Histopathological Study of The Cestode Parasite, *Cotugnia Jadhavae* From *Gallus Domesticus* At Aurangabad (M.S.)

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Abstract- ***The present exploration was undertaken to study the histopathology of a cestode Cotugnia from Gallus domesticus at Aurangabad Maharashtra. The cestode worm adhers itself to host tissue and sucks the nourishment. The T.S. of infected intestine showed that the damage caused by parasite to intestinal villi. The worms firmly attach to the mucosal wall and starts pad formation at its base. The worms are able to reach the intestinal tissue and to attach them. Due to attachment it has disturbed the structure of intestinal mucosa and broken the innermost lining of intestine also. Some observations show that worms are firmly attached to villi of intestine, due to this attachment, necrosis in host tissue was also observed. Few tissues of villi are heavily infected by parasite and goes into necrotic stage.***

Indexed Terms- Histopathology, Cotugnia jadhavae, Gallus domesticus.

I. INTRODUCTION

Phylum Platyhelminthes includes animals with dorsoventrally flattened body hence the name flatworms (Verma and Prakash,2020).This phylum retained as such both in five and six kingdom systems (Verma 2016a,2016b) and is divided into three classes namely Turbellaria, Trematoda and Cestoda (Verma,2017).The cestode include tapeworm which are parasite and provided with suckers and hooks. The body of tapeworm is divided into scolex, neck and strobila. The strobila consists of immature, mature and gravid proglottids.

The genus Cotugnia was established by Diamare (1893) with its type species *C.diagonopora* (Pasquale, 1890) from fowl. So far 40 species of *Cotugnia* have been reported (Shaikh, 2018). Rostellum of the parasite studied was armed with two rows of hooks. It has cup like muscular suckers. Each segment contains two sets of genital organs. A large number of researchers worked well on helminth parasites, some of them are (Shinde (1969), Malhotra and Capoor (1983), Jadhav et al. (1994,2003), Kharade and Shinde (1995), Mahajan et al. (1999), Shinde et al. (1999), Verma et al .(2006,2007) and Thorat (2011). A Far as the different aspects of histology of helminth is concerned,it is done by Mitra and Shinde (1980,1989), Jha et al. (1981), Kishore and Sinha (1983) and Padhi et al. (1986), Thorat (2020), Yamaguti (1935, 1959) are the milestone of helminth research. The present exploration was undertaken to study the histopathology of a cestode *Cotugnia jadhavae* at Aurangabad Maharashtra.

II. MATERIAL AND METHOD

About two dozen intestines of Hen, *Gallus domesticus* were dissected and observe to examine the degree of infection of cestode parasite. Author found few intestines heavily infected with cestode parasites. Some cestode parasites were collected and preserved in 4% formalin than processed and stained for taxonomical studies. The pieces of intestine along with attached worms fixed in fixative Bouin's fluid taking care that the intact parasites were not disturbed. The pieces of uninfected intestines were also fixed in Bouin's fluid. The preserved material from Bouin's fluid is isolated, washed with distilled water, dehydrated through graded alcohol, cleared in xylene and embedded in paraffin wax (m.p.58-60^{0c}). After section cutting stained with Mallory's triple stain, best slides selected and observed under microscope.

III. RESULTS AND DISCUSSION

Eleven cestode parasites were collected from intestine of hen, *Gallus domesticus* at Aurangabad. The worms are medium in size, scolex quadrangular in shape, broader than long; suckers somewhat oval and medium in size, four in numbers, arranged in two pairs at laterally; rostellum medium in size oval in shape; 450-480 rostellar hooks are present in a circle; neck medium, wide, broader than long; mature segments broader than long, almost three times broader than long, each with a double set of reproductive organs with lateral margins; testes are 108-110 in numbers, variable in size, oval in shape, situated in center of segment in between longitudinal excretory canal, evenly distributed; cirrus pouch small, short, oval, anteriarly directed opens marginally on each side; cirrus is thin narrow tube, short, containing in cirrus pouch; vas deferens long curved, runs above the ovary; ovary is irregular in shape with irregular margins placed middle of the segment; vagina thin tube, posterior to cirrus pouch ,runs transversely, reaches & opens into ootype; ootype small, oval; genital pore small, oval marginal, bilateral, placed anterior to segment; genital atrium small, round; vitelline gland small, oval; longitudinal excretory canals thin.

