The present dissertation entitled, "Histochemical and Biochemical studies on the testes in relation to spermatogenesis of some freshwater teleosts" covers some aspects of morpho-histological, histochemical and biochemical observations on the testes in relation to spermatogenesis of two Indian freshwater major carps, Labeo rohita (Ham.) and Cirrhinus mrigala (Ham.).

Morpho-histological studies are mainly concerned with the determination of gonadosomatic index (GSI) and frequency percentage of the various male germ cells prevailing in the various phases of the testicular development and their correlation with different degrees of spermatogenetic activity in both the fishes under study.

Histochemical studies are confined to the occurrence and localization of some phosphatases and substances viz., protein, bound lipid, etc., occurring in the different testicular cells during the entire reproductive cycle of the two species. A correlation between the distribution and localization of these substances in the various male germ cells and spermatogenesis have also been made in the present study.

Quantitative estimation of various nutrients viz., protein, lipid, carbohydrate, glycogen in the liver, body muscle and testis as well as cholesterol content in the testis only has been conducted throughout the year by adopting standard biochemical techniques. Their quantitative variations in the different tissues have been correlated with the spermatogenetic activity effected in the various phases of development and maturation of testis in L. rohita and C. mrigala.