

## P R E F A C E

The Zoology Laboratory of the Shivaji University, Kolhapur is actively engaged in researches on metabolites such as proteins, lipids, mucosubstances and a galaxy of highly active enzymes viz.  $\beta$ -glucuronidase, acid phosphatase, alkaline phosphatase, esterases in the various organ-systems such as alimentary tract, reproductive tract etc. In addition several investigations have successfully been completed on adeno-hypophyseal cell types in male and female bats and seasonal variations in them according to the sex-cycle/s, thyroid glands and gall bladder etc. In the present decade, the researches have been completed on the mucosubstances in the alimentary tract of Euplerodon systoma, Bufo melanostictus, Rana cyanophlyctis, Mabuya carinata, five representatives of vertebrates, six species of bats, Brunner's glands of twenty mammals, gall bladder of thirty-eight vertebrates gastric glands in twenty vertebrates, tongue of nearly eighty vertebrates and seminal vesicles. In addition some research students have investigated on esterases in the gonads and sex-accessory glands of vertebrates from fishes to mammals, and lipids, mucosubstances and enzymes in the frontal sac-gland of the bats belonging to the family Hipposideridae. The work included in the present thesis concerns with the characterization of mucosubstances in the Cowper's glands of some mammals. In addition, the present thesis also includes the effects of castration and testosterone propionate in intact and castrated house rats.

Mammals, especially seasonal breeders were collected irrespective of the phase of the sex-cycle. This was mainly because of unavailability of some animals throughout the year during

the tenure of one year fellowship. For example the bats, Rhinolophus luctus beddomei are found as a single pair in a colony only during the breeding season, followed by separation of sexes and their migration. The cyclic variations in the testes and Cowper's glands of these animals and some additional animals, bioassay studies and effects of castration and hormone replacements will be investigated for the Doctoral research during three years of tenure.

It was thought desirable to divide the present dissertation into four chapters viz. Introduction, Material and Methods, Observations and Discussion respectively. The last chapter will be followed by Summary and Concluding Remarks and Bibliography.

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