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HISTOPATHOLOGY OF THE CESTODE PARASITES, GENSUS *COTUGNIA* (DIAMARE, 1893) FROM *GALLUS DOMESTICUS*

R. M. KHADAP
DEPTT. OF ZOOLOGY, NUTAN MAHAVIDYALAYA,
SAILU-431 503, INDIA.
(e-mail : khadapr@rediffmail.com)

The cestode *Cotugnia sillodensis* (Jadhav *et.al.*, 2003) has been found in large number in intestine of *Gallus gallus* dometicus. The worm is short with a penetrative type of scolex and rostellum is provided with hooks ,it penetrates the mucuosa and submucosa adheres there very firmly and does not reach the muscles layers. Plug formation is been at the ruptured epithehal portion which may have formed from lymphocytes and eosinophiles cells.

Key words : Histopathology, cestode parasites, Genus *Cotugnia*, *Gallus domesticus.*

INTRODUCTION

The genus *Cotugnia* (Diamare, 1893) and so many workers studied on it's taxonomy but Mitra & Shinde (1980) reported histopathology of the cestode amoebotaenis in *Gallus domesticus*. Borvenska & Caira (1993) observed mode of attachment and pathogenicity of tapeworm infecting the spiral intestine of the nurse shark. Mpoame & Agbed (1995). observed a gastrointestinal helminth infection of domestic fowl in discharge western Cameroon. Nanware *et al.* (2005) also studied histopathology cestodes of *Capra hircus* and a marine fish. Hayunga (1977) explained relationship of pathology and site secretion in host intestine of carryophyllied tape worm.

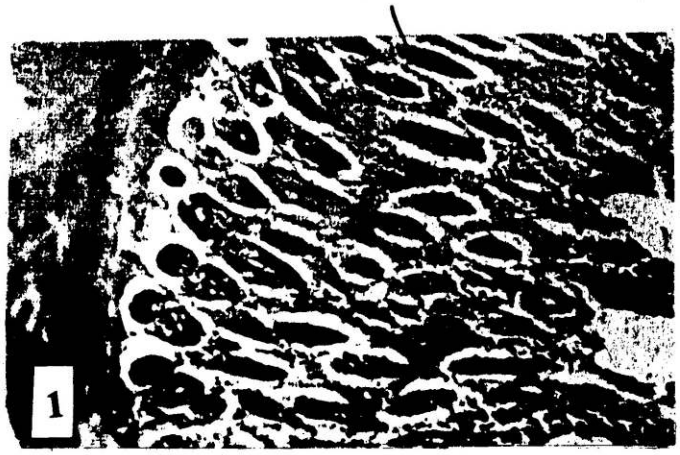
MATERIALS AND METHODS

Pieces of the infected and non infected intestine were fixed in Bouin's fluids, they were dehydrated by graded alcohol, cleared and embedded in paraffin wax. The transverse and longitudinal sections were taken at 9μ. Dewaxing was done by xylene, processed through alcoholic series and cleared in xylene, mount in DPX.

