



International Journal of Science, Architecture, Technology and Environment

Biodiversity of Parasites Cestodes of Goats from Naigaon District Nanded (M.S.) India

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DOI: <https://doi.org/10.63680/ijstate1125044.034>

Abstract

Goat is an important animal in economy of India. Goat is infected by several parasites which is responsible for production of goat. To improve the production of goat population first diagnosis the parasite this infected to goat. For that use of bioactive crops, use of vaccines and biological control as well as different strategies like phytotherapy, pasture management and chemotherapy for production and improve the goat help

Keywords: Cestode, Goat, Moniezia, Stilesia, Mogheia, Naigaon, Anatomical

INTRODUCTION

The present study was a part of helminthological investigation carried on three species (Moniezia suglegaoensis, Stilesia naigaonensis and Mogheia narshionensis) of Naigaon. Bovidae is a goat family consisting of Capra hircus. It is the only family in the order Artiodactyla. The **goat** or **domestic goat (Capra hircus)** is a species of goat-antelope that is mostly kept as livestock. It was domesticated from the wild goat (*C. aegagrus*) of Southwest Asia and Eastern Europe. The goat is a member of the family Bovidae, meaning it is closely related to the sheep. It was one of the first animals to be domesticated, in Iran around 10,000 years ago. Goats have been used for milk, meat, wool, and skins across much of the world. Milk from goats is often turned into cheese. Today, there were more than 1.1 billion goats living in the world, of which 150 million were in India.

MATERIALS AND METHODS

Nine specimens of cestode parasites were collected from the intestine of goat, capra hircus at Suglegaon and Seven specimens cestode parasites were collected from the intestine of goat, capra hircus at Naigaon and Eight specimens cestode parasites were collected from the intestine of goat, capra hircus at Narshi. The collected worms washed, relaxed, fixed in 4% formalin, stained with H. haematoxylin, dehydrated and cleared in xylene and mounted in D.P.X. Drawing were made the help of Camera lucida. All measurements are in millimeter (mm). Identification on the basis of various taxonomic characters using Yamaguti (1961).

DESCRIPTION

The present paper redescibes a total of three cestode species viz., *Moniezia sugelegaonesis*, *Stilesia naigaonensis* and *Mogheia narshionensis*.

Moniezia sugelegaonesis: Scolex medium, squarish, with four suckers and measures 0.557-0.669 in length and 0.781 to 0.850 in width. Suckers large, oval, four and measure 0.239 - 0.278 in length and 0.243 to 0.298 in width. Neck medium, curved, broad anteriorly narrow posteriorly and measures 1.606 to – 3.805 in length and 0.518 – 0.545 in breadth. Mature proglottids medium, broader than long, double set of reproductive organs, craspedote, short, blunt, conical projections at posterior corners and measures 0.964-1.850 in length and 3.559 to 3.669 in breadths. Testes small, oval 80-90 in number, evenly distributed and measures 0.024 -0.034 in length and 0.034 to 0.056 in breadth. Cirrus pouch medium, elongated, anteriorly situated, narrow anteriorly broad posteriorly and measures 0.353 to 0.456 in length and 0.115 to 0.126 in breadth. Cirrus thin, slightly coiled, contained with cirrus pouch and measures 0.353 to 0.363 in length and 0.011 to 0.013 in breadth. Vasdeferences is thin, highly coiled and measures 2.233 to 2.344 in length and 0.012 to 0.016 in breadth. Ovary medium, horse –shoe shape, bilobed, numerous short, blunt round acini and measures 0.821 to 1.024 in length and 0.324 to 0.459 in breadths. Vagina thin, posterior to cirrus pouch, starts from genital pore, crosses the longitudinal excretory canals, enlarges form receptaculum seminis , reaches and opens in to ootype and measures 0.675 to 0.879 in length and 0.121 to 0.221 in breadth. Receptaculum seminis medium, oval, antero lateral to ovary and measures 0.213 to 0.324 in length and 0.065 to 0.078 in width. Ootype small, oval, anteroventral ovary and measures 0.315 to 0.319 in length and 0.056 to 0.067in width. Vitelline gland medium, oval, obliquely placed post ovarian and measures 0.239 to 0.243 in length and 0.123 to 0.139 in breadth. Inter proglottidal glands present in intersegmental region, medium, oval, 4-5 pairs, 12-15 in number and measures 0.0657 to 0.0766 in length and 0.056 to 0.078in width. Longitudinal excretory canals thin and measures 0.022 to 0.034 in breadth.

