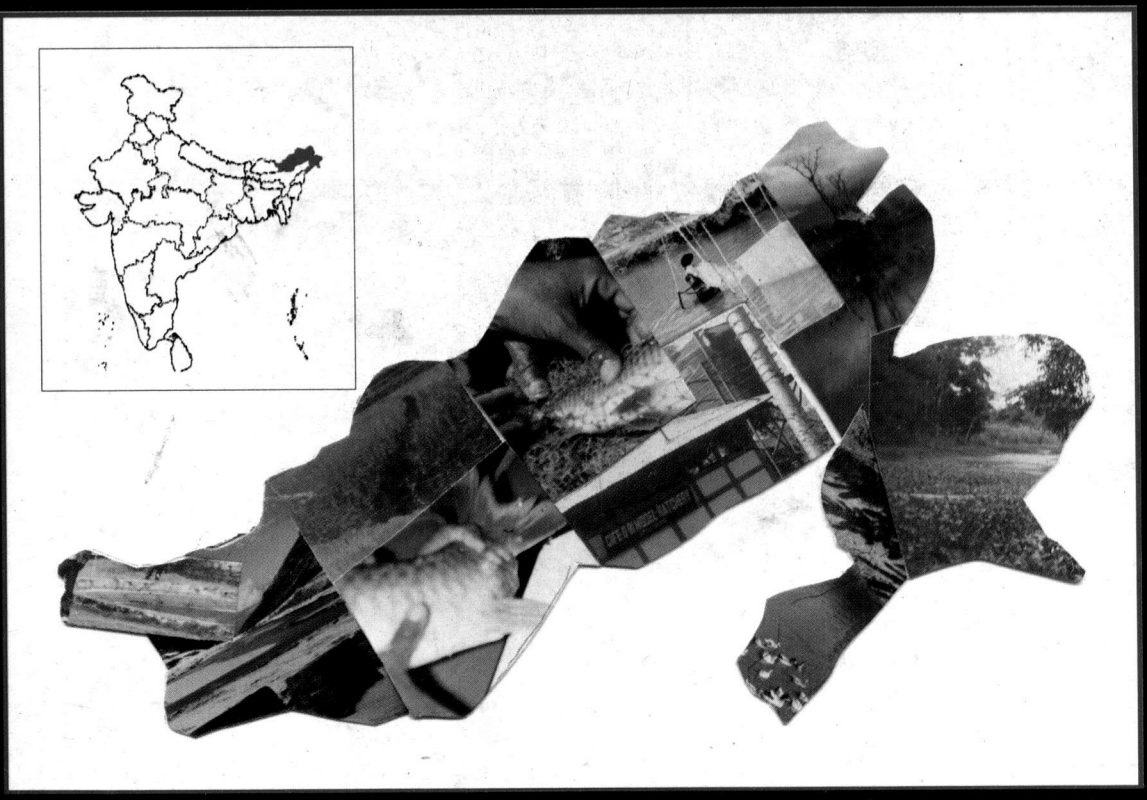
FISH AND FISHERIES OF NORTH EASTERN INDIA

(ARUNACHAL PRADESH)



PRANAB NATH & S.C. DEY

Fish and Fisheries of North Eastern India

(Arunachal Pradesh)

By

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Dedication

This book is dedicated to a man who appreciated the treatise so much but could not see its publication in the present form

Late DR. ARUN G. JHINGRAN
Ex-Director
Central Inland Capture Fisheries
Research Institute, Barrackpore, India

PREFACE

The present treatise is intended to partially compensate the paucity of a comprehensive and authentic information on the fish and fisheries of north-eastern region of India constituting the states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. The region incidentally contains c 25% of inland water system of the country and is gifted with rich and varied ichthyofaunae.

The primary objective of the book is to highlight the fish diversities and fisheries of Arunachal Pradesh, the largest among the states of N.E. India. Based on original research made over a decade a mosaic of inventories encompassing the systematics, capture & culture fisheries, riverine and wetland ecology, ornamental fish resources and plausible scope of fisheries development of the state have been presented in the treatise. It is humbly felt that the book may be useful to the teachers, researchers and fishery entrepreneurs besides the planners, engineers, agriculturists and other agencies who are associated in the developmental programmes for the human welfare and growth of the region.

Pranab Nath

S.C. Dey

LIST OF FISHES

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The authors express their indebtendness to Professor Dr. E. W. Knight Jones of the Department of Zoology, University College of Swansea, Wales, U. K. for his valuable suggestions to the improvement of the present treatise. The help and encouragements received in various ways from a host of personalities notably, Dr. A. G. Menon and Dr. K. C. Jayaram, both Scientists Emeritus of the Zoological Survey of India, Southern Regional station, Madras; Dr. P.V. Dehadrai, D.D.G. (Retd.) Fisheries, Ministry of Agriculture, Govt. of India; Dr. P. Das, Director (Retd.), N.B.F.G.R. (ICAR), Lucknow; Dr. M. Sinha, Director, C.I.C.F.R.I. (ICAR), Barrackpore (West Bengal); Dr. S.L. Chondar, Principal Scientist, Central Institute of Fisheries Education, Versova (Maharastra); Dr. P.P. Wamanen, former Head, Department of Agri-Botany, Gauhati University and Sri K.K. Choudhury, Director of Fisheries, Govt. of Arunachal Pradesh, during the course of the present work are gratefully acknowledged.

