Research Paper

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Investigation of the Cestode Silurotaenia, Nybelin, 1942 from the Fish Macrons Singhala (Ham. and Buch.): A Report on New Species, Silurotaenia Govindii

Zoology

KEYWORDS : Cestode Silurotaenia, Fish, Macrons singhala, New Species, Silurotaenia govindii.

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ABSTRACT

The genus Silurotaenia was erected by Nybelin, 1942 form Silurus glanis. Later on Shinde, Deshmukh and Chincholikar added one new species to this genus in 1975 as S. nybelini form Pseudotropius taakree form Ambejogai, Maharashtra state India. After that Shinde and Kadam and Jadhav in 1984 have added four species such as S. macroni, S.singhala from Macroni singhala and S. barbusi and S. ticto form Barbus ticto, then one more species is added as S.paithanensis by Shinde, Majid and Solunke in 1983. Nine specimens of the cestode parasites were collected form the intestine of a freshwater fish Macrons singhala at Aurangabad Maharashtra state India .The scolex is distinct small vessel shaped longer than broader posteriorly and measures 0.331x0.191-0.249 in length and breadth. It bears a rostellum which is medium size, almost oval in shape and measures 0.119 in length and 0.169 in breadth. The rostellum is armed with six to seven rows of hooks, which are spindle shaped, narrow anteriorly and measure 0.31-0.005 in length and 0.001-0.005 in breadth. Suckers are arranged in pairs one on each side oval in shape and measure 0.031-0.005 in length and 0.001-0.005 in breadth. The detail morphology of the animal is described in this paper.

Introduction

The genus Silurotaenia was erected by Nybelin, 1942 form Silurus glanis. Later on Shinde, Deshmukh and Chincholikar added one new species to this genus in 1975 as S. nybelini form Pseudotropius baakree form Ambejogai, Maharashtra state India . After that Shinde and Kadam and Jadhav in 1984 have added four species such as S. macroni S. ticto form Barbus ticto then one more species is added as s paithanensis by Shinde Majid and Solunke in 1983. In our opinion,

Postgangesiais a member of the Gangesiinae Mola, 1929, members of which have huge rostellar structures with well-developed retractor muscles and no cortical vitelline follicles. Mola's very brief diagnosis of this taxon (1929, p. 106) emphasized only the presence of an armed rostellum with a crown of hooks, and the subfamily was erected for the single genus Gangesia Woodland, 1924. Although this genus was later considered as a member of the Proteocephalinae by many authors (Fuhrmann, 1931; Wardle & MacLeod, 1952; Yamaguti, 1959), Freze (1965) rein- stated the subfamily Gangesiinae. He included three more genera (Silurotaenia Nybelin, 1942, Electrotaenia Nybelin, 1942 and Vermaia Nybelin, 1942) mainly on the basis of their very typical rostellum structure and musculature. Indeed, the internal apical organ structure is similar in all four genera (Silurota enia,Electrotaenia,Gangesia and Postgangesia), bearing anteroposterior ramified muscles bundles and deeply-staining chromophil cells.

Materials and Methods

Mature specimens of cestode parasites were collected from the intestine of freshwater fish Macrons singhala (Ham. and Buch.) at Aurangabad districts of Maharashtra, India. These cestodes are preserved in hot 4% formalin and four specimens are stained with Harris haematoxylin and Borax carmine, passed through various alcoholic grades, cleared in xylene, mounted in D.P.X. and drawings are made with the aid of Camera lucida and all measurements are recorded in millimeters unless otherwise mentioned

Description

Nine specimens of the cestode parasites were collected form the intestine of a freshwater fish Macrons singhala at Aurangabad Maharashtra state India in the month of April, 1984

The scolex is distinct small vessel shaped longer than broader posteriorly and measures 0.331x0.191-0.249 in length and breadth. It bears a rostellum which is medium size, almost oval in shape and measures 0.119 in length and 0.169 in breadth. The rostellum is armed with six to seven rows of hooks, which are spindle shaped, narrow anteriorly and measure 0.31-0.005 in length and 0.001-0.005 in breadth. Suckers are arranged in pairs one on each side oval in shape and measure 0.031-0.005 in length and 0.001-0.005 in breadth and breadth.

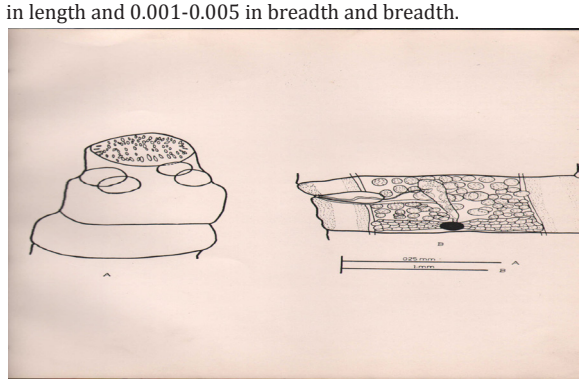

Fig.1.A-Scolex; B- Mature Proglottid

The mature segments are broader than long, almost two times broader than long, with wavy lateral margins and measure 0.909x 1.856 in lengths and breadth.

