Apicobothrium, Mastacembelus armatus,* Parabothriocephalidae, Pseudophyllidea

Introduction

Eight fishes, *Mastacembelus armatus* were purchased from block Bharua district Hamirpur (U.P.) India. One was found infected with two alike cestodes in its intestine. Morphological studies of the worm revealed them to belong the new genus, *Apicobothrium* n.g. of the family Parabothriocephalidea of order Pseudophyllidea.

Materials and Methods

The hosts, *Mastacembelus armatus* (Lacepede) were obtained from Bharua, Hamirpur (U.P.). Usual techniques for collection and preservation of the cestode were employed. Whole mount was stained in Mayer's Haemalum and cleared in xylol. Figures were drawn with cameralucida. All the measurements have been given in millimeters unless otherwise stated.

Generic Diagnosis

Large sized, segmented worms. Scolex elongated with two elongated spined bothria. Apical disc armed with bothrial spines.Rostellar hooks present in single row. Neck present, proglottids broader than long and craspedote. Testes partly cortical, partly medullary, arranged in two separate lateral filds. Cirrus pouch margical.External and internal seminal vesicles absent. Ovary bilobed, medial and post equatorial . Vagina posterior to cirrus pouch. Receptaculum seminis and mehlis gland absent. Vitellaria cortical, in two lateral bands. Genital atrium irregularly alternating. Uterus initially a median tube like structure but later on sac like, pre-ovarian located in the middle of the proglottids. Uterine pore opens in the upper side of uterus. Eggs oval to round and operculate. Parasites of fresh water fishes.

Description

Worms large sized, segmented measure 123.12-162.42X0.912-1.08 (142.77X0.996). Scolex narrow anteriorly and broader posteriorly measure 0.55-0.81X27-0.462 (0.683X0.366). Apical disc armed measure 0.015-0.017X0.045-0.061(0.016X0.54). Rostellar hooks 16-20 in a single row, arranged in one group measure 0.021-0.039(0.032) in length.Bothria elongated, shallow, spined, two in number measure 0.46-0.77X0.10-0.16(0.62X0.130). Neck measure 0.16-0.21X0.15-0.30(0.19X0.22).

Proglottids broader than long craspedote. Immature proglottids measure 0.015-0.21X0.16-0.33(0.18X0.24).Mature proglottid measure 0.18-0.54X0.62-0.84(0.36X0.73) and gravid proglottids longer than broad measure 0.25-0.26X0.92-1.05(0.25X0.98).

Testes partly cortical, partly medullary oval to round, 140-180 in number measure 0.015-0.047X0.019-0.052(0.031x0.035) arranged in two lateral fields which cross the ventral longitudinal excretory canals. Cirrus pouch margical, oval irregularly alternating measure 0.019-0.025X0.025-0.044(0.022X0.034). External and internal seminal vesicle absent. Vagina measure 0.012-0.015(0.0135) in diameter.

Ovary bilobed, medial, post equatorial measure 0.05-0.10X0.20-0.37 (0.075X0.29). Receptaculum seminis

TABLE -01: COMPARISON OF THE CHARACTERS OF THE GENUS CLOSER TO *APICOBOTHRIUM* N.G.

S. No.	Characters	*Glossobothrium*[6]	*Dactylobothrium*[3]	*Mastalobothrium*[4]	*Apicobothrium* N.G.
01	Apical disc	Unarmed	Armed	Armed	Armed
02	Rostellar hooks	Absent	In four rows and arranged in two groups	In single row and arranged in two groups	In single row and arranged in one group
03	Posterior Bothrial appendages	Present	Absent	Absent	Absent
04	Bothrial Spines	Absent	Absent	Absent	Present
05	Neck	Absent	Absent	Absent	Present
06	Ovary	Slightly poral	Medial	Medial	Medial
07	Genital atrium	Irregularly alternating	Unilateral	Unilateral	Irregularly alternating
08	Midduct	Absent	Present	Absent	Absent
09	Uterus	'S' Shaped	Coiled and irregular	Coiled and irregular	Initially tubular but later on sac like

absent. Mehlis gland absent.

Vitelline follicles cortical measure 0.011-0.025X0.015-0.022(0.18X0.019) in two lateral bands. Genital atrium irregularly alternating measure 0.025-0.035X0.012-0.017(0.03X0.014) deep and wide respectively.

Uterus initially median tube like structure but later on sac like, pre ovarian located in the middle of the proglottid measure 0.18-0.40X0.10-0.20(0.29X0.15).

Egg numerous, oval to round, operculate, measure 0.015-0.045X0.018-0.058 (0.023X0.038).

Ventral longitudinal excretory canals measure 0.021-0.040(0.031) in diameter.

Discussion

The present form comes closer to the genus, *Glossobothrium*[6], *Dactylobothrium*[3] and *Mastalobothrium*[4] of the family Parabothrioaphalidae[7].

The present form differs from *Glossobothrium*[6] in having armed apical disc, prominent rostellar hooks, absence of bothrial appendages, prominent bothrial spines prominent neck, presence of medial ovary and sac like uterus.

The present form differs from *Dactylobothrium*[3] in having rostellar hooks in single row and arranged in one group, presence of bothrial spines, prominent neck, irregularly alternating genital atrium, absence of midduct and sac like uterus.

