

A new species of tapeworm *Moniezia (b.) Shindeae* of *Capra hircus* from Ambajogai, Beed,(M.S.), India.

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Abstract: The paper deals with the study of a new species of tapeworm *Moniezia (B.) Shindeae* in *Capra hircus* from Ambajogai, Dist. Beed, M.S., India. The alimentary canal of vertebrate animals contains different types of helminth parasites. The cestodes are more common in occurrence among the vertebrates. The attempt was made to study the taxonomy of cestode parasites found in *Capra hircus*. The present tapeworm having scolex simple, dome shaped; mature segments broader than long, squarish; testes medium, oval; cirrus thin, coiled tube; vas difference thin, coiled; ovary bilobed, flower shaped; vagina thick, coiled; ootype oval; genital pore small, oval; vitelline glands medium, oval.

Key Words: Tapeworm, *Moniezia (B.) Shindeae*, *Capra hircus*, Ambajogai.

1. INTRODUCTION:

The genus *Moniezia* was erected by Blanchard in 1891, as a type species *Moniezia expansa* from *Ovis aries*. Later on Skrjabin and Schulz (1937) divided this genus into three sub-genera as *Moniezia*, *Blanchariezia* and *Baeriezia*. The present worm agrees in some characters with subgenus *Blanchariezia* but differs from the same in many characters.

2. MATERIALS AND METHODS:

Eleven cestode parasites were collected from the small intestine of *Capra hircus* in the month of October, 2019 at Ambajogai, Dist.Beed, M.S., India. All the parasites were flattened, preserved in 4 % formalin, stained with Harris haemotoxylin, passed through various alcoholic grades, cleared in xylol, mounted in DPX and whole mount slides were prepared for anatomical studies. Drawings were made with the aid of Camera Lucida and all the measurements are in millimeters.

3. DESCRIPTION:

The scolex of the worm is simple, dome shaped and measures 1.361-2.441 in length and 1.078-2.477 in breadth. It bears four suckers which are large, oval, muscular and arranged in the pairs and marginally attached to each other's and measures 0.681-1.078 in length and 0.341-0.681 in breadth. The scolex leads to short neck with thick musculature and measures 0.510-0.624 in length and 0.737-0.965 in breadth. The neck leads into immature segments and immature segments leads into mature segments. The mature segments are broader than long, squarish, having double set of reproductive organs and measures 1.963-2.052 in length and 5.533-6.783 in breadth. The testes are medium, oval, 114 in numbers and measures 0.035-0.053 in diameter. The cirrus pouch is medium, oval, elongated, marginal, just anterior to the middle of the segment, reaches to longitudinal excretory canals and measures 0.071-0.125 in length and 0.107-0.303 in breadth. The cirrus is thin, coiled, tubular, enclosed in cirrus pouch and measures 1.392 in length and 0.053 in breadth. The vas deference is thin, coiled, anteriorly directed and measures 0.053 in length and 0.017 in breadth. The ovary is bilobed, flower shaped, irregular in margin, obliquely placed on the lateral sides, one on each side and measures 0.303-0.446 in length and 0.213-0.893 in breadth. The vagina is thick tube, coiled, posterior to cirrus pouch, open into ootype and measures 0.535 in length and 0.035 in breadth. The ootype is oval and measures 0.107-0.213 in length and breadth. The genital pore is small, oval and measures 0.053-0.107 in length and 0.035-0.071 in breadth. The vitelline glands are medium in size, oval, post ovarian and measures 0.071-0.142 in length and 0.089-0.195 in breadth. The interproglottidal glands are oblong to oval and 16-20 in numbers. The excretory canals are present in each segments and measures 0.053 in breadth.

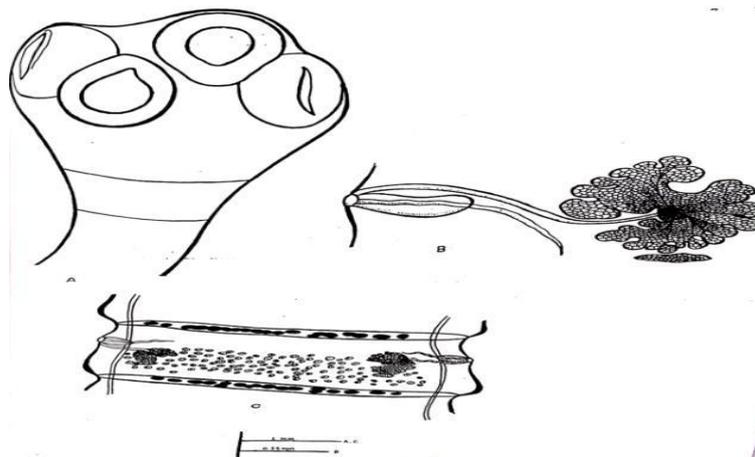


Figure 1: A) Scolex B) Magnified Reproductive Organs C) Mature Segment

4. RESULTS AND DISCUSSION:

The present worm deals with the description of new species *Moniezia (B.) shindeae*. The worm under discussion is having scolex simple, dome shaped; neck short, thick; mature segments broader than long, squarish; testes medium, oval; cirrus pouch medium, oval, elongated, marginal; cirrus thin coiled; vas deference thin, coiled, anteriorly directed; ovary oval; genital pore small, oval; vitelline glands medium, oval, post ovarian; interproglottidal glands and lateral excretory canals are present.

