rhodium of the type $RhHX_2(CO)[C_6H_{11})_3As]_2$ by reacting the rhodium (I) carbonyl compounds with the corresponding hydrohalic acid produce only the rhodium (III) compounds of the type $RhX_3(CO)[(C_6H_{11})_3As]_2$, suggesting that the hydrido carbonyls of rhodium are very unstable and easily get converted to the rhodium (III) carbonyl compounds. Such observations have been made earlier also[11-12]. The rhodium (I) carbonyl compounds also fail to add on molecular oxygen or nitrogen.

Rhodium trichloride however reacts with tricyclohexyl arsine in methoxy ethanol in presence of hydrochloric acid to give a five-co-ordinate reddish-brown crystalline compound of the formula $RhCl_3[(C_6H_{11})_3As]_2$. The formation of such a five-co-ordinate compound of rhodium (III) as against a six-co-ordinate compound is probably due to steric factors involving the bulky arsine. The configuration and other aspects of this compound are being investigated.

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THERMAL RESPONSES IN *CATLA CATLA* FRY

Earlier, results have been reported on the thermal responses in *Cyprinus carpio* and *Cirrhina mrigala* fry and fingerlings[1-2]. Recently an attempt has been made to study the responses of *Catla catla* fry to temperature stress and shock under laboratory conditions. *Catla catla* constitutes an important inland fishery resource in India.

The responses of *Catla catla* fry (2·5–3·5 cm length) to thermal stress were studied by exposing the fry to various test temperatures ranging from 30·3° C to 36·0° C. The mortalities observed over 24 hr test period are given in Table I. It is seen that the Median Lethal Temperature (MLT) is 36·0° C.

Table I

Responses of carp fry to various water temperatures (Exposure time 24 hr)

No. of specimens	Acclimation temperature (°C)	Test temperature (°C)	% Mortality
20	20·3	30·3±·1	10
20	21·5	33·5±·1	15
20	22·0	35·9±·1	45
20	22·5	36·0±·1	50

Table II

Responses of carp fry to test temperature of 38·4° C ±·1 for various exposure periods

No. of specimens	Duration of Exposure (min)	% Mortality	% Mortality observed on transfer to acclimated water (48 hr)
12	2	0	0
12	4	0	0
12	6	0	17
12	8	0	33

The effects of thermal shock were studied by exposing carp fry to temperatures above MLT. In first set of experiments the fry were momentarily

exposed (till they lost equilibrium) to 38·3° C and brought back to acclimation temperature of 22·5° C, initial recovery was cent per cent but subsequently 38% mortality occurred in 24 hr, 50% mortality in 72 hr, and 75% mortality occurred in 96 hr (Fig. 1). It appears, therefore, that thermal shock had impaired the capacity of fry to survive for a prolonged period at the ambient water temperature.