The authors are pleased to acknowledge the assistance extended to them by Sharbasri T.V. Thomas and C.B. Das of the Department of Fisheries, Govt. of Arunachal Pradesh and also by Sri S. Bhattacharjee of Classic Computers, Shillong (Maghalaya) in meticulously typing the manuscript and rendering necessary help in the physical preparation of the book. Mr. J.K. Jain of the reputed M/s Narendra Publishing House, Delhi have very kindly agreed to publish the present treatise for the furtherance of fisheries, for which the authors record their deep appreciation to them.

To humbly acknowledge the patronage and unstinted permeation received from *Late* Dr. Arun C. Jhingran, former Director, C.I.C.F.R.I., the authors gratefully and fawningly dedicate the present treatise to him.

CONTENTS

KEY TO IDENTIFICATION OF FISH TAXA

1 INTRODUCTION

The North Eastern Region (**NER**) has varied physiographic features ranging from river valleys to snow capped mountains. The river Brahmaputra, the major drainage, with its numerous tributaries flowing through the different states along with myriads of rivulets and lentic water bodies, forms the frame of Inland water system of this part of the country.

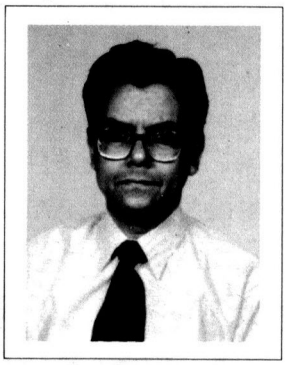
Uptill now some exploratory works are available on the fish fauna of this zone. The notable of these works are of : Hora (1921a, 1935, 1962), Hora and Mukherjee (1953), Menon (1954a, 1962, 1964), Sehgal (1955), Jayaram (1953, 1981), Motwani ***et.al.*** (1962), Joseph and Narayan (1965), Malhotra and Suri (1969), Yazdani (1972, 1977), Dutta (1977), Michael (1975), Dey (1964, 1965, 1973, 1975, 1969b, 1976d, 1978, 1978c, 1981, 1982, 1984a, 1984b, 1987), Dey and Singh (1967), Dey and Sharma (1967), Dey and Das (1982), Dey and Nath (1986), Dey and Sen (1982), Nath and Dey (1982a), Das and Dey (1984), Dey and Yadav (1987), Dey and Kar (1988), Das (1980), Yadav (1981, 1987, 1989), Sen (1982). Choudhury and Yadav (1984, 1986), Lahon (1983), Kar (1984) and Goswami (1985).

Several works on fish geography emphasizing fish fauna of this region were undertaken by Hora (1937, 1944, 1953), Menon (1951, 1954, 1954b, 1955, 1963), Hora and Menon (1952, 1953), Silas (1951, 1952), Jayaram (1974, 1977), Dey (1976a) Nath and Dey (1982b), Sen and Dey (1984) and Dey (1985).

That Sector of the Eastern Himalaya which formerly formed the Assam Himalaya (erstwhile **NEFA** Himalaya, Sen, 1977), subsequently became known as the state of Arunachal Pradesh (Lat. 27° and and 29°30' N and Long. 92°8'57" and 97°12' E) located in the extreme east of the country with an area of 83,743 Km^2 (Fig. 132). Of this area, the Arunachal Himalaya is traversed by a net work of water courses and makes a favourable habitat for a variety of ichthyofauna-the systematic study on this resource, however, is fragmentary. In this context, reference may be made of McClelland (1839) for 4 species from Mishmi mountains (now Lohit district), Chaudhuri (1913) for 21 species from Abor country (now West Siang District), Hora (1921b) for 5 species from Abor hills, Jayaram (1963) for a new sisorid fish from West Kameng, Jayaram and Mazumdar (1964) for 19 species from West Siang district, Menon (1964) for ***Garra lissorhynchus*** from Assam Himalaya (now **Arunachal Pradesh**), Srivastava (1966) for 32

species from this region, Dutta and Sen (1977) for adding new distribution of ***Schizopygopsis stoliczkae*** from Subansiri district, Choudhury and Sen (1977) for 42 species, Sen and Choudhury (1977) for 2 species, Jhingran and Sehgal (1978) for 10 species from this region. It was only of late, when Choudhury (1978, 1980, 1981 for 20 species), Ghosh (1979 for 30 species), Dutta and Barman (1983, 1984a, 1984b, 1985 for 28 species), Nath and Dey (1985 for 85 species) also made some attempts to investigate the fish and fisheries of Arunachal Pradesh.

Dr. Pranab Nath is presently working as Deputy Director of Fisheries, Govt. of Arunachal Pradesh. He obtained his M.Sc. and Ph.D degrees from Gauhati University. Besides undertaking intensive researches, Dr. Nath has been deeply involved during the last two decades in the formulation of various fisheries plan, schemes and projects under Govt. of Arunachal Pradesh and actively participated in many seminars and conferences to present his findings. He has published a good many important research papers on different aspects of fisheries and aquaculture of the state in reputed journals. Dr. Nath has also been a collaborating partner in the NATP mission mode sub-programme entitled "Fish Genetic Resources" under NBFGR (ICAR), Lucknow.



Professor S.C. Dey teaches Fishery Science, Fish Biology and Biosystematics to the Post-graduate students of Zoology at Gauhati University since 1963. He was awarded the Degree of Doctor of Science (D.Sc.) by the Calcutta University for his seminal and sublime Researches in the field of Systematics and Functional Morphology of hill stream fishes of N.E. India. Professor Dey has large number of research publications to his credit both in the national and international journals on fish and fisheries and aquatic biology and also conducted research projects funded by NEC, CSIR, UGC, DoEF and WWF- India. Besides, he has also been associated with research projects funded by international agencies. So far a good many researchers have obtained their Ph.D's under his direct supervision and guidance.

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