



REVIEW OF RESEARCH



A NEW CESTODE *MONIEZIA TULJAPURENSIS* N.SP. (EUCESTODA : ANOPLOCEPHA LIDAE) FROM *CAPRA HIRCUS*

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The present communication deals with a study of *Moniezia tuljapurensis* n.sp.

ABSTRACT :

The scolex of *Moniezia tuljapurensis* n.sp. is simple, large, suckers are medium, oval, situated obliquely in the anterior most region of the scolex. mature proglottids are big, broader than long, almost 3 1/2 times broader than long, craspedote, each with a double set of reproductive organs, having short, blunt projections at the posterior corners of the segments with concave and convex lateral margin. Testes medium, oval 70-80 (85), The cirrus pouch on each side is thin tube, slightly curved. Vagina is a thin tube situated posterior to the cirrus pouch ootype is large, oval, placed in the middle of the segments, vitelline gland is medium, situated at 1/3rd from posterior margin of the segments, the interproglottidal glands are present.

KEY WORDS : Cestode, New species, *Moniezia*, *Capra hircus*.

MATERIAL AND METHOD :

Twelve specimens of the cestode parasites were collected from the intestine of Goat, *Capra hircus* at Tuljapur, Dist. Osmanabad, India. All the worms were flattened, fixed in 4% formalin, stained with Harris haematoxylin, passed through various alcoholic grades and mounted in D.P.X. Drawings are made with camera lucida. All measurements are in millimeters.

DESCRIPTION :

All the cestodes were long, with thick musculature, whitish in colour, with scolex, numerous immature and mature proglottids. The scolex is simple, large, broad anteriorly, narrow posteriorly with four suckers, distinctly marked off from the strobila, and measures 2.897-3.215 in length and 0.136-2.556 in breadth. The suckers are medium, oval, situated obliquely in the anterior most region of the scolex and measures 1.817-2.328 in length and 0.565-0.795 in breadth. The neck is medium, broader than long, slightly broad anteriorly narrow posteriorly, and measures 0.886-0.965 in length and 1.141-1.146 in breadth.

The mature proglottids are big, broader than long, almost 3 1/2 times broader than long, craspedote, each with a double set of reproductive organs, having short, blunt projections at the posterior corners of the segments with concave and convex lateral margin and measure 1.375-1.464 in length and 4.785-5.445 in breadth. The testes are small, oval, 70-80 (75) scattered all over the segments, occupy posterior 3/4th region of the segments, bounded laterally, by longitudinal excretory canals and 0.267-0.321 in length and 0.089-0.0142 in breadth. The cirrus pouch on each side is thin tube, slightly curved, contained within the cirrus pouch and measures 0.250-0.285 in length and 0.017-0.035 in breadth. The vasdeferens

thin, short, curved, runs obliquely anteriorly and measures 0.928-1.016 in length and 0.017-0.035 in width. The ovary on each side medium, horse- shoe shaped in appearance, irregular margin, distinctly bilobed, lobes unequal, placed in the middle of the segments and measures 1.263-2.005 in length and 0.089-0.214 in breadth. The vagina is a thin tube, situated posterior to the cirrus pouch on each side, starts from the genital pore, extends anteriorly laterally for long distance, takes a turn posteriorly reaches and opens in to the ootype and measures 1.025-1.042 in length and 0.017-0.035 in breadth. The ootype is large, oval, placed in the middle of the segments in between two ovarian lobes and measures 0.571-0.660 in length and 0.089-0.214 in breadth. The vitelline gland is medium, situated at 1/3rd from posterior margin of the segments, obliquely placed, postovarian and measures 0.178-0.194 in length and 0.089-0.178 in breadth. The genital pores are bilateral, medium, oval situated at 1/3rd from the anterior margin of the segments and measures 0.142-0.160 in length and 0.089-0.095 in breadth. In between the two segments, in the intra segmental regions, the interproglottidal glands are present, glands are medium, 10 in number, oval, muscular, either single or paired, linearly arranged and measure 0.285-0.357 in length and 0.010-0.054 in width.

The longitudinal excretory canals are wide and measure 0.020 in width.

DISCUSSION:

The genus *Moniezia* was established by Blanchard, 1891 as a type species, *Moniezia expansa* from *Ovis aries*, Skarjabin and Schulz, 1937 divided this genus, in to three sub genera, as follows

- I. Interproglottidal glands grouped in rosettes *Moniezia*.
- II. Interproglottidal glands arranged linearly (sometimes absent) *Blanchariezia*.
- III. Interproglottidal glands absent *Baeriezia*.

The present form, agrees in all the characters, with the sub genus *Brielancharjeria* Skarjabin and Schulz, 1937 which is having the following species.

