



# RECENT FISHERY PUBLICATIONS

## FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PROCESSED PUBLICATIONS ARE AVAILABLE FREE FROM THE DIVISION OF INFORMATION, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON 25, D. C. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

- CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES AND ALASKA.  
 SL - STATISTICAL SECTION LISTS OF DEALERS IN AND PRODUCERS OF FISHERY PRODUCTS AND BYPRODUCTS.  
 SSR - FISH. - SPECIAL SCIENTIFIC REPORTS--FISHERIES (LIMITED DISTRIBUTION).  
 SEP. - SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

- | Number   | Title   |
|----------|---|
| CFS-1562 | - Florida Landings, March 1957, 6 pp.         |
| CFS-1576 | - Massachusetts Landings, January 1957, 3 pp. |
| CFS-1582 | - Ohio Landings, May 1957, 2 pp.              |
| CFS-1583 | - Florida Landings, April 1957, 6 pp.         |
| CFS-1586 | - Shrimp Landings, 1956 Annual Summary, 8 pp. |
| CFS-1588 | - Alabama Landings, April 1957, 2 pp.         |
| CFS-1589 | - South Carolina Landings, May 1957, 2 pp.    |
| CFS-1590 | - Georgia Landings, May 1957, 2 pp.           |
| CFS-1591 | - Frozen Fish Report, June 1957, 2 pp.        |

SL-116 - Firms Canning Food for Animals from Marine-Animal Products, 1956 (revised).

SSR-Fish. No. 201 - Preliminary Report on Expedition Eastropic, by Joseph E. King, Thomas A. Austin, and Maxwell S. Doty, 155 pp., illus., March 1957. Describes the methods used and the results obtained in observations made aboard the research vessel Hugh M. Smith on the EASTROPIC expedition, a cooperative oceanographic survey of the central and eastern tropical Pacific, September-December 1955. Information was obtained on east-west gradients in temperature, salinity, phosphate, zooplankton, and forage-fish abundance. By means of closing-net hauls a special study was made of the vertical distribution of zooplankton. In collaboration with the University of Hawaii, carbon fixation and chlorophyll measurements were made on the east-to-west leg of the cruise. A survey of tuna baitfish was conducted in the Marquesas Islands.

SSR-Fish. No. 202 - Creel Census on the Upper Mississippi River, by John Greenbank, 59 pp., illus., March 1957.

SSR-Fish. No. 214 - Surface Water Temperatures along Atlantic and Gulf Coasts of the United States, by Dean F. Bumpus, 156 pp., illus., April 1957.

SSR-Fish. No. 218 - Fish and Shellfish Consumption in Public Eating and Drinking Places, 112 pp., June 1957. The results of a survey made by the Bureau of the Census of the Department of Commerce for the Bureau of Commercial Fisheries to secure information which would help the fishing industry improve old markets and develop new ones. It was found that when a customer whether he be in the north, south, east, or west wants shellfish, his first choice is shrimp in two out of three of the Nation's public eating places which serve fish or shellfish. But if he wants fish, and he lives in the northeastern part of the country, his choice in public eating places will be tuna, flounder, haddock, and halibut in the order named. If he lives in the north-central area, his choice will be ocean perch, pike, haddock and catfish; in the south it will be catfish, sea trout, flounder, and cod; and in the west he will choose halibut, salmon, tuna, and flounder. The study also indicates that fish or shellfish is the main dish in 17 percent of all meals served in the 208,100 eating places that serve fish and shellfish. But there are still 190,000 of the total 398,000 public eating places which for some reason do not serve fish or shellfish.

SSR-Fish. No. 219 - The Spawning Behavior of the Channel Catfish Ictalurus punctatus, by Howard P. Clemens and Kermit E. Sneed, 15 pp., June 1957. Channel catfish were induced to spawn in glass aquaria by the injection of fish pituitaries. The normal spawning pattern and behavior probably was not modified by the injections. During the prespawning period the male hazed the female and both were belligerent toward other fish. Pairing was accomplished when the female was subdued and assumed a given position on the bottom of the aquarium. The emission of sex products was preceded by a spawning reflex in which the male wrapped his tail around the head of the female and quivered, while the female responded in like manner. The spawning act required about 6 hours and eggs were released about 9 times each hour. Bright lights, visitors, or handling the spawners did not materially interfere with or delay the spawning act. The males cared for the eggs after the spawning was completed. Males were used to spawn with more than one female, but the females usually deposited all their eggs during one spawning.