Moniezia naigaonesis: Scolex large, quadrangular, with four suckers and measures 3.557-3.669 in length and 0.754 to 0.859 in width. Suckers large, oval, four, two pairs and measure 0.334 - 0.379 in length and 0.343 to 0.398 in width. Neck medium, broad anteriorly narrow posteriorly and measures 2.645 to – 2.805 in length and 0.218 – 0.346 in breadth. Mature proglottids small, squarish, broader than long, acraspedote and measures 0.064-0.080 in length and 1.543 to 1.668 in breadth. Testes medium, oval 10 in number, evenly distributed and measures 0.028 - 0.054 in length and 0.033 to 0.052 in breadth. Cirrus pouch small, cylindrical, narrow anteriorly broad posteriorly and measures 0.123 to 0. 156 in length and 0.024 to 0.045 in breadth. Cirrus thin, slightly coiled, contained with cirrus pouch and measures 0.153 to 0.163 in length and 0.016 to 0.019 in breadth. Vasdeferences is medium, thin, slightly curved and measures 2.233 to 2.344 in length and 0.012 to 0.016 in breadth. Ovary medium, oval, single mass and measures 0.043 to 0.065 in length and 0.045 to 0.048 in breadths. Vagina thin, posterior to cirrus pouch, starts from genital pore, crosses the longitudinal excretory canals, reaches and opens in to ootype and measures 0.475 to 0.656 in length and 0.010 to 0.023 in breadth. Ootype small, round, lateroventral ovary and measures 0.012 to 0.014 in length and 0.023 to 0.026in width. Genital pore small, medium and measures 0.017 to 0.021 in length and 0.009 to 0.012in width. Longitudinal excretory canals thin and measures 0.012 to 0.015 in breadth. *Moniezia narshionensis*: Scolex medium, oval, with four suckers and measures 0.432-0.465 in length and 1.781 to 1.850 in width. Suckers medium, oval, four and measure 0.431 - 0.452 in length and 0.345 to 0.398 in width. Neck medium, curved, wide anteriorly narrow posteriorly and measures 2.406 to – 2.700 in length and 0.512 – 0.532 in breadth. Mature proglottids muscular, broader than long, short, blunt, round, projections at anterior and posterior corners, acraspedote and measures 0.1121 -0.1231 in length and 3.559 to 3.669 in breadth. Testes small, oval 18 in number, unevenly distributed, bound by laterally longitudinal excretory canals and measures 0.16 -0.19 in length and 0.016 to

0.024 in breadth. Cirrus pouch medium, elongated, anteriorly situated, narrow anteriorly broad posteriorly and measures 0.353 to 0.456 in length and 0.115 to 0.126 in breadth. Cirrus thin, contained with cirrus pouch and measures 0.145 to 0.165 in length and 0.012 to 0.014 in breadth. Cirrus pouch medium, oval, narrow anteriorly and posteriorly and measures 0.233 to 0.344 in length and 0.045 to 0.056 in breadth. Vasdeferences is thin, medium and measures 0.238 to 0.346 in length and 0.011 to 0.013 in breadth. Ovary medium, oval, compact, single mass and measures 0.121 to 0.024 in length and 0.328 to 0.456 in breadths. Uterine cap large, broad in middle and measures 0.342 to 0.347 in length and 0.023 to 0.034 in breadth. Vagina thin, posterior to cirrus pouch, starts from genital pore, crosses the longitudinal excretory canals, reaches and opens in to ootype and measures 0.375 to 0.379 in length and 0.124 to 0.147 in breadth. Ootype small, round, lateroventral to ovary and measures 0.231 to 0.241 in length and 0.021 to 0.026 in width. Genital pore large, oval, anterior or posterior half, irregularly and measures 0.078 to 0.089 in length and 0.024 to 0.056 in breadth. Longitudinal excretory canals medium and measures 0.012 to 0.014 in breadth.

