GENERAL INTRODUCTION

During the last decade intensive efforts have been made by the Government of India to exploit and conserve fish resources of the country as a part of their grow more food campaign. These efforts though noteworthy have only touched the fringe of the problem. Fish resources of India, potentially rich as they are, yield a mere fraction of what they could, were they exploited and cultured in a scientific fashion. The problem as a whole, undoubtedly, requires Government intervention and assistance.

The fishery industry of India, purely because of historical reasons has not been able to achieve the status it rightly deserves. We in India have to work within the framework of a particular philosophy or a discipline which means convincing the people that fish as an item of food has no other equivalent. Even now, more than 2/3rd of the population of this country which is purely vegetarian does not recognise fish either as an essential item of diet or as an essential commodity for export. Protein deficiency amongst a substantial population of India is well known. The FAO, during last few years, have made an intensive survey of the hungry nation and have presented alarming figures related to the protein deficiency and mal-nutrition.

It is said, and more rightly so, that the backbone of the fishing industry is the trained personnel which is required at various phases of the industry. Training
actually is essential to the fishermen, to the operatives, and finally to the officers and research workers who are directly concerned with the fishing industry.

The knowledge of the biology of fishes forms another important prerequisite of understanding the fish resources. As far as the marine and estuarine fishes are concerned, some knowledge has been gained during recent years, but the freshwater fishes of India have not been adequately studied. Keeping in view of these facts, efforts were made at Aligarh to study the biology of some of the most common fishes of inland waters. An earlier thesis on this subject has already been presented by Dr. A. Qayyum Siddiqui, which covers the biology of three species namely _Ophicephalus punctatus, Barbus atros_ and _Callichthys bimaculatus_. The present work which is being presented in the form of another thesis includes the biology of the following four species:

1. *Mystus seenghala* (Sykes)
2. *Mystus vittatus* (Bloch)
3. *Mystus cavasius* (Ham.)
4. *Heteromeustes fossilis* (Bloch)

Studies on the biology of four species, noted above include three main aspects namely growth, breeding and food. For the study of growth, since no reliable methods could be discovered earlier, an attempt was made to find out suitable structures which could reveal growth markings and which could
be utilized for estimating the rate of growth. In

*Ophicephalus punctatus*, opercular bones and scales were

found to be satisfactory. In *O. striatus* scale studies
gave successful results. The other fishes whose biology
was under investigation did not reveal any satisfactory
structures to start with. Later on, however, the sections
of pectoral spines in some species did reveal some zonations.

The author due to lack of time could not include the data
on pectoral spine as a part of this thesis. However, deeply
conscious of the importance of this work, he is continuing
these investigations and hopes to incorporate it at the
time of sending the various parts of the thesis for publi-
cation.

The author also wants to keep on record a serious
handicap which he faced due to the departure of his super-
visor, Dr. S.Z. Qasim from Aligarh. The work, therefore,
carried out is not of the standard as he and his supervisor
would have wished. Nevertheless, making full use of time
and resources devoted to him, the author carried out these
studies by maintaining constant touch with Dr. Qasim first
at Bombay and later on in Cochin.

The form of presentation of this thesis is as

follwes:-

The thesis is divided into five main parts. Part A
is further divided into four chapters, each dealing with the
biology of a different catfish.
Part B includes only one chapter which is devoted to the studies on egg production of four catfishes. Part C includes growth studies on two freshwater fishes namely *Ophicerhalus punctatus* and *Ophicerhalus striatus* each described under a separate chapter. Part D gives an account of some of the myxosporidian parasites which the author collected from the fish, *Ophicerhalus punctatus*. Part E includes the description of a loach which the author feels might be a new species.