- The present cestode, differs from *M.(B.) benedeni* (1937) which is having the posterior segment fleshy, testes 500 in number, arranged in the form of two triangles, in two fields; cirrus pouch wide, short; ovary compact, at the centre of segments; interproglottidal glands varying in size, narrow, short and in transverse row and reported from Horse, *Equus equus*.
- The present tapeworm, differs from *M. (B.) aurangabadensis* (1985) which is having testes 1100-1200 in number, vas deferens coiled, cirrus pouch cylindrical, seminal vesicle long, uterus reticular, vitelline gland round, interproglottidal glands 12-15 in number and reported from sheep, *Ovis bharal*.
- The worm under discussion, differs from *M. (B.) bharalae* (1985) [1] which is having the testes 190-200 in number, distributed in 1/2 to 3/4th of the segments; vas deferens elongated, fusiform; ovary compact, seminal vesicle elongated, fusiform; cirrus pouch small, interproglottidal glands in two rows, at posterior margin, 38-44 in number; genital pores sub marginal and reported from sheep, *Ovis bharal*.
- The present form, differs from *M.(B.) pallid* (1926) which is having the mature segments squarish, uterus external, dorsal and ventrally over excretory canals; the interproglottidal glands varying in size and reported from Horse, *Equus equus*.
- The present parasite, differs from *M. (B.) shindei* (2004) [2] which is having scolex simple, mature segment big, craspedote, testes small oval, cirrus pouch medium, oval situated just anterior to the middle of the segments, vas deferens thin, short, ovary on each side, single mass, vagina postero ventral to the cirrus pouch, vitelline gland large, oval and reported from *Capra hircus*.
- The present form differs from *Moniezia (B) warnanagarensis*, (1997) [3] which is having scolex large, testes 300-320 in number, distributed throughout the proglottids, in single field, ovary indistinctly lobed with 13-15 short, blunt acini, transversely elongated, inter proglottidal glands, 56 in numbers, oval, medium in size, cirrus pouch medium, oval, transversely elongated, slightly obliquely placed and extend beyond longitudinal excretory canal.
- The present cestode differs from *Moniezia (B) kalawati* (1999) [4] which is having squarish scolex, oval shaped cirrus pouch, testes small, oval distributed throughout the segment, 172 in number, ovary medium, short, blunt acini, and 54 inter proglottidal glands in the inter segmental region, medium, oval either single or paired, irregularly arranged in the central width of the segments and leaving space on each lateral side.
- The present tapeworm differs from *Moniezia (B) murhari* (1999) [5] in having the scolex squarish, testes 405-415 in number, cirrus pouch elongated in the anterior region of the segments, ovary inverted horse shoe shaped, indistinctly bilobed each with numerous short, blunt, round, acini and inter proglottidal glands 63 in numbers.
- The present parasites differs from *Moniezia (B) caprai* (2004) [6] which is having the scolex is medium, squarish, with large four suckers, without rostellum, testes oval in shape, 255-260 in numbers, cirrus pouch is medium in size and ovary medium in size, kidney shaped.

- The present cestode differs from *Moniezia (B)hircusae* (2004) which is having scolex large, mature segments big, craspedote, testes 168 in number, medium, small, scattered in a single field, ovary large, oval, a single mass, in anterior half of the segment, inter proglottidal glands 14-15 in number, large, oval and cirrus pouch in anterior 1/3rd region of the segment.
- The present cestode differs from earlier described *Moniezia (B) rajalaensis* (2007) [7] in having scolex large, globular, mature proglottids Squarish, Broader than long, testes 250-260 in numbers, medium, scattered throughout proglottids, ovary large, horse shoe shaped, inter proglottidal glands 31-32 in number, large, oval and cirrus pouch oval.
- The present cestode differs from earlier described *Moniezia (B) govindae* (2011) [8] in having scolex large, globular, mature proglottids big, craspedote, testes 100-140 in numbers, medium, scattered throughout proglottids, ovary large, compact, nut shaped, inter proglottidal glands 40-42 in number, large, oval and cirrus pouch elongated.
- The present worm differs from earlier described *Moniezia (B.) kalyanae* (2019) [9] in having scolex large, squarish, testes 165-175 (167), cirrus thin, narrow, vas deferens short, narrow, curved, ovary large bean shaped, single mass, ootype small, oval, genital pores bilateral, small, oval, interproglottidal glands medium, oval, 64 in numbers.

The above noted characters are distinct, which are valid enough to erect a new species for these worms and hence the name *Moniezia (B.) Shindeae* n.sp. is proposed in the honor of Prof. G. B. Shinde, who was the eminent Cestodologist of India.

Type species	: <i>Moniezia (Blanchariezia) Shindeae</i> n.sp.
Host	: <i>Capra hircus</i>
Habitat	: Small Intestine
Locality	: Ambajogai, Dist. Beed, M.S., India.
Date of collection	: 12 th October, 2019.

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