From *Mastalobothrium*[4] it differs in having rostellar hooks arranged in one group, presence of bothrial spines, prominent neck, irregularly alternating genital atrim and sac like uterus.

Thus the present form differs from all the known genera of the family Parabothriocephalidae[7].

In the light of above discussion the present form Apicobothrium bharuaensis,n.g. n.sp. may be provisionally accommodated in the proposed new genus.

The species is named after the place of host collection.

Type species : *Apicobothrium bharuaensis* n.g.,n.sp.
Host : *Mastacembelus armatus*
Habitat : Intestine
Locality : Village- Bharua,
District- Hamirpur (U.P.) India
Number of specimen: 02
Date of Collection : 21 January 2008

Figures

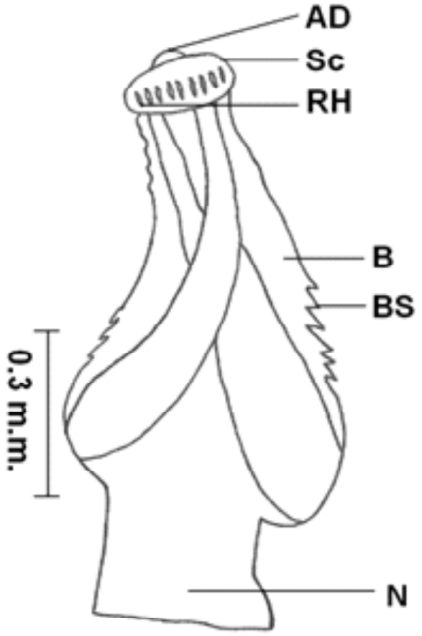

Fig.1.

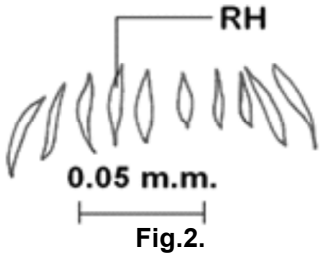

Fig.2.

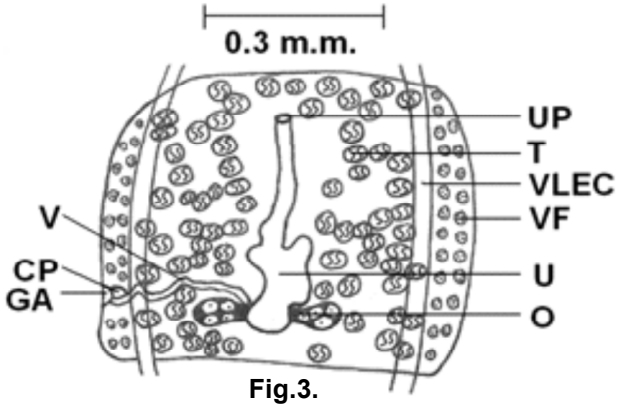

Fig.3.

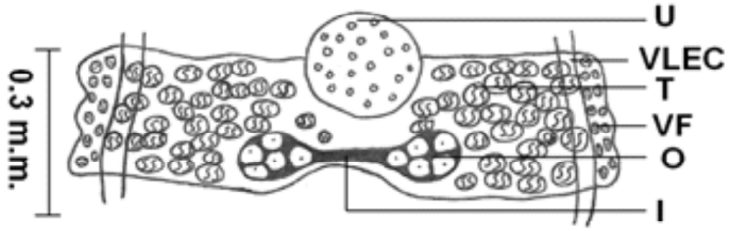

Fig.4.

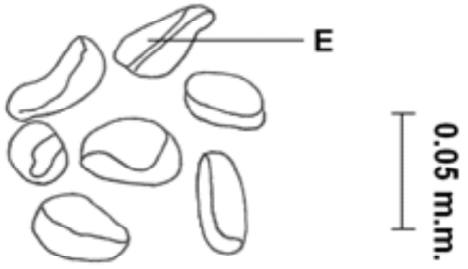

Fig.5.

Figs. 1-5 : *Apicobothrium bharuaensis* n.g., n.sp.

1- Acolex, 2- Rostellar hooks, 3- Early mature proglottid, 4- Early graisd proglottid, 5- Eggs

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Revised key to the various genera of the family Parabothriocephalidae[7]

1- Genital pores marginal……..2

Genital pores dorsal, near lateral margin……5

2. Apical disc absent . Bothria lacking appendages…..*Probothriocaphalus*[1]

Apical disc present..……3

3. Apical disc unarmed. Bothria with prominent, posterior appendages……..*Glossobothrium*[6]

Apical disc armed and bothrial spines present…… ……*Apicobothrium* n.g.

Apical disc armed and bothrial appendages absent…4

4. Rostellar hooks in four rows…….. *Dactylobothrium*.

Rostellar hooks in single row…… *Mastalobothrium*[4].

5. Cirrus unarmed. Eggs with conspicuous lateral swelling…..... *Neobothriocephalus*[2].

Cirrus spined.Eggs lacking lateral swelling……6

6. Testes in two lateral fields…….. *Metabothriocephalus*[8].

Testes in single median field……...7

7. Vitellaria cortical. Scolex lacking, replaced with pseudoscolex with shallow depression…….

Parabothriocephaloides[5].

Vitellaria medullary. Scolex present, small…… *Parabothrioophalus*[5].

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