



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.
 FL - FISHERY LEAFLETS.
 SSR.- FISH.- SPECIAL SCIENTIFIC REPORTS--FISHERIES (LIMITED DISTRIBUTION).
 SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

- | Number | Title |
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| CFS-1487 | - Frozen Fish Report, January 1957, 8 pp. |
| CFS-1489 | - New York Landings, December 1956, 4 pp. |
| CFS-1493 | - Maine Landings, 1956 Annual Summary, 5 pp. |
| CFS-1494 | - Rhode Island Landings, 1956 Annual Summary, 6 pp. |
| CFS-1497 | - Maine Landings, 1956 Annual Summary, 11 pp. |
| CFS-1498 | - Mississippi Landings, December 1956, 2 pp. |
| CFS-1501 | - Fish Meal and Oil, January 1957, 2 pp. |
| CFS-1506 | - Georgia Landings, January 1957, 2 pp. |
| FL - 195 | - Partial List of Manufacturers of Fishing Gear and Accessories, 12 pp., revised September 1956. |
| FL - 254 | - List of Fishery Associations in the United States, Alaska, and Hawaii, 12 pp., revised August 1956. |
| FL - 292 | - List of Fishery Cooperatives in the United States and Alaska, 5 pp., revised August 1956. |
| FL - 336ee | - Commercial Fisheries Outlook, January-March 1957, 41 pp., illus., January 1957. |
| FL - 428 | - Refrigeration of Fish, Part 2--Handling Fresh Fish, by Charles Butler, John A. Dassow, C. J. Carlson, Joseph Carver, and Martin Heerd, 84 pp., illus., December 1956. |
| FL - 431 | - Distribution and Marketing of Frozen Fishery Products (Part V--Refrigeration of Fish), by Joseph W. Slavin and Martin Heerd, 78 pp., illus., October 1956. Part V of a series of five leaflets on the refrigeration of fish. Deals with problems of transportation and marketing of frozen fish as well as the design of locker plants and home freezers for storage of the frozen |

product. Section 1, concerned with transportation, takes up railroad, truck and ship distribution practices as well as the different systems for maintenance of freezing temperatures that have been evolved for use in each practice. Section 2 takes up the quality problems at the retail level and offers methods of checking the prior history and consequently the quality level of the product at the point of sale. Section 3, dealing with locker plants and home-freezers takes up the problems of design requirements as well as suggestions for good product handling practices that have been developed for both types of frozen storage equipment.

FL - 437 - Assembly Methods for Otter-Trawl Nets, by Boris O. Knake, 29 pp., illus., December 1956. Illustrates and describes in detail the assembly of standard trawl nets, methods of lacing, assembling of an Iceland trawl net, and the proper way of bending the trawl net. The proper assembly of the otter trawl is one of the most difficult problems faced by trawl fishermen. Correctly operated, the trawl is an extremely efficient fishing device; when improperly hung or operated, its efficiency is greatly reduced.

SSR-Fish. No. 192 - Three Russian Papers on Northwestern Pacific Plankton, translated by W. G. Van Campen, 24 pp., illus., October 1956. Contains the following articles: "On the Vertical Distribution of Copepods in the Northwestern Pacific Ocean," by K. A. Brodskii; "Some Essential Features of Zooplankton Distribution in the Northwestern Pacific Ocean," by V. G. Bogorov and M. E. Vinogradov; and "Plankton of the Northwestern Part of the Kuril Sea and the Waters of the Pacific Ocean Adjacent to the Kurile Islands," by K. A. Brodskii.

SSR-Fish. No. 194 - Preparation of a Dry Product from Condensed Menhaden Solubles: Statistical Analysis of the Data (Supplement to the Fish and Wildlife Service Research Report 45), by C. Lee and R. J. Monroe, 23 pp., December 1956. Simple correlation studies show that 4 of 10 chemical and physical characteristics are important in preparing suitable dry condensed solubles. These are ammonia, corrected protein content, total ash, and water insoluble matter. Multiple correlation studies of other selected data show that the specific gravity of condensed solubles is largely determined by its total ash and fat content. Dry solids content and the refractive index or specific gravity are not correlated either separately or in combination. The study indicates that the variability in con-

position of condensed solubles does not account for either the extreme variation in viscosity of the condensed solubles or for differences in moisture-absorptive characteristics of the related dry solubles. By means of an analysis of variance it was shown that the solubles produced by plants in the South Atlantic and Gulf of Mexico areas differed in composition from the product of plants in the Central Atlantic area. Otherwise, there were not sufficient data to permit determination of the effect of type of plant or of the month of production upon the properties of the condensed solubles.

