

A report of the species of the genus *Phyllobothrium radioductum* (Eucestoda: Phyllobothriidae) from *Trygon sephen* at Ratnagiri (MS), India

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Abstract

The present form deals with redescription of species of the genus *Phyllobothrium radioductum* (Beneden, 1849), Maire weir kay, 1942 which is having some additional characters, such as Testes 90-95 (92), ovary indistinctly bilobed, large, transversely placed near the posterior margin of the segment, shape and structure of vitellaria (granular, thin strips).

Keywords: *Phyllobothrium*, *Trygon sephen*, spiral valve, Ratnagiri (MS) India.

INTRODUCTION

The genus *Phyllobothrium* was erected by Beneden, 1849 [1], with its type species *Phyllobothrium radioductum* from Raja binoculata from California. The present communications deals with description of a species of genus *Phyllobothrium radioductum* from *Trygon sephen* Cuvier, 1871.

MATERIALS AND METHODS

Twenty nine specimens of cestode parasites were collected from spiral valve of *Trygon sephen*. All were flattened, preserved in 4% formalin, stained with Harris haematoxyline, were passed through various alcoholic grades, whole mount slides were prepared for anatomical studies. Drawings were made with the help of camera lucida. All measurements are in millimeters.

DESCRIPTION

The scolex is medium in size, almost quadrangular in shape, with irregular margin, with four bothridia, which are sessile, overlapping on each other, distinctly marked off from the strobila and measures 0.359 – 0.409 in length and 0.388 – 0.461 in breadth. Each bothridium is medium in size, oval in shape, petal like each with a single accessory suckers and measures 0.252 - 0.364 in length and 0.072 – 0.170 in breadth. The accessory suckers are small in size, oval in shape and measures 0.039 – 0.053 in length and 0.043 - 0.058 in breadth.

The scolex is followed by a wide, long neck, which is narrow anteriorly, broad posteriorly and measures 1.326 in length and 0.136 – 0.243 in breadth.

The mature segments are longer than broad, which is narrow anteriorly, broad posteriorly, almost three times longer than broad,

with concave and convex lateral margins, without projections at the anterior and posterior corners of the segments and measures 0.825 – 1.015 in length and 0.209 – 0.345 in breadth. The testes are small and medium in size, oval in shape, in 2 – 5 rows, 90 – 95 (92) in number, pre-ovarian roughly in two lateral fields upto the cirrus pouch region and in a single field anterior to it, almost evenly distributed, in the central medulla from the anterior margin of the segments to the ovary, bounded laterally by longitudinal excretory canals and measures 0.029 – 0.049 in length and 0.024 – 0.043 in breadth. The cirrus pouch is medium in size, oval in shape obliquely and transversely placed, almost at 1/3rd from the anterior margin of the segments extends medially upto the middle of the segments, opens sub marginally and measures 0.121 length and 0.043 – 0.058 in breadth. The cirrus is of medium width, slightly coiled, inside the cirrus pouch and measures 0.126 in length and 0.010 – 0.015 in breadth. The vas deferens is a short, thin tube, runs, slightly posterior and measures 0.078 in length and 0.005 – 0.010 in breadth. The ovary is indistinctly bi lobed, large in size, transversely placed, near the posterior margin or the proglottids extends laterally up to the sub corticular region of the segments and measures 0.272 in length and 0.078 – 0.107 in breadth. The vagina is a thick wide tube, long, placed anterior to the cirrus pouch, starts from the genital pore, runs transversely and obliquely almost up to the middle of the segments, turns posteriorly, runs in the middle of the segments, reaches and opens in to the ootype and measures 0.752 in length and 0.015 – 0.024 in breadth. The ootype is large in size, oval in shape, posteroventral to the isthmus, situated near the posterior margin of the segments and measures 0.034 – 0.049 in length and 0.039 – 0.072 in breadth. The genital pores are medium in size, oval in shape, submarginal in position, unilateral, situated almost at 1/3rd from the anterior margin of the segments and measures 0.034 in length and 0.024 – 0.029 in breadth.

