

FISHING IN MANY WATERS



A Fijian fisher-girl with her prawn-net



FISHING IN MANY WATERS

JAMES HORNELL



CAMBRIDGE AT THE UNIVERSITY PRESS 1950



CAMBRIDGEUNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org Information on this title: www.cambridge.org/9781107475434

© Cambridge University Press 1950

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 1950 First paperback edition 2014

A catalogue record for this publication is available from the British Library

ISBN 978-1-107-47543-4 Paperback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication, and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.



PUBLISHER'S NOTE

Mr Hornell died in February 1949. He had completed a thorough revision of his manuscript, and had passed proofs of his many illustrations. The book has been seen through the press by Professor J. H. Hutton, and every effort has been made to ensure accuracy of detail. But Mr Hornell wrote from unrivalled personal knowledge of his subject: if there are imperfections in the book, it is because he had no opportunity to make them good in proof.





CONTENTS

List of Pla	ates	page 1x
List of Tex	xt-figures	xiii
Chapter I	Weapons of the Chase borrowed by the Fisherman I The Spear and the Harpoon II The Fishing-bow, Cross-bow, Blow-gun and Sickle	1 1 2
II	Angling of Sorts	22
III	Animals trained to fish and Fishes that angle for their living	28
IV	Shark-fishing	41
V	The Negro as fisherman I Sea-fishing off West Africa II Notable fishing Methods of Negroes on Inland Waters	46 46 50
VI	Kite-fishing	62
VII	Fisheries that ring the World: the Bonito, Albacore and Tunny Industries I Bonito-fishing in the Maldive Islands II Catching and Curing the Bonito in Japan III Bonito-fishing in Polynesia IV Crane- or Tira-fishing for Albacore V The Tuna fisheries of California VI The European Tunny and Bonito fisheries	65 65 70 74 78 80 83
VIII	Baiting for Crocodiles and Alligators	87
IX	Catching and Curing the Bombay-duck	94
X	The Grey Mullet takes Evasive Action	99
XI	Netting for Hilsa, the Indian Shad	108



viii	CONTENTS		
Chapter XII	Fishing at Port Said	page	114
XIII	Catching Flying-fish off the Indian Coast		118
XIV	The fatal attraction of the Shadows		123
XV	Fishing for Octopus, Cuttlefish and Squid		130
XVI	Trapping Devices I Deltaic and Freshwater Fish-traps II Marine Fish-traps		136 136 147
XVII	The Greatest Eel-farm and Eel-trap in the World I Mainly about getting there II Eel-fishing and Eel-farming at Comacchio		1 58 1 58 1 62
XVIII	Poison-fishing		168
XIX	Seeking Pearls and Chank shells in Ceylon an Indian Waters		182
XX	The Women Divers of Japan		190
XXI	Fruits of the Sea		199
Bibliography			205
Index			209



LIST OF PLATES

(The plates are bound together at the end of the book between pages 208 and 209)

A Fijian fisher-girl with her prawn-net

Frontispiece

- I A. How the swordfish is lured within reach, Laccadive Islands; a demonstration
 - B. Harpooners watching for swordfish, Strait of Messina. (Photo by F. G. Crupi, Taormina)
- II A. Shooting fish with a cross-bow, Malabar
 - B. A Chinese illustration of cormorant-fishing. (From De Thiersant)
- III A. Adjusting a cormorant's harness. (By courtesy of Dr E. W. Gudger and the American Museum of Natural History, New York)
 - B. The head cormorant wearing its harness. (By courtesy of the Field and Stream Magazine, U.S.A.)
- IV A. Night fishing with cormorants, Gifu, Japan. (By courtesy of Dr E. W. Gudger)
 - B. An experiment with a remora during a pearl fishery, Ceylon
 - V A. Negro woman making a bimbé-net, Sierra Leone
 - B. Fishing with a bimbé-net, Sherbro, Sierra Leone
- VI A. A Kru fisherman landing with a catch of tarpon
 - B. A Sierra Leone fisherman using four fishing-lines
- VII A. The Chinese lever dip-net in use in South India, at Beypore, Malabar
 - B. Bonito-fishing in Japan; a lookout boat
- VIII A Solomon islander freeing a garfish's beak from the threads of the spider's web lure used in kite-fishing. (By courtesy of Miss B. Blackwood and the Clarendon Press)
 - IX A. Collecting bait for the bonito fishery, Maldive Islands
 - B. The Maldivian bonito fishery; the crew engaged in fishing
 - X A. A store-basket for live bait, Minicoy Island
 - B. A store-basket for bonito live bait as used by the Japanese
- XI A Samoan bonito-boat showing how two men ply three rods. (*Photo by Tattersall's studio, Apia*)
- XII A. Doing tots on his thigh; a Gujarat fisherman calculates his earnings
 - B. Shooting an anchored bag-net off Velan, Kathiawar, India
- XIII A. Stringing 'Bombay-ducks' to dry at Velan, Kathiawar
 - B. The fishermen's shrine to Madhvar Devi at Diu, Kathiawar, India



