PREFACE

In a developing country like India, the importance of fisheries needs no emphasis. To meet the increasing demand for protein-rich food, to earn valuable foreign exchange and to provide gainful employment to the coastal rural population, the development of fisheries has been assigned the highest priority in the national five year plans since the post independence period.

With a coastline of 7,517 km and forming a continental shelf of about 3,11,680 sq. km., the marine fishery resources of India are rich and diverse comprising a large assemblage of finfishes and shellfishes. The annual marine fish production of the country is of the order of about 2.24 million tonnes. The export of fish and fish products from the country has earned about Rs. 2,503.6 crores during 1993-94.

The marine shellfishes of India is chiefly constituted by crustaceans and molluscs. Among crustaceans, penaeid prawns are most important in view of the quantum of landings, value and increasing demand for export trade. These are followed by crabs and lobsters.

Although there are over 600 species of crabs recorded from Indian waters, only a few of them are being used for food purposes (Rao et al., 1973). The commonly utilised crab species for food in this country belongs to three families, viz., Calippidae, Portunidae and Grapsidae. Of them, Portunidae is important in that it includes the commercially important species such as *Scylla serrata*, *Portunus*
There are no noteworthy organised fishery for crabs in any part of this country. They are caught in small quantities in gears used for catching general fish resources. Of late, however, trawl nets operated by mechanised boats and other powered vessels catch considerable quantities of crabs.

The annual average yield of marine crabs in our country was around 4,000 tonnes in early sixties. With the advent of mechanised trawling in fifties for prawns and ground fishes and the subsequent strengthening of the trawler fleet, the exploitation of the demersal living resources has been intensified over the years. Increased deployment of medium-sized trawlers (9.75 - 15.0 m) fitted with 37-102 HP engines for overnight fishing and extension of fishing ground up to 75 m depth in the recent years, resulted in increased exploitation of crab resources. Consequently, the present annual average yield of crabs in our country from the marine sector is around 23,137 tonnes for the 11 year period from 1983 to 1993, which is 500% more than the catch realised 30 years before. During the last 5 years, the annual catch fluctuated between 16,191 (1989) and 28,489 tonnes (1991).

To augment crab production, the unexploited resources like the swarming crabs can be exploited. According to the recent exploratory surveys conducted by the FORV SAGAR SAMPADA, the swarming crab, *Charybdis (Goneohellenus) Smithii* is found to be a potentially important deep sea resource occupying the outer shelf and upper continental shelf regions and occurring along the west coast of India.
Since crab meat is a delicacy in many parts of the world, it is exported alive, frozen and canned to several foreign countries. During 1993-94 alone, crabs worth Rs.196.4 million (2,034 tonnes) were exported from India which formed 0.78 % in terms of value and 0.83 % in quantity of the total export of marine products from the country during this period. The countries importing crab meat from India are Japan, USA, Belgium, Thailand, Portugal, Indonesia, Malaysia, Singapore and United Kingdom.

Due to the ever-increasing demand for live crabs for human consumption, there has been a recent upsurge of interest in the culture of crabs to augment the resource in several countries. Among crabs there are many potential candidates for culture. Reproductively most crabs offer little problem for artificial propagation. Although crabs continue to be a major subject of research, the number of species being cultured commercially for food is small. However, in Taiwan, Indonesia and the Philippines, efforts have been made to culture *Scylla serrata* as a subsidiary crop in milk fish ponds (Bardach *et al.*, 1972; Escritor, 1970, 1972). Experimental culture of *S. serrata* has been tried in Australia (Heasman and Fielder, 1983), India (Naidu, 1955; Kathirvel, 1980; Marichamy, 1980; Marichamy *et al.*, 1980 and 1986; Raman *et al.*, 1980, Marichamy and Rajapackiam 1984; Srinivasagam *et al.*, 1984 and Bensam, 1986), Indonesia (Grino, 1977), Malaysia (Ong, 1964 and 1966), and the Philippines (Arriola, 1940; Escritor, 1972; Lavina and Buling, 1977; Motoh *et al.*, 1977).
Investigations on the marine crab resources of India are limited to only a few works. Most of the works are confined to reporting on the species represented in general account of the fishery. Anywhere studies on the biology and population structure of the commercially exploited species have not been attempted. In the context of increased importance of crab resources and the interest evinced in the culture, there is an urgent need to study the biology and ascertain the present status of the crab stocks for the rational exploitation of the resources and to augment production through culture practices. Hence, the present study was taken up, and an attempt has been made for the first time to assess the present status of the stocks of the marine portunids based on the data collected from Karnataka.

It is hoped that the present study will enhance our knowledge on various aspects of fishery, biology and population dynamics of the resource of portunids of Karnataka which in turn will form the basis for evolving management strategies for the judicious exploitation of these valuable resources on an all India basis.