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ON A NEW TAPEWORM *STILESIA CRIBBI* SP.N. (CESTODA: THYSANOSOMIDAE FUHRMAN, 1907) FROM GOAT (*CAPRA HIRCUS*) IN PAKISTAN

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ABSTRACT

A new species of the genus *Stilesia* Railliet in 1893 namely *Stilesia cribbi* sp. nov. is being reported from small intestine in goat (*Capra hircus*) from Karachi, Pakistan. The present form seems to be typical in having scolex globular roughly rounded, well developed with muscular suckers. Segmentation are wider than long. Double set of genetalia per segment. Genital pores alternating. 6-8 testes, cirrus pouch small, cirrus long, vas deferens long, elongated lying posterior to vagina. Ovary large globular almost attached with vitelline glands. Eggs numerous, round to oval.

Keywords: *Stilesia cribbi* sp.n., *Capra hircus*, small intestine, Karachi, Pakistan.

INTRODUCTION

Railliet, 1893 erected the genus *Stilesia* from Europe, Asia and Africa with *S. globipunctata* (Rivolta, 1874), syn. *Taenia ovipunctata* Rivolta, 1874 in *Ovis aries*, *Capra hircus*, *Cobus ellipsiprymnus*, Gazella, camelus, cattle and antelopes.

Bilqees (1985) reported two species of genus *Stilesia* from Sindh, Pakistan namely *S. globipunctata* Rivolta, 1874 in *Ovis aries* and *Capra hircus* and *S. vittata* Railliet, 1896 in sheep. The present communication, deals with the description of *Stilesia cribbi* n.sp. collected from intestine of goat (*Capra hircus*) from Gulshan-e-Iqbal, Karachi, Pakistan.

MATERIALS AND METHODS

Cestodes were collected from the intestine of goat (*Capra hircus*) from Gulshan-e-Iqbal, Karachi. These worms were preserved in hot 4% formalin and stained with Harris haematoxylin, passed through various alcoholic grades, cleaned in xylol, mounted in D.P.X. and the whole mount slides were prepared for anatomical studies. The drawings were made with the aid of camera Lucida, and all the measurements are calculated in millimeter unless otherwise reported. The Holotype and Paratype specimens have been deposited in the museum of Zoology Department, University of Karachi, Karachi-75270.

Order: Cyclophyllidae Beneden in Braun, 1900
Family: Anoplocephalidae Cholodkovsky, 1902
Genus: *Stilesia* Railliet, 1893

***Stilesia cribbi* sp.n.**
Fig. 1(a-c)

Host: Goat (*Capra hircus*)
Site of infection: Small intestine
No. of host examined: 4
No. of specimen recovered: 16 from 1 host
Locality: Gulshan-e-Iqbal, Karachi, Pakistan

Description is based on the study of 20 strobila along with 10 well developed scolices. Length of worms 9.50 to 11.60 cm, consist of numerous segments, the segmentation is weak, much wider than long. Scolex globular roughly

rounded, well developed with highly muscular suckers. The suckers are four in number and oval in shape. Scolex measuring 0.45-0.56 by 0.41-0.48. Sucker 0.31-0.35 by 0.22-0.25. Neck small 0.11-0.13 in diameter. Mature segments measure 1.02-1.05 wide and 0.25-0.28 in length, with double set of genetalia per segment. Genital pores irregularly alternating, marginal in the middle or anterior to it. Testes small, globular six to eight in number, irregularly placed at the lateral margins of the segment on each side 0.011-0.021 in diameter. Cirrus pouch small 0.14-0.16 long and 0.04-0.05 wide. Cirrus 0.11-0.15 long, vas deferens long in most specimens entangled lying posterior to vagina. The vagina is anterior to cirrus sac. Ovary large globular, united with the vitelline glands 0.12-0.15 in diameter while the vitelline gland measure 0.11-0.12 in diameter lying closely almost attached to ovary. Eggs numerous, round to oval measuring 0.034-0.054 by 0.032-0.051.