Sr. No.	Name Of Species
1	<i>Moniezia (B.) benedeni</i> Moniez, 1879
2	<i>Moniezia (B.) pallida</i> Monnig, 1925
3	<i>Moniezia (B.) aurangabadensis</i> Shinde et al; 1985
4	<i>Moniezia (B.) bharalae</i> Shinde et al; 1997
5	<i>Moniezia (B.) warnanagerensis</i> Patil et al; 1997
6	<i>Moniezia (B.) kalawati</i> Nanaware et al; 1999
7	<i>Moniezia (B.) govindi</i> patil et al; 2014
8	<i>Moniezia (B.) vanamala</i> patil et al; 2015

After going through the literature, the present worm comes closer to *Moniezia (B.) benedeni*, *Moniezia (B.) pallid*, *Moniezia (B.) aurangabadensis*, *Moniezia (B.) bharalae* Shinde, *Moniezia (B.) warnanagerensis*, *Moniezia (B.) kalawati*, *Moniezia (B.) govindi*, *Moniezia (B.) vanamala*

- The present tapeworm, differs from *Moniezia (B.) benedeni* which is having the mature segments broader than long, posterior segments fleshy, testes 500, arranged in the form of two triangles, in two fields; ovary compact, with acini, present at the centre of the segment, on each side; interproglottidal glands varying in size, narrow, short and in a transverse row; cirrus pouch wide, short, oval, do not touch to the longitudinal excretory canals and reported from the host, *Ovis aries* and *Bos indicus*.
- The worm under discussion, differs from *Moniezia (B.) pallida* which is having the uterus external, dorsally and ventrally, over excretory canals, the interproglottidal glands varying in size and reported from the host *horse, equus caballus*.
- The present cestode differs from *Moniezia (B.) aurangabadensis* which is having the scolex simple, segments broader than long, testes 1100-1200, distributed from the anterior to the posterior margin of the segments; ovary bilobed, each lobe with acini; interproglottidal glands 12-15, in a row; seminal

vesicle oval, long, cirrus pouch long, cylindrical, vitelline gland small, vagina posterior to the cirrus pouch and reported from the host *sheep, Ovis bharal*.

- The present worm differs, from *Moniezia (B.) bharalae* which is having the mature segments broader than long, testes 190-200, distributed in $\frac{1}{2}$ to $\frac{3}{4}$ th of the segments, ovary compact, bilobed, interproglottidal glands in two rows, at posterior margin of the segments, 38-44 in number; seminal vesicle elongated, fusiform, cirrus pouch oval, obliquely placed, vitelline gland absent and reported from the host, *Ovis bharal*.
- The present cestode differs from *Moniezia (B.) warnanagerensis* which is having scolex large, globular, mature segments broader than long, almost 4-5 times broader than long, testes 300-320, distributed throughout the segment in single field. Ovary indistinctly bilobed, with 13-15 short, blunt acini, transversely elongated, interproglottidal glands 56 in number, medium, oval, cirrus pouch medium, oval, transversely elongated, slightly obliquely placed, extend beyond longitudinal excretory canal, vagina wide posterior to the cirrus pouch and reported from the host, *Capra hircus*.
- The present tape worm differs, from *Moniezia (B.) kalawati*, which is having scolex simple, squarish, mature segments broader than long, testes 172, oval distributed throughout the segments, in central medulla in a single field, ovary single mass, oval, with irregular margin with many short, blunt acini on each lateral side, interproglottidal glands 54 in number, medium, oval, arranged laterally, cirrus pouch medium, oval, $\frac{1}{4}$ th from the posterior margin of the segment obliquely placed not reaching up to the longitudinal excretory canal, vitelline gland small, compact lobe, post ovarian just touching the acini, vagina posterior to cirrus pouch and reported from the host *goat, Capra hircus*.
- The present cestode differs from *Moniezia (B.) govindi* The scolex is large, globular, oval, suckers large, oval, situated almost in the anterior $\frac{3}{4}$ th region of the scolex. Mature proglottids are large, squarish, slightly concave or convex lateral margins. Testes medium, oval 220-230 (225), cirrus pouch on each side, medium, oval, cylindrical appearance, slightly broader anteriorly narrow posteriorly, vagina is a thin tube situated posterior to the cirrus pouch, ootype large, oval, post ovarian, situated in the concavity of the ovarian lobes, vitelline gland large, quadrangular with irregular margin, post ovarian, almost central in position 30-32 short, blunt, round wide acini, in between the two segments in the intra segmental regions, the interproglottidal glands are present
- The present tape worm differs, from *Moniezia (B.) vanamala*, which is having, scolex large, broad anteriorly, narrow posteriorly, suckers medium, oval arranged in two pairs, one pair in each half of the scolex. Mature proglottids are big, broader than long, each with double set of reproductive organs, testes follicular, small, round 210-215(211), cirrus pouch in each side, cirrus is thin, slightly coiled, ovary on each side large, globular with irregular margin, vagina is a thin tube situated posterior to the cirrus pouch, seminal receptacle large, ootype medium, round ventral to the ovary, vitelline gland medium, obliquely placed, in between the two segments in the intra segmental regions, the interproglottidal glands are present.

The above noted characters, are valid enough to accommodate these worms, in to a new species and hence the name *Moniezia tuljapurensis* n.sp. is proposed, after the locality

Type species : *Moniezia (B.) tuljapurensis* n.sp.
 Host : *Capra hircus*
 Habitat : Intestine
 Locality : At. Tuljapur Dist. Osmanabad, India.

Type specimens : Holotype and paratype are deposited in Helminthology Laboratory, Department of Zoology, Dr. B. A. M. University Aurangabad.

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