A Masula boat of Madras

Photo by the author

WATER TRANSPORT

ORIGINS & EARLY EVOLUTION

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BY

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To

THE MEMORY OF MY FRIEND

DR A. C. HADDON, F.R.S.

TO WHOSE KINDLY ENCOURAGEMENT

AND ADVICE, I OWE SO MUCH

PREFACE

In the following pages I shall endeavour to marshal in due order the major part of the knowledge within our ken concerning the origins of the many devices upon which men, living in varying stages of culture, launch themselves afloat upon river, lake and sea. The major details of their construction will be reviewed and their geographical distribution in time and space will likewise be recorded. Some have failed to progress far beyond their primary condition—these are the dead ends of our subject; others have evolved into water-craft of considerable complexity, masterpieces of naval construction, suited admirably to subserve the particular traffic for which they have been designed. Usually the process has been slow and prolonged, but there can be no doubt that, by reason of the exceptional inventive skill of occasional individuals or communities, progress has sometimes been accelerated by what may be considered a sudden and radical mutation—the superimposition of a secondary invention of revolutionary importance upon the primary conception and design.

Seldom may the evolutionary story of this progression be pieced together fully; gaps have to be bridged by hypotheses and these have to be considered in the light of all known facts in any way relevant or related.

As the sub-title indicates, this account does not concern itself with the enormous advances made in ship designing and shipbuilding subsequent to the application to the propulsion of water-craft of steam and the internal combustion engine; it carries the story down to the days of the sailing ship and there ends. For it the lordly East Indiaman of the eighteenth century, the great *Baghla*, pride of Arab seamen, and the handy fishing lugger of the British Isles before the coming of steam and motor, are all alike at the tips of the terminal branches of the evolutionary trees whereof the story is now to be told.

Of necessity much use has had to be made of accounts recorded by a host of intrepid pioneering travellers dating from the day of Pytheas the Massiliote, explorer of the seas northward of the Pillars of Hercules, down to those of our own generation. As their tales are not always to be trusted, particularly in details, they have been scrutinized and analysed most carefully. Wherever possible they have been checked by direct investigations made during a long life in which it has been my good fortune to study at first hand the great majority of the many types of craft in use in the Indian and Pacific Oceans and of those that fish and traffic on the more important of their tributary rivers. For several years I had charge of the Pearl Fisheries carried on by the Government of Ceylon in the Gulf of Mannar; these fisheries act as a loadstone attracting to the fishing banks every type of fishing boat working out of the harbours of South India, together with those of the Jaffna Peninsula in the north of Ceylon.

Later, upon transfer to India, I had opportunities during the ensuing seventeen years to visit all the fishing ports and hamlets strung out along the coasts of the Indian Peninsula, from Baluchistan and the mouths of the Indus in the north-west to Cape Comorin in the south, thence northward to the delta of the Ganges. On various occasions the river craft of the Ganges, the Brahmaputra and the Irrawadi were subjects of study. A visit rich in results was made to Japan, China and Indo-China in 1907.

A memorable and fruitful coasting cruise in 1918 through the maze of islands forming the Malay Archipelago afforded unique opportunities for the study of the great range in the designs of the small craft characteristic of Indonesia—from Sumatra in the west to New Guinea in the east.

Subsequent to my retirement from service with the Madras Government in 1924, a generous grant from the Percy Sladen Fund enabled me to participate in the *St George* Expedition to the South Sea. An outstanding result of this was the collection of a vast body of data concerning the outrigger craft of Polynesia and Fiji. This, when written up, formed eventually Part I of the *Canoes of Oceania*, a monograph by the late Dr A.C. Haddon and myself, published by the Bernice P. Bishop Museum, Honolulu.

During the following years the Colonial Office entrusted me from time to time with the investigation of the potentialities of the fishing industry in a number of British colonies. These missions enabled me to study in turn, and under the most favourable conditions, the local fishing and coasting craft of Sierra Leone, Mauritius, the Seychelles Islands, Malta, Palestine and Fiji. Investigations have likewise been carried out from time to time in Italy, Cyprus, Egypt and the Nile, the Anglo-Egyptian Sudan, Uganda and Baroda; also of the many types of sea-craft to be seen in the ports of the Red Sea, the Gulf of Aden and along the coasts of Kenya, Tanganyika, Madagascar, Mozambique and Angola.

