

### DICTYUCHUS ANOMALOUS (NAGAI), A NEW PATHOGEN OF FRESH WATER TELEOSTS

DURING the course of an investigation on fungi associated with fish diseases, fungal infections on adult individuals of *Channa punctatus* (Bloch) were observed during February–March 1975, which usually resulted in the death of the infected hosts. The infected fishes showed the presence of white cottony patches scattered on their body (Fig. 1).



FIG. 1. *Channa punctatus*, showing the infection of *Dictyuchus anomalous* (White cottony patches on the body).

TABLE I

Controlled laboratory studies demonstrating the infectious ability of *Dictyuchus anomalous*, on wounded and unwounded test fishes

Name and Number of fish	Mycosis evident and death occurred	Mycosis evident within days	Death occurred in days
Wounded:			
<i>Puntius sophore</i> 2	2	7 days	8 days
<i>Colisa lalia</i> 2	2	7 days	8 days
Unwounded:			
<i>Puntius sophore</i> 2	..	..	..
<i>Colisa lalia</i> 2	..	..	..

The pathogen was isolated on boiled hempseed halves in sterile distilled water and its unifungal bacteria free cultures were prepared on the lines described by Johnson<sup>1</sup>, Raper<sup>2</sup> and Tiffney<sup>3</sup>. The fungus was identified as *Dictyuchus anomalous* (Nagai).

In order to establish the parasitic ability of the isolate, laboratory inoculation experiments were conducted under controlled conditions, on the lines of Scott and O'Warren<sup>4</sup>, using *Puntius sophore* (Hamilton) and *Colisa lalia* (Hamilton) as test fishes.

Hypae of the parasite were observed growing from the injured areas of the test fishes on 7th day of placing the fish in the infection troughs. The infected fishes died within 24 hours of the appearance of the fungal tufts on the body of the fish. It was further observed that injury greatly lowered the resistance of the fish to the fungal infection (Table I).

*Dictyuchus anomalous* is reported for the first time as a fish pathogen. *Channa punctatus* is a new host record for the species of *Dictyuchus*.

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### EFFECT OF ORGANIC AND MINERAL FERTILIZERS ON *AZOTOBACTER* IN FLOODED RICE FIELD

ALTHOUGH occurrence and distribution of *Azotobacter* in paddy soils have been investigated<sup>1-6-8</sup>, little information is available on the effect of organic and mineral fertilizers on *Azotobacter* population under flooded field conditions. In the present report the effect of organic and mineral fertilizers on the population of *Azotobacter* in the rice field has been discussed.

Soil samples were collected from paddy fields under different treatments—(i) control, (ii) 100 kg N/ha, (iii) rice straw 5 tons/ha, (iv) rice straw + 100 kg N/ha, (v) rice straw 10 tons/ha and (vi) rice straw + 100 kg N/ha. *Azotobacter* population in soils was determined by serial dilution technique on nitrogen-free medium containing (g/l)  $K_2HPO_4$ , 1.74;  $KH_2PO_4$ , 0.91;  $MgSO_4 \cdot 7H_2O$ , 0.30;  $CaCl_2 \cdot 6H_2O$ , 0.10; NaCl, 0.50;  $FeCl_3 \cdot 6H_2O$ .