



Taxonomical Study of Cestode Parasite *Taenia taeniaeformis* (= *Hydatigera taeniaeformis*) In Common Cat, *Felis domesticus* From Ahmednagar, India

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Abstract

The present communication deals with the taxonomical description of cestode parasite *Taenia taeniaeformis* commonly known as feline tapeworm. The neck is almost as broad as the scolex and segmentation begins immediately behind the scolex. The scolex of *T. taeniaeformis* is armed with a large double circle of 40-45 hooks and four clearly lateral suckers. Hooks are claw hammer shaped, smaller hooks measures 0.236(0.248-0.255) mm in length and 0.073 (0.071-0.075) mm in breadth. Large hooks are measures 0.380(0.350-0.411) mm in lengths and 0.102 (0.100-0.104) mm in breadth. Mature segments are craspedote slightly broader than long. Testes are small rounded numerous in number, ovary bilobed trace follicular, unequal. The vagina is thick, wide and ventral to the cirrus pouch. Vitelline gland is large, elongated transversely and triangular in shape. Gravid segments contains uterus and forms 11-13 digitiform lateral branches.

Key words – Taxonomy, Cestode, *Taenia taeniaeformis*, *Felis domesticus*.

I. INTRODUCTION

Taenia taeniaeformis is a parasite characterized by a cosmopolitan geographical distribution. The final hosts are carnivores of the families Felidae and Canidae, including domestic cats and dogs [9]. Adult cestodes are about 60 cm in length and occurs in small intestine of carnivores as definite hosts. Mouse, rat, cat, squirrel, rabbit, bat and human are the intermediate hosts of *Taenia taeniaeformis*. *Cysticercus fasciolaris* is a larval stage of *Taenia taeniaeformis* which commonly found in a liver of intermediated host through contaminated water or feed materials with infected cat faeces. In urban areas of Sri Lanka and England some sporadic cases were reported in human, Particularly in Childrens. [5][9]

The adult *Taenia taeniaeformis* can be subdivided into three body regions. The anterior region is called scolex; which is used to adhere to the intestine of the host species. In *Taenia taeniaeformis*, the scolex is made up of four large suckers arranged around the sides with double circlet of hooks, claw hammer shaped hooks [6] behind the scolex is the neck region, and finally third region is the strobila. The neck is fairly small, almost nonexistent, and it produces proglottids. [7]

Taenia taeniaeformis are internal parasites that absorb food through their body surface because they lack a digestive system of their own. Since they are located in the intestine of their host, they take advantage of the already digested food and directly absorb the nutrients, absorption mainly occurs throughout the segment. [1] [2] [10] [11]

II. MATERIALS AND METHODS

For the taxonomical study of cestode parasites seven specimens were collected from the intestines of accidentally dead cat *Felis domesticus* from Ahmednagar District, Maharashtra.

These cestodes were flattened, preserved in 4% formalin, stained with Harris haematoxylin, passed through various alcoholic grades, cleared in xylol, mounted in D.P.X and whole mount slides prepared for further anatomical studies. Drawings were made with the aid of Camera Lucida. All measurements are given in millimeters. Unless otherwise indicated.

III. DESCRIPTION

The scolex is large in size dome shaped, highly muscular, narrow anteriorly, broad posteriorly and measures 1.425(1.412-1.433) in lengths and 1.407(1.324-1.491) in breadth rostellum large in size, rounded in shape, with double crown of hooks and measures (0.622) in diameter. The hooks are claw hammer shaped, [6] 40- 45 in numbers. small and large in size, arranged in two circles. Smaller hooks measures 0.236(0.248-0.255) in lengths and 0.073(0.071-0.075) in breadth where as the larger hooks are measures 0.380(0.350-0.411) in lengths and 0.102(0.100-0.104) in breadth. The suckers are medium in size, arranged in four corners, oval in shaped, and measures 0.293 (0.271-0.315) in lengths and 0.311(0.307-0.315) in width.

Mature segment are craspedote slightly broader than long. with irregular lateral margins and projections at the anterior and posterior corners of the segments and measures 2.346 (2.324-2.368) in lengths and 2.657(2.640-2.675) in breadth.