 \mathbf{x}

LIST OF PLATES

- XIV A. Drying the threefold portion of a veranda-net, Mauritius
 - B. Egyptian mullet-fishers: their veranda-net is rolled up at the stern of each boat
- XV The changodam method of catching mullet in Cochin backwaters
- XVI A. Two Italian fishing-boats which trawl in pairs off Port Said
 - B. Ancient Egyptians using a primitive trawl. (By courtesy of the Metropolitan Museum of Art, New York)
- XVII A. A catamaran used in the flying-fish fishery, Coromandel coast of India
 - B. The same catamaran under sail
- XVIII A. A prawn trap, Chilka Lake, Ganjam, India. These traps are set in long rows across the current
 - B. Quadrangular fish and prawn traps, Kolair Lake, India
 - XIX A. Hand-traps used in Malabar. Left, a sieving device; centre, a plunge-basket; right, a fishing-scoop
 - B. Tubular traps of split cane used in Fiji. Below, an eel-trap; above, two wider woven fish-traps
 - XX A. Fish-traps (nasse) on the quay, Palermo, Sicily
 - B. A large fish-trap (nassa), Malta
 - XXI A. A hooded fisherwoman and her fish-trap. Aramia river, Papua. (Photo by Capt. Frank Hurley)
 - B. A small type of nassa (fish-trap) hung from a buoyed rope, Malta
- XXII A. A stellate five-way fish-trap, Kilakarai, South India
 - B. Heart-shaped fish-traps, Madeira
- XXIII A. A two-way fish-trap (uwea), Mbau, Fiji (1939)
 - B. A one-way fish-trap (susu) with entrance on top, Mbau, Fiji (1939)
- XXIV A. Eel-trap of uwea type, Fiji (1939)
 - B. A shark-fisher of Aua Island, Melanesia. (Photo by courtesy of G. Lane-Fox Pitt-Rivers)
- XXV A. Walled enclosures used to trap fishes on the Darling River, Australia. (Photo by Tost and Rohn, Sydney, Australia)
 - B. A screen-barrier, trapped at the centre in a Cochin backwater, South India
- XXVI A. Outer view of a cordate terminal fish-trap used at Comacchio, Italy
 - B. View of the same from within
- XXVII A. A poisoning fish-drive at Ovalau Island, Fiji: hauling in the net. (By courtesy of Dr Isaac, Suva)
 - B. The end of the drive; hauling the net aboard, Ovalau, Fiji
- XXVIII A fish-drive for shoal of hilsa at the Lower Anicut, Kaveri River, South India
 - XXIX A. Divers at work on the pearl banks, Ceylon
 - B. Divers from Tuticorin at work on the South Indian pearl banks



