The limnology of a freshwater pond with special reference to nutrient pollutants which cause aquatic pollution was studied and the effects of such pollution on the growth and development of the fauna and the flora in the pond were investigated. A number of physical and chemical constituents were analysed. It was found that as a group chlorophyceae depended on nitrate-nitrogen for its growth whereas diatom population was greatly controlled by the phosphate available to them. Multiple correlation studies showed that chlorophyceae, bacillariophyceae and euglenaceae were stimulated by the presence of phosphate, ammonia-nitrogen and nitrate-nitrogen. The presence of *Microcystis* sp. in large numbers indicated eutrophic nature of the pond. Also the pond was found to be a polluted ecosystem due to heavy loads of nutrients and disarrayed exhibition of physico-chemical and biological characteristics.

Short term experiments of static bioassays were conducted to determine the LC50 values of *Channa punctatus* at time intervals of 24, 48, 72 and 96 hours with DDT, malathion and sevin. These tests were performed under varying conditions of temperature, pH and hardness. Temperature was found to have a profound influence on the effectiveness of the three toxicants. Hardness as an environmental factor
reduced the toxicity of the three chemicals to the fish. pH of water did affect the susceptibility of the fish to malathion and sevin whereby these chemicals were more toxic at lower pH than at a higher one. Different however, was the case with DDT. In general the toxicity of DDT to the fish was greatest followed by malathion and sevin.

Safe concentrations were determined by subjecting the fish, *Channa punctatus* to sublethal doses of DDT, malathion and sevin for sixty days. At these safe concentrations the growth of the fish over an 8 week period was observed. The growth was greatly accelerated in all the three toxicant mediums. However, the well being of the fishes (condition factor, K) was low compared to normal ones.

*Channa punctatus* was also subjected to graded concentrations of toxicants in sealed containers to determine the threshold toxicity of the insecticides by analysing the oxygen content in the jars after the death of the fishes. These threshold toxicity values were compared with acute toxicity LC50 values obtained by conventional bioassay test. The toxicity values of both the methods remained more or less comparable.