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**Histopathological Study Of *Lytocestus* Species Infection In Host Intestine
Clarias Batrachus (L) From Kham River, Aurangabad (M.S) India**

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Abstract: In the present investigation occurrence and pathological changes caused by cestode parasites *Lytocestus* Species in the intestine of fresh water fishes, *Clarias batrachus* (Linn.) from Kham river, Aurangabad (M.S) India are studied. The worm *Lytocestus* Sp. attached to the intestine of host *Clarias batrachus*. In T.S. of intestine of *Clarias batrachus* it has been observed that the cestode attached to the intestinal layer and slowly damaged the host intestinal villi, invaded deep and sucking the content in the region of villi.

Keywords: *Clarias batrachus*, Histology, Kham River, *Lytocestus*.

1. INTRODUCTION:

The term 'host-parasites relationship' correctly designates an intimate interaction, between two or more distinct organisms, in which the one benefits while causing damage to the others. The study of parasites and parasitism is without an end. One could go on and on like this as the various aspects are not only important but quite interesting too. What about the host-parasites and parasites-parasites relationship as also the relationship between the definitive and intermediate hosts of the parasites.

The Caryophyllidean cestodes produce disease to the fishes by inducing mild irritation, inflammation between the folds, thinning of intestinal walls and sometimes death resulting from dysfunctioning of intestinal mucosa. The other remarkable feature of the Caryophyllidean cestodes is the presence of prominent secretory glands which are used by the parasites for establishment. The structure and function of scolex glands in different species of Caryophyllidean cestodes were studied in detail by Hayunga (1979) and Hayunga and Mackiewicz (1988). They reported that the scolex glands were more developed in those species, which lack attachment organs and suggested that the secretion of the glands was used by the parasite to adhere to the host intestine.

The host parasite relationship has studied by Mitra and Shinde, 1980 of *Amoebotaenia indiana* and *Hymenolepis nana* by Bailey, 1951. The establishment and distribution of *Raillietina cesticillas* in the fowl was by Foster and Daughtery, 1959, cestode relationship of hill stream, fishes was observed by Chauhan and Malhotra, 1981. Host various parasite responses were described Mitchell, 1981. Histopathological changes were also observed *Moniezia* from *Capra hircus* (L.) by Nanware and Jadhav, 2005, *Circumncobothrium* and *Senga* from *Mastacembalus armatus* by Fartade Asawari and Sunita Borde, 2011 and Marine Cestode from marine fish by Anarse Sandeep and Borde Sunita, 2012. Noteworthy work was carried out on histopathological changes caused by cestode parasites by Mackiewicz *et al.*, 1972, Molnar *et al.*, 2003, Rubela *et al.*, 2006, Williams, 2007, Jadhav *et al.*, 2012, and Laxma Reddy and Benarjee, 2014.

The foregoing literature survey clearly reveals that Caryophyllidean parasites cause considerable damage and therefore great economic losses to the fishermen. Thus, these groups of parasites require attention of parasitologists to develop an integrated control programme.

The present communication deals with the study of histopathology of *Lytocestus* species infection in host intestine *Clarias batrachus* from Kham River, Aurangabad (M.S) India.

2. MATERIAL AND METHODS:

For the histopathological study, intestines of fishes were dissected to observe the rate of infection. Some fishes were found to be infected and some non-infected. Both infected and non-infected hosts intestine were dissected and

fixed in Bouin's fluid to study histopathological changes. The fixative inhibits the post mortem changes of the tissues. Then tissues were washed, dehydrated through alcoholic grades, cleared in xylene and embedded in paraffin wax (58-62°C).

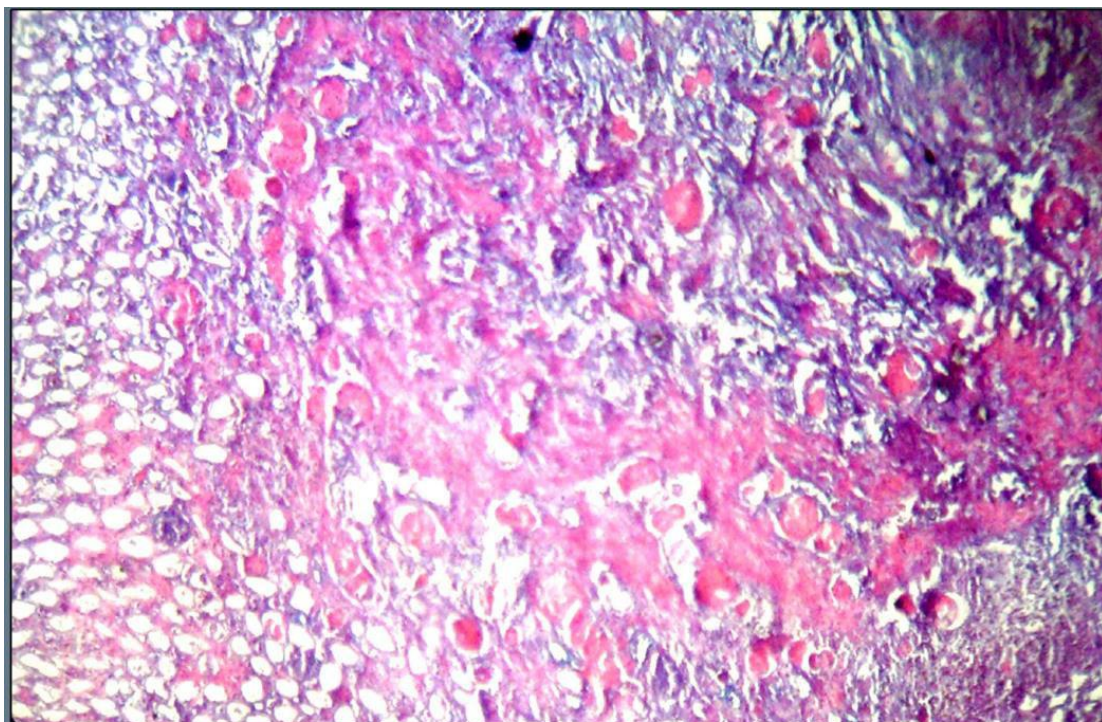
The blocks were cut at 7 μ and slides were stained in Eosin haematoxylin double staining method. Best slides or sections were selected and observed under the microscope.

