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Report of the Cestode *Phyllobothrium chiloscyllii*, Subhapradha, 1955 from *Carcharhinus macloti*

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Abstract: Present investigation deals with report of cestode *Phyllobothrium chiloscyllii,* Subhapradha, 1955 from *Carcharhinus macloti* at Alibag, Borali, Dighi, Shrivardhan, Murud,Raigad, West Coast of Maharashtra, India during the February, 2007 to January, 2009. The present tapeworm comes closer to *Phyllobothrium chiloscyllii* Subhapradha, 1955 with the characters such as length of worm, shape of bothridia, presence of long neck, arrangement of vagina and genital pore, but the same differs due to scolex (oval, China Rose shaped Vs. globular); Number of testes (30-40 Vs. 55-80); Ovary (transversely placed Vs. 'U' shaped) and Vitellaria (granular Vs. follicular). These are the minor characters hence it is redescribed here as *Phyllobothrium chiloscylli* Subhapradha, 1955.

Keywords: *Carcharhinus macloti, Phyllobothrium chiloscyllii*, Cestode

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Introduction

The genus *Phyllobothrium* was erected by Beneden (1849) with its type species *Phyllobothrium radioductum* from *Raja binoculata* from California. Latur Linton (1890) reported *Phyllobothrium foliatum* from *Rhynchobatus djeddinsis*, pearl Banks, Ceylon; Subhapradha (1955) reported *Phyllobothrium chiloscyllii* from *Chiloscyllium griseum* at Madras East coast of India. Jadhav *et al*. (2006) and Bhure and Nanware (2015, 2016) studied diversity of piscean cestode parasites from Maharashtra State, India. The present worm was collected from the Spiral valve of *Carcharhinus macloti* at Alibag, Borali, Dighi, Shrivardhan, Murud, Raigad, West Coast of Maharashtra, India.

Materials and Methods

One hundred thirty six specimens of the cestodes were collected from the Spiral valve of *Carcharhinus macloti* at Alibag, Borali, Dighi, Shrivardhan, Murud Dist. Raigad West Coast of Maharashtra, India during the February, 2007 to January, 2009. The specimens were studied and photomicrograph and camera lucida diagrams were prepared from different parts of worms. All measurements are in millimeters (mm) unless

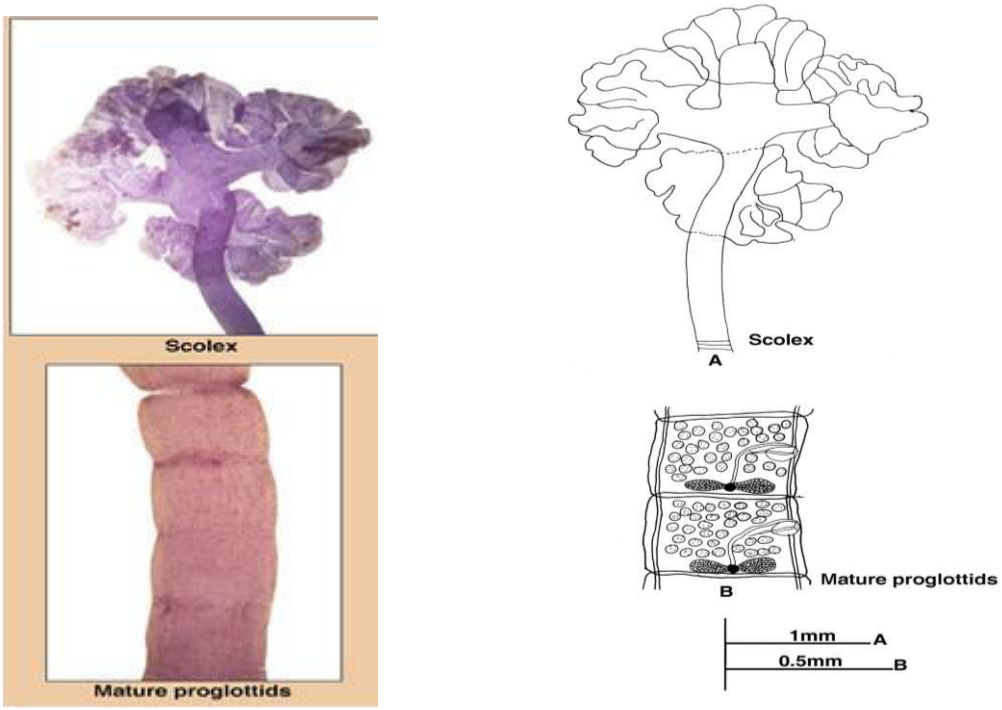

Fig. 1: Photomicrograph and Camera Lucida diagram (A- Scolex; B- Mature Proglottids) of *Phyllobothrium chiloscyllii*, Subhapradha, 1955.

otherwise mentioned.

