

ON A NEW SPECIES OF *MONIEZIA* BLANCHARD, 1891 (CESTODA ANOPILOCEPHALIDAE) IN *OVIS BHARAL* FROM BULDHANA DIST. (M.S.) INDIA

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ABSTRACT

The present communication deals with a new species of the genus *Moniezia* Blanchard, (1891) from the intestine of *Ovis bharal* at Shegaon Dist. Buldhana (M.S.) India. The new species *Moniezia shegaonensis* Sp. Nov. is characterized by the presence of scolex globular, elongated, mature proglottids 4 to 5 times broader than long, Inter proglottidal glands 20-25 in number, testes small in size, rounded scattered posterior to segment, 100-105 in numbers, cirrus pouch oval, ovary compact, rounded, vitelline gland post ovarian.

KEY WORDS: Buldhana, *Moniezia shegaonensis*, *Ovis bharal*.

INTRODUCTION

The genus *Moniezia* was established by Blanchard (1891). Skrjabin and Schulz (1937) divided this genus in to three subgenera as follows:

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| 1] Inter proglottid glands grouped in rosettes - - - - - | <i>Moniezia</i> . |
| 2] Inter proglottid glands arranged linearly - - - - - | <i>Blanchariezia</i> . (sometimes absent) |
| 3] Inter proglottid glands absent - - - - - | <i>Baeriezia</i> . |

The present worm agrees in all characters with subgenus *Blanchariezia*. Skrjabin and Schulz (1937) having two species as *M. (B.) benedeni* and *M. (B.) pallid*. Later on two more species were added by Shinde (1985) from the host *Ovis bharal* as *M. (B.) aurangabadensis* and *M. (B.) bharalae* at Aurangabad, M.S. India. Later on Patil (1997) added *M. (B.) warananagarensis* from *Capra hircus*. Nanware in (1999) erected *M. (B.) kalawati* from *Capra hircus* (L.). Kalse added (1999) *M. (B.) murhari* from the same host, Pokale, (2004) added *M. (B.) caprai* from *Capra hircus* (L.). Pawar (2004) added *M. (B.) hindei* from *Capra hircus*. *M. (B.) hircusaeis* added by Tat (2004). Later on Borde (2007) added *Moniezia (B) rajalaensis* from *Capra hircus* (L.) and lastly Padwal added one new species *Moniezia (B) govindaein* (2011).

The present communication, deals with the description of a new species, *Moniezia (B) shegaonensis* Sp. Nov. Collected from the *Ovis bharal* at. Shegaon District Buldhana (M.S.) India.

MATERIAL AND METHODS

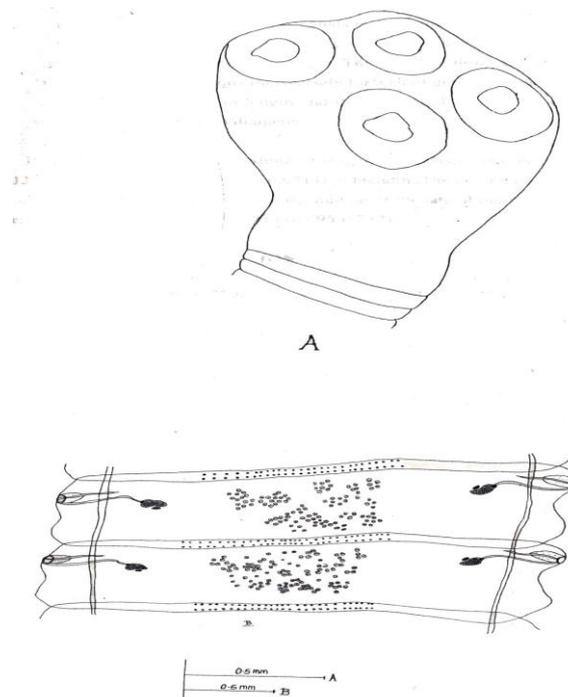
Cestode parasites were collected from the intestine of *Ovis bharal* at. Shegaon District Buldhana (M.S.) India during the period of June, 2008 to May, 2010. These cestodes preserved in hot 4% formalin and stained with Harris haematoxylin, passed through various alcoholic grades, cleared in xylene, mounted in D.P.X. and drawings are made with the aid of camera lucida. All measurements are given in millimeters. The identification is made with the help of Systema Helminthum (1959).

RESULTS

Description

The identified new species *Moniezia Blanchard*, 1891 was shown in figure 1. All the cestodes are long consisting scolex, neck, immature, mature and gravid proglottids. The scolex is large in size, globular in shape and measures 1.2 (1.02-1.46) in length and 1.23 (1.22-1.24) in width. Suckers are large in size, rounded in shape, four in numbers, arranged in two pairs, one pair in each half off the scolex and measures 0.32 (0.30-0.34) in length and 0.32 (0.31-0.32) in width. The neck is long and measures 1.34 (1.32-1.36) in length and 0.61 (0.56-0.65) in width. The mature proglottids are almost four times broader than long, with double set of reproductive organs and measures 1.61 (1.16-1.87) in length and 5.55 (5.51-5.59) in width. The testes are small in size, rounded in shape, 190 to 220 in numbers scattered in posterior of the proglottids in between the excretory canal and measures 0.24 (0.93 - 0.30) in diameter. The

