



Reporting a New Species of Cestode, *Stilesia Aliisp.* Nov. from *Capra Hircus*(L.) in Latur District (M.s.) India

KEYWORDS

Capra hircus (L.), Cestoda, Latur, , Maharashtra state, *Stilesiaali*.

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ABSTRACT

The present communication deals with new species of *Stilesia*(Railliet, 1893) from intestine of *Capra hircus* (L.) at Latur dist. (M.S.). The description of new species *Stilesiaali*Sp.Nov.is having scolex large, nearly quadrangular, mature proglottids twelve to thirteen times broader than long, testes medium in size, oval, two lateral fields, 9 to 10 in numbers, cirrus pouch oval, ovary medium in size, oval in shape, vitelline gland is absent, par uterine organs are bifurcated, two in numbers.

INTRODUCTION:

1. The genus *Stilesia* was erected by Railliet in 1893, from *Ovis aries* in Europe, Asia and Africa, as *Stilesia globipunctata*. Later on *S. hepatica* was added to this genus by Wolffhugel in 1903 from sheep and goat in East Africa. *Stilesia vittata* was reported by Railliet in 1896 from *Camelus dromedarius* from Africa and India. *Stilesia okapi* is erected as a new species of this genus by Leiper in 1936 from Okapi in Africa, is regarded by Baer, 1950 as a variety of *Stilesia globipunctata*, The author agrees with Baer to regard *Stilesia okapi* as *S. globipunctata*. Later on *S. leiperi* is added by Kadam et. al, 1980 from *Ovis bharal* (L.) Kalyankar et. al., 1981 described *S. caballeroi* from *Capra hircus* (L.). *S. southwelli* is added by Shinde et. al., 1982 from *Capra hircus* (L.). Jadhav et. al., 1982 reported *S. aurangabadensis* from *Ovis bharal* (L.) at Aurangabad. Malhotra and Capoor, 1983 added two species to this genus i.e. *S. garhwalensis* from *Capra hircus* (L.) and *S. kotwarensis* from *Ovis bharal* (L.) Later on *S. marthwadensis* is added by Shinde et.al. 1985 from *Capra hircus* (L.). In 1999 two species are added i.e. *S. jadhavae* by Jadhav from *Ovis bharal* (L.) and *S. yawalensis* by Kalse et. al. from *Capra hircus* (L.). Deshmukh and Shinde, 2001 added *S. dhondagaie* from *Capra hircus* (L.). *S. capari* is added by Patil et. al., 2002 from *Capra hircus* (L.). In 2004 four species are added to this genus i.e. *S. ambajogaensis* by Pawar et. al., *S. pandeyi* by Nanaware and Jadhav *S. indapurensis* by Khadap, et.al. and *S. daulatabadensis* by Shelke and Shinde from *Capra hircus* (L.). Nanaware et. al., 2005 described *S. jadhavi* from *Capra hircus* (L.) *S. govindae* by Padwal and Jadhav, 2006 from *Ovis bharal* (L.) *S. shrigondaensis* Pokale et.al. (2008) from *Capra hircus* (L.)

The present communication, deals with the description of a *stilesia alii* collected from goat.

MATERIAL AND METHODS

Cestode parasites were collected from the intestine of *Capra hircus* at. Udgir District Latur (M.S.) India. 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

DESCRIPTION

Twelve specimens, of the cestode parasites, were collected from the intestine of a Goat, *Capra hircus* at Udgir, Tq. Udgir, Dist. Latur, M.S., India; in the month of June 2012.

All the cestodes were long, with thin musculature, scolex, numerous immature, mature and gravid proglottids. These worms were flattend, preserved in 4% formalin, stained with Harris haematoxylin, passed through alcoholic grades, cleared in xylol, mounted in DPX and whole mount slides, were prepared, for further anatomical studies. The scolex is large in size, nearly quadrangular in shape, slightly narrow anteriorly broad posteriorly, distinctly marked off from the strobili and measures 0.977 to 1.03 in length and 1.181 to 1.383 in breadth. It bears four suckers, which are large in size, oval in shape, arranged in two pairs, one pair in each half of the scolex, touching to the lateral margins of the scolex, slightly overlapping on each other I each pair and measure 0.409 to 0.544 in length and 0.315 to 0.499 in breadth. The neck is of medium length and width, slightly broad anteriorly, tapers posteriorly and measures 1.590 to 1.646 in length and 0.409 to 0.624 in breadth. The mature segments are small in size, very thin, having only one set of reproductive organ in each segment, broader than long, almost twelve to thirteen times broader than long, with indistinct segmentation, convex lateral margins, with or without projection at the anterior and the posterior corners of the segments and measure 0.146 to 0.155 in length and 0.087 to 0.121 in breadth. The testes are 9 to 10 in number, 5+4 or 5+5 on both the sides, medium in size, oval in shape, in two lateral fields, in the central medulla, unevenly distributed, bounded laterally by the longitudinal excretory canals, lateral to the ovary and measure 0.019 to 0.029 in length and 0.024 to 0.034 in breadth. The cirrus pouch is medium in size, oval in shape, slightly elongated, narrow proximally, broad distally, just anterior to the middle of the segments, transversely placed, extending or not beyond the longitudinal excretory canals, opens marginally and measures 0.078 to 0.087 in length and 0.019 to 0.039 in breadth.

The cirrus is thin, slightly curved, obtained within the cirrus pouch, slightly protruded out and measures 0.112 to 0.126 in length and 0.010 in breadth. The vas deference is thin, slightly curved, runs transversely and measures 0.107 to 0.146 in length and 0.005 to 0.010 in breadth.

The ovary is medium in size, oval in shape, placed in the

posterior region of the segments, a single mass, compact and measures 0.005 to 0.058 in length and 0.029 to 0.039 in breadth. Perhaps this is a transitional segments, between mature and gravid segments. The ovary is divided into two, along with the uterine cap, one such a set, on each side, in each segment and the formation of two par uterine organs, is already started. The vagina is a thin, long tube, starting from the genital pore, posterior to the cirrus pouch, runs transversely and measures 0.024 to 0.277 in length and 0.005 to 0.010 in breadth. The ootype is small in size, oval in shape, situated at the lateral side of the ovary, ventro lateral to it and measures 0.010 to 0.005 in length and 0.005 to 0.010 in breadth. The genital pore are small in size, oval in shape, marginal, regularly alternate, placed at 1/3rd to 1/5th of the anterior margins of the segments and measures 0.010 to 0.015 in length and 0.015 to 0.019 in breadth. The longitudinal excretory canals are narrow and measure 0.015 in width. The vitelline gland is absent. The gravid proglottids are of medium size, broader than long, almost three times broader than long, with slightly convex lateral margins, each with two par uterine organs in each segments and measure 0.655 to 0.679 in length and 0.214 to 0.296 in breadth. There are two, big, par uterine organs, bifurcated, started developing in each gravid proglottid from the uterus, placed laterally, in the centre of the segments, or on the posterior half of it, contain numerous eggs and measure 0.170 to 0.209 in length and 0.053 to 0.087 in breadth.

The eggs are small in size, oval in shape, ranging from 9-15 in number in different par uterine organs and measure 0.005 to 0.015 in length and 0.010 to 0.015 in breadth.

RESULTS AND DISCUSSION

The genus *Stilesia* was erected by Railliet, 1893. The worm under discussion is having scolex large, nearly quadrangular, mature proglottids twelve to thirteen times broader than long, testes medium in size, oval, two lateral fields, 9 to 10 in numbers, cirrus pouch oval, ovary medium in size, oval in shape, vitelline gland is absent, vagina is thin tube posterior to cirrus pouch, ootype small, oval in shape, par uterine organs are bifurcated, two in numbers.

The present parasite differs from *S. globipunctata* (Rivolta 1874) Railliet, 1893 in having scolex small in size, rounded, testes 4-7, cirrus pouch small, pyriform, ventral to vagina, ovary spherical, vagina dorsal to cirrus pouch and reported from *Ovis aries* in Europe. The worm under discussion differs from *Stilesia vittata* Railliet, 1896, in having testes 5-9 each in two lateral groups, vas deferens closely coiled, cirrus pouch elongated, cylindrical, ovary rounded compact, genital pore in anterior half of the segment and reported from *Camelus dromedarius* in Africa. The present tapeworm differs from *Stilesia hepatica* Wolfhugel, 1903, in having testes 6-7, in each side, pre ovarian, vas deferens not closely coiled, but extending up to excretory canal, ovary small, compact, oval, vagina anterior to cirrus pouch, genital pore in the middle of the segment and reported from the liver of *Ovis aries*. The worm under discussion differs from *Stilesia okapi* Leiper, 1936 in having testes 2-3 testes in each lateral side and from *Okapi* in Africa. The present parasite differs from *Stilesia leiperi*, Jadhav et al. 1980, which is having testes 5-6, on each side, cirrus pouch cylindrical, vas deferens not closely coiled but extend beyond long excretory canals, ovary medium, almost circular, compact with small acini and genital pore in anterior half of the segment and reported from *Ovis bharal* (L.) The present worm differs from *Stilesia caballeroi*, Kalyankar

et al, 1981. in having the scolex very small, testes 1 to 11 in number testes on each side, disposed in 2 to 3 rows. The present form differs from *Stilesia southwelli* Shinde, et.al. 1982, which is having quadrangular scolex, mature proglottids 5 times broader than long, testes 4 in each two lateral groups, vas deferens very much coiled, reaching upto ovary, ovary small, round without acini, genital pore at 1/3rd from anterior margin of the proglottid, par uterine organs two in each proglottid, transversely elongated, containing (10-15) group of eggs. The present worm differs from *Stilesia aurangabadensis*, Jadhav et.al. 1982, in having the scolex spherical, testes rounded, in two lateral groups, 5 on each lateral side of the proglottid and lateral to ovary, vas deferens not coiled, reaches up to longitudinal excretory canal, cirrus pouch cylindrical, ovary medium in size, compact, circular in poral half and reported from *Ovis bharal* (L.) in India. The present tapeworm differs from *Stilesia garhwalensis* Malhotra and Capoor, 1983, in having the size of scolex 0.510-0.840 in diameter, testes 0-9 in numbers, size of cirrus pouch 0.011-0.101 in diameter, size of ovary 0.009-0.097 in diameter, genital pore situated at anterior 1/3rd level of lateral margin of proglottid. The present cestode differs from *Stilesia kotwarensis*, Malhotra and Capoor, 1983 in having testes 1 to 12 in numbers, ovary small, spherical, situated inner to the longitudinal excretory canal on poral side, genital pore at anterior 1/3rd level of lateral margin of proglottid and reported from *Ovis bharal* (L.) in India. The present form differs from *Stilesia marathwadensis* Shinde, et al, 1985, is having proglottids broader than long, testes 5-7 in number, rounded, in two groups and cirrus pouch cylindrical. The present worm differs from *Stilesia jadhavae* Jadhav, 1999 in having the mature proglottids 8 times broader than long, testes 5-7 in numbers, ootype 0.045 in diameter, ovary 0.197 in diameter, vagina anterior to cirrus pouch and reported from *Ovis bharal* (L.) in India. The present cestode differs from *Stilesia yawalensis* Kalse et. al. 1999, in having scolex quadrangular, mature proglottids broader than long, testes rounded, in 2 groups (5-6 in number), vas-deference thin, curved, cirrus pouch oval, ovary medium, globular, a single mass, vagina thin and genital pore marginal. The present parasite differs from *Stilesia dhondgae*, Deshmukh et.al. , 2001 in having scolex quadrangular, broad anteriorly, testes oval, 8-10 in numbers, arranged in 2 rows, vas deferens short, cirrus pouch small, oval, situated middle to posterior side, ovary bilobed and par uterine organ simple. The present worm differs from *S. capari* Patil et.al. ,2002 in having scolex globular, testes 8-9 in numbers, vas deferens short, cirrus pouch small, ovary sac like and vagina anterior to cirrus pouch. The present cestode differs from *S. ambajogaensis* Pawar et. al., 2004 in having scolex quadrangular, testes 25-30 in numbers, cirrus pouch cylindrical, elongated, ovary small, oval, vagina anterior to cirrus pouch and reported from *Bos indicus*, in India. The present tapeworm differs from *Stilesia pandeyi*, Nanaware et. al. 2004, in having scolex large, with four suckers, neck short and wide almost four times broader than long, mature proglottids almost 17 times broader than long, with convex lateral margins and slight projections at posterior corners of proglottid, testes are on two lateral fields, twenty in number, cirrus pouch small, elongated, at one third of anterior margins of proglottid, obliquely placed, cirrus thin, slightly curved, vas deferens short, medium, obliquely placed, ovary small, oval, with 3-4 short, blunt acini, vagina thin tube, runs obliquely, ootype small and rounded, genital pores medium, oval. The present cestode differs from *Stilesia indapurensis*, Khadap and Jadhav, 2004 in having scolex medium, quadrangular, broad anteriorly, mature proglottids squarish, testes oval, 8 to 9 in numbers, vas deferens curved, cirrus

pouch large elongated, vagina thin, par uterine organs two in each mature segment. The present parasite differs from *Stilesia daulatabadensis*, Shelke and Shinde, 2004 in having scolex globular, medium, squarish, testes acraspedote, eleven in number, 7 on poral and 4 on aporal side, vas deferens medium, slightly curved, cirrus pouch medium, oval, ovary medium, oval, single mass, vagina thin, long, anterior to cirrus pouch, slightly curved and par uterine organ 2 in number. The present worm differs from *S. jadhavi* Nanaware and Jadhav, 2005 in having scolex globular, testes 14 in numbers, ovary lobulated and vagina anterior to cirrus pouch. The present cestode differs from *S. govindae* Padwal and Jadhav, 2006 in having scolex medium, elongated, mature proglottids 15 times broader than long, testes 12-14 in numbers, cirrus pouch cylindrical, sac like, vas deferens long, ovary lobulated and vagina postero-ventral to cirrus pouch. The present cestode differs from *S. shrigondaensis* Pokale et. al., 2008 in having scolex medium, rounded, mature proglottids broader than long, testes 10-12 in numbers, cirrus pouch oval, vas deferens short, ovary Medium in size, oval and vagina thin tube. The present cestode differs from *S. bordeae* Sp. Nov. in having scolex medium, globular, mature proglottids almost 6-7 times broader than long, testes 6 – 11 in each segment, cirrus pouch oval, sac like, vas deferens long coiled and ovary compact.

The above noted characters are valid enough to erect a new species hence the name *S. alii* Sp. Nov. is proposed in honour of Dr. Syed Mahdi Ali Ex- professor and Head, Department of zoology, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad; who has contributed a lot in our knowledge of Helminthology.

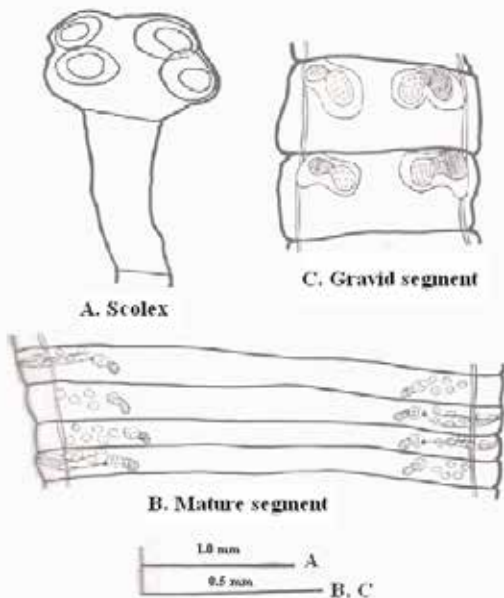


Fig. *Stilesia alii* Sp. Nov.

A Key to the Species of the genus *Stilesia* Railliet, 1893.

- Vagina anterior to cirrus pouch - 1
- Vagina posterior to cirrus pouch - 2
- Vagina postero-ventral to cirrus pouch - *S. govindae*,

Padwal & Jadhav, 2006

- 1) Scolex rounded - 3
- Scolex globular - 4
- Scolex quadrangular - 5
- 2) Scolex rounded - 6
- Scolex globular - 7
- Scolex quadrangular - 8
- Scolex very small - *S. caballeroi*, Kalyankar et al, 1981
- 3) Cirrus pouch pyriform - *S. globipunctata* Railliet, 1893
- Cirrus pouch oval - *S. hepatica* Wolffhugel, 1903
- 4) Ovary lobulated - *S. jadhavi* Nanaware et. al, 2005
- Ovary sac like - *S. capari* Patil et. al, 2002
- Ovary rounded - *S. jadhavae* Jadhav, 1999
- 5) Testes 5-6 in number - *S. yawalensis* Kalse et al. 1999
- Testes 8-10 in number - *S. dhondagae*, Deshmukh and Shinde, 2001
- Testes 25-30 in number - *S. ambajogaensis* ,Pawar et. al, 2005
- 6) Ovary spherical - 9
- Ovary compact - 10
- Ovary oval - 11
- 7) Mature proglottids squarish in shape - *S. daulatabadensis*, Shelke et. al, 2004
- Mature proglottids broader than long - 12
- 8) Genital pore at the anterior margin of the segment -13
- Genital pore at the posterior margin of the segment- *S. indapurensis*, Khadap et al, 2004
- 9) Testes 2-3 in number - *S. okapi* Leiper, 1936
- Testes 1-12 in number - *S. kotwarensis* Malhotra and Ca-poor, 1983
- 10) Vas deference closely coiled extend beyond excretory canal - *S. vittata* Railliet, 1986
- Vas deference not coiled reaches upto excretory canal - *S. aurangabadensis* Jadhav et. al, 1902.
- Vas deference not closely coiled but extend beyond excretory canal- *S. lepri* ,Kadam et al, 1950
- 11) Testes in between 5-7 - *S. marathwadensis* Shinde et. al, 1985
- Testes in between 5-7 - *S. shrigondaensis* Pokale et.al. (2008)

12) Testes 0-9 in number - *S. garhwalensis*, Malhotra and Capoor, 1983

Testes 7-11 in number - *S. bordeae*, Humbe et al. 2013

Testes 20 in number - *S. pandeyi*, Nanware and Jadhav, 2004

13) Testes only 4 in each group - *southwelli* Shinde et al, 1982

Testes 4-6 in each group - *S. alii*. Sp. Nov

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