preparatory phase (for breeding) of its life. At the same time, it is premature to assert it as a normal hermaphrodite.

Dr. N. K. Thakur, Officer-in-charge, Mithapur Fish Farm, Patna, for his helpful suggestions and scrutiny of the manuscript.

Air-breathing Fish Culture
Unit, Central Fisheries,
(ICAR), Mithapur
Fish Farm,
Patna 800 001, April 7, 1978.

* Department of Zoology, Patna University, Patna.

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PARASITIZATION OF ISOPARORCHIS
HYPSELOBAGRI BILLET IN CHANNA
PUNCTATUS BLOCH

A Review of the literature reveals that Isoparorchis
hypeleobagri Billet (Order, Prostomata; Family,
Isoparorchidae; Genus, Isoparorchis; Species, I.
hypeleobagri) usually infests the swim bladder of
silurid fishes. However, a few reports are
available about its occurrence in nonsilurid species.
These reports now have recorded only the juvenile forms of this parasite in the nonsilurid fishes, resulting in what is commonly known as ‘ink spot disease’ due to the presence of metacercaria stage.

The present investigation reports the widespread infestation by this parasite in fully developed sexually adult stage in Channa punctatus Blanch, a nonsilurid fish of the order Osphranchidae. The adult parasites found infesting C. punctatus during this investigation varied in size from 14 to 20 mm in length and 8 to 12 mm in width (cf. 2.01 mm x 1.05 mm reported by Rai and Pandey). It is also interesting to record that the average length of the ovarian tube alone was 2.48 mm which exceeds the total length of the parasite itself reported by Rai and Pandey.

In a single fish usually two to five adult parasites were found with a number of juveniles showing exceptional variation in number and size. The degree of infestation can be realized from the fact that these parasites weighed 3.13% of the host's body weight. Further the adult parasites were not limited to the swim bladder alone but attacked almost every visceral organ such as liver, spleen, ovary, body musculature, intestinal muscles and mesenteric.

Detailed studies on the effect of parasitization on the physiology of the fish per se and its possible effect as food for man are being reported elsewhere.

Thanks are due to I.C.A.R. for financial support and to the Department of Zoology, University of Rajasthan, Jaipur, for facilities.

Department of Zoology, C. L. Mahajan.
University of Rajasthan, N. K. Agrawal.
Jaipur 302 004 (India), M. J. John.
May 12, 1978. V. P. Katta.


**OCCURRENCE OF GIANT MITOCHONDRIA IN THE CELLS OF GAMETOphyTES OF LYGODIUM FLEXUOSUM (L.) SW. EXPOSED TO GAMMA RADIATION**

Spores of *L. flexuosum* were sown in 2 separate petridishes, each having approximately 500 spores in 1% Knoepf's solution. Various stages of gametophytes of *L. flexuosum*, viz., ungerminated spores, 2 to 3 days old and one month old were exposed to doses of gamma radiation from cobalt source ranging from 8,000 rad to 1,20,000 rad. The irradiated gametophytes as well as controls were kept in cultures at 26±2°C with diffused daylight augmented with 600 ft.c. light for 8 hours.

It was observed that irradiated plants show delay in germination, slowing of cell division and other abnormalities in growth patterns. Gametophytes with interesting abnormalities as sublethal doses were chosen for ultrastructural studies. Such gametophytes were fixed in Caulfield's fixative and were kept at 4°C for 4 hours, then they were processed for ultrathin sections by ultratome. Finally, sections were studied in Hitachi H.U.-11 E and photographed by transmission electron microscope.

![Fig. 1-2. Fig. 1. Micrograph of a portion of the cell of gamma-irradiated gametophyte of *Lygodium flexuosum* showing giant (or complex) mitochondria (M) (× 32,000). Fig. 2. A portion of another cell of gamma-irradiated gametophyte of *L. flexuosum* showing another giant mitochondrion (M) (× 1,920).](image)