SSR-Fish. No. 196 - Collections by the Oregon in the Gulf of Mexico, by Stewart Springer and Harvey R. Bullis, Jr., 137 pp., December 1956. A list of crustaceans, mollusks, and fishes identified from collections made by the exploratory fishing vessel Oregon in the Gulf of Mexico and adjacent seas from 1950 through 1955.

SSR-Fish. No. 200 - Canned Fish and Shellfish Preferences of Household Consumers, 1956, 332 pp., illus., February 1957. A report on a June 1956 nationwide survey pertaining to the use of canned fish and shellfish products by household consumers and their specific preferences, demands, likes, and dislikes affecting the actual and potential market for these products. The canned fish and shellfish industry is confronted with many economic and market problems. This survey was conducted to find the answers to some of these problems. Because of changes in income and standards of living among the masses of lower income consumers, many families are up-grading the types of fishery products they use. The competition of imported products and domestic oversupply are often depressing factors on canned fishery products markets. The industry is faced with a pressing need for expanding markets. At the same time, partly because of the fragmentation of the industry into many small firms which are unable to conduct any basic marketing research, it is handicapped by insufficient knowledge of consumer demand and buying practices. This survey was designed to provide information which will help the domestic fishing industry with its production and marketing problems. Survey results indicate that canned fish, or shellfish, is not directly competitive in any considerable degree with fresh or frozen fish or shellfish. While the use of canned fish or shellfish was quite stable, there existed a variation in relationship between fresh and frozen fish as influenced by geographic location and availability of fresh fish and other factors. Further results are discussed in a summary of major findings. Survey methods and tabulations of responses to questionnaires are included. A graphic version of some of the more important findings of the survey is presented in Circular 45, "Household Consumer Preferences for Canned Fishery Products, 1956."

Survey of Sport Fishery Projects, 1956, Circular 46, 165 pp., January 1957. This circular is the third catalog of sport-fishery programs in the United States. Its objective is to provide fishery administrators, teachers, research workers, and managers a means of keeping abreast of current work in fish conservation and restoration activities. The subjects covered are: acquisition of fishing waters; age and growth; aquatic vegetation

control; creel census; dams and diversions; disease and parasites; distribution of fishes; economics of sport fishery; fertilization; fish culture; food studies; lake and pond construction; lake improvement; lake investigations; life history studies; marine investigations; movement and migration; pollution; pond investigations; population investigations; rehabilitation of lakes, ponds, reservoirs, and streams; reservoir investigations; rough fish control; stocking; stream investigations and improvements; surveys; techniques and equipment; and watershed management.

Sep. No. 472 - Bottom Trawling Exploration in the Strait of Juan de Fuca--February to March 1956.

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

Landings and Prices of Fishery Products, Boston Fish Pier, 1956 (Includes "Trends in the Fishing Industry at Boston"), by John J. O'Brien, 25 pp., processed, 1957. (Available free from the Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston 10, Mass.) Fish marketing trends and conditions in Boston for 1956 are discussed. Detailed data on landings and ex-vessel prices of fish and shellfish at the Boston Fish Pier during 1956 are presented. Statistics are given by months and species and by type of gear, together with comparative data for previous years.

Means to Restore and Increase the Runs of Kamchatka Salmon, translated by C. E. Atkinson, Translation Series No. 11, 8 pp., illus., processed. (Edited translation from Ichthyological Commission, Transactions of Conferences No. 4, 1954, pp. 10-13, Academy of Sciences, U. S. S. R., Moscow, Russia.) U. S. Fish and Wildlife Service Laboratory, Seattle, Wash., April 1956. Discusses the causes for the sharp decrease in the number of red salmon in the Kamchatka River and the decline in the size of the spawning runs of the Far Lake red salmon. Also discusses the Kamchatka salmon studies and plans to increase production.

