

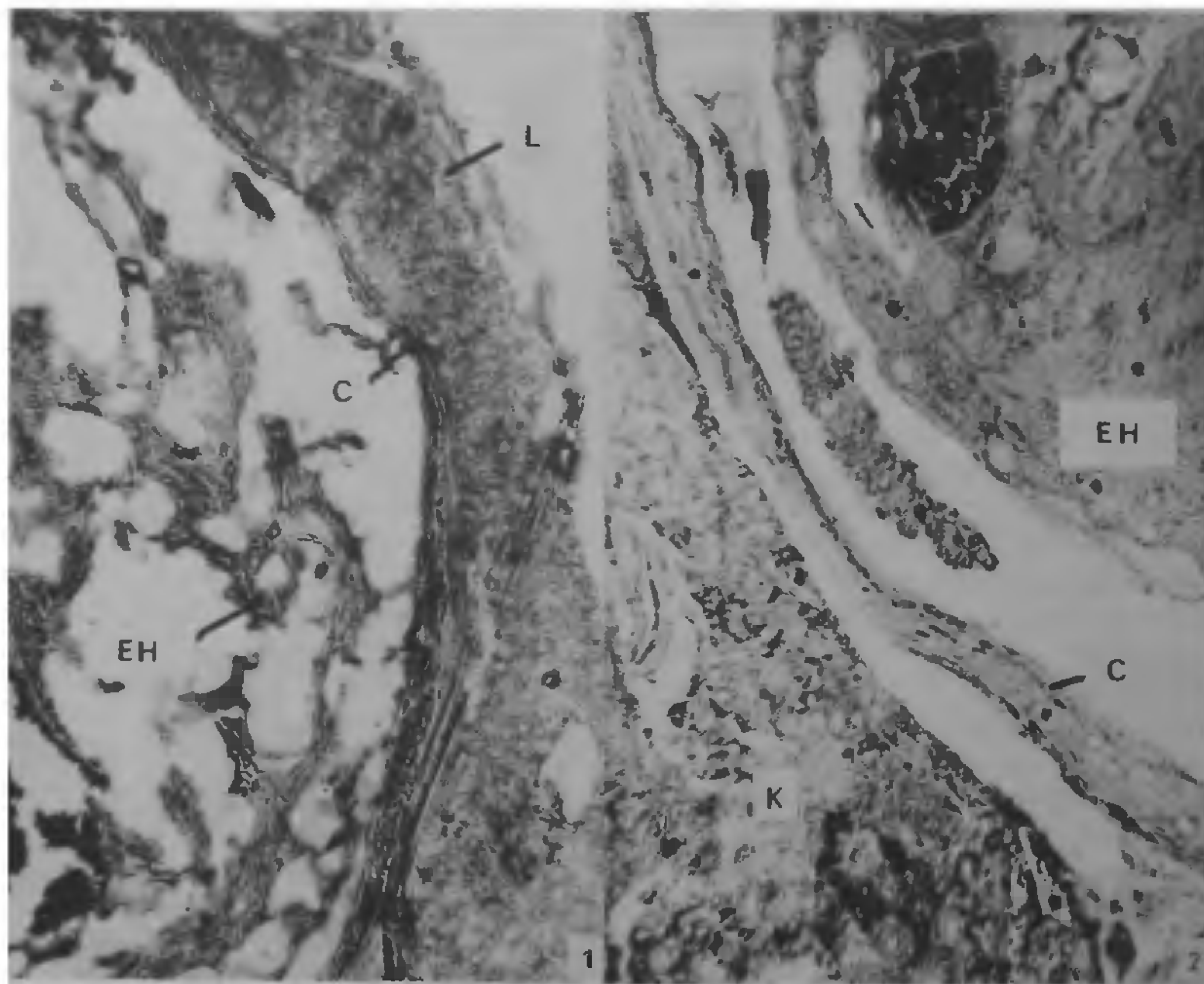
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STUDIES ON YELLOW GRUB DISEASE OF FRESHWATER FISH *CHANNA PUNCTATUS* (BLOCH)

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PATHOGENICITY in yellow grub disease of *Channa punctatus* (Bloch) has been studied during March 1984 to February 1986. A total of 485 (216 male and 269 female) *C. punctatus* were examined. On an average 54.27% and 3.86% male 58.34% and 4.93% female fish were infected respectively by the metacercaria of *Euclinostomum heterostomum* and *Clinostomum giganticum*. The maximum intensity of infection was observed from April to August and the minimum in December and January. Concurrent infection by *E. heterostomum* and *C. giganticum* was observed in 26.25% male and 23.15% female *C. punctatus*.

The metacercaria of *E. heterostomum* were localized in the liver, kidney and spleen whereas



Figures 1 and 2. ($\times 100$). 1. Section of liver of *C. punctatus* showing encapsulated metacercaria of *E. heterostomum* (EH). H&E. 2. Section of kidney of *C. punctatus* showing encapsulated *E. heterostomum* (EH). H&E [L, Liver; C, Capsule wall; K, Kidney].

metacercaria of *C. giganticum* were present in the striped muscles. Liver had the highest infection followed by muscle, kidney and spleen.

The capsules, containing *E. heterostomum* and *C. giganticum*, were spherical and 4 to 6 mm in diameter. The capsule wall stained blue with Mallory's triple stain (figures 1 and 2). A number of fibroblasts, lymphocytes and yellow black pigment were present on the capsule wall. The capsules contained a dark watery fluid and only one metacercaria in each.

The infected liver was atrophied and pale in colour in contrast to red colour of the normal fish. The hepatic cells were compressed and distorted (figure 1). Fragmented parenchymatous cells were seen in the vicinity of the capsule. Free metacercaria inside the liver were seen to hold on to plug of hepatic tissue. The epithelium of the bile duct was inflamed resulting in congestion of bile. Destruction and compression of the uriniferous tubules were seen around the capsules present in the kidney (figure 2). In the spleen, the capsules were seen to

have compressed and physically destroyed the splenic tissue. The striped muscle fibres containing the metacercaria were loose and weak in contrast to the compact and strong muscle fibres of uninfected fish. Vasodilation and congestion of blood vessels in infected liver, kidney and spleen, specially around the capsules, were evident.

Bose *et al*¹ also reported the damage of the hepatic tissue of toad due to encysted *Anisakis* sp. larvae. Cheng² was of the view that the connective tissue fibres, cells and pigment granules around the metacercaria are deposited by the host fish. He opined that consumption of infected fishes by man is harmless.

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ANNOUNCEMENTS

INTERNATIONAL SYMPOSIUM ON INDUSTRIAL METAL FINISHING

The 'International Symposium on Industrial Metal Finishing' will be held at Karaikudi, Tamil Nadu, during 1-5 February 1989.

Further particulars can be had from: Prof. K. I. Vasu, Director, Central Electrochemical Research Institute, Karaikudi 623 006.

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