SUMMARY
1. The fresh water major carp *Cyprinus carpio* (Linnaeus) were collected from local fisheries department and acclimated to the laboratory conditions. Each carp weighing 10 ± 2 gms were taken throughout the investigation.

2. Toxicity studies were conducted to determine the survival and mortality of the animals in the dithiocarbamate fungicide, ziram. LC$_{50}$ for 96 hours of exposure was calculated from %mortality, probit mortality curves of Dragsted and Behren’s method. The Mean LC$_{50}$ was found to be 0.60 mg. Survival rate was reduced markedly with increase in concentration of ziram at each exposure period. The sublethal concentration, one tenth value LC$_{50}$/96 hrs was found to be 0.060 mg. All further studies of this investigation were carried out in sublethal concentrations, the animals in freshwater without ziram and acetone were served as controls.

3. The time-course in the rate of oxygen consumption during sublethal exposure of ziram exhibits an initial elevation at 24 hours followed by decrease at 7$^{th}$ and 15$^{th}$ day periods. Maximum suppression of O$_2$ consumption occurred at 15$^{th}$ day. The O$_2$ consumption raised from 16$^{th}$ day onwards and reached nearer to control at the end of 30 day of exposure period (Fig. 3). This indicates the capacity of the animal to recover from the stress of the fungicide without suffering lasting effects, reaching to the maintenance of homeostasis during ziram exposure.

4. The rate of O$_2$ consumption of the whole animal in sublethal exposure elevated at first day followed by its suppression at 7$^{th}$ day and maximum suppression at
15\textsuperscript{th} day. After the 15\textsuperscript{th} day the animal tends to recover from O\textsubscript{2} suppression and came nearer to control at 30 day exposure (Fig. 4).

5. Decrease in liver glycogen and muscle glycogen have been observed in liver and muscle glycogen activity of the fish, \textit{Cyprinus carpio} at 1\textsuperscript{st}, 7\textsuperscript{th}, 15\textsuperscript{th}, 21\textsuperscript{st} and 30\textsuperscript{th} day on exposure to sublethal concentrations of ziram so as to assess the involvement of carbohydrate metabolism in the fish exposed to ziram toxicity (Figs. 6 and 7).

6. Shifts in the pattern of SDH activity in tissues which are usually associated with the changes in availability of metabolites. At 24hrs there is a an increase in the SDH activity and maximum suppression was noticed during 15\textsuperscript{th} day. The recovery in SDH activity is attained at 30\textsuperscript{th} day period because of adaptation. The sequential changes in carbohydrate metabolism in the tissues of the \textit{Cyprinus carpio} suggest the possible mechanism by which cellular metabolism is affected during ziram toxicity (Fig. 8, 10, 12).

7. Elevation of LDH activity in the tissues of \textit{Cyprinus carpio} suggests that the LDH activity depends on the expression of different isomeric forms of lactate dehydrogenase enzyme. The maximum suppression of LDH activity was observed during the 7\textsuperscript{th} day. The elevation of LDH activity was attained during 30\textsuperscript{th} day period because of stepping up of anaerobic glycolytic pathway leading to the accumulation of more lactate which is one of the important factor for the inactive state of the fish during exposed toxicity of the fungicide, ziram. Finally the shifts in carbohydrate metabolism may be to tide over the fungicide toxicity (Fig. 9, 11, 13).