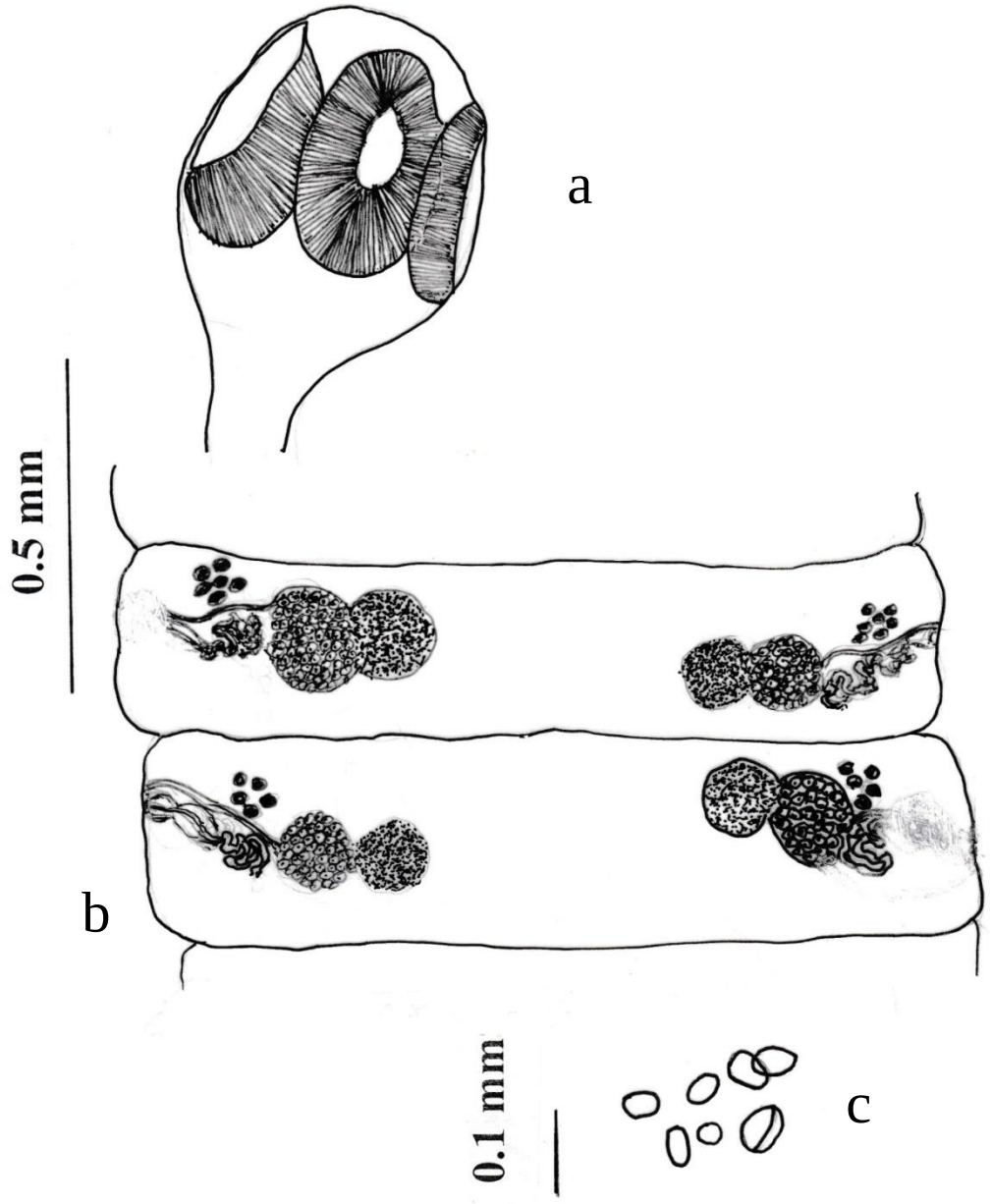

Fig. 1(A-C): *Stilesia cribbi* sp.n., A. Scolex; B. Mature segment; C. Eggs.

DISCUSSION

After going through literature, the cestodes under discussion seem to be quite typical in having scolex well developed with highly muscular suckers; neck short and narrow; strobila with immature segments with weak segmentation, broader than long; mature segments with double set of reproductive organs, genital pores unilateral and irregularly alternating; testes small globular 6-8 in number, irregularly placed; cirrus sac small with cirrus sometimes oozing out of the pore; vas difference coiled; ovary and vitellaria compact, roughly rounded in shape and large in size and eggs are round to oval. Shinde *et al.* (2013) presented a detailed systematic observation of the species of genus *Stilesia* Railliet, 1893 collected from the intestine of *Ovis bharal* and described a new species *S. intestinalis* from *Capra hircus* (L.) from Shirur Anantpal District, India.

