HISTOPATHOLOGICAL EXAMINATION OF FRESH WATER FISH, MASTACEMBELUS ARMATUS (LECEPEDE, 1800) INFECTED WITH CESTODE PARASITE FROM UMARKHED REGION (M.S.) INDIA.

Dr. Madhav Maroti Kalyankar
Department of Zoology G.S.Gawande College Umarkhed Dist. Yavatmal, 445206, M.S. India
kalyankar@gsgcollege.edu.in

Dr. Dinesh K. Dabhadkar
Department of Zoology G.S.Gawande College Umarkhed Dist. Yavatmal, 445206, M.S. India

Abstract
The fresh water fish Mastacembelus armatus (Lecepede, 1800) collected from Umarkhed Region of Yavatmal district and after dissection their intestinal passage was examined for cestode parasites. The cestode parasite was recovered from intestine. The histopathological examination were carried out and observation clearly shows that the cestode parasites approaching the intestinal villi embedded in fibroblast cell, plasma cell and are attach to the intestinal villi. The histopathological studies of cestode parasite have been studied to find the pathological changes & extend the damage of the intestinal layers of Mastacembelus armatus.
Keywords: *Cestode, Mastacembelus armatus, Umarkhed*

Introduction

Histopathology is the microscopic study of tissue affected by disease. Histological and anatomical changes in parasitized organism have been studied in various ways and by a number of workers. And yet a detailed cytological study of the effect of parasitism upon the host is nearly a virgin field (H. P. Kjbrschow Agersborg, 1924). Fish diseases and histopathology, with a broad range of causes, are increasingly being used as indicators of environmental stress since they provide a definite biological end point of histological exposure, it is a mechanism which can provide an indication of fish health by determining early injury to cells and can therefore be considered an important tool to determine the effect of parasites on fish tissue.

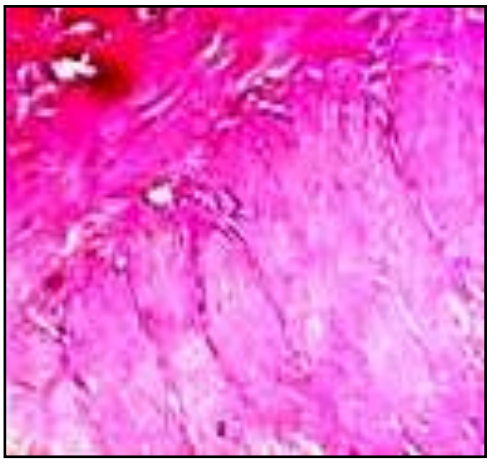
Histopathology of infected intestine of fresh water fish is relatively a neglected field of study specially caused by helminth parasites. Although, there are several studies particularly those related to the parasite morphology but histopathological investigations on most helminth species that had been described are still scarce. Hall and Bellwood, (1995) stated that, the histological analysis of the digestive system is recognized a good indicator of the nutritional status of fish. In the present investigation clearly reveals that cestode 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.

Material and Methods-

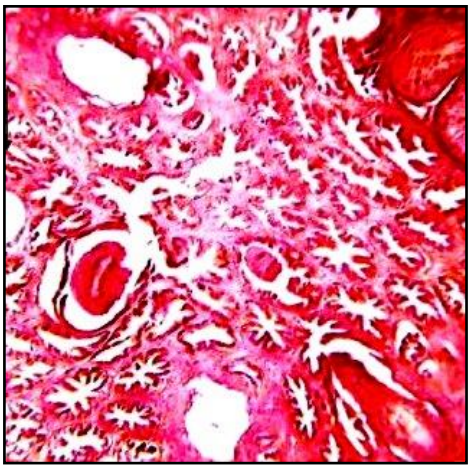
For the histopathological examinition, fresh water fish Mastacembelus *armatus* were dissected to observe the rate of infection. Some fishes were found to be infected and some normal. Both infected and normal hosts intestine were cut in to small pieces and were fixed in Bouin‘s fluid to study histopathogical 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 0C). The blocks were cut at 7 µ and slides were stained in Eosin Hematoxylin double staining method. Best slides or sections were selected and observed under the microscope for histopathology study.

Result and Discussions

After cestode parasite infection there is a drastic alteration which leads to the destruction of the internal anatomy, resulting in the total change of its appearance. Normal intestine showed, healthy villi and all layers are clearly observed. Infected fish intestine includes shortening of villi, thickening of the muscle layer, and destruction of the villi, hold fast penetration of the mucosa and the damage of both the mucous and submucous membranes. In T.S. of intestine of Mastacembelus *armatus* it has observed that the cestode is having penetrative type of scolex and there is no doubt those they because heavy mechanical tissue scratches to their host. Scolex of worm deeply penetrated through layers causing heavy mechanical injury to mucosa, sub mucosa, come to lie near the muscularis mucosa. The intestinal villi encircle the scolex of worm and intestinal structural design gets destructed and also it forms cyst like structure, pad formation took place.



L.S. of Non Infected intestine of Mastacembelus *armatus*



L.S. of Infected intestine of Mastacembelus *armatus*

Conclusion

Above histopathological discussion it can be concluded that cestode parasites finds nutritive material from the host intestine i.e. Mastacembelus *armatus* which is essential for their nourishment and development.

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