

# Taxonomic Observation of Avian Tape Worm *Davainea Gunjotinesis* n.Sp. from *Gallus Gallus Domesticus* (Linnaeus)

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## Keywords

Avean tapeworm  
*Davainea*  
*Gallus gallus domesticus*

## Abstract

The present study deals with the taxonomic observation of avian tape worm *Davainea gunjotinesis* n.sp. collected from intestine of a *Gallus gallus domesticus* (Linnaeus) at Omerga, Osmanabad district (M.S.), India. The worm comes closer to all the known species of this genus in general topography of organ but differs due to scolex globular, four suckers, rostellar hooks 20-22 in numbers, neck absent, mature proglottids broader than long, testes 55-60 in numbers, cirrus pouch large, oval placed towards the 1/4<sup>th</sup> anterior margin of the proglottids, genital pores large, oval in shape, marginal and irregularly alternate.

## 1. Introduction

Fuhrmann (1912) added three species in this genus that is *D. nana*, from *Numida ptilorhyncha*. Subhi and Shinde, (1988) added *D. jalnaensis*. Bhaware *et. al.* (1992) added *D. retharei*, from *Streptopelia decaocta*. Later on Hiware *et. al.* (1993) added two species to this genus i.e. *D. aurangabadensis* from *Vanellus indicus* and *D. thapari* from *Pellornerum ruficeps*. Then *D. osmanabadensis* is added by Mahajan *et al.* (1999) from *Gallus domesticus*. Recently Lakhe *et al.* (2004) added *D. Muktabae* from *Acrldotheres tristis*. The present communication deals with the description of a new species *Davainea gunjotinesis* n.sp. collected from intestine of a *Gallus gallus domesticus* (Linnaeus) at Omerga, Osmanabad District ( India).

## 2. Materials and Methods

Twenty eight cestode parasites were collected from *Gallus gallus domesticus* at Omerga, Osmanabad District (India) during the period of June 2009 to June 2010 and out of these ten parasites were taken for morphological studies. These parasites were small, preserved in 4% formalin and stained with Harris haematoxylin, passed in various alcoholic grades and mounted in D.P.X. drawing were done with the help of camera lucida and all measurements were given in millimeters.

## 3. Results

The scolex is medium in size, rounded in shape and measures 0.1990 (0.1941-0.2038) in length and 0.3155 (0.3009-0.3300) in width. Rosetellum is large, oval in shape and measures 0.0533 (0.0436-0.0631) in length and 0.1504 (0.1456-0.1553) in width. Hooks 20-22 in numbers, arranged in a single circle and measures 0.0112 (0.0103-0.121) in length and 0.00606 (0.00519-0.0069) in width. Suckers are

large, rounded to oval in shape, overlapped and measures 0.1116 (0.970-0.1262) in length and 0.1334 (0.1213-0.1456) in width. Mature proglottids are Craspedote two to three times longer than broad and measures 1.4199 (1.359-1.480) in length and 0.6990 (0.6067-0.7912) in width and narrow anteriorly and broad posteriorly. Testes are rounded to oval in shape, 55-60 in numbers, measures 0.0364 (0.0339-0.0388) in length and 0.0339 (0.0291-0.0388) in width and present anteriorly in the mature proglottids, cirrus pouch large, oval in shape, elongated and placed towards the 1/4<sup>th</sup> anterior margin of the proglottids and measures 0.1553 (0.1456-0.1650) in length and 0.849 (0.0776-0.0922) in width. Cirrus is thick straight within the cirrus, protrusible and measures 0.1140 (0.1067-0.121) in length and 0.0012 (0.0097-0.0145) in width and forms vas deferens which is short, thick runs anteriorly and measures 0.1990 (0.1941-0.2038) in length and 0.0072 (0.0048-0.0097) in width. The cirrus and vagina opens from common genital pores. The genital pores are large, oval in shape, marginal, irregularly alternate and measures 0.0194 (0.0145-0.0242) in length and 0.0703 (0.0582-0.0825) in width.

The vagina is long tube opens from genital pores, posterior to cirrus pouch and measures 0.6237 (0.6165-0.6310) in length and 0.0194 (0.0145-0.0242) in width and turns posteriorly and forms receptaculum seminis, which is short, tubular in shape and measures 0.0436 (0.0388-0.0485) in length and 0.0242 (0.0194-0.0291) in width and reaches to ootype, which is small, almost rounded and measures 0.0339 in diameter. The ovary is compact, triangular in shape and measures 1.5169 (1.5448- 1.5291) in length and 0.0194 (0.0145-0.0242) in width and present middle of the proglottids. The excretory canal runs longitudinally

through the proglottids on either side and measures 1.5169 (1.5048-1.5291) in length and 0.0194 (0.0145-0.0242) in width. The vitelline gland medium is oval in shape, post ovarian and measures 0.0194 in diameter.