Testes are small and large, oval and rounded, bounded laterally by longitudinal excretory canals, placed in the central medulla, present form anterior margin of the segment to ovary, evenly distributed, in a single field, 72-78 in number and measure 0.068-0.159x0.136 in length and breadth and 0.053 – 0.098 in diameter. Cirrus pouch is larger oval in shape narrow anteriorly and broader posteriorly at one third of the segment opens marginally into a genital pore and measures 0.456 in length and 0.045-0.189 in breadth. The genital pore is small, round and measures 0.022 in diameter. Cirrus is thin, coiled and measures 0.484x0.015-0.022 in length and breadth. Vas deferens is thin, curved, runs obliquely and measures 0.348x 0.007 in length and breadth.

Ovary is indistinctly bilobed near the posterior margin of the segments extends laterally up to the longitudinal excretory canals, large in size and measures 1.083-1.181 in length and 0.166 – 0.227 in breadth. Lobes compact, almost rectangular, narrow proximally and broader distally. The vagina is thin, posterior to cirrus pouch runs transversely up the centre of the segment then takes a curve obliquely, reaches and opens in to the ootype and measures 1.249 in length and 0.015-0.037 in breadth. Ootype is large, oval, situated on the short isthmus and measures 0.136 in length and 0.166 in breadth. Uterus saccular, reaches almost up to the anterior margin of the segment, central in position and measures 0.719 in length and 0.030-0.166 in breadth.

Vitellaria granular, corticular and subcorticular in position and form the anterior to the posterior margin of the segments.

Discussion

The genus Silurotaenia was erected by Nybelin in 1942 in as a type species S. siluri form Silurus glanis later on following species are added to this genus S. nybelini Shinde, Chincholikar and Deshmukh 1975. S.macroni Shinde, Kadam and Jadhav 1984 S.singhala Shinde, Kadam and Jadhav 1984. S.barbusi Shinde .Kadam and Jadhav 1984. S.paithanensis Shinde, Majid and Solunke 1983.

1. The worm under discussion is having scolex distinct, small, vessel shaped, longer than broad; rostellum medium, oval, armed with six to seven rows of rostellar hooks; suckers arranged in pairs, one on each side, overlapping medium, oval; mature segments broader than long, almost twice in width; testes 72-78 in number, small and large, oval and round, in central medulla, evenly distributed; cirrus pouch large, oval in shape, at one third of the segment; genital pores small and round, open marginally; ovary indistinctly bilobed, near posterior margin, ovarian lobes compact, almost rectangular, narrow proximally and broader distally; vitellaria granular, two thin strips, on each side of the segment, corticular and subcorticular in position.
2. The present cestode differs from S. siluri in not having the mature segments almost square but slightly longer than broad, testes 220-230 in number, cirrus pouch oval, slightly touching the excretory canals; ovary bilobed, almost quadrangular, lobes with acini, not reaching up to longitudinal excretory canals; vitellaria follicular, in 3-4 rows and just anterior to the middle of segment.
3. The present worm differs from S. nybelini **in** not having the mature segments longer than broad, testes 130-140 in number. Cirrus pouch extends up to one third of the segment, ovary 'U' shaped, compact, lobes extending anteriorly; vitellaria present, genital pores at one third from the anterior margin of segment.
4. The present cestode differs from S. macroni in the having the mature segments almost square, testes 68 in number, rounded, of medium size, scattered; cirrus pouch situated in the middle of segment, ovarian lobes with 6-7, short, blunt acini; type round and vitellaria arranged in a group, in 3-4 rows.
5. The present cestode differs from S. singhala in the having long scolex, broad at the base and tapering anteriorly, with deep constriction; rostellum transversely elongated, testes 370-390 in number, cirrus pouch saccular, elongated; ovarian lobes with few, small, blunt acini; vagina anterior to the cirrus pouch, genital pores with a curve at a distance, vitellaria follicular, just outside the longitudinal excretory canal, in 4 to 5 rows, on each side; the gravid segments almost square, uterus with a central stem, with 8-10, lateral branches, containing eggs.
6. The present cestode differs from S. barbusi in not having scolex large, broad at the base; rostellum large, suckers round, mature segments longer than broad, testes 135-140 in number, cirrus pouch cylindrical, elongated, genital pores in anterior half; ovary broad, with fan shaped lobes, with many, short, blunt acini; uterus a straight tube and vitellaria in lateral parenchyma, just outside the longitudinal excretory canals.
7. The present cestode differs from S. tictoi in not having scolex well marked from the body, large suckers, mature segments measure 0.61 x 2.25, testes numerous, medium, 557-590 in number; cirrus pouch large, saccular and ovary elongated, with few, short, blunt acini.
8. The present worm differs from S.paithanensis in the having mature segments almost square, testes 82-85 in number, cirrus pouch extending beyond the longitudinal excretory canal; cirrus spinous, vas deferens very much coiled, ovary fan shaped and uterus tubular.

The characters of present worm are so different, from the species reported earlier that it becomes necessary to erect a new species for these worms and hence the name Silurotaenia govindi n.sp. is proposed, in honour of Dr. G.B. Shinde, guide of the author and co-coordinator, college Development council (UGC), Marathwada University, Aurangabad, for his keen interest for the completion of this work.

Type species	:	Silurotaenia govindi n.sp.
Host	:	Macrones singhla Ham. and Buch.
Habitat	:	Intestine.
Locality	:	Aurangabad, M.S., India.

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