POFI--Progress in 1956, by A. L. Tester and Staff, 33 pp., illus., processed. (Pacific Oceanic Fishery Investigations, U. S. Fish and Wildlife Service, Honolulu, Hawaii), February 18, 1957. The purpose of this report is to summarize for the benefit of POFI's Industry Advisors the accomplishments of the past year and to present and discuss new ideas and hypotheses regarding the tuna populations of the Pacific. Even though these ideas and hypotheses are in an undeveloped or formative stage, they serve as guidelines for future research. Results of POFI's work for 1956 are discussed under the following major headings: equatorial tuna investigations; Hawaiian skipjack investigations; albacore investigations; sea scanar; contract research; foreign literature; publications; and manuscripts completed.

(Chicago) December 1956 Monthly Summary of Chicago's Fresh and Frozen Fishery Products Receipts and Wholesale Market Prices, 10 pp. (Market News Service, U. S. Fish and Wildlife Service, 565 W. Washington St., Chicago 6, Ill.) Receipts at Chicago by species and by states and provinces; fresh-water fish, shrimp,

and frozen fillet wholesale market prices; for the month indicated.

Gulf Monthly Landings, Production, and Shipments of Fishery Products, February 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.

(Seattle) Monthly Summary - Fishery Products, February 1957, 6 pp. (Market News Service, U. S. Fish and Wildlife Service, 421 Bell St. Terminal, Seattle 1, Wash.) Includes landings and local receipts, with ex-vessel and wholesale prices in some instances, as reported by Seattle and Astoria (Oregon) wholesale dealers; also Northwest Pacific halibut landings; for the month indicated.

THE FOLLOWING SERVICE PUBLICATIONS ARE FOR SALE AND ARE AVAILABLE ONLY FROM THE SUPERINTENDENT OF DOCUMENTS, WASHINGTON 25, D. C.

How to Cook Crabs, by Dorothy M. Robey and Rose G. Kerr, Test Kitchen Series No. 10, 17 pp., illus., printed, 20 cents, 1956. This booklet contains 32 choice recipes which have been developed and kitchen-tested by the Service's staff of home economists. As the booklet explains, four principal kinds of crabs are taken from the marine waters of the United States and Alaska. From the Atlantic and Gulf coasts come blue crabs which compose three-fourths of all the crabs marketed in this country. Dungeness crabs are found on the Pacific coast from Alaska to Mexico. King crabs come from the North Pacific off Alaska. Rock crabs are taken on the New England and California coasts. Of local importance are stone crabs in Florida and tanner crabs in Alaska. The four principal kinds of crabs are pictured in the booklet and their approximate weights are listed. Complete, illustrated instructions are given for picking the meat from blue crabs. Some of the easy-to-prepare recipes included are: crab Louis, crab ravigote, crab newburg, deviled crab, imperial crab, avocados stuffed with crab meat, and barbecued crab sandwiches.

Observations on the Development of the Atlantic Sailfish ISTIOPHORUS AMERICANUS (Cuvier), with Notes on an Unidentified Species of Istiophorid, by Jack W. Gehringer, Fishery Bulletin 110 (From Fishery Bulletin of the Fish and Wildlife Service, vol. 57), 36 pp., illus., printed, 30 cents, 1956.

Tunas and Tuna Fisheries of the World: An Annotated Bibliography, 1930-53, by Wilvan G. Van Campen and Earl E. Hoven, Fishery Bulletin 111, 76 pp., printed, 45 cents. (Reprinted from Fishery Bulletin of the Fish and Wildlife Service, vol. 57, pp. 173-249.) A bibliography, with descriptive annotations and a subject index, which attempts to list important literature published between 1930 and 1953 dealing with tunas and their fisheries in all parts of the world. All aspects of the biology of the tunas are dealt with, as are descriptions and histories of all types of tuna fisheries, commercial and exploratory tuna fishing methods and results, fishing gear, catch

statistics, and fishery management. Processes, technology, economics and marketing, folklore and purely literary references have been excluded.

MISCELLANEOUS PUBLICATIONS

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISHERY 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.

ARGENTINA:

Memoria y Balance (Report and Balance Sheet) 53rd Season ending June 30, 1956, 18 pp., printed in Spanish. Compañía Argentina de Pesca, S. A., 25 de Mayo 460, Buenos Aires, Argentina, December 27, 1956. Annual report of fishery developments, commercial prospects and finances of the Argentine Fishery Co., Inc. for the period July 1, 1955 to June 30, 1956. Discusses, among other subjects, a proposal to abandon whaling because it has become unprofitable.