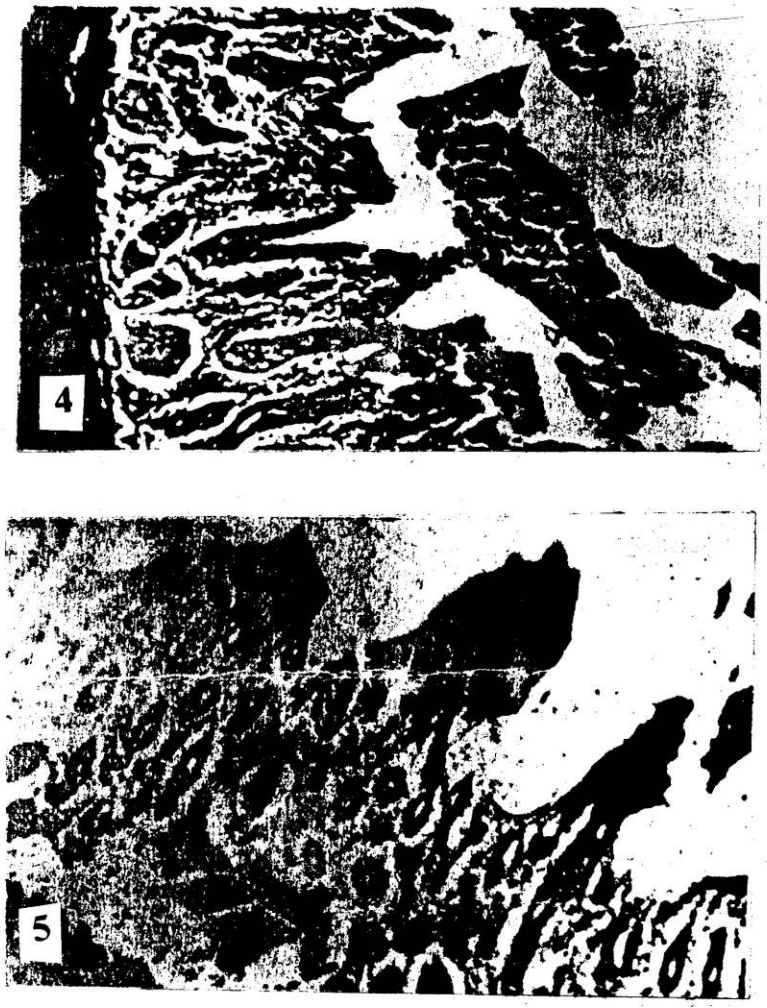
RESULTS AND DISCUSSION

These cestodes get attached to the host tissue by the hooks on the rostellium. Here the worm tries to approach the intestine through the crypts of Lieberkuhn (Fig. 1) and succeds in destroying the crypts and reaching up to the sub mucosa (Fig. 2). When these tissue get disturbed and become loose the rostellum, protrudes and deepens its position in the intestine for a attachment by piercing in the glands of the sub mucosa, with half of the body fragile (Fig. 3). That worm tries to overcome the entanglement of the crypts of Lieberkuhn. It cannot reach the muscles layers, probably due to absence of neck and the short length.

Tissue reaction and cellular initiation occurs from the point of attachment and viscid material leaks out forming a sticky plug (due to the mycin present in sub mucosa) for which the worm use the material for its nutrition (Fig. 4). At the plug formation site there is a large accusation of blood cells supplied by the host were reaction of the cell material



Figs. 1-3 : *Cotugnia sillodensis* on *Gallus domesticus*. **1.** Parasite approaching the crypts of Lieberkuhn in T.S.; **2.** T.S. through the crypts upto sub mucosa; **3.** Rostellum piercing through sub mucosal epithelial tissue.



Figs. 4-5 : *Cotugnia sillodensis* on *Gallus domesticus*. **4.** Protruded rostellum embedded in the intestine; **5.** Plug formation of the rupture.

takes place forming eosinophic cells leucocytes and lymphocytic cell.

The interrelation of the parasite with the host. results in the parasite with the host result in the survival of the parasite and slight damage to the host intestine since the parasite does not reaches beyond the submucosail layer as *Cotugnia sillodensis* (Jadhav *et al.*, 2003) in the same host.

Recentely many scientists have worked out on the host parasite relationship. The cestode parasites were attatched mostly in the duodenal mucosa and heavy infection with this parasites caused inflammation, congestion and swelling of intestinal mucosa along with this pinpoint hemorrhagic spots. Microscopic studies revealed chronic catarrhal enteritis with server destruction of the villi, degeneration and desquamation of the lining epithelial cells, frequent ulceration and thinckening of the mucosa and submuosa due to celluar infiltration. The muscular coat and serosa were unaffected. *Cotugnia* sp. caused nodule formation on the wall of the intestine there by indicating its high pathogen

city. Similar observation was made by earlier workers (Mitrà & Shinde, 1980) the scolex of *Amoebotenia* sp.

Penetrated into the dilated crypts of the muscular is mucosa of the duodenum and formed to rostolum penetrates into the muscular coat causing fragmentation of the muscular fibers diffuse infiltration of lymphocytes, plasma cells and monocytes, foreign body giants cells and fibrous connective tissue. The observations support the descriptions of Mpoame & Agbede (1995). Borvclnska & Caira (1993) explain the mode of all attachment and pathogenity of tapeworms. Shinde et al. (1984) studies interrelationship between cestode parasites with their host *Caracharias acutus.* Nanware *et al.* (2005) observed histopathological changes in an intestine of *Caprohircus.*.

Parasites of marine fishes when caused hispathological conditions in a tissue the main changes occurs in the infected tissue are increase or decrease in particular regions of the tissue. The decrease in the muscular fibers of the longitudinal muscular layers seen in the infected fowl may be of mechanical damage due to the erosion of the intestinal layers on the other hands the increase in the thickness of the muscular layers may be considered as an adaption to the presence of the parasites. The damage of epithelial cells, particularly absorptive and goblet cells indicates the loss of absorptive power of intestine in the infected fowl thus the food entering the intestinal villain is utilized by the parasite or circulated in the blood of the host.

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