The testes are small rounded numerous in numbers, evenly distributed and measures 0.043(0.026-0.061) in diameter. The cirrus pouch medium, cylindrical, middle of the lateral margin of the segment. Measures 0.223 (0.210-0.236) in lengths and 0.107(0.105-0.114) breath.

The cirrus is thin unarmed, slightly coiled, contained within the cirrus pouch and measures 0.214 (0.201-0.228) in lengths and 0.026(0.017-0.035) in breadth.

Vas deferens is broad, small one loop, ventral to excretory stem and runs up to the middle region of the segment. Measures 0.657 (0.649-0.666 in lengths and 0.034(0.026-0.043) in breadth.

Ovary bilobed trace follicular extends laterally in the posterior region of the segment, unequal in size, poral lobe slightly smaller and narrow, aporal lobe large and broad. Measures 0.964 (0.956-0.973) in lengths and 0.232(0.210-0.250) in breadth.

The vagina is thick, wide and ventral to the cirrus pouch. starts from the genital pore, extends medially turns posteriorly runs a long distance, enlarges and forms the receptaculum seminis, near the ovary and measures 2.365(2.350-2.380) in lengths and 0.034(0.026-0.043) in breadth. receptaculum seminis is medium in size, oval in shape, measures 0.140 (0.131-0.149) in lengths and 0.061(0.052-0.070) in width, Opens in to the Vitelline duct, Vitelline duct opens in to the Vitelline gland, from the middle of the Vitelline duct forms another duct it opens in to the Mehalis gland, Mehalis gland forms oviduct, oviduct opens in to the isthmus, Mehalis gland is rounded, posterior to the ovary and measures 0.052(0.043-0.061) in diameter.