BELGIUM:

Moniteur du Poisson (The Fish Monitor), illus., printed. Redaction et Administration, Rue Verte 53, Anvers, Belgium. A monthly magazine printed in French and devoted to the fishing industry. This specialized magazine is something new, touching on everything and anything that concerns the fishing industry. The first issue (November 1956) presents a historical summary of the development of the canned fishery products industry in Portugal and includes statistics on exports of canned fishery products. The December issue was to be devoted entirely to the fishing industry of Denmark, and the January issue was to be compiled in close cooperation with the Bureau of Maritime Fishing for the Belgian Congo.

BIOCHEMISTRY:

"The Amino Acid Composition of Fish Collagen and Gelatin," by J. E. Eastoe, article, The Biochemical Journal, vol. 65, no. 2, February 1957, pp. 363-368, printed, single copy \$4.25. Cambridge University Press, 32 East 57th St., New York 22, N. Y.

BRAZIL:

Producao de Conserva, Salga e Oleo de Peixe (Production of Canned Fish, Seasoned, and Fish Oil), 37 pp. of tables, processed in Portuguese. Servico de Estatistica da Producao Ministerio da Agricultura, Rio de Janeiro, Brazil.

BYPRODUCTS:

Fabricacion de Harina de Pescado en Pequeña Escala (Manufacture of Fish Flour on a Small Scale), by Trygve Sparre, Technical Publication No. 2, 21 pp., illus., processed in Spanish. Ministerio de Agricultura, Direccion General de Pesca y Caza, Valparaiso, Chile, October 1956.

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Plantas Reductoras de Desperdicios de Pescado (Machines for Reducing Fish Waste), by Einar Sola, Technical Publication No. 3, 48 pp., illus., processed in Spanish. Ministerio de Agricultura, Direccion General de Pesca y Caza, Valparaiso, Chile, 1956. Describes the machinery and process used in the manufacture of fish flour from fish waste.

CANADA:

British Columbia Catch Statistics, 1956 (By Area and Type of Gear), 155 pp., illus., processed. Department of Fisheries of Canada, 1110 West Georgia St., Vancouver 5, B. C., Canada, February 4, 1957. The sixth annual report of fish-catch statistics for British Columbia based on Departmental copies of sales slips that are completed by all commercial fish buyers operating within the Province. Statistics are presented by species, months, gear, and area. The report is intended as a factual statement of catch and no attempt is made except in a general way to explain the success or failure of fishing operations. However, certain economic, weather, and conservation factors that have a bearing on the catch are reviewed.

Fisheries Statistics of Canada (Nova Scotia), 1954, 93 pp., printed in French and English, 50 Canadian cents. Queen's Printer and Controller of Stationery, Ottawa, Canada, 1957. Consists of tables giving the quantity and value of fish and shellfish landed in Nova Scotia, 1951-1954, by species and by fisheries districts; quantity and value of manufactured fishery products and by-products for 1953-54; capital equipment in primary operations; and number of persons engaged in the primary operations.

"Fishing Industry Looks to Science," article, Trade News, vol. 9, no. 7, January 1957, pp. 3-8, illus., printed. Department of Fisheries, Ottawa, Canada. On January 7-9 the Fisheries Research Board of Canada held its annual meeting in Ottawa. This article describes the meetings and the reports from the directors of the Board's stations and those heading special units. Investigations carried out during the past year and programs planned for the year ahead showed that ashore and afloat the research conducted by the Atlantic, Pacific, Central, and Arctic regions had covered a wide range of biological, technological, and hydrological aspects of the fisheries. In this article it was possible to touch but lightly on the wide ramifications of the Research Board's work. Some aspects are capable of producing conclusions within a reasonably short period of time, others by reason of the complexities involved must extend over many years. In their laboratories and workshops and on ships at sea, Canada's fisheries scientists day by day are accumulating the knowledge that will not only give the nation's fishermen the adequate standard of living that their labors deserve but will also advance the welfare of peoples of other lands who are coming to depend more and more on the harvests of the sea. On pages 9-11 of this issue of Trade News is the full text of an address, "Expansion of Fisheries Research," given by Deputy Minister of Fisheries G. R. Clark at the annual meeting of the Board. Dr. Clark salutes the

research staffs of the Board's various stations and discusses aid in industrial development, vessel and gear research, and pollution of waters.