The longitudinal excretory canals are thin and measures 0.010 in width. The vitellaria are granular, thin strips, on each lateral side, in corticular region and from anterior to the posterior margin of the proglottids

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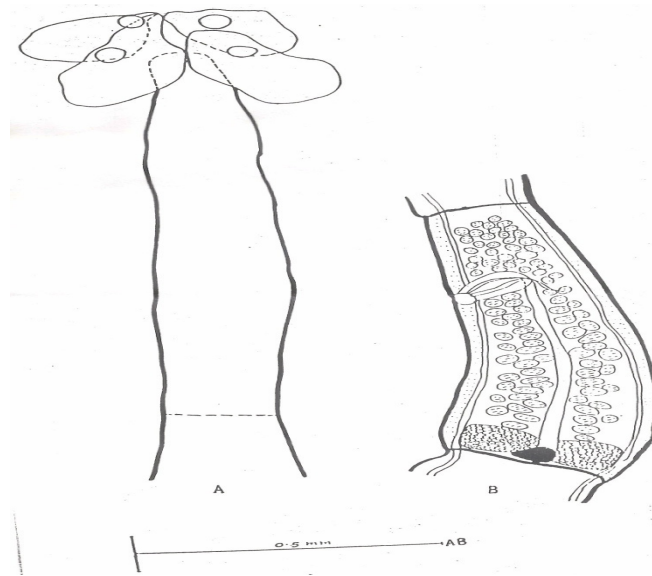


Fig 1-A and 1-B.

Type species : *Phyllobothrium radioductum* Mair, 1942 [2]
 Host : Trygon sephen Cuvier, 1871 [3]
 Habitat : Spiral valve
 Locality : Ratnagiri, M.S. (West coast of India), India
 Date of collection : 5th April, 1991

DISCUSSION

After going through the literature, the worm under discussion, after considering the number of testes comes closer to *Phyllobothrium radioductum* Mair, 1942 [2]. This worm resembles it in many characters, but differs from it in few characters, which are as follows. The present cestodes, differs from *Phyllobothrium radioductum* in the number of testes 90 – 95 (92) preovarian, small and oval as against 100. The present form, differs from it, in the structure of ovary in distinctly bilobed, large, transversely placed, near the posterior margin of the segments as against 'U' shaped, with short, oval acini.

The present cestode, differs from the same in shape and structure of vitellaria (granular, thin strips as against follicular). Mair in 1942 [2] reported *Phyllobothrium radioductum* from Raja binoculata at California, where as the present worms, are being reported from *Trygon sephen* Cuvier (1871) [3] at Ratnagiri, M.S. (West coast of India), India it is a new host record.

Phyllobothrium foliatum Linton, 1890 [4]

The present form deals with redescription of species of the genus *Phyllobothrium foliatum* Linton, 1890 which is having some additional characters, such as testes 75 – 85 (83) preovarian in 2 to 4 rows, shape and size of ovary (distinctly bilobed, medium in size, transversely placed, near posterior margin of the segment, shape and structure of vitellaria (granular, thin strips)

DESCRIPTION

Twenty one specimens of the cestode parasites, were collected from the spiral valve of *Trygon sephen* Cuvier, 1871 [3] from Ratnagiri M.S. India in the month of April, 1991.

The scolex is distinctly marked off from the strobila, large in

size, almost quadrangular in shape with irregular margin, with four bothridia and measures 0.413 – 0.485 in length and 0.417 to 0.582 in breadth. Each bothridium is medium in size, oval in shape, sessile, having an accessory sucker and measures 0.364 in length and 0.150 – 0.194 in breadth. The accessory suckers are medium in size, oval in shape, one in each bothridium and measure 0.043 – 0.058 in length and 0.034 – 0.053 in breadth.

The neck is short, wide, narrow anteriorly broad posteriorly and measures 0.165 – 0.184 in length and 0.170 to 0.194 in breadth. The mature segments are longer than broad, almost two times longer than broad, with slightly concave and convex lateral margins without projections at the anterior and posterior corners of the segments, slightly unequal in length and measures 0.597 – 0.733 in length and 0.267 – 0.320 in breadth.

The testes are small and medium in size, oval in shape, in 2 to 4 rows, 75 – 85 (83) in number, preovarian, roughly in two lateral fields upto the cirrus pouch region and in a single field anterior to it almost evenly distributed, in the conetral medulla, from the anterior margin of the segments to the ovary, bounded laterally by longitudinal excretory canals and measures 0.015 – 0.029 in length and 0.019 – 0.039 in breadth. The cirrus pouch is medium in size, oval in shape, slightly obliquely placed situated at 1/3rd from the anterior margin of the segments, extends medially beyond the middle of segments opens marginally and measures 0.189 in length and 0.039 – 0.072 in breadth. The cirrus is thin tube, long, slightly coiled, contained within the cirrus pouch and measures 0.184 in length and 0.010 – 0.019 in breadth.

The vas deferens is thin, short, extends transversely and measures 0.019 in length and 0.005 – 0.010 in breadth.