Sep. No. 483 - Laboratory Method of Obtaining Unsaturated Fatty Alcohols from Fish Oils.

Sep. No. 484 - Research in Service Laboratories (August 1957): Contains these articles---"Discoloration in Precooked Tuna for Canning;"

"Inspection Aid for Voluntary U. S. Standards for Frozen Fried Fish Sticks Released;" "Frozen Fish Packaging Improvement Proposed;" "Revised and New Federal Specifications Planned for Five Fishery Items;" "Technical Note No. 40 - Experimental Mobile De-icing, Washing and Weighing Unit for Unloading Fish From Vessels."

THE FOLLOWING SERVICE PUBLICATIONS ARE AVAILABLE ONLY FROM THE SPECIFIC OFFICE MENTIONED.

Gulf Monthly Landings, Production, and Shipments of Fishery Products, June 1957, 5 pp. (Market News Service, U. S. Fish and Wildlife Service, 609-611 Federal Bldg., New Orleans 12, La.) Gulf States shrimp, oyster, finfish, and blue crab landings; crab meat production; LCL express shipments from New Orleans; and wholesale prices of fish and shellfish on the New Orleans French Market; for the month indicated.

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, June 1957, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, 18 So. King St., Hampton, Va.) Fishery production for the Virginia areas of Hampton Roads, Lower Northern Neck, and Eastern Shore; the Maryland areas of Crisfield, Ocean City, and Cambridge; and the North Carolina areas of Atlantic, Beaufort, and Morehead City; together with cumulative and comparative data; for the month indicated.

(New York) Monthly Summary - March 1957 - Receipts of Fishery Products at the New York City Wholesale Salt-Water Market, 16 pp. (Market News Service, U. S. Fish and Wildlife Service, 155 John St., New York 38, N.Y.) Receipts in the salt-water section of the Fulton Fish Market by species and by states and provinces for the month indicated.

## MISCELLANEOUS PUBLICATIONS

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM. CORRESPONDENCE REGARDING PUBLICATIONS THAT FOLLOW SHOULD BE ADDRESSED TO THE RESPECTIVE ORGANIZATION OR PUBLISHER MENTIONED. DATA ON PRICES, IF READILY AVAILABLE, ARE SHOWN.

### ANTARCTICA:

The Conquest of the Antarctic, by Norman Kemp, 152 pp., illus., printed, \$4.75. Philosophical Library, Inc., 15 East 40th St., New York 16, N.Y., 1957. Presents a complete and fascinating history of the little-known continent of Antarctica. The text is made very vivid by the inclusion of many photographs of the men, vessels, and coastal regions discussed. The author has timed the writing of this book to coincide with the impending separate expeditions of Britain, New Zealand, U.S.S.R., and the United States, to conquer the Antarctic. Background information available on the proposed expeditions, including personal interviews with some of the members, comprises the largest part of the book. One

chapter is devoted to the United States' "Operation Deep Freeze." During that operation, only four species of animal life were observed--killer whales, skua gulls, penguins, and seals. In summarizing his account of the Antarctic, the author states that, "This immense and unrevealed wilderness of rock and ice will continue to invite adventure, and appeal to the imaginations of ambitious and energetic men."

### CANADA:

"Summary Statistics of Canada's Fisheries, 1936-1955," 32 pp., printed. (Reprinted from Canadian Fisheries Annual, 1957, pp. 67-98.) Canadian Fisheries Annual, Gardenvale, Quebec, Canada. The first of eight sections of this report covers summary statistics for all Canada in regard to landings and values of catches from 1949-1956, value of gear and craft, and number of fishermen and men in plants. The other sections present detailed data on east coast fisheries--Newfoundland, Maritimes, and Quebec; fresh-water fisheries; West Coast fisheries; fillet production; and exports and imports.

