

---

P R E F A C E

The Zoology laboratory of Shivaji University, Kolhapur (Maharashtra, India) is engaged in extensive work on lipids, their distribution in various organs and tissues, their composition and alterations in them under varying physiological conditions, both occurring naturally and induced experimentally, and their functional significance in various life process. One of the aspects of such studies on lipids concerns with the distribution, composition, histochemical localization and alteration in them in the testes, ovaries and male and female accessory reproductive organs of various seasonally breeding vertebrates and invertebrates in their physiology of reproduction. In addition to the work on lipids, the laboratory has also undertaken extensive research projects on other important tissue metabolites such as mucosubstances, proteins and enzymes, especially the lysosomal ones, in the vertebrate and invertebrate reproductive processes. The studies incorporated in the present dissertation for a part of such an extensive research project and concern with the lipids in the testes and ovaries from two species of fishes (Rasbora daniconius and Cirrhina fulungee). The lipids have been investigated for their contents, composition and alterations in all the components in the gonads of these two seasonally breeding vertebrates in their entire annual reproductive cycles, and the observations have been discussed in comparison with the existing

---

Conti..

-----

literature in relation to the organ specific lipid content and composition, reproductive events and alterations in the lipids functional significance of the lipids in reproductive organs and also probable hormonal control over their metabolism. Quantitative biochemical techniques coupled with thin layer chromatography technique of separation of various neutral lipid and phospholipid components have been employed.

The present dissertation is divided into four chapters. The first chapter gives a brief but critical review of the literature on the lipids in the reproductive organs especially gonads, the reasons that led to the present investigation and also outline the plan of the proposed work. The second chapter describes the material and biochemical techniques employed in the present work. The chapter three on the lipids in the reproductive organs of a fish (R. daniconius and C. fulungee) exhibits the observations on lipid content, composition and alterations therein have been recorded. The chapter fourth deals with discussion on lipids with available literature on the lipids of the gonads in other fishes. This chapter also gives brief concluding remarks in which some ideas for further work are outlined. The dissertation ends with bibliography of the literature cited in various chapters.