LIST OF PLATES

хi

- XXX A. Muhammadan divers with their catches of chank shells in net-bags; Rameswaram, South India (1914)
 - B. A Japanese woman diver on the pearl bank, Bay of Agu, Japan
- XXXI A. Three Japanese women divers and their male attendant
 - B. The same family group at work, Toba, Japan
- XXXII A. Life appearance of an edible sea-urchin (Echinus esculentus)
 - B. Shells of *Pteroceras* (five-fingered chank) used as octopus-traps, Palk Strait, India
- XXXIII A. The common octopus; attitude when resting
 - B. A large catch of octopus drying outside a village in Mauritius
- XXXIV A. The 'ormer' (Haliotis tuberculata) of the Channel Islands. Above, the inner surface of an empty shell; below, the under surface of the animal and (right) the outer surface of the shell. Jersey
 - B. A number of the Brachiopod Lingula dug out of sand, Fiji
- XXXV Baskets of the Fijian river-clam, Batissa violacea, on sale in Suva market, Fiji (1939)
- XXXVI Strings of crabs on sale on the roadside in Fiji (1939)

[Where no acknowledgement is made in the list above, the photograph is by the author.]





LIST OF TEXT-FIGURES

I	Indian multidentate fishing-spears; in order from above they are: A, the ordinary form of Bengal konch. B, the Nadiya konch. C, the Jutiyā, a harpoon variety. D, the Pacha of Patna and Mymensingh	page 2
2	An Egyptian nobleman of dynastic times spearing fish with a bident. (After Maspero)	
3	A fishing canoe of Menado in the Celebes; a trident spear rests in crutches on the outrigger. (Original)	3
4	Types of the ornamentation of the wooden 'bonito' lures used in the Laccadive Islands in the swordfish fishery. The two figures at the bottom are side-views of the tails of two of these lures. (Original)	7
5	A, the butt of a turtle spear from the north coast of New Guinea, fancifully carved. (Original). B, head of another, armed with two barbed spearheads. (Original)	9
6	A, propeller-shaped 'retarder' or brake used in the islands off the north coast of New Guinea when fishing for turtle or large fishes. B, longitudinal section through the retarder to show its curvature. (Original)	10
7	A, retarder in the form of an ox-ray, Wooi Bay, New Guinea. (<i>Original</i> .) B, other forms of retarders used by New Guinea fishermen; pieces of china plates are inserted into the lobes of b .	11
8	The simple form of bow and arrow-harpoon used to shoot fishes in Malabar backwaters. (Original)	12
9	An Andaman islander shooting a fish with bow and arrow	13
10	A simple form of the Malayali cross-bow from Arathinkal, Travancore; the line receptacle is omitted. (Original)	14
11	The ordinary type of the Malayali cross-bow. Note the elongated stock and the stout bow formed of four plates or leaves. The arrow groove and the line pocket are shown but not the arrow; from Valapad, South Malabar. (Original)	14
12	Crossbow arrows used in South India. A is a bird bolt; B and E are the forms of fish-arrow in general use; C and D being rarer varieties of the same. (Original)	15
13	Varieties of the Malayali blow-gun differing in the form of the mouth-piece. A is a plain reed tube without added mouthpiece. In B, the mouthpiece is a disk of coconut shell; in C, it is turned out of wood, whilst in D and E, it is built up of layers of gummed cloth, painted over. The butt end of E is ornamented with lacquered bands of yellow and red on black. The barrels of all these are made of the stems of the <i>ita</i> reed. (<i>Original</i>)	16