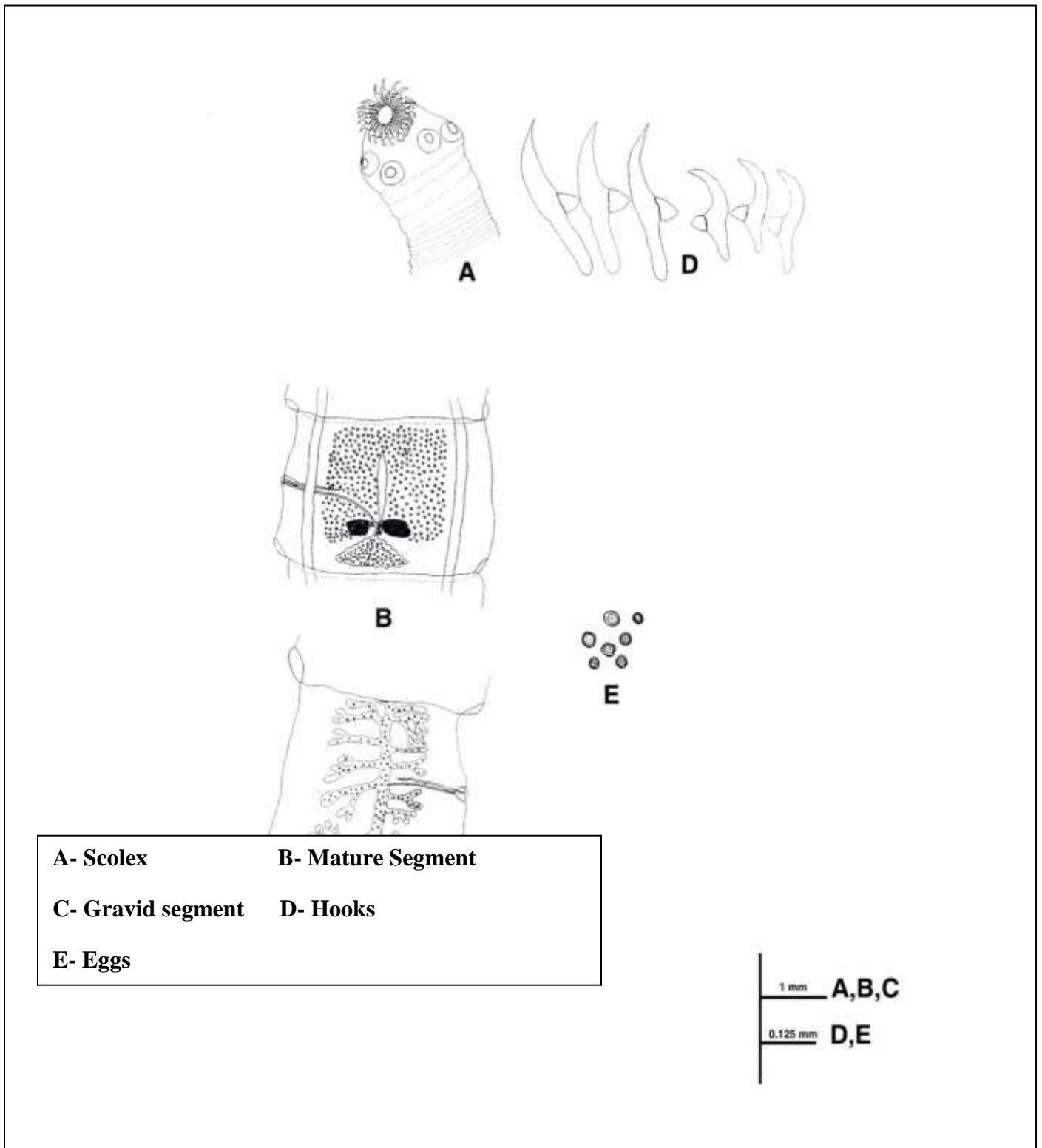


Fig 1: Taenia taeniaeformis

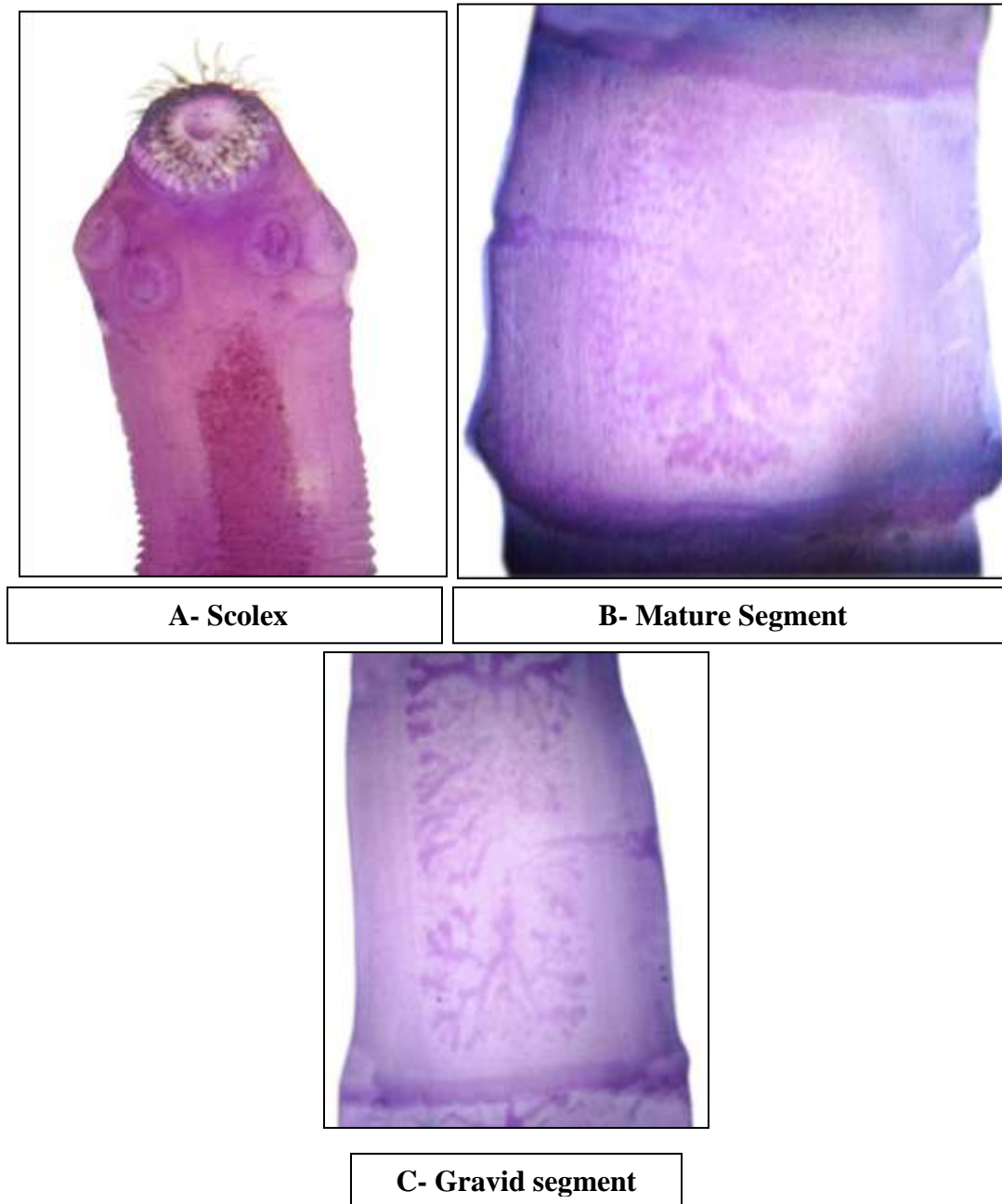


Fig 2: Taenia taeniaeformis

Genital pores are medium in size, oval in shape, placed anteriorly to the segment, regularly alternate measure 0.135(0.122-0.149) in lengths and 0.056(0.052-0.061) in breadth.

The longitudinal excretory canals are of medium size and measures 0.355(0.342-0.368) in lengths and 0.157(0.149-0.166) in breadth

The Vitelline gland is large, elongated transversely, triangular in shape, post ovarian near the posterior margin of the segment with 14-16 acini, measures 1.096 (1.087-1.105) in lengths and 0.416(0.403-0.429) in breadth.

The gravid segments contains uterus and forms 11-13 digitiform lateral branches, measures 3.253 (3.236-3.271) in lengths and 2.732(2.587-2.877) in breadth. Eggs are rounded or slightly ovoid embryonated. Measures 0.020 (0.017-0.024) in diameter.

IV. RESULT AND DISCUSSION

The genus *Taenia* was erected [8] as a type species *T. solium* in man. After going through the literature, the worm under discussion turned out to be *Taenia taeniaeformis*, it referred to by same as *Hydatigera taeniaeformis*. [3]

The worm under discussion, resembles, *T. taeniaeformis*, in having the scolex dome shaped, rostellum rounded. Mature segment broader than long (craspedote), neck absent, ovary bilobed, double crown of hooks, hooks are claw hammer shaped.[6] Vas deferens runs up to the middle of the segment, Vitelline gland triangular transverse plane, not contact the ovary. Uterus with 11-13 digitiform lateral branches.

- 1) The present cestode differs from *T. taeniaeformis* in the number of hooks 40- 45 Vs 40.
- 2) The present cestode differs from *T. taeniaeformis* in the shape of ovary trace follicular Vs bipartite.
- 3) Vas deference and vagina slightly curved near the cirrus pouch Vs straight.

As the characters are minor, it is redescribed here, as *Taenia taeniaeformis*. From *Felis domesticus* collected from Ahmednagar District, (M.S.) India.

TAXONOMIC SUMMARY

Genus	<i>Taenia</i> [8]
Species	<i>Taenia taeniaeformis</i> [3]
Type host	<i>Felis domesticus</i> .
Habitat	Intestine.
Type locality	Ahmednagar District, Maharashtra.
Para type	Dept. of Zoology, Padmashri Vikhe Patil College Pravaranagar
Date of collection	20 th Jan 2017
Etymology	As the cestode species reported from Ahmednagar District (M.S.) India.

V. CONCLUSION

The present taxonomical study revealed that the peat animal *Felis domesticus* is infected by cestode *Taenia taeniaeformis*. This cestode parasite not only infect but also damages intestinal wall of host. They are located in the intestine of their host and absorb the nutrients. These parasites are important for human health also.

VI. ACKNOWLEDGMENT

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