: PREFACE :

It is well-known that the natural toxins exert a pronounced effect on the metabolism and biological functions of the intoxicated animals with just a minute quantity. Since ancient times human beings have pondered the physiological efects of various toxins. In recent years, the research programs have steadily and significantly increased the information specific to plant poisonings. Many investigators found target systems, organs, tissues and cells, as well as the nature of changes produced in affected animals and the pharmacological actions of these plant toxins. However, very scanty information on the effect of plant toxins on the haematology and enzymology is available.

The animal physiology laboratory of the Zoology Department of Shivaji University, Kolhapur is recently engaged in extensive work on the histochemistry, histoenzymology, biochemistry and haematology of aquatic invertebrates and vertebrates. Toxicological experiments especially using natural piscicides from the indigenous plants from the Western Ghat are being taken. The work embodied in the present dissertation forms a part of such a research project and concerns with the haematological parameters including TRBCs, TWBCs, Hb percentage and

clotting time and one non-lysosomal enzyme - alkaline phosphatase in the liver, kidney, gill and brain and its alterations during intoxication due to natural piscicide in the ethanol extract of the leaves of Lasiosiphon eriocephalus in the freshwater undesirable teleost fish S. mossambica.

The dissertation is divided into five chapters. First is introductory chapter. The second chapter is on the material and methods employed in the present study The third chapter includes the haematological parameters in controlled and experimented fish, which have been discussed in the light of existing information on fish haematology. Chapter fourth gives an introduction, observations on histoenzymological localization and also the biochemically estimated values of an enzyme alkaline phosphatase and its variations in the liver, kidney, gill and brain during intoxication due to natural piscicide and discussion on it. The last, fifth chapter provides the general summary and concluding remarks and the importance of the present investigation along with the avenues for future research. The last chapter is followed by bibliography.

I assume responsibility for the opinions expressed in the dissertation and also for omissions and errors, if any, in the body of the dissertation. I feel and hope that the readers will find the present dissertation interesting, informative and stimulatory.