### COMMISSIONS:

Ninth Annual Report of the Pacific Marine Fisheries Commission for the Year 1956 (to the Congress of the United States and to the Governors and Legislatures of Washington, Oregon, and California), 16 pp., printed. Pacific Marine Fisheries Commission, 340 State Office Bldg., 1400 S. W. Fifth Ave., Portland 1, Ore. Describes the Commission's meeting of November 26-28, 1956, at which recommendations were adopted for 1957 concerning regulations of petrale sole fishery; troll chinook salmon fishery; ocean salmon--troll and gill-net fishery; tuna; sablefish (blackcod); and otter-trawl fishery. Also included are a brief summary of the Commission's history; a list of names of the Commissioners, officers, and advisors; and financial reports.

### CRABS:

Retort Cooking of Blue Crabs, by Robert A. Littleford, Bulletin No. 1, 16 pp., illus., printed. Seafood Processing Laboratory, University of Maryland, Crisfield, Md. Reports on investigations made in regard to the retort cooking of crabs to determine (1) whether differences in yield of meat resulting from variations in cooking time; (2) an optimum time for cooking crabs based upon percent yield, length of shelf life, and quality of meat; and (3) the actual heat penetration of the crabs during the cooking process. It was concluded that a 10-minute cook at 15 pounds pressure and 250° F. produced the best results.

### DENMARK:

Arsberetning fra Fiskeriministeriets Forsøgs-laboratorium for 1956 (Annual Report to the Danish Fishing Industry for 1956), 39 pp., illus., printed in Danish with English translation of the main experimental results. Fiskeriministeriets Forsøgs-laboratorium, Copenhagen, Denmark 1957. Describes the results of the following experiments: fat determination in herring and sand eels; determination of the nutritional value of fish for animal feed; keeping quality of

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fresh fish; chilling of fish; antibiotics as a means of preserving fish; antibiotic content in the fish; hygienic requirements for shellfish; painting fish boxes; freezing fish and shellfish, such as shrimp, trout, mackerel fillets, catfish fillets, and cod roe; semi-preserved fishery products; canned cod roe, fish meal; and fish silage.

#### FISHES:

Fishes: A Guide to Familiar American Species, by Herbert S. Zim and Hurst H. Shoemaker, 160 pp., 278 color drawings, printed, limp bound \$1, de luxe cloth \$1.95. Simon and Schuster, New York, N. Y., 1956. A booklet showing the 278 species which represent most of the families of American bony fishes. Notes on sharks and rays, lampreys and hagfishes, and animals mistaken for fishes are also presented.

#### FOOD AND AGRICULTURE ORGANIZATION:

Directory of Fisheries Institutions: Asia and the Far East, 78 pp., printed. Food and Agriculture Organization of the United Nations, Regional Office for Asia and the Far East, Bangkok, Thailand, 1957.

#### FOOD CONSUMPTION:

Dietary Levels of Households in the United States, Household Food Consumption Survey 1955 Report No. 6, 69 pp., processed, 45 cents; Dietary Levels of Households in the Northeast, Report No. 7, 69 pp., processed, 45 cents; Dietary Levels of Households in the North Central Region, Report No. 8, 69 pp., processed, 40 cents; and Dietary Levels of Households in the South, Report No. 9, 69 pp., processed, 45 cents. U. S. Department of Agriculture, Washington, D. C., 1957. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) These reports on the nutritive content of diets, including fish and shellfish, contain portions of the data from the U. S. Department of Agriculture's nationwide Survey of Household Food Consumption made in the spring of 1955. Previous reports in this series have presented the data on quantities of foods used during the week, which are the basis of calculations of nutrient content of household food supplies in these reports. The survey was based on a national probability sample of approximately 6,000 housekeeping households of one or more persons. These reports discuss and tabulate the rural-urban differences in dietary levels as well as the differences by income groups.

