Meanwhile aquaculture ventured marine fisheries has become an urgent need as food resource and is just beginning to receive significant attention in a great expansion of crustacean aquaculture.

Although, India has got about 2 hectares of brackish water areas, major part of it remained unutilized and is far behind in culture of marine animals. The culture of marine animals did not receive due attention which actually it deserves, though the capture fisheries have late been developing. However modern technology has been given tremendous power to man to retain the balance of increasing demand of food, hence his impact on aquaculture is of a higher order today then has been in past.

Crustaceans comprise 15% of total fishery catch, among them the crabs being the main item and occupies the second position on an economic importance in fishery resources. Several species of edible crabs are available along the Indian coasts. Charybdis crouciata, Charybdis lucifera, Neptunus pelagicus, Neptunus sanguinolentus, Ozius rugulosus and Scylla serrata are the major edible species
available (Chhapper, 1957). Among these crustaceans the portunid crab, *Scylla serrata* is one of the commonest and commercially important fishery resources of India along the west coast (Fig.1). The edible crab, *Scylla serrata* is a continuous breeder and found in plenty in the Ratnagiri backwaters (West coast of India). Ratnagiri is situated on the latitude 16.5900 and longitude 73.1800. The maximum temperature in this area is 33° C (during the month of May) and the minimum temperature is 22° C (during the month of December). The rainy season starts from 2nd week of June and extends upto August and the average rainfall is 250-300cm.

*Scylla serrata* is a predator which feeds on slow moving and sessile benthic invertebrates (Hill, 1976). A diet of this nature in which the major component is sessile or near sessile requires a predator to forage for its foods. The Karla backwaters in Ratnagiri seems a good ground for the breeding of this crab.

Although much work has been done on the brachyuran fauna to which crab, *Scylla serrata* belongs along the Indian cost by several workers, but it did not
receive the attention it deserves in regard to the reproductive physiology Arriola (1940) has studied the life history of the crab, Scylla serrata from Phillipines; Studies on the early development (Naidu and Rajabai, 1955); taxonomy (Chapper, 1957); histochemistry (Momin, 1972); eyestalk ablation and changes in the gonad (Ragnekar and Deshmuch, 1968, Ragnekar et al., 1971 and Joshi and Shivdas, 1978; 1979) of this species have also been made. From the available data it appears that not much is known about the reproductive physiology with regards to annual reproductive cycle and effects of exogenous and endogenous factors controlling the reproduction in Scylla serrata and other crabs Hence the present probe was initiated to fulfil the gap in the reproductive physiology of decapod crustaceans.

The present investigation is included in the following 4 chapters.

The 1st chapter constitutes the annual reproductive cycle and seasonal histological changes in gonads With the present trend towards more intensive methods of culture it is of prime
importance to know and such a biological research is essential for the assessment of the pattern of reproductive cycle.

In the second chapter effect of manipulated environmental factors, such as photoperiod, temperature and salinity on reproduction have been described.

The third chapter deals with the effect of the hormones produced in the X-organ sinus gland complex of the eyestalk and central nervous tissues, like brain and thoracic ganglion on the reproduction in females. Also this includes the effect of external steroid hormones like, HCG, FSH, LH and Prostaglandins F1 on the ovarian development.

The fourth and last chapter deals with the associated biochemical changes during the period of annual reproductive cycle. In the present work the handling of food reserves during the annual reproductive cycle were studied in detail.
We presume that this type of approach will be of help to the aquaculturists and also for the researchers who are working on the endocrinology and physiology of crustaceans to unfold the secrets involved in the reproductive physiological process of the crab, *Scylla serrata*. 