The present specimens mainly differ from the twenty one species of the genus reported in the article mainly in the number of testes and their arrangement, shape and position of ovary and morphology of cirrus sac. Priyanka (2015) conducted morphological studies of cestode parasites and their impact on hosts internal organs in India with a new species *S. shindei* from *Capra hircus* it differs from the present specimens in having 9-12 testes, mature segments much broader than long being 22-24 times broader and ovary medium in size and rounded with unilateral, irregularly alternate genital pores. Furthermore, present specimens differ from *S. globipunctata*, *S.hepatica* and *S. vittata* in the shape size and position of the ovary which appears to be much smaller in size than present specimens and occupies a posterior in less than the first half of the segment. The testes in above mentioned species are globular and appear bigger in size. Vas deferens also does not appear to be much convoluted as compared to the present specimens. *S. globipunctata* Railliet, 1893 have two distinct sets of testes in each mature segment, one on each side, ovary is present only on the pore side. No vitelline glands and no shell gland is present. Uterus double, finally void of eggs which are contained in egg pouches (paruterine organs). Egg shell with two conical projections at opposite poles and genital pores irregularly alternate.

The present species differ from *S. hepatica* Wolffhugel (1903) which are single pored and irregularly alternating while from *S. vittata* Railliet, 1896, host *Camelus bactranus* from Africa differ from the present specimens in having 5-9 testes arranged in two lateral groups, ovary is rounded and cirrus sac is elongated, cylindrical and vas deferens is coiled. The present specimens differ from *S. indiana* Pawar (2016) in having larger scolex, somewhat overlapping suckers, long neck, testes 4 to 5 in number and in having ovary small. As compared to *S. intestinalis* Shinde *et al.* (2013) which has testes arranged in 2 groups, 4 testes in each group and scolex rectangular and large.

The present species differs from *S. leiperi* Kadam *et al.* (1980) which has 5-6 testes on each side, from *S. okapi* Leiper, 1935 in having 2-3 testes in each lateral side; from *S. cahallerai* Kalyankar *et al.*, 1981 which has testes 1 to 11 in number on each side disposed in two to three rows. The present forms differ from *S. southwelli* Shinde *et al.* (1982) in having quadrangular scolex, testes 4 in two lateral groups and vas deferens very much coiled. The present worms differ from *S. aurangabadensis* Jadhav (1982) in having testes five on both lateral sides in groups, from *S. garhwalensis* Malhotra and Cooper (1983) which has ovary much smaller as compared to present specimens. The present specimens differ from *S. marathwadensis* Shinde *et al.* (1985) which have testes in two groups 5-7 in number; from *S. katwarensis* Malhotra and Capoor (1983) which have very small ovary, from *S. jadhavae* (Jadhav, 1999) in having larger ovary as compared to present specimens. The present cestode differ from *S.yavalensis* Shinde and Kalse (1999) which has quadrangular scolex, from *S. dhondagae* Deshmukh *et al.* (2001) which has quadrangular scolex and testes 8 to 10 in number arranged in two rows and vas deferens short; from *S. capari* Patil and Menkudle (2002) which has vas deferens short and ovary sac like; from *S. ambajogaensis* Pawar *et al.* (2004) which have quadrangular scolex and having large number of testes; from *S. pandeyi* Nanware *et al.* (2004) in number of testes and shape of the ovary; from *S.indapurensis* Khadap (2004) which has vas deferens curved; from *S. daulatbadensis* Shelke and Shinde (2004) which has 11 acraspedale testes and vas deferens only slightly curved, from *S. jadhavi* Nanware and Jadhav (2005) which has testes 14 in number and ovary lobulated. The present cestode further differs from *S. govindae* Padwal and Jadhav (2006) which has ovary lobulated and testes 12-14 in number, from *S.kanegaonensis* Patil (2012) in having vas deferens short and ovary divided into two pairs.

The above observed characters are valid enough to erect a new species. Hence the species is named *S. cribbi* sp. nov. The name of the species is in honour of Dr. Thomas Cribb, Australia for his immense contribution in the field of Parasitology.

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