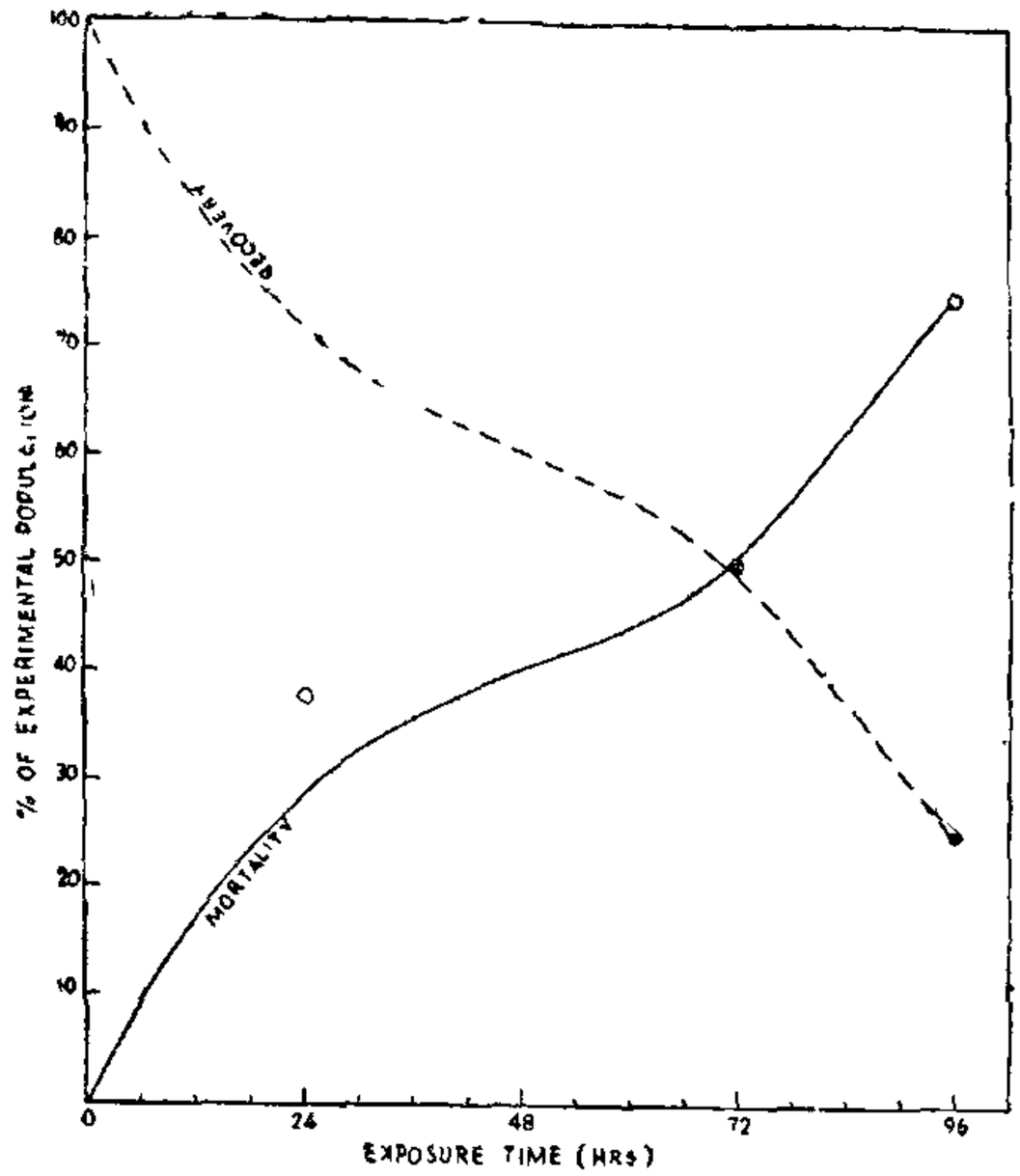

FIG. 1. Recovery and latent mortality of *Catla catla* fry at 22·5° C after exposure to thermal shock at 38·3° C ± ·1.

In the second set of experiments prolonged effect of exposure to 38·4° C was observed. Mortality seen in the fry at 22·5° C (acclimated water temperature) after 6 and 8 minutes' exposure to 38·4° C are markedly higher, *i.e.*, 17% and 33% in 48 hr, compared to the nil mortality when the exposure was restricted to 4 minutes or less (Table II).

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STUDIES ON ACETYLATION OF SULFANILAMIDE IN *OCHROMONAS MALHAMENSIS*

ABSTRACT

O. malhamensis metabolises sulfanilamide to a non-diazotisable derivative, N-acetyle sulfanilamide. Vitamin B_{12} and methionine stimulate acetylation of sulfanilamide *in vivo*. The acetylation of sulfanilamide could be demonstrated *in vitro*. The para amino benzoic acid and sulfanilamide acetylating systems are inhibited by the presence of the other in the growth medium either way.

ACETYLATION of sulfanilamide, discovered by Marshall *et al.*[1] has been the subject of a large number of investigations. Since a considerable fraction of the drug may circulate and be excreted in the acetylated form, the phenomenon has practical importance[2–4]. In *Ochromonas malhamensis* sulphanilamide growth inhibition has been observed by Potty and Tamhane[5]. Whether a disposal system for sulfanilamide by way of acetylation exists in this organism has been the subject-matter of this report. A *p*ABA acetylation mechanism has been studied earlier[6].

EXPERIMENTAL

Maintenance.—*O. malhamensis* was maintained by weekly transfers in Fords medium[7] and incubated under light at 28° C for 7 days.

Growth Studies.—These were conducted in the basal medium of Johnson *et al.*[8], in pyrex test-tube in a final volume of 4 ml. 2 drops of thrice diluted, 5-day old culture, was used as the inoculum. The growth was measured after diluting to a final volume of 10 ml in a Klett-Summerson photoelectric colorimeter at 660 mμ.

Cultivation of O. malhamensis *for* in vitro *studies.*—The cells were grown in 100 ml batches in 500 ml Erlenmeyer flasks, recovered by centrifugation under refrigeration, washed twice with chilled distilled water and suspended in a suitable volume of water.

Estimation of sulfanilamide.—The method of Bratton and Marshall[9] involving diazotisation and subsequent coupling with N-(1-naphthyl) ethylene diamine dihydrochloride and measuring the colour intensity at 540 mμ was followed for the estimation of sulfanilamide. Optimum conditions for the hydrolysis involved the boiling of samples with 4 N HCl for one hour in a water-bath.

In vitro *studies on the acetylation of sulfanilamide.*— Cell suspensions corresponding to 80 mgm were added to a reaction system consisting of 0·04 M phosphate buffer, pH 7·0, and ·7 μ moles of sulfanilamide and other additions where stated in a final volume of 10 ml. This was incubated at 30° C under constant shaking for 20 hours after which