PREFACE

An abiding interest in the studies on the biology and fishery of prawns has been aroused among fishery workers of the country by the increasing importance of the export trade of the item in different forms. The author has been engaged in the study of fishery, biology and ecology of prawns since 1957 when the Central Marine Fisheries Research Institute's substation at Cochin with which he was associated carried out a series of statistically designed experiments in paddy field prawn fishing in a 12-acre experimental farm near Vaikom about 25 km south of Cochin in the Vembanad lake, Kerala State. From 1958 to 1963 a detailed study of the fishery and biology of the giant freshwater prawn, *Macrobrachium rosenbergii* in the Vembanad lake and Pamba river was pursued. These investigations lead to the location of a nursery ground of the species in the Pamba river system in Kerala for the first time pointing to the possibility of collecting juveniles for culture purposes. Also it was possible to suggest to the fishing industry a closed season coinciding with the peak breeding period for the species aimed at conservation and was partially accepted and
observed by the freezing industry in the year 1963
(October - November). Investigations on the off-shore
prawn fisheries of Cochin were also carried out by the
author as a member of the prawn research team.

On joining the Central Inland Fisheries Research
Institute at its Cuttack Substation he has been working
on the biology, ecology and culture of Macrobrachium
malcolmsonii from 1969 – 1972. The studies have helped
in identifying many of the problems encountered in
freshwater prawn culture and devising a number of remedial
measures.

The results of these investigations are
embodied in this thesis which is presented in 11 chapters.

In the 1 chapter an introduction to the study is
given emphasising the relevance of the work. Chapter II
deals with the review of the more important studies on
prawns in general and freshwater prawns in particular
carried out in India and abroad. Collection of material
and methods adopted for their analysis and study are
presented in chapter III. The systematic position,
distinguishing characters and distribution of
Macrobwrachium malcolmsonii H. Milne Edwards are dealt with in chapter IV. In chapter V the various aspects of the biology of the species such as, food and feeding habits, age and growth, maturity, fecundity and brooding, length-weight relationship, relative condition, body-length - carapace length and body length - rostral length relations, migration etc. are given. A brief account of the fishery of the species in the area is presented in chapter VI. Chapter VII deals with the various aspects of ecology of the river stretch nearby and ponds where the culture of prawn was undertaken. The culture experiments in the field and the yard are detailed and their results discussed in chapter VIII. Brief biological notes on the weed prawns - Macrobwrachium lamarrei and M. scabrificulum are given under chapter IX. A detailed discussion on all the above aspects in the light of work done on the same or related species in India and elsewhere forms the contents of chapter X. The last chapter gives a brief summary of the thesis.

A probable ecological variety of M. malcolmsonii is briefly recorded in appendix I and all the relevant publications of the author are included in appendix II.