3. RESULT AND DISCUSSION:

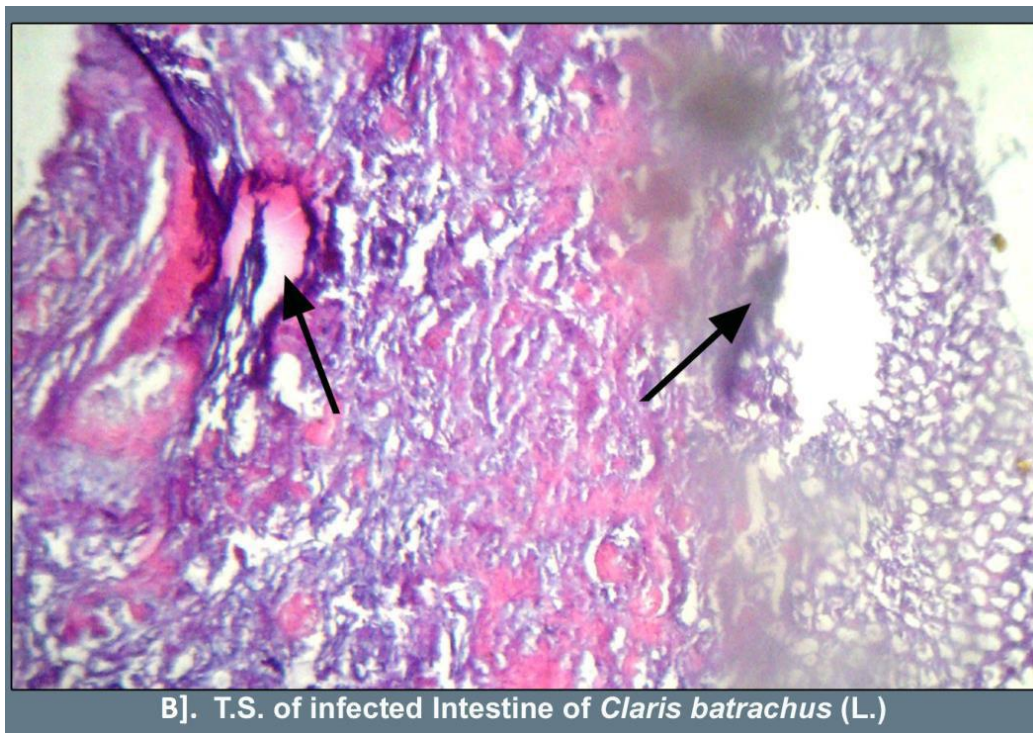
From the present communication the results indicate that some of the intestines were found to be infected with cestode parasite. In T.S. of non-infected intestine of *Clarias batrachus* (L.) it has been observed normal intestinal villi and other layers of intestine. In T.S. of infected intestine of *Clarias batrachus* (L.) has been observed that the cestode attached to the mucosal, sub-mucosal and muscularis mucosa of intestine and slowly damaged the hosts intestinal villi, invaded deep and forming the cyst like structure for sucking the content from the region of the intestine. Healthy intestine showed, healthy villi and all layers are clearly observed, whereas infected intestine has been observed that the worm attached to the mucosal layer of intestine and slowly invades to the deeper layers of the host tissue.

The worm *Lytocestus* Sp. attached to the intestine of host *Clarias batrachus*. In T.S. of intestine of *Clarias batrachus* it has been observed that the cestode attached to the intestinal layer and slowly damaged the hosts intestinal villi, invaded deep and sucking the content in the region of villi.

In the present study case the damage of *Lytocestus* sp. observed is similar to the damage reported by Satpute and Agrawal (1974) and A. S. Raipalli and A. L. Deshmukh (2018). However, the helminths crosses majority of the intestinal layers (internal epithelium, submucosa, muscularis layer) and come to lie near serosa suggesting that, it is very dangerous and destructive parasites to the definitive host (C. J. Hiware, 2008). The worm is not only successful to enter into the intestine forming the ulceration in the intestinal wall causing damage to the host tissue but the parasite may affect host physiology in many ways that induce stress in the host. The parasitic infection in turn disturbs the metabolic pathways (Esch GW et al., 1977). The intestinal cells of the host become stretched and distorted causing mechanical obstruction of the lumen of fish intestine (Bauer., 1968; Ahmad and Sanahullah, 1979; Scott and Grizzle, 1979). During heavy infection, the intestine gets blocked causing death of the host (Bauer et. al., 1981). In some cases, high number of parasites reduces the diameter of the lumen by more than 50% which affects the movement of the food through the intestine (Shostak and Dick, 1986). Marty, G. (2008) reported the Atlantic salmon (*Salmo salar*) had ananisakid larva partly embedded in the wall of an intestinal caecum.



A]. T.S. of non-infected Intestine of *Clarias batrachus* (L.)



4. CONCLUSION:

From the above histopathological discussion it can be concluded that helminth parasites like *Lytocestus* Sp. finds the nutritive material from the intestine of hosts *Clarias batrachus* (L.) which is essential for their nourishment and growth. While taking nourishment parasites invade host tissue resulting tissue damage causing mechanical injury to the host at the attachment site.

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