The ovary is distinctly bilobed, medium in size, transversely placed, near the posterior margin of the proglottids extends laterally up to the cortical region of the segments and measures 0.228 – 0.238 in length and 0.019 – 0.087 in breadth. The vagina is a wide tube, long, anterior to cirrus pouch, starts from the genital pore, extends transversely and obliquely up to the middle of the segments, turns posteriorly, runs in the middle of the segments posteriorly, reaches and opens in to the ootype and measures 0.626 in length and 0.019 – 0.039 in breadth. The ootype is medium in size, oval in shape, preovarian, in the concavity of the ovarian lobes, situated near the posterior margin of the segments and measures 0.039 –

0.043 in length and 0.043 in breadth.

The genital pores are medium in size, oval in shape, marginal in position, unilateral situated almost at 1/3rd from the anterior margin of the segments and measures 0.043 in length and 0.024 – 0.029 in breadth.

The longitudinal excretory canals are thin and measures, 0.015 in width. The vitellaria are granular, thin strips, on each lateral side, in corticular region and from anterior to the posterior margin of the proglottids.

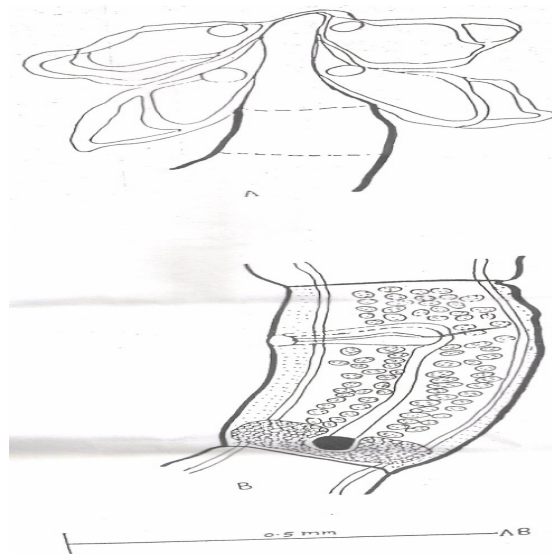


Fig 2-A and 2-B.

Type species	- <i>Phyllobothrium foliatum</i> Linton, 1890 [4]
Host	- <i>Trygon sephen</i> Cuvier, 1871 [3]
Habitat	- Spiral valve
Locality	- Ratnagiri, M.S. (West coast of India) India
Date of collection	- 7 th April, 1991

DISCUSSION

After going through the literature, the worm under discussion, turned out to be *Phyllobothrium foliatum* Linton, 1890 [4]. However, it differs from it, in some characters, which are as follows:-

The worm under discussion, differs from it, in the number of testes 75 – 85 (83), preovarian in 2 – 4 rows, as against numberons (125) from anterior margin up to the genital pore.

The present worm, differs from it, in the shape and size of ovary (distinctly bilobed medium in size, transversely placed, near the posterior margin of the segments as against bilobed, distinct).

The present form, differs from the same, in the shape and structure of vitellaria (granular, thin strips as against follicular in 2 - 3 rows).

Linton 1890 [4] reported *Phyllobothrium foliatum* from *Rhynchobatus djeddensis*, pearl Banks, Ceylon; whereas the present worms are being reported, from *Trygon sephen* Cuvier, 1871 [3] at Ratnagiri, M.S. (West coast of India), India. It is a new host record.

Phyllobothrium chiloscyllyi Subhapradha, 1955 [5]

The present form deals with redescription of species of the genus *Phyllobothrium chiloscyllyi* subhapradha, 1955. Which is having some additional characters, such as testes 60 – 70 (68) and, preovarian. The ovary indistinctly bilobed medium in size, placed near the posterior margin of segments, vitellaria granular, thin strips.

DESCRIPTION

Seventeen specimens, of the cestode parasites, were collected, from the spiral valve of carcharias acutus Muller and Henle, 1906 [6] at Bombay, M.S. India, in the month of December, 1990.

The scolex is distinctly marked off the strobilla, medium in size, almost quadrangular in shape, with irregular margin, with four bothridia, which are sessile, overlapping on each other and measures 0.291 in length and 0.364 – 0.422 in breadth. Each bothridium is medium and small in size, oval in shape, petal like, each with a single accessory sucker and measures 0.204 – 0.277 in length and 0.146 – 0.194 in breadth. The accessory suckers are medium in size, oval in shape and measures 0.039 – 0.049 in length and 0.043 – 0.053 in breadth. The neck is medium in length, narrow anteriorly, broad posteriorly and measures 0.413 in length and 0.107 – 0.194 in breadth. The mature segments are longer than broad, almost one and half times longer than broad, with slightly convex lateral margins, without projections at the anterior and posterior corners of the segments, slightly unequal in length and measure 0.534 – 0.563 in length and 0.340 – 0.393 in breadth.