Progress Reports of the Atlantic Coast Stations, no. 63, 23 pp., illus., printed in English and French. Queen's Printer, Ottawa, Canada, November 1955. Contains the following articles: "The Green Crab--A New Clam Enemy," by J. S. MacPhail, E. I. Lord, and L. M. Dickie; "Have Atlantic Salmon been Overfished?" by P. F. Elson; "Summer Surface Temperatures in the Canadian Atlantic," by W. B. Bailey; and "The Valleyfield-Badgers Quai Commercial Longlining Experiment, 1954," by H. D. Macpherson.

CLAMS:

The Maryland Soft Shell Clam Industry and Its Effects on Tidewater Resources, by J. H. Manning, Resource Study Report No. 11, 27 pp., illus., printed. Maryland Department of Research and Education, Chesapeake Biological Laboratory, Solomons, Md., January 1957. An interim report to the Maryland General Assembly including basic information concerning the soft shell clam, the industry it supports, the gear used in its exploitation, and the effects of that gear on tidewater resources. In addition, some of the proposals which have been made concerning the soft shell clam fishery are evaluated. All available evidence has been considered--statistical records, direct observations, and the results of the Department's and others' research. Much of the evidence is presumptive rather than conclusive, but sufficient to support certain estimates and reasoned judgments. The report is presented in 7 main divisions: (1) Design and operation of the hydraulic clam dredge; (2) Summary of knowledge of Maryland's soft shell clam resource; (3) Development and present status of the Maryland soft shell clam industry; (4) Potential value of the Maryland soft shell clam resource; (5) Effects of the hydraulic clam dredge on tidewater resources; (6) Evaluation of the effects of certain proposals concerning the soft shell clam industry; and (7) Summary.

CONSERVATION:

Fish Conservation Highlights of 1956, 178 pp., illus., printed. Sport Fishing Institute, Bond Bldg., Washington 5, D. C., 1957. A summary of accomplishments and important problems in fish conservation. The former established pattern of agency-by-agency narration of the year's work was abandoned in favor of summarizations organized by functions and kind of activity. Contains sections on the Dingell-Johnson program (Federal aid in fish restoration), resource development, special aspects of fish management, and management studies and basic research. Also contains the following articles: "The Fishery Biologist," by Charles C. Bowers, Jr.; "Boy Scouts in Fish Conservation," by Ted S. Pettit; and "Licensing Salt-Water Anglers," by Charles H. Callison and Richard H. Stroud.

CORSICA:

Problemes d'equipement de la peche en Corse (Problems of Equipment in Corsican Fishery),

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by F. Doumenge, 19 pp., illus., printed in French. (Reprinted from Bulletin de la Societe Languedocienne de Geographie, vol. XXVII, no. 4.) Centre Regional de la Productivite et des Etudes Economiques, Rue de Verdun 22, Montpellier, France, 1956. Discusses traditions, problems, and possibilities for modernization of the fishery in Corsica.

DEPARTMENT OF THE INTERIOR:

1956 Annual Report of the Secretary of the Interior (For the Fiscal Year Ended June 30, 1956), 418 pp., illus., printed, \$1.25 (paper). U. S. Department of the Interior, Washington, D. C. (For sale by the Superintendent of Documents, Washington 25, D. C.) This publication contains the annual reports of the various agencies of the Department of the Interior, including the Fish and Wildlife Service. Included under Fish and Wildlife Service are summaries of its various activities. Specifically discussed are assistance to the commercial fisheries (describes the activities of the Branch of Commercial Fisheries); conservation of Alaska commercial fisheries; Pribilof Islands fur-seal industry; research in fishery biology (coastal, inland, and marine fisheries); maintenance of inland fisheries; Federal aid to states for the restoration of fish and wildlife; river basin development and wildlife needs; international cooperation in conservation (international technical cooperation and conservation agreements); and other activities.

EAST AFRICA:

East African Fisheries Research Organization Annual Report, 1955/1956, 32 pp., printed. East African Fisheries Research Organization, P. O. Box 343, Jinja, Uganda, 1956. This report covers the period from July 1, 1955, to June 30, 1956, and contains a general account of the work of the Organization and a list of the publications by staff members and visiting scientists. The following papers are also presented: "The Efficient Utilisation of the Fisheries of Lake Victoria," by R. S. A. Beauchamp; "The Distribution of Sulphur in the Muds, Water and Vegetation of Lake Victoria and Its Fixation in the Bottom Deposits," by P. R. Hesse; "Some Observations on Seasonal and Diurnal Changes of Stratification in Lake Victoria," by J. F. Talling; "The Planktonic Crustacea of Lake Victoria," by J. Rzoska; "Effects of D. D. T. on the Feeding Habits of Insectivorous Fishes in the Victoria Nile," by P. S. Corbet; "Ring Formation in the Scales of Tilapia esculenta," by D. J. Garrod; "Preliminary Note on Investigations being Undertaken on the Physiology of Reproduction in Fishes," by A. J. Marshall; and "Results Obtained from a Spectrographical Analysis of Bottom Deposits from Pilkington Bay," by C. T. Chamberlain.

