PREFACE

The Malacology Laboratory in the Department of Zoology of Shivaji University, Kolhapur, India is engaged in extensive work on the biochemical aspects of physiology of reproduction in Gastropod Molluscs. The Main guide line of such work concerns with the changes in the reproductive organs such as testis, ovaries, ovotestis and associated male and female reproductive organs in the reproductive system, in some basic metabolites such as polysaccharides, proteins, lipids and some enzymes during seasonal breeding-aestivation cycle and under the influence of neuro-endocrine hormones to relate such biochemical alterations to the physiology of reproduction in these animals.

The work embodied in the present dissertation forms a part of such a research project and concerns with the effects of neurohormones of optic tentacles and cerebral ganglia and of gonadal hormones on the mucopolysaccharides, proteins and cholesterol in the important male accessory sex organs viz., prostate gland, dart gland and penial complex of a locally available hermaphrodite pulmonate pest slug Semperula maculata. Both the histochemical and biochemical techniques have been employed, the former giving a reliable information on the alterations in these metabolites in tissue and cell sites and the latter on these metabolites in exact mathematical terms, such an integration of histochemical and biochemical techniques is found to give a better understanding of the physiology of reproduction.

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