#### GENERAL:

Fisheries Research Papers, vol. 2, no. 1, June 1957, 76 pp., illus., printed. Washington Department of Fisheries, Olympia, Wash. Contains the following articles: "The Vertical and Horizontal Distribution of Seaward Migrant Salmon in the Forebay of Baker Dam," by William H. Rees; "Downstream Migrant Salmon Survival in Free Fall from a Ski-Jump Spillway," by Albert F. Regenthal; "Observations on the Distribution and Biology of the Pink Shrimp (*Pandalus jordani*) off the Washington Coast," by Herb. C. Tegelberg and John M. Smith; "The

Quality of Seed Oysters from Japan," by Charles E. Woelke; "Migration and Growth of the Dogfish Shark, *Squalus acanthias* (Linnaeus), of the Eastern North Pacific," by Gilbert A. Holland; "Rare Fishes from the Eastern North Pacific Ocean," by Arthur D. Welander, Dayton L. Alverson, and Peter Bergman; "Brin Shrimp Nauplii (*Artemia gracilis*) as Food for Juvenile Pink Salmon," by J. A. Coates, C. H. Ellis, and R. L. Schwab; and "Survival Capacity of Spermatozoa of the Chinook Salmon and Steelhead Trout," by Richard T. Smith and Elmer Quistorff.

Natural History, Vol. LXVI, No. 6, June 1957, 336 pp., illus., printed, 50 cents. American Museum of Natural History, Central Park West at 79th St., New York 24, N. Y. Contains among others, the following well-illustrated articles: "The Fish that made History," by Gary Webster--an account of the important part played by the codfish in the development of the New World; "Crayfish Are Like That," by John H. Garrard--describes the appearance and behavior of crayfish found in United States streams; and "White Whales of the Amazon," by Ross Allen and Wilfred T. Neill--a report on the expedition that brought the first living specimens of the Amazon River dolphin to the United States.

"On the Transport of Live Cod and Coalfish," by Gunnar Sundnes, article, Journal du Conseil, vol. XXII, no. 2, pp. 191-196, illus., printed, single copy Kr. 12 (US\$1.74). Messrs. Andr. Fred. Høst & Søn, Bredgade, Copenhagen, Denmark, February 1957.

"Recent Experiments on Trawler Icing," article, World Fishing, vol. 6, no. 5, May 1957, pp. 64-72, illus., printed. John Trundell (Publishers) Ltd., Temple Chambers, Temple Avenue, London, E. C. 4, England. Describes laboratory experiments conducted with trawler model to determine possible methods of protection against ice formed on trawlers by freezing sea spray. Rates of icing and hazards to stability of trawlers under various conditions are discussed in detail.

Seafarer's and Their Ships (The Story of a Century of Progress in the Safety of Ships and the Well-being of Seamen), 96 pp., illus., printed, \$3.50. Philosophical Library, Inc., 15 East 40th St., New York 16, N. Y. This well-illustrated booklet shows how the present pattern of relationship between Britain's Marine Department and the shipping industry has developed through the years. Since the passing of the Merchant Shipping Act of 1854, much has been done to improve the conditions of life at sea and the efficiency of the Merchant Navy, and to strengthen the measures taken to safeguard the lives of those who serve in ships both on the high seas and off the coasts of Britain. The functions and responsibilities of the Marine Department have remained in principle the same--the safety and well-being of the merchant ships and seamen. These responsibilities and functions have developed with the years and the growing complexity of ships, and the purpose of



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this book is to describe something of this development.

#### HONG KONG:

Hong Kong Annual Department Report by the Acting Director of Agriculture, Fisheries & Forestry (for the Financial Year 1955-56), 97 pp., illus., printed. Government Printer, Java Road, Hong Kong. This publication contains the annual reports of the various divisions of the Department of Agriculture, Fisheries and Forestry. Included in the report of the Fisheries Division is a review of its activities during the year, which were directed mainly to the Marine fisheries and the mechanization of the fishing fleet, fishing investigations, training of fishermen, fresh-water fisheries, and oyster culture. Tables in the appendix give the number and type of Hong Kong fishing craft and fishermen, and landings of the principal varieties of fish marketed by species.