LAMPREY:

"Artificial Propagation of the Sea Lamprey, Petromyzon marinus," by Robert E. Lennon, article, Copeia, no. 3, August 19, 1955, pp. 235-236, printed, single copy \$2.00. American Society of Ichthyologists and Herpetologists, Mt. Royal and Guilford Aves., Baltimore 2, Md.

FOOD AND AGRICULTURE ORGANIZATION:

Conservation et Distribution des Produits de la Peche (Conservation and Distribution of Fishery

Products), by Commandant Giorgio Ricci, FAO Technical Paper No. 43, 10 pp., processed in French. Food and Agriculture Organization of the United Nations, Rome, Italy, 1956. Recommends wider use of refrigerators and quick freezing since the use of ice is often insufficient to keep fish in good condition.

Transport of Fish for Short Trips by Sea at Medium Temperature, by Selim R. Suntutur, FAO Technical Paper No. 47, 4 pp., processed. Food and Agriculture Organization of the United Nations, Rome, Italy, 1956.

The Food and Agriculture Organization has published reports describing that Agency's activities under the Expanded Technical Assistance Program for developing the fisheries of many countries. These reports have not been published on a sale basis, but have been processed only for limited distribution to governments, libraries, and universities. Food and Agriculture Organization, Viale delle Terme di Caracalla, Rome, Italy.

Informe al Gobierno del Ecuador sobre Fomento de la Pesca Maritima (Report to the Government of Ecuador on Marine Fishery Projects) by Dr. Erwin A. Schweigger, FAO Rpt. No. 3, 23 pp., processed in Spanish, January 1955. Reports on the fishery resources of Ecuador; equipment; the social level of the fisherman; surface fishery; specific problems of tuna and cod fisheries, and need for conservation measures; and lists the scientific, English, and Ecuadorian names of fish in Ecuador.

Informe al Gobierno de la Republica de Panama sobre Investigacion de los Recursos Camaroneros, Octubre 1952-October 1953 (Report to the Government of Panama on Investigations of the Shrimp Resources, October 1952-October 1953) by Leslie W. Scattergood, FAO Rpt. No. 326, 70 pp. and 6 plates of photographs, processed in Spanish, March 1955. Discusses the objective study, fishery history, and importance of shrimp in Panama; the shrimp fleet; shrimp fishery zone and oceanography; and methods of identification and measurement, and observations and distribution of commercial species of shrimp.

Informe al Gobierno de la Republica Dominicana sobre Piscicultura (Report to the Government of the Dominican Republic on Fish Culture), by S. Y. Lin, FAO Rpt. No. 346, 11 pp. and 5 plates of plans and photographs, processed in Spanish, December 1954. Discusses proposed plans for establishing needed fish hatcheries throughout the Dominican Republic.

Report to the Government of India on the Development of the Sundarbans Fisheries in West Bengal based on work done by W. F. L. van der Heyd, FAO Rpt. No. 347, 15 pp. and 10 drawings and photographs, processed, December 1954. Reports on fishing gear, methods, and craft used in Sundarbans fisheries; transport and marketing of fish; experimental fishing project; and floating ice plant and cold storage.

Report to the Government of Turkey on Fishery Biology, based on the work of Dr. G. A.

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Rounsefell, FAO Rpt. No. 391, 23 pp., processed, July 1955. Discusses proposed research for development of fishery resources in Turkey.

Relatorio ao Governo do Brasil sobre Biologia da Pesca (Report to the Government of Brazil on Fishery Biology), FAO Rpt. No. 494, 40 pp., illus., processed in Portuguese, May 1956. A report on Brazil's fishery resources and oceanography, illustrated by 15 charts. Includes descriptions of the most important commercial species of fish and charts their oceanic distribution by species.