#### 4. Discussion

The worm under discussion is having scolex globular, four suckers, rostellar hooks 20-22 in numbers, neck absent, mature proglottids broader than long, testes 55-60 in numbers, cirrus pouch large, oval placed towards the 1/4<sup>th</sup> anterior margin of the proglottids, genital pores large, oval in shape, marginal and irregularly alternate. This worm differs from *D. paucisegmenta* in having scolex 0.70 in diameter, suckers 0.01 in diameter, testes 40 in numbers, cirrus pouch 0.20 in length and genital pores unilateral (Fuhrmann, 1909). It differs from *D. nana*, which is having rostellar hooks 176-200 in numbers, testes 50 in numbers, and genital pores regularly alternate (Fuhrmann, 1912). The present form differs from *D. andrai*, which is having size of scolex 0.45 in diameter, testes 14 in numbers. The present worm differs from *D. ambejogaiensis*, in having rostellar hooks 55-65 in numbers, mature proglottids broader than long and testes 18-20 in numbers (Shinde and Ghare, 1977). It is also differs from *D. domesticus*, in the rostellar hooks 220-240 in numbers testes 22-23 in numbers and genital pores regularly alternate (Shinde and Mitra, 1981). It differs from *D. jalnaensis*, in the

shape of scolex oval, rostellar hooks 28 in numbers, mature proglottids broader than long, testes 30-35 in numbers, cirrus pouch saccular in shape, genital opening unilateral and ovary bilobed, oval (Subuhi and Shinde, 1988).

It differs from *D. rethareii*, in having scolex oval in shape, rostellar hooks 35-40 in numbers, presence of neck, mature proglottids broader than long, testes 65-75 in numbers and genital opening regularly alternate (Bhaware *et al.*, 1992). It is also differs from *D. aurangabadensis*, with the shape of scolex oval, rostellar hooks 16 in numbers, mature proglottids broader than long, testes 7-8 in numbers, cirrus pouch large, spindle, genital pores unilateral and ovary bilobed (Hiwari *et al.*, 1993). The present parasite differs from *D. osmanabadensis*, in the rostellar hooks 12 in numbers, testes 30-35 in numbers and genital opening unilateral (Mahajan *et al.*, 1999). It is also differs from *D. muktabae*, having rostellar hooks 16 in numbers, testes 50-55 in numbers and genital opening unilateral (Lakhe, *et al.* 2004). The present worm *D. shindaei*, having characters, scolex globular, 0.291-0.509×0.041-0.050 in length and breadth, hooks 320 arranged in single circle, mature proglottids 40-50, testes 20-22 and cirrus pouch sac like (Jadhav *et al.*, 2008). Above characters describe to erect a new species to accommodate these worms and hence the name *Davaine gunjotinesis* n.sp. is named after the place where the author is working.

Fig. 1. *D. gunjotinesis* n.sp.



Fig. 2. *D. gunjotinesis* n.sp..**Taxonomic summary**

Type species	<i>Davaine gunjotinesis</i> n.sp.
Host	<i>Gallus gallus domesticus</i> (Linnaeus).
Habitat	Intestine.
Locality	Omerga, Osmanabad District (India)
Period of collection	June.2009 to June. 2010.
No. of specimen	21.
Accession Number	40/21-1-9/10.
Deposition	Dept. of Zoology, Shrikrishna Mahavidyalaya, Gunjoti (M.S.) India

**A key to the species of the genus Davainea**

Genital opening regularly alternate	1	
Genital opening irregularly alternate	2	
Genital opening unilateral	3	
1) No. of testes in between 21-25 in numbers		<i>D. domesticus</i> , Shinde & Mitra, 1981.
No. of testes in between 31-50 in numbers		<i>D. nana</i> , Fuhrmann, 1912.
No. of testes in between 51-75 in numbers		<i>D. rethareii</i> , Bhaware et.al., 1992.
2) No. of hooks below 50 in numbers		<i>D. gunjotinesis</i> , n.sp.
No. of hooks in between 51-75 in numbers		<i>D. ambejagaiensis</i> , Shinde & Ghare, 1977.
3) No. of proglottids below 10 in numbers		<i>D. paucisegmenta</i> , Fuhrmann, 1909.
No. of proglottids in between 11-25 in numbers	5	
No. of proglottids in between 26-40 in numbers	6	
No. of proglottids 61-90 in numbers		<i>D. thapari</i> , Hiware et.al, 1993.
No. of proglottids in between 100-120 in nos		<i>D. maktabae</i> , Lakhe et.al., 2004.
No. of proglottids in between 121-140 in nos.		<i>D. jalnaensis</i> , Subuhi and Shinde., 1988.
4) No. of testes- 25		<i>D. Shindei</i> , minor, Patil and Borde 2008
5) No. of hooks below 100		<i>D. aurangabadensis</i> , Hiware et.al. 1993
6) No. of testes below 11-25		<i>D. Shindei</i> , Jadhav et al. 2008
No. of testes above 25 in numbers		<i>D. osmanabadensis</i> , Mahajan et.al., 1999.

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