cirrus pouch is large in size, oval in shape, situated in the middle margin of the proglottids and measures 0.42 (0.42-0.42) in length and 0.20 (0.20-0.20) in width. The cirrus is thick, medium, inside the cirrus pouch and measures 0.34 (0.34-0.34) in length and 0.22 (0.22-0.22) in width. The vas deferens on each side, thin tube, coiling and measure 0.79(0.79-0.79) in length and 0.34(0.34-0.34) in width. The ovary on each sides, ovarian follicles with big acini, on both the side forming rounded shaped ovary, measures 0.43(0.36-0.51) in length and 0.51(0.48-0.54) in width. Vagina posterior to cirrus pouch, thin tube and forms receptaculumseminis, is long tube reaches to the ootype which is oval. Vagina measures, 0.73(0.73-0.73) in length and 0.01 (0.01-0.02) in width. Receptaculum seminis is thin tube, open into ootype and measures 0.17(0.17-0.17) in length and 0.01(0.01-0.01) in width. Ootype is oval to rounded, and measures 0.096(0.09-0.10) in length and 0.04 (0.03-0.05) in width, Vagina and cirrus pouch open through a pore, genital pore, marginal, elongated, measures 0.20(0.20-0.20) in length and 0.03 (0.03-0.03) in width. The vitelline gland oval in shape, post ovarian, measures 0.24(0.20-0.28) in length and 0.17 (0.17-0.18) in width. In between the two proglottids there are oval to rounded glands known as inter-proglottidal glands, irregularly arranged, in between the excretory canal, 18-20 in each proglottids, measures 0.42 (0.34-0.51) in diameter. Pair of excretory canalis present on both the sides.



A:- Scolex
B:- Mature Segment

Figure 1. Scolex and mature segment of new species *Moniezia Blanchard, 1891*(Cestoda anoplocephalidae) In *Ovis bharal* from Buldhana Dist. (M.S.) India.

DISCUSSION

The genus *Moniezia* was erected by Blanchard in (1891). The worm under discussion is having the scolex globular, elongated, mature proglottids four times broader than long, testes small in size, rounded scattered posterior to segment, 190-220 in numbers, cirrus pouch oval, ovary compact, rounded, vitelline gland post ovarian. The present worm differs from *Moniezia (B) benedeni* (1937), which is having numerous proglottids broader than long, posterior proglottids fleshy, testes 500 in numbers, arranged in two groups, cirrus pouch short and wide, vas deferens with 2-3 coils, ovary compact, in the centre of the segments, eggs well developed, inter proglottidal glands liner and close to the posterior margin of the segments, arranged transversely and reported from the Calves and Lambs. The present cestode differs from *Moniezia (B) pallida* (1926), which is having the uterus external, dorsal and ventrally over excretory canals, the inter proglottidal glands varying in size and reported from the host horse in South Africa. The present parasite differs

from *Moniezia (B) aurangabadensis* (1985) which is having the scolex quadrangular, testes small, 1100-1200 in numbers, vas deferens coiled, cirrus pouch cylindrical, oval with some rounded acini, gravid proglottids broader than long, uterus reticulate, inter proglottidal glands 12-15 in numbers and reported from *Ovis bharal*(L.)

The present tapeworm differs from *Moniezia (B) bharalae* (1985) which is having testes rounded, 190-200 in numbers, vas deferens short, elongated, fusiform, genital pores bilateral, sub marginal, ovary compact, inter proglottidal glands arranged in two rows, small in size, 38-44 in number and reported from *Ovis bharal* (L.)

The present form differs from *Moniezia (B) warnanagarensis*, (1997) 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) which is having squarish scolex, oval shaped cirrus pouch, testes small, oval distributed through out 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* (1997) 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) 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 worm differs from *Moniezia (B) shindei* (2004) in having scolex large, mature segments craspedote, testes 190-200 (195) in number, scattered all over segment and ovary a single mass, large, oval, cirrus pouch oval, elongated, in centre of the segment and vitelline gland large, oval, internal to ovary. 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) 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) 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 above differentiating characters are valid enough to erect a new species for these cestodes and hence the name *Moniezia (B.) shegaonensis Sp.Nov.* is proposed, after the locality of the host.

Taxonomic Summary

Genus - *Moniezia* Blanchard, 1891

Species- *Moniezia (B) shegaonensis Sp.Nov.*

Type host- *Ovis bharal*

Habitat (Site) - Intestine

Type locality - Shegaon, Maharashtra, India.

Holotype and Paratype - Deposited in the Helminthology Research

Lab. Dept. of Zoology, Dr. B.A.M. University, Aurangabad, (M.S.) India.

Etymology - Named after the locality of the species.

A Key to the Species of the genus *Moniezia* Blanchard, [2]

Mature segments broader than long	-1
Mature segments Squarish	- <i>M. (B.) pallida</i> (1926)
Mature segments medium in size	- <i>M. (B.) caprai</i> (2004)
Mature segments Craspedote	- 2
1) Scolex globular	- 3
Scolex quadrangular	- <i>M. (B.) aurangabadensis</i> (1985)
Scolex squarish	-4
2) Inter proglottidal glands 14 - 15 in number	- <i>M. (B.) hircusae</i> (1985)
Inter proglottidal glands 20-25 in number	- <i>Moniezia shegaonensis Sp.Nov.</i>
Inter proglottidal glands 76 in number	- <i>M. (B.) shindei</i> (2004)

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| 3) Testes below 150 | - <i>M. (B.) govindae</i> (2011) |
| Testes in between 150-200 | - <i>M. (B.) bharalae</i> (1985) |
| Testes in between 250-260 | - <i>M. (B.) rajalaensis</i> (2007) |
| Testes above 300-350 in | - <i>M. (B.) warnanagarenensis</i> (1997) |
| Testes more than 350 | - <i>M. (B.) benedeni</i> (1937) |
| 4) Vitelline gland rounded | - <i>M. (B.) murhari</i> (1997) |
| Vitellaria follicular | - <i>M. (B.) kalawati</i> (1999) |

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