xiv

LIST OF TEXT-FIGURES

14	A is a very massive wooden blow-gun in the Trichur Museum, Cochin. The butt is encased in a turned brass mouthpiece; the barrel is spirally wrapped with strips of fibre, painted black. B is an old blow-gun from Valapad in South Malabar; it is made of wood and spirally wrapped with animal membrane. C shows a retrieving hook on the muzzle of the Trichur blow-gun. (Original)	re 18
15	Blow-gun darts used when shooting fishes. 1, dart ready for use; 2, details of: (a), the shaft; (b), the steel-barbed head; (c), the mop-like wad, its base not yet pulled down into the cavity at the head of the shaft; 3, a longitudinal section through the head of the shaft, showing the oblique perforation through which the retrieving line is passed. (Original)	19
16	Fishing with cormorants in China. (After J. Doolittle, by courtesy of the American Museum of Natural History, New York)	30
17	The common sucker-fish, Echeneis naucrates. (Original)	35
18	A deep-sea angler-fish, Lophodulus dinema. A phosphorescent light is emitted from the bulbous tip of its fishing-rod. (After Regan and Trewavas)	38
19	The small Indian angler-fish, Antennarius hispidus. (Original)	39
20	The Uringalē, a barrier weir-trap used at Mala in the French Cameroons. (After Monod.) A, diagram of the fence in optical section. B, upstream face view	56
2 I	A lever dip-net $(ndamb\bar{e})$ used in the French Cameroons on the River Faro. (After $Monod$)	58
22	Canoes of the Kotoko people, fitted with the lever dip-net (zémi). A, the net raised; B, the net being lowered; C, transverse section of the canoe hull, made of two dugout hulls sewn together longitudinally and with the sides raised by sewn-on wash-strakes. The net is suspended from two long antennae, which take the place of the oval frame used in the ndambē. (After Monod)	58
23	A fishing kite used in Buka, North-west Solomon Islands. A, apex, where the mid-ribs of the median and outer sections meet; B, the control or flying line; C, the tail line carrying the lure; D, made of reeled filaments from a spider's web; E, E, E, the three strengthening cross-rods; a, a, points where the line C is tied to the free end of the median mid-rib. (From an example in the Pitt-Rivers Museum, Oxford, collected by Miss B. Blackwood who kindly lent this block)	63
24	A Maldivian bonito fishing-boat. (Original)	67
25	Two examples of Polynesian bonito hooks. (Original)	76
26	The two-rod fishing gear used on the Californian coast in the bonito and tunny fishery	83
27	Method of hooking an alligator in South America. (After C. Waterton)	92
28	A hilsa fisherman floating downstream on the River Kaveri, supported upon a wooden float. (Original)	109
29	A fishing dingi drifting down the Ganges with its shānglā-jāl lowered into position to catch hilsa. (Original)	111



	LIST OF TEXT-FIGURES	xv
30	sinuous-tailed bodies are spermatozoa; the long filaments are the means whereby the eggs are attached to floating seaweeds. (From a drawing by Dr M. Ramaswami	122
3 I	Diagram showing how the <i>madi valai</i> is operated. (Original)	127
32	Ground baiting of a bush-filled enclosure on the River Benue, Cameroons. (After Monod)	128
33	A Samoan example of the 'rat-lure' used to catch octopus in Polynesia. (Original)	131
34	A small species of octopus numerous on the <i>Zostera</i> beds in Palk Strait, South India, $\times \frac{3}{4}$. (Original)	132
35	Shell of the five-fingered chank (<i>Pteroceras</i>) used in South India as an octopus-trap, $\times \frac{1}{2}$. (<i>Original</i>)	133
36	The common squid, Loligo, $\times \frac{1}{2}$. (Original)	134
37	A common squid-fishing device in use in the north of Ceylon. On the right is the jigger used to hook the squid. (Original)	135
38	A tubular trap used in India to capture murrel (Ophiocephalus), × 1/4. (Original)	145
39	Thorn-lined traps. A, a floating variety used to catch prawns, Fiji; B, another from the Duke of York group, Bismarck Archipelago, with the thorns completely covered. (Original)	146
4 0	The two components of a South Indian three-way basket trap. A, woven basketry shaped to form the top and sides; B, the part to form the floor of the same trap; C, the trap completed. (Original)	149
41	Diagrammatic sections through four types of Fijian fish-traps. A, the susu type; B, the uwea type of Mbau; C, the uwea of Rewa; D, an eel-trap of uwea type. (Original)	150
42	Plans of typical fishing-weirs or pounds, Oceania. A, as used in Vitilevu Bay; B, one seen east of Savu-savu Bay; C, a type with two double pens. (Original)	156
43	Plan of a labyrinth for the capture of eels and mullet at Comacchio, Italy.	163
44	Nose-clip used by Arab divers. (Original)	186