#### ISRAEL:

Sea Fisheries (Report to the Government of Israel), by Dr. Alfred Perlmutter, USOM Agricultural Report No. 13, 109 pp., illus., processed. International Cooperation Administration, United States of America Operations Mission to Israel, 12-14 Harakevet St., Tel Aviv, Israel, October 1956. This report points out the potentialities of Israel's fisheries resources, recommends a program to obtain better utilization of these resources, and summarizes progress to date on the program. The first section of the report discusses each present and possible new fishery in an attempt to evaluate the potential of Israel's aquatic resources, and the second section suggests methods for their development to attain maximum utilization. It includes an outline of the program for the development of Israel's sea fishery resources and progress being made on the various aspects of the program. The appendices include (1) a list of the commercially-important fish, with names in English, Hebrew, Arabic, and Latin; (2) a list of commercially-important invertebrates and plants, in Latin, English, and Hebrew; and (3) a paper entitled "Use of the Estuarine and Sea Fish of the Family Mugilidae, Grey Mullet, for Pond Culture in Israel," by Alfred Perlmutter, Lyka Bograd, and Joel Pruginin.

#### MOLLUSKS:

"Factors Affecting the Pollution and Self-Purification of Molluscan Shellfish," by P. C. Wood, article, Journal du Conseil, vol. XXII, no. 2, pp. 200-208, illus., printed, single copy Kr. 12 (US\$1.74). Messrs. Andr. Fred Høst & Søn, Bredgade, Copenhagen, Denmark, February 1957.

#### MULLET:

The Demand for Florida Mullet, by William S. Engleson and Marshall R. Colberg, Contribution No. 69 from the Oceanographic Institute, 12 pp., illus., printed. (Reprinted from Papers from the Oceanographic Institute, no. 2, 1956, pp. 77-88.) Oceanographic Institute, Florida State University, Tallahassee, Fla. Describes in summary form a statistical demand study pertaining to Florida-

caught mullet--Florida's most important food fish. Price and sales data, essential for a statistical demand study, were collected primarily by the U. S. Fish and Wildlife Service and also by the Florida State Board of Conservation.

#### NEW ZEALAND:

Annual Report of the Marine Department (1 April 1956 to 31 March 1957), 83 pp., printed. Government Printer, Wellington, New Zealand, 1957. This report contains, among others, a section on the fisheries of New Zealand which discusses crayfish, fishing vessels and personnel, fish landings, methods of capture, landings by ports, exports and imports, big-game fishing, fish-liver oil, whaling, oysters, toheroa, whitebait fishery, mussels, fresh-water fisheries and research, marine research, and legislation. The section concludes with a series of tables giving detailed data on the fisheries.

#### NORWAY:

Praktiske Fiskeforsøk, 1954 og 1955 (Practical Fishery Research, 1954 and 1955), Arsberetning Vedkommende Norges Fiskerier 1955, Nr. 9, 124 pp., illus., printed in Norwegian. A. S. John Griegs Boktrykkeri, Bergen, Norway, 1957.

#### OHIO:

Summary of the Ohio Lake Erie Commercial Fisheries, 1956, 17 pp., processed. Division of Wildlife, Ohio Department of Natural Resources, 1500 Dublin Rd., Columbus 12, Ohio. A statistical summary, compiled by the Department's Wildlife District One, Sandusky, pertaining to the Ohio commercial fisheries of Lake Erie for 1956. Catch statistics are shown by species, seasons, districts, months, gear, counties, and major ports. Data on the trap-net catch, percent of total catch (all gear), and average pounds per lift are given for 1956.

#### OYSTERS:

"The Cultivation of Mother-of-Pearl Oyster in the Red Sea," by C. Crossland, article, Australian Journal of Marine and Freshwater Research, vol. 8, no. 2, May 1957, pp. 111-130, illus., printed. Australian Journal of Marine and Freshwater Research, Commonwealth Scientific and Industrial Research Organization, 314 Albert Street, East Melbourne, C. 2, Victoria, Australia.

"The Culture of Oysters in North-Western Spain," by Manuel Sanchez y Sanchez, article, Journal du Conseil, vol. XXII, no. 2, pp. 197-199, printed, single copy Kr. 12 (US\$1.74). Messrs. Andr. Fred Høst & Søn, Bredgade, Copenhagen, Denmark, February 1957.

