P R E F A C E

Among the invertebrates most of the knowledge available on the reproductive physiology concerns insects. Crustaceans received little attention when compared with other invertebrate phyla. Studies on the endocrinology of the crustacea were initiated in 1928 by two independent workers Perkins and Koller. Later, Manstrom described the sinus gland in the crustacean eyestalk. In these animals the hormonal factors have been indicated in regulating physiological process like moulting, reproduction, chromatophore control etc. Very little attention has been paid on the endocrine control of reproduction in freshwater crustaceans.

A survey of freshwater prawns of Marathwada region of Maharashtra State revealed that the prawn, Macrobrachium kistnensis is available in large numbers throughout the year, near Aurangabad. This opportunity was taken to study the reproductive biology of this prawn. The aim of the present investigation is to make a thorough study of the various aspects of reproduction in Macrobrachium kistnensis. The results are presented in six chapters.
The first chapter deals with the annual reproductive cycle, gonadal index and the effect of exogenous factors on reproduction. The histophysiology of the Androgenic gland and its effect on the reproduction of male and female Macrobrachium kistnensis was included in the second chapter. Sex pheromones and the mating behaviour constitutes the third chapter. The fourth chapter deals with the biochemical changes taking place in the hepatopancreas and the muscle are correlated with the changes taking place in the gonads.

The adult neurosecretory system and the development of the neurosecretory system were described in the fifth chapter. The effect of the hormones produced in the x-organ sinus gland complex of the eyestalk and central nervous tissue like brain and thoracic ganglion on the reproduction in both male and female Macrobrachium kistnensis is described in the last chapter.