CHAPTER ONE

GENERAL INTRODUCTION
The group crustacea, which is known to include a sizeable component of aquatic fauna, is one that has elicited interest from scientists, both in the field of basic as well as applied research; beginning with the biology and physiology (Waterman, 1960 and 1961) and culminating in crustacean fisheries and economics (Bliss, 1985; Pillay, 1979; Jhingran, 1982). Since a large number of crustacean species are of economic importance, it is needless to emphasize that today, research on any aspects of crustaceans is a significant contribution to the field of aquaculture.

Research on the chromosome complements of a species, is fundamental and important in understanding the relative taxonomic position of the species, and the phylogenetic-interrelations amongst individuals of the group. Therefore, from time to time, considerable research on the chromosomes of animals belonging to all phyla, has gone on, adding valuable information to the field of karyomorphology (Goswani, 1989). Along with the need for chromosome research, newer techniques in the preparation of chromosomes have also been innovated. With particular reference to crustacea in general and decapod crustacea in particular, studies on chromosomes has advanced rather slowly. Initial work on chromosomes of crustaceans as found in reviews: decapoda, isopoda and amphipoda (Niiyama, 1959); Thoracica, Rhizocephala and Acrothoracica (White, 1970); and Calanoida, Siphonostomatoida, Harpacticoida and Cyclopoidea (Colombera and Lazzaretto-Colombera, 1978), point out certain generalizations as follows:

In many crustaceans, especially in the decapods, there is a wide range of chromosome numbers, the haploid numbers ranging from 41 to 168.
2. The group includes some of the highest counts ever reported for any organism.

3. Most often, there are no obvious modes in the frequency of chromosome numbers determined and

4. The group has a highly flexible chromosome system.

More recent work on the chromosomes of crustaceans, has provided a further insight into the interesting/intriguing chromosome system of crustaceans (Farmer, 1974; Lecher, 1975; Milligan, 1976; Hughes, 1982; Hayashi and Fujiwara, 1988; chow et al., 1990).

To date, chromosome studies on crustaceans is limited to temperate and/or marine species. Although many crustaceans (especially prawns, crabs and lobsters) constitute an important fishery of the Indian subcontinent, so far, no attempt has been made to extend the studies on chromosomes, to crustacean species of our country. This is also true of the freshwater crustacean species. Therefore, during the present studies, it was felt necessary to undertake studies on the chromosome complements of freshwater macrocrustaceans of Bangalore (South India), with a view to get:

1. an idea of the haploid/diploid genome size of the freshwater species

2. to be able to draw meaningful phylogenetic interrelations amongst the species and

3. to be able to initiate chromosome research that may be usefully extrapolated in crustacean culture fisheries in the years to come.