#### ROCKFISHES:

A Review of the Rockfishes of California (Family Scorpaenidae), by Julius B. Phillips, Fish Bulletin No. 104, 158 pp., illus., printed. Department of Fish and Game, Sacramento 14, Calif., 1957. The rockfishes and scorpion fishes form one of the most important fish families in the ocean waters of California. At present, in California waters, this family is repre-

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sented by 49 species in the genus *Sebastes*, two in the genus *Sebastolobus*, and one in the genus *Scorpaena*. Not only does this family contain more species than any other marine or fresh-water fish family known to inhabit our waters, but most of the species are highly desirable for food. This report presents uniform, concise descriptions of all the species comprising the family Scorpaenidae in California waters. Keys and photographs of all these species are presented to facilitate identification. Proper identification of the 52 kinds of rockfish, inhabiting our waters, will not only aid the industry by providing means of maintaining a uniformity in its products, but is logically the first step in helping to speed future research studies on this increasingly important group of fishes. Although the keys resulting from this study are primarily for identification of adult fish, juveniles are included when available.

#### SALMON:

"Investigation and Management of the Atlantic Salmon, 1956," article, *Trade News*, vol. 9, no. 12, June 1957, pp. 3-18, illus., printed. Department of Fisheries of Canada, Ottawa, Canada. A review of the present situation and the progress made in Canada's Atlantic salmon research and management program. This review includes an article on the changing environment of the Atlantic salmon, by Dr. J. L. Kask, Chairman of the Fisheries Research Board of Canada. Two other articles constitute the report of the Scientific Subcommittee on the progress made in the investigational and management activities during 1956. Part I deals with the research program and is by Dr. C. J. Kerswill of the Research Board's Biological Station at St. Andrews, N. B. The second half of the report, by Dr. W. M. Sprules, Special Assistant to the Deputy Minister of Fisheries of Canada, Ottawa, deals with the management program.

Electric Screens for Adult Salmon, by F. J. Andrew, P. C. Johnson, and L. R. Kersey, 43 pp., illus., printed. International Pacific Salmon Fisheries Commission, New Westminster, Canada, 1956.

Further Experiments with an Electric Screen for Downstream-Migrant Salmon at Baker Dam, by F. J. Andrew, P. C. Johnson, and L. R. Kersey, 29 pp., illus., printed. International Pacific Salmon Fisheries Commission, New Westminster, Canada, 1956.

#### SARDINES:

Algunos Aspectos del Desarrollo Inicial del Ovario de Sardina (SARDINA PILCHARDUS Walb.) (Some Aspects of the First Stages of Ovarian Development of the Sardine), by Jaime dos Santos Pinto and Buenaventura Ansreu, *Notas e Estudos do Instituto de Biologia Maritima* No. 13, 12 pp., illus., printed in Portuguese with summary in English. Instituto de Biologia Maritima, Lisbon, Portugal, 1956.

A Sardinha do Norte de Portugal (SARDINA PILCHARDUS Walb.). Características Etárias e de Reprodução (North Portugal's Sardines. . . Life

History and Spawning Characteristics), by J. Amorim Machado Cruz, *Notas e Estudos do Instituto de Biologia Maritima* No. 14, 45 pp., illus., printed in Portuguese with summary in English. Instituto de Biologia Maritima, Lisbon, Portugal, January 1957.

#### SEAWEED:

(Institute of Seaweed Research) Annual Report for 1956, 24 pp., illus., printed. Institute of Seaweed Research, Inveresk, Midlothian, Scotland. As a result of the recommendation made by the Advisory Council on Scientific Policy, as indicated in the 1955 Annual Report, the scale and scope of the Institute's operations have been reduced during the year under review. Originally the Institute's purpose was to determine whether the possibility existed of creating a stable Scottish seaweed industry which could compete with those of other countries and at the same time provide a considerable part-time industry in the Highlands and Islands. From July 1, 1956, its original purpose having been fulfilled, the Institute's responsibilities have been as follows: (a) to support fundamental algal research; (b) to operate an information service; (c) to provide advice and technical assistance in connection with the development of the seaweed resources of the Highlands and Islands of Scotland; and (d) to supply algal chemicals for research at cost and to stimulate interest in their utilization. This report gives a summary of the work carried out under extramural contract and on a collaborative basis during 1956 covering algal chemistry, plant physiology, microbiology, and use of algal chemicals in medicine.