RESULTS AND DISCUSSION:

The genus *Moniezia* was erected by Blanchard, 1891. later on the following species is added to this genus:

Moniezia (B) *benedeni* (Moniez, 1879), *Moniezia* (B) *pallida* Moning, 1926

Moniezia (B) *aurangabadensis* Shinde et. al. 1985, *Moniezia* (B) *bharalae* Shinde et.al, 1985.

Moniezia (B) *warnanagerensis* Patil et.al. , 1997, M. (B) *kalawati* Nanaware et.al. 1999.

The worm under discussion differs from *Moniezia* (B) *benedenti* which is having the mature segments broader than long, posterior segments fleshy , testes 500 in number arranged in the form of two triangles, in two fields, ovary compact, with acini, present at the centre of the segments, on each side, interproglottidal glands varying in size, narrow, short and in a transverse row, cirrus pouch wide, short, oval ,do not touch the longitudinal excretory canals and reported from the host, *Ovis aries* and *Bos indicus* .

The worm under discussion differs from *Moniezia* (B) (*Blanchariaezia*) *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 genus *Stilesia* was erected by Railliet, 1823. later on the following species is added to this genus:

S. vittata Railliet, 1896. , *S. hepatica* Walffhugel, 1903, *S. okapi leiper*, 1936.

S. leiperi Kadam et al, 1980 from *Ovis bharal*.

S. caballeroi Kalyankar et al, 1981 from *Capra hircus*.

S. aurangabadensis Majid et.al, 1982 from *Ovis bharal* at Aurangabad.

The worm under discussion differs from *S. globipunctata* which is having scolex small, round, mature segments broader than long, with distinct segments, testes in two groups, 4-7 on each side, cirrus pouch small, pyriform, ventral to vagina, vas deferens not closely coiled, between cirrus pouch and outer wall of the excretory vessel, ovary somewhat globular and vagina dorsal to cirrus pouch.

The worm under discussion differs from *S. vittata* which is having the mature segments broader than long, not distinct segments, testes in two groups, 5-9 on each side, cirrus pouch elongated, cylindrical, vas deferens closely coiled, ovary large, compact, situated between poral vessel and vagina posterior to cirrus pouch, uterus transverse, a large tube, near anterior margin and paruterine organs are two, big in size, internal to the excretory vessel.

The worm under discussion differs from *S. hepatica* which is having the mature segments broader than long, craspedote, testes in two groups, 6-7 on each side, preovarian, cirrus pouch oval, vas deferens not closely coiled, ovary small, compact and vagina anterior to cirrus pouch, uterus transverse, a small tube, in the centre and paruterine organs situated to the longitudinal excretory canal.

The genus *Mogheia* was erected by Lopez-Nrayra in 1944. later on the following species is added to this genus:

The worm under discussion differs from *M. orbiuterina* in not having scolex, testes 9, rounded, cirrus pouch reaching upto the longitudinal excretory canals, ovary small, paruterine organs small, almost circular, with longer uterus, eggs 3-4 in number and found in *Tardoides somervillei*.

The worm under discussion differs from *M. megaparuterina* in not having scolex testes 17-18, globular to oblong, encircling the ovary, few poral, cirrus pouch short, elliptical, receptaculum seminis posteroventral to ovary, paruterine organs sac-like, at poral side of the uterus and projects in to the middle of the succeeding segments.

The worm under discussion differs from *M. bayamegaparuterina* in not having scolex, testes 4, situated lateral and aporal to ovary, in the central of medulla, vagina posterior to ovary and found in *Ploceus philippinus*.

CONCLUSION:

The present paper redescibes only three species of cestode parasites viz., *Moniezia sugalegaonesis*, *Stilesia naigaonensis* and *Mogheia narshionensis*. This work adds to the parasite species diversity infecting these avian hosts.

Acknowledgments

The authors would like to thank Principal and all the members of the Department of Zoology, Shardchandra Arts, Commerce and Science College, Naigaon Dist. Nanded who helped during the study.

Declaration of Conflicting Interests

The authors declare no potential conflicts of interest with respect to the research, authorship and publication of this article.

Funding

The author received no financial support for the research, authorship and publication of this article.

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