The testes are small and medium in size, oval in shape, in 2 to 5 rows, 60 – 70 (68) in number, preovarian, roughly in two lateral fields up to the cirrus pouch region and in a single field anterior to it, almost evenly distributed, in the central medulla, from the anterior margin of the segments of the ovary, bounded laterally by longitudinal excretory canals and measures 0.015 – 0.024 in length and 0.029 – 0.058 in breadth. The cirrus pouch is large in size, oval in shape, slightly obliquely placed, situated just anterior to the middle of the segments, opens marginally and measures 0.252 in length and 0.063 – 0.146 in breadth. The cirrus is wide, long unarmed, slightly coiled, contained within the cirrus pouch and measures 0.233 in length and 0.010 – 0.024 in breadth. The vas deferense is thin, short extends anteriorly and measures 0.131 in length and 0.005 – 0.010 in breadth. The ovary is indistinctly bilobed, medium in size, transversely placed, near the posterior margin of the proglottids, extends laterally up to the corticular region of the segments and

measures 0.340 in length and 0.049 – 0.067 in breadth. The vagina is a wide tube posteroventral to the cirrus pouch, starts from the genital pore, runs slightly obliquely for a short distance, turns posteriorly, extends in the middle of segments reaches and opens in to the ootype and measures 0.388 in length and 0.024 – 0.034 in breadth. The ootype is large in size, oval in shape, anteroventral to the isthmus elongated antero-posteriorly, situated near the posterior margin of the segments and measures 0.083 in length and 0.029 –

0.049 in breadth. The genital pores are medium in size, oval in shape marginal in position, unilateral, situated, almost at 1/3rd from the anterior margin of the segments and measures 0.072 in length and 0.015 to 0.024 in breadth. The longitudinal excretory canals are thin and 0.019 in width. The vitellaria are granular, thin strips, on each lateral side, in corticular region and from anterior to the posterior margin of the proglottids.

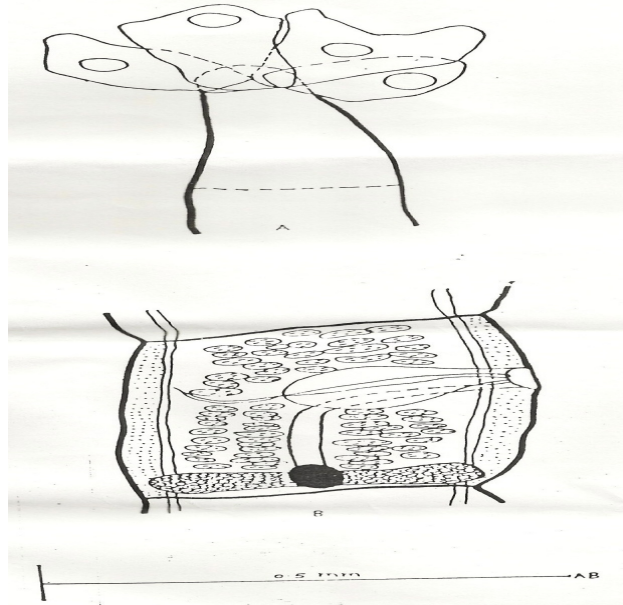


Fig 3-A and 3-B.

Type species - *Phyllobothrium chiloscyllyi* Subhadrappa, 1955 [5]
 Host - *Carcharias acutus* Muller and Henle, 1906 [6]
 Habitat - Spiral valve
 Locality - Bombay, M.S. (West coast of India)
 Date of Collection- 6th December, 1990

DISCUSSION

After going through the literature, the worm under discussion, turned out to be *Phyllobothrium chiloscyllyi* Subhadrappa, 1955 [5]. However, it differs from it, in some characters, which are as follows.

The present tapeworm differs from it, in the number of testes 60 – 70 (68) oval, preovarin as against 55 – 80 round or oval.

The present cestode differs from the same, in the shape of the ovary indistinctly bilobed, medium in size, extends laterally up to corticular region, placed near the posterior margin of segments as against 'H' shaped and bilobed.

The present worm, differs from it, in the shape of vitellaria (granular, thin strips as against follicular).

As the above noted characters are minor, it is redescribed here as *Phyllobothrium chiloscyllyi* Subhadrappa, 1955 [5] Subhadrappa (1955) [5] reported her worms i.e. *Phyllobothrium chiloscyllyi* from *Chiloscyllium griseum* Muller and Henle, 1906 [6] at Madras East coast of India, India; whereas the present worms, are being reported from *Carcharias acutus* Muller and Henle, 1906 [6] at Bombay, M.S. West coast of India, India, it is new host record.

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