Microscopic observations revealed that host tissue is damaged by the cestode parasite. The cestode parasite studied has the penetrative scolex and well developed, worm easily adhere itself to host tissue. The scolex having rostellar muscular pad with spines and four suckers, help them adhering to the intestine tissue. The T.S. of infected intestine showed that the damage caused by parasite to intestinal villi. The worms firmly attach to the mucosal wall and started pad formation at the base of mucosal wall. Few worms to causes disturbances in the physiological condition gut lining of the host. The T.S. of intestine damages caused by parasite to intestinal villi and tissues also. The worms able to reach tissues of intestine and to attach them. Due to attachment it has disturbed the structure of intestinal and broken the innermost lining of intestine. Some observations show that worms are firmly attached to villi of intestine, due to this attachment, necrosis of host tissue also observed. Few tissues of villi are heavily infected by parasite to goes in necrotic stage. The histochemical studies revealed that worms fairly rich in Proteins, Carbohydrates and Fats as the lumen of host contains sufficient amount of Proteins, Carbohydrates and Fats, for the development of worm. Thus, Author concluded that the rich environment of host intestine is favourable for the development and growth of the worm. Hence the parasites maintaining good histopathological relationship with the host.

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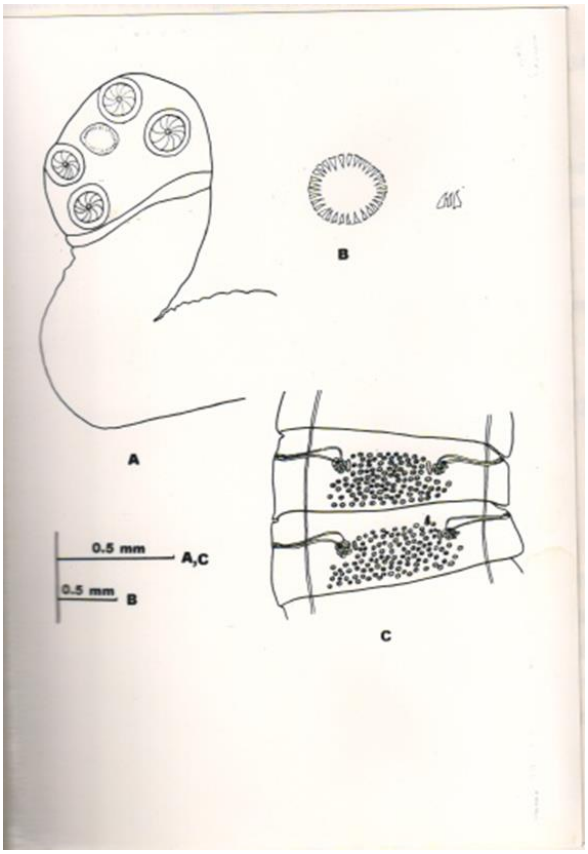
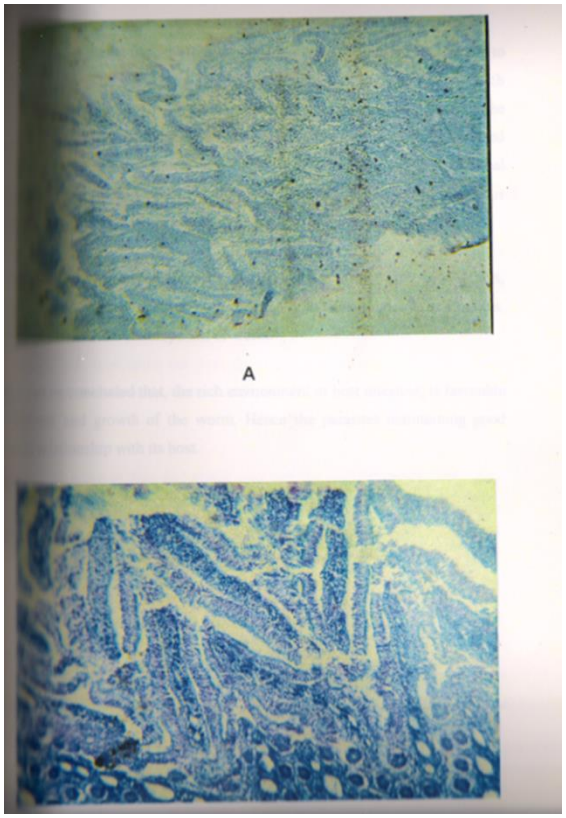


A. A.Scolex
B. B.Rostellum
C. C.Mature segment.



A. A.T.S.of intestine showing damage caused by parasite to intestinal villi.
B. B.T.S. of intestine showing damage caused by parasite to intestinal villi and tissues.