Report to the Government of Sudan on a Brief Survey of the Sudanese Red Sea Fisheries (July 1955), FAO Rpt. No. 510, 41 pp., illus., processed, June 1956. Describes a brief survey of the Sudanese marine fisheries. Discusses the present status of the sea fisheries, shell fishing, and the governmental development scheme, and makes recommendations for improvement of the fisheries.

Report to the Government of Syria on the Marine Fisheries, FAO Rpt. No. 516, 39 pp., illus., processed, August 1956. This is a report based on a survey of the Syrian sea fisheries. Although the Syrian waters are rather unproductive, as is the Eastern Mediterranean in general, it appears likely that a modest increase in the production of marine fish could be obtained through implementation of the recommendations contained in this report, which aim at gradual improvement of the craft, gear, and methods used for inshore fishing, pelagic fishing, trawling, sponge diving, as well as better practices in fish handling and distribution.

Report to the Government of Egypt on the Fishery Investigations on the Nozha Hydrodrome near Alexandria, Egypt, FAO Rpt. No. 543, 21 pp., processed, September 1956. A short review of the activities on the Hydrodrome project where fishery investigations are being conducted. Contains a brief review of the project, summary of accomplishments, and recommendations concerning the Hydrodrome project.

FOOD CONSUMPTION:

Food Consumption of Households in the Northeast, Household Food Consumption Survey 1955 Report No. 2, 197 pp., processed, \$1; Food Consumption of Households in the North Central Region, Report No. 3, 197 pp., processed, \$1; Food Consumption of Households in the South, Report No. 4, 197 pp., processed, \$1; and Food Consumption of Households in the West, Report No. 5, 195 pp., processed, \$1. U. S. Department of Agriculture, Washington, D. C., December 1956. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) These reports 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. The survey was part of the Department's broad program of research on the marketing and utilization of farm products and on family dietary levels. The basic data in this survey relate to quantities of food consumed, including fish and

shellfish. The survey was based on a national probability sample of approximately 6,000 housekeeping households of one or more persons. These reports give current information on patterns of food consumption, expenditures, dietary levels, and household food practices. Many interesting facets of the nation's eating habits are presented.

FRESH-WATER FISH:

Freshwater Fishery Biology, Second Edition, by Karl F. Lagler, 434 pp., illus., printed, \$6.75. Wm. C. Brown Company, 215 West Ninth, Dubuque, Iowa.

GENERAL:

Federal Aid in Fish and Wildlife Restoration (Annual Reports of the Dingell-Johnson and Pittman-Robertson Programs for the Fiscal Year Ending June 30, 1956), 105 pp., illus., printed. Wildlife Management Institute, Wire Bldg., Washington 5, D. C.

"Ionizing Radiations in the Processing of Plant and Animal Products," by John T. R. Nickerson, Bernard E. Proctor, and Samuel A. Goldblith, article, Food Technology, vol. 10, July 1956, pp. 305-311, printed, single copy \$1.50. The Garrard Press, 119 West Park Ave., Campaign, Ill. This article is concerned with the effect of high voltage cathode rays on the organoleptic properties of fish cakes, halibut steaks, and scallops and the prevention of irradiation-induced changes under certain processing conditions.

The Open Sea: Its Natural History; The World of Plankton, by Alister C. Hardy, 335 pp., illus., printed, \$6.50. Houghton Mifflin Co., 2 Park St., Boston 7, Mass. A nontechnical account for the general reader of the teeming world of plankton, and also a guide for the study of marine biology.

"QMC is Researching Convenience Foods," by Karl Robe, article, Food Processing, vol. 17, July 1956, pp. 21-23, illus., printed. Putman Publishing Company, 111 East Delaware Place, Chicago 11, Ill.

The Underwater World, by John Tassos, 242 pp., illus., printed, \$4.95. Prentice-Hall, Inc., 70 Fifth Ave., New York, N. Y. A complete guide to diving, spearfishing, and other underwater secrets.

GREAT LAKES:

Annual Report to the Great Lakes Research Committee, 1955, by W. A. Kennedy, Section I, 76 pp., Section II, 20 pp., illus., processed. Federal-Provincial Great Lakes Fisheries Research Committee, Canada. Section I reports on lamprey control experiments and discusses the following: forecast of lake trout production in Lake Superior; biological program and check-weir operations on tributaries to Lake Superior; electrical lamprey barriers; studies on possibility that sea lamprey can spawn in lakes, specifically Lake Erie; and preