

Taxonomic studies of mammalian Tapeworm *Avitellina ali n. Sp.* from *Capra hircus* at Dhule, MS, India

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ABSTRACT

The present investigation deals with taxonomic studies of mammalian tapeworm of genus *Avitellina*, viz. *A. ali n. sp.* collected from the host *Capra hircus* at Dhule (M.S.) India. The present worm comes closer to all the known species to the genus *Avitellina* in general topography of organ but differs due to scolex medium, globular, suckers large, oval, neck long, mature segment 27 and half times broader than long, testes oval, medium, 6-10 in number, outer column 1-2, inner column 2-3 testes, cirrus pouch medium, cylindrical, vas deferens thin, medium, ovary medium, oval, vagina posterior to cirrus pouch, vitelline gland absent, genital pore irregularly alternate, gravid segments show one par uterine organ, containing eggs.

Keywords: *Avitellina ali n. sp.*, Mammalian tapeworm, *Capra hircus*.

INTRODUCTION

The genus *Avitellina* was erected by Gough (1911), as a type species *A. centripunctata*, (Rivolta, 1874) in *Ovisaries* in Europe. Later on 8 species are added under this genus i.e. *A. chalmersi* Woodland (1927), *A. goughi* Woodland (1927), *A. lahorea* Woodland (1927), *A. sudanea* Woodland (1927), *A. tatia* Bhalerao (1936), *A. woodland* Bhalerao (1936), *A. hircusae* Kale, 2005 and *A. singhii* Shinde, 2013. The present form collected from Dhule (M.S.) India.

MATERIAL AND MATERIALS

The survey of *Capra hircus* were made at Dhule for Cestode infection in the month of January 2009. Four Cestodes were collected from the intestine of *Capra hircus*. All the worms are flattened preserved in 4% formalin, stained with Harris Haematoxyline, passed through various alcoholic grades, cleared in Xylol, mounted in DPX and whole mount slide were prepared for anatomical studies, drawing were made with the help of camera lucida and microphotographs were taken by digital camera.

RESULT AND DISCUSSION

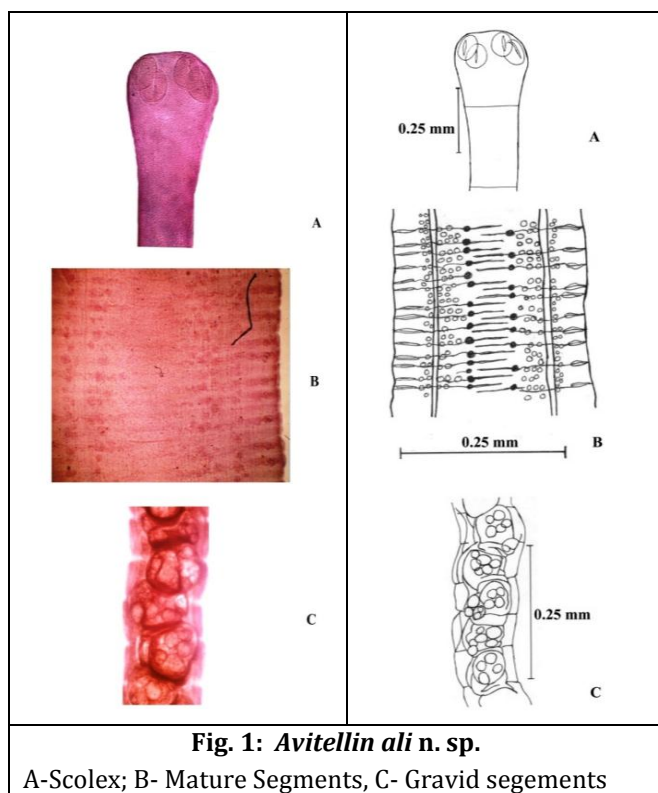


Fig. 1: *Avitellin ali* n. sp.

A-Scolex; B- Mature Segments, C- Gravid segments

Description (Based on four specimens):

The worms were long, muscular with numerous proglottides. Scolex medium, muscular, globular, broad anteriorly, narrow posteriorly, without rostellum and rostellar hooks, measures 0.226 - 0.233 x 0.216 - 0.250; four prominent suckers, large, muscular, oval, arranged in two lateral pairs, slightly touching each other, measure 0.086 - 0.093 x 0.066 - 0.070; neck long, measures 0.244 - 0.246 x 0.146 - 0.160.

The mature segment with indistinct segmentation, weak musculature, 27 and half times broader than long, acraspedote, with uniform lateral margin, measure 0.009 - 0.011 x 0.285 - 0.314; testes 6-10 in number, appear in two lateral fields, each field divided into two lateral groups by excretory canal and nerve trunks on both lateral side of ovary, outer column 1-2 testes, inner column 2-3 testes, testes oval, medium, measure 0.009 - 0.011 x 0.006 - 0.011; cirrus pouch medium, cylindrical, elongated, situated at margins of the segment, transversely placed, measures 0.042 - 0.048 x 0.006 - 0.009; cirrus thin, straight or slightly curved, measures 0.045 - 0.051 x 0.003; vas deferens thin, medium, runs straight, measures 0.026 - 0.029 x 0.003.

The ovary is medium, single, oval, measures 0.009 - 0.011 x 0.006 - 0.011; vagina thin, posterior to cirrus pouch, runs towards the ovary, measures 0.100 - 0.102 x 0.003; vitelline gland absent; genital pore medium, irregularly alternate, measures 0.003; oval; gravid segments broader than long, indistinctly segmented, measure 0.123 - 0.140 x 0.213 - 0.233; segment show one par uterine organ, sac like, containing 5-6 eggs, measures 0.333 - 0.340 x 0.212 - 0.219; eggs are small, round and measure 0.040 - 0.050 in diameter.

The present worm, agrees in all the characters with the genus *Avitellina*, in general topography of organ but after going through the literature, the worm under discussion, comes closer to *A. lahoreana* and differs in having scolex small, vas deferens coiled, ovary small, spherical, vagina ventral to cirrus pouch, par uterine organ snail shaped and reported from *Bosindicus* and *Ovisaries*.

The present cestode, differs from *A. centripunctata* having scolex rounded, testis 12-16 in numbers, vagina dorsal to cirrus pouch, par uterine organ pyriform and reported from and *Ovisaries*.

The present worm, differs from *A. chalmersi* having scolex rounded testis 12-18 in numbers and reported from and *Ovisaries*.

The present cestode, differs from *A. goughii* having scolex rounded, testis 10-20 in numbers, vagina ventrally or dorsally to cirrus pouch, par uterine organ resembles a bunch of bananas and reported from and *Bosindicus* and *Ovisaries*.

The present tapeworm differs from *A. sudanea*, in having testes numbers 11-12, par uterine organ kidney shaped and reported from *Ovisaries*.

The present worm differs from *A. tattia*, in having testes numbers 16-24, vagina ventral to cirrus pouch and par uterine organ pear shaped.

The present cestode, differs from *A. woodlandi*, in the number of testes 8-14 and reported from *Ovisaries*.

The present parasite, differs from *A. hircusae* in the shape of scolex oval, in the number of testes 14 and ovary rosette shaped.

The worm under discussion differs from *A. singhii* in the shape of scolex quadrangular, in the number of testes 35-40 and par uterine oval in shaped.

These characters are valid enough, to erect a new species, for these worms and hence the name *A. ali* n. sp. is proposed, after Dr. Syed Mehdi Ali, Ex-Professor and Head, Department of Zoology, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad; who has contributed so much, to our knowledge of Helminthology

TAXONOMIC SUMMARY

Type species	:	<i>Avitellinali</i> n. sp.
Host	:	<i>Capra hircus</i> (Linnaeus, 1758)
Habitat	:	Small intestine
Locality	:	Dhule, Dist. Dhule, M.S., India
Holotype and Paratype	:	Deposited in the Helminthology Research Lab. Department of Zoology, Nanasaheb Y. N. Chavan College, Chalisgaon, Dist. Jalgaon (M.S.)
Date of collection	:	11 th February, 2009.

A KEY TO THE SPECIES OF GENUS AVITELLINA GOUGH, 1911

- External column of testes 0-1 testes1
- External column of testes 1-2 testes2
- External column of testes 2-3 or more testes3
- 1. Outer column 1 testes and inner column 2-4 testes, par uterine organs
snail – shaped.....*A. lahorea* Woodland, 1927
- 2. Outer column 1-2 testes and inner column 2-3 testes, par uterine organs
sac- like***A. ali* n. sp.**
Outer column 1-2 testes and inner column 3-5 testes, par uterine organs
sac- like.....*A. woodlandi*Bhalerao, 1936
Outer column 1-2 testes and inner column 5-5 testes , par uterine organs kidney
shaped.....*A. sudanea* Woodland, 1927
Outer column 2 testes and inner column 5-5 testes, par uterine organs
saclike.....*A. hircusae*Kale, et al., 2005
- 3. External column 2-3 testes and internal column 4-6 testes*A. centripunctata*; Gough, 1911
External column 2-3 testes and internal column 3-7 testes, par uterine
organs large, bananas bunch like.....*A. goughi*; Woodland, 1927
External column 3-4 testes, Par uterine organs oval or pear4
- 4. Internal column 3-4 testes,Par uterine organs oval.....*A. chalmersi*; Woodland, 1927
Internal column 5-8 testes,Par uterine organs pear shaped.....*A. tatia*; Bhalerao, 1936

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