#### SHRIMP:

"A Revision of the Australian Species of Penaeinae (Crustacea Decapoda: Penaeidae), by W. Dall, article, *Australian Journal of Marine and Freshwater Research*, vol. 8, no. 2, May 1957, pp. 136-231, illus., printed. Australian Journal of Marine and Freshwater Research, Commonwealth Scientific and Research Organization, 314 Albert Street, East Melbourne, C.2, Victoria Australia.

#### SMALL CRAFT:

High-Speed Small Craft, second revised edition, by Peter Du Cane, 336 pp., illus., printed, \$15. Philosophical Library Inc., 15 East 40th St., New York 16, N. Y., 1957. A revised edition of an excellent book covering all phases of the design and construction of high-speed marine craft. It is illustrated by numerous photographs, charts, and diagrams which greatly enhance the value of this book for all concerned in any way with the designing and powering of small high-speed craft. The various chapters discuss the types of high-speed craft, seaworthiness and maneuverability, design, materials, structure, application of plywood and laminated-wood construction in marine craft, installation of main machinery, transmission, steering gear, reverse gear, cruising engines, model experiments, propellers, speed trials, dynamic stability, and electric arrangements in high-speed craft. In addition, the revised edition contains several new chapters on the principles underlying the

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performance of planning craft in theory and practice, rudder design in plan form and section, reinforced plastics for boat-building, light alloys in high-speed craft, propelling machinery, and use of models for prediction of behavior in rough water.

#### SWEDEN:

Fishermen's Organizations and the Regulation of Fish Prices in Sweden, by Christian Hessel and Sigmund Verstandig, FAO Fisheries Study No. 4, 106 pp., illus., printed, 5s. (US\$1). Food and Agriculture Organization of the United Nations, Rome, Italy, 1957. (For sale at Columbia University Press, International Documents Service, 2960 Broadway, New York 27, N. Y.) The authors state that "The principal aim of this paper is to provide a description of the organizations of the Swedish fishermen and the system of regulating fish prices, written in such a way as to enable fisheries administrators and fishermen in other countries to benefit from the experiences gained in Sweden. The reason the description embraces both fishermen's organizations and price regulations is that in Sweden these regulations, to a great extent, are administered in collaboration with the fishermen's organizations. In order to give a picture of the background to the main subjects treated in this paper, the fishing industry, the fishing population, and the governmental administration of the fisheries in Sweden have been briefly reviewed in the first part." Part 2 discusses the origin and early development of the fishermen's and the fish dealers' organizations; Part 3, the fishermen's professional unions; Part 4, the fishermen's cooperative trading associations; and Part 5, price regulations.

#### TRAWLING:

Deep Sea Trawling, by John Garner, 98 pp., illus., printed. The Gourrock Ropework Co., Ltd., Port Glasgow, Scotland, 1956. Trawling is the most extensive method used for catching fish, and various types of gear or rigs for small or large trawls are used, but irrespective of size they are all of the same principle, namely, to drag along the bottom of the sea. The trawl described in this book is the most popular for deep-sea fishing, and even after being used for many years it has not altered much from the original. This book describes and illustrates in detail the materials used in making nets for trawling, the different steps in braiding the nets, how the trawl net pieces can be worked out in theory before each piece is made, details of a trawl, the rope and wire working gear, the running gear, and the hauling and shooting gear. Net mending is also described and illustrated.

#### TUNA:

A Study of Bluefin Tuna Populations from the Eastern and Western North Atlantic Based on an Analysis of Fin-Ray and Gill-Raker Counts (The Charles F. Johnson Oceanic Gamefish Investigations), by C. Richard Robins, Report No. 57-13, 8 pp., processed. The Marine Laboratory, University of Miami, Coral Gables, Fla.

Identification of the Pink Pigment of Canned Tuna, by W. Duane Brown and A. L. Tappel, 8 pp., illus., printed. (Reprinted from Food Research, vol. 22, no. 2, 1957, pp. 214-221.) Department of Food Technology, University of California, Davis, Calif. A report on results of experiments leading to the identification of the pink pigment of tuna as a hemochrome. Knowledge of the chemical nature of this pigment is of considerable importance in studies of discoloration of canned tuna.