Collections in Australian, New Zealand and Canadian Museums have been examined in detail; so, too, have those of many of the greater museums in Europe—in Scandinavia, Germany, France, Portugal and Italy. In America, British Columbia, Panama, Trinidad and the western coast of the Republic of Colombia have been visited.

Without the possession of the first-hand information gained through so many years and in so many parts of the world, the present work could not have been written. The subject is one not to be understood properly by any armchair study of travellers' tales, however extensive, neither can it be presented in true perspective nor the relationship of the various classes assessed with any degree of accuracy or probability unless representative craft have been seen going about their workaday avocations in fair weather and in foul, their crews rowing, paddling, poling, tracking or sailing; coming ashore in canoe or catamaran through the thunder and crash of a boiling surf, fishing from a crazy craft tearing along with all sail set at a good eight knots, the

while several of the crew crouch precariously on the weather boom of an outrigger, or, in fine weather, drowsing in happy idleness as their *baghla* or *būm* drives steadily along before the monsoon, on one of the many sea-routes that connect Arabia and Africa in commerce with India.

How perfectly each fitment of a craft fulfils its proper purpose can seldom be adequately understood unless seen in action, nor the reason appreciated for differences in design unless the peculiarities of the respective local conditions, commercial as well as physical, are known and duly correlated.

To the many friends who have aided me in writing this account of the older types of water transport, I offer grateful thanks. To my sorrow several of the most notable are no longer with us; among these was the late Dr W. A. Herdman, F.R.S., first Professor of Oceanography in Liverpool University, whose kindness and interest led me out of the wilderness into the congenial realm of economic Marine Zoology. In later years I had the good fortune to come under the influence of the late Dr A. C. Haddon, F.R.S.; his friendship was very dear to me, and when he asked me to collaborate with him in writing a monograph on the *Canoes of Oceania*, I felt honoured beyond measure. Another most helpful friend, the late Mr H. H. Brindley, was always ready to give advice out of his rich store of knowledge of things maritime.

Other helpers, fortunately still with us, are so many and have all been so generous in the assistance which they have rendered that it is impossible to enumerate all and to name a few only may seem invidious. However, I cannot refrain from mentioning Sir Geoffrey Callender, Director of the National Maritime Museum, whose support and encouragement have been invaluable. Help of major importance has also been received from Lieut.-Commander W. P. Roop, United States Navy, Messrs T. C. Lethbridge and H. Cary Gilson, of Cambridge, Prof. G. Lindblom, Stockholm, Dr S. Lagercrantz, Upsala, Dr G. Friederici, our greatest authority on the migrations of the Oceanic peoples, and Dr Thilenius, formerly Director of the Museum für Volkerkunde, Hamburg.

Neither may acknowledgment be omitted to the editors of the *Mariner's Mirror*, *Antiquity*, *Man*, the *Journal of the Royal Anthropological Institute*, the *Journal of the Polynesian Society*, *N.Z.*, and the *Memoirs of the Asiatic Society of Bengal*, for the readiness with which they complied with my requests to be allowed to reproduce, after revision, in the present book, such of the articles which I had contributed in the past to their respective journals and which were suitable for the purpose. The Editor of the *Mariner's Mirror* and the Council of the Society for Nautical Research have been specially generous; the half-tone blocks which they have lent are so many that it might have been impossible otherwise to illustrate this work so freely as has been done. The Editor of *Antiquity* has also allowed the use of numerous

blocks, and the number of these would have been considerably greater had not many been destroyed during the Battle of Britain and the subsequent drive for the salvage of metals.

The courtesy of the Trustees of the British Museum has also to be acknowledged for their permission to make use of several illustrations of objects in the national collections.

Thanks are likewise due to the Royal Geographical Society for permission to reproduce two figures of the reed balsas of Lake Titicaca used to illustrate Mr G. Gilson's paper, and to the many friends and correspondents who have contributed advice, items of information, photographs and sketches; due acknowledgment of this help will be made in the appropriate place.

Whenever the source of an illustration is not given, it is to be understood that it is original, either from one of my own photographs or from a sketch by myself or from one finished under my instruction from a rough sketch made on the spot.

J. H.

ST LEONARDS-ON-SEA

1 *January* 1946

CONTENTS

TEXT-FIGURES

(*For List of Plates at end of book see page* 305)