Results

The length of largest worm measured 13 mm in length and 0.45 mm in breadth, consisting of 17-18 proglottids. Scolex (Fig. 1) was oval, like 'China Rose', with four sessile, measured 1.9885 mm (1.7044-2.2727 mm) in length and 2.2437 mm (2.1012-2.3863 mm) in breadth. Bothridia sessile, leaf like, having a row of about 40 to 50 loculi along the margin of each bothridium, measured 0.6818 mm (0.6250-0.7386 mm) in length and 1.0908 mm (0.9090-1.2726 mm) in breadth. Each bothridium possessed an accessory suckers at middle region. The powerful longitudinal muscle fibers were attached to each bothridium, decreased in strength gradually, clearly visible up to neck region and then became separated from each other in immature and became feeble in mature proglottids. Scolex was followed by a neck, which was long, broader than long, measured 1.8749 mm (1.8181-1.9317 mm) in length and 0.2526 mm (0.2272-0.2840 mm) in width. Mature proglottids were broader than long, measured 0.2427 mm (0.2330-0.2524 mm) in length and 0.3227 mm (0.3155-0.3300 mm) in breadth. Testes were pre-ovarian of an average size, oval to rounded in shape, scattered all over in the mature proglottids, 30-40 in numbers, measured 0.03155 mm (0.02427-0.03383 mm) in length and 0.02426 mm (0.01941-0.02912 mm) in breadth. Cirrus pouch was elongated, oval in shape, transversely placed at the middle of the proglottids, measured 0.07281 mm (0.06796-0.07766 mm) in length and 0.03155 mm (0.02427-0.03883 mm) in breadth. The cirrus is thin, tubular, slightly curved and measured 0.06280 mm (0.05825-0.06796 mm) in length and 0.01941 mm (0.004854-0.01941 mm) in breadth. The cirrus pouch and vagina opened through a common genital pore, which was marginal, unilateral and measured 0.02426 mm (0.01941-0.02912 mm) in length and 0.01455 mm (0.009708-0.001941 mm) in breadth. Vagina was situated anterior to cirrus pouch, run transversely, turns vertically and joined with receptaculum seminis, measured 0.1286 mm (0.1213-0.1359

mm) in length and 0.007281 mm (0.004854-0.009708 mm) in breadth. The receptaculum seminis is short, thin tube, measured 0.09222 mm (0.08737-0.09708 mm) in length and 0.01213 mm (0.009708-0.01456 mm) in width. Ovary was bilobed, transversely placed, situated at posterior end of the proglottids, measured 0.09222 mm (0.08737-0.09708 mm) in length and 0.03397 mm (0.02912-0.03883 mm) in breadth. The ootype was compact, oval, situated in between the two lobes of ovary, measured 0.02427 mm in diameter. The excretory canal was situated on either side of proglottids, measured 0.2499 mm (0.2330-0.2669 mm) in length and 0.01213 mm (0.009708-0.01456 mm) in breadth. Vitellaria were granular, situated in two lateral fields in cortical region.

Discussion

The tapeworm in this study comes closer to *Phyllobothrium chiloscyllii* Subhapradha, 1955 with the characters such as length of worm, shape of bothridia, presence of long neck, arrangement of vagina and genital pore, but the same differed from it with the following characters-

1} The shape of scolex oval, China Rose shaped Vs. globular.

2} Number of testes 30-40 vs. 55-80 in number.

3} Arrangement of ovary transversely placed Vs. 'U' shaped.

4} Vitellaria are granular vs. follicular.

The present form was collected from the spiral valve of *Carcharhinus macloti* at Alibag, Mirya, Murud, Bhatye (West Coast of Maharashtra, India), whereas *Phyllobothrium chiloscyllii* Subhapradha, 1955 was collected from *Chilloscyllium griseum*, *Rhynchobatus djeddensis* and *R. Schlegelli* at Madras (East Coast of India). These are the minor characters so it is redescribed here as *Phyllobothrium chiloscylli* Subhapradha, 1955.

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References

Bhure DB and Nanware SS. (2015): Studies on Hold-Fast organs of piscean cestode parasites from Maharashtra State, India. Environ Conserv J. 16: 93-100.

Bhure DB and Nanware SS. (2016): Hold-Fast organs of piscean and avian cestode parasites with special emphasis on histopathology. World Sci News 34: 109-120.

Jadhav BV, Manna B and Bhure DB. (2006) Morphological diversity of hold fast organs of Lecanicephalidean tapeworms. J Nat Hist. 2:16-20.

Linton E. (1890) Notes on entozoan of marine fishes of New Englans II. Ann. Rep. U.S. Comm. fish and fisheries for 1987. Washington. 15: 719-899.

Subhapradha CK. (1955) Cestode parasites of fishes of madras coast. Ind J Helminth. 7(2): 41-132.