"On the Distribution of Catches by Tuna Long-Line," by T. Yoshihara, article, Journal of the Tokyo University of Fisheries, vol. 41, no. 1, pp. 1-26, illus., printed. The Tokyo University of Fisheries, Tokyo, Japan, 1954. For a number of years Japanese scientists have explored fishing grounds with a view to helping promote an active and productive offshore fishery for tuna. In particular, they have paid attention to the depths of the swimming layers of different species and also to the correlation of catches at different depths with hydrographic data. This paper presents some of the data collected in the course of extensive investigations, and studies in some detail the horizontal and vertical distributions of three sets of tuna catches by vessels working in the Pacific Ocean during 1949, 1950, and 1952. The first part of the paper deals with a method of determining the depth of fishing of each hook from the known dimensions of the length of a basket and the length of the float and branch lines. A table and graph have been prepared to facilitate the conversion of this ratio into the required co-ordinates, and the actual depths of the hooks in baskets of five and six hooks, for unit length of main line, are presented. The rest of the paper deals with the spatial distribution of the different species based on actual catch data. The paper concludes with some comments on the relationship between catch and water temperature.

#### WASHINGTON:

1956 Fisheries Statistical Report, 88 pp., printed. Washington State Department of Fisheries, Fishermen's Terminal, Seattle 9, Wash., May 1957. This edition represents an extension of the statistical series to include a wider scope of material. It covers statewide commercial catches of fish and shellfish, Fraser River sockeye pack, Puget Sound salmon, Grays Harbor catch figures, Willapa Harbor catch figures, Columbia River catch figures, licenses and receipts, the Indian fisheries, miscellaneous statistics, plantings of hatchery salmon and egg takes at hatcheries, and fishway counts. Major additions to the commercial fishing tables include Indian catch figures, published here for the first time, and hatchery and fishway counts formerly found in the Annual Report series. According to this report, "The 1956 commercial fisheries of the State (Washington) produced a total of 122,464,148 pounds of fish and shellfish worth \$21,574,670 to the fishermen and \$44,485,900 at the wholesaling and processing level. The retail value was estimated at \$62,280,260. The

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statewide canned salmon pack from local fish amounted to 186,787 48-pound cases, the lowest pack since 1944, and far below the 1935-1955 average. It was an off-year for pink salmon, sockeye salmon catches did not quite reach expectations, and the Puget Sound chum season was a failure. Production composed 3.1 percent

of the poundage and 7.1 percent of the value of all fish and shellfish produced by the United States and Alaska. Nine states and Alaska out-ranked Washington in aggregate landings, but the value of the State's canned and processed fish continued to rank third highest."



### FISH STICKS--TIME SAVERS EVERYONE FAVORS

When you prepare seafood the modern way, as in golden-fried fish sticks, there is no cleaning, no waste, no breading, no defrosting, and no frying. Each fish stick is frozen individually so you can prepare as many or as few as you like at any time. They are low in price, readily available, flavorful, and certainly easy-to-prepare.



The fish mainly used in the preparation of the fish sticks are cod, haddock, pollock, salmon, and halibut, but other species are used in lesser amounts. The fish are filleted and the fillets are then frozen into uniform blocks. The frozen blocks are cut into rectangular-shaped sticks weighing about one ounce. The sticks are dipped into batter, breaded and fried in deepfat. The cooked sticks are then packaged, frozen, and shipped for distribution into retail outlets all over the United States.

A popular quick luncheon item, recommended by the home economists of the Fish and Wildlife Service, that will click with all members of the family, especially the small fry, are "fishburgers" served with tartar sauce. The preparations are simple, but the "fishburgers" are tasty and nutritious.

Place the fish sticks in a single layer in a baking pan. Bake in a hot oven, 400° F., for 15 to 20 minutes or until heated through and crisp. Place two fish sticks on a toasted buttered roll and serve with tartar sauce.

#### TARTAR SAUCE

- |  |                              |
|--|------------------------------|
| $\frac{1}{2}$ CUP MAYONNAISE OR SALAD DRESSING | 1 TABLESPOON CHOPPED PARSLEY |
| 1 TABLESPOON CHOPPED ONION                     | 1 TABLESPOON CHOPPED OLIVES  |
| 1 TABLESPOON CHOPPED PICKLE                    |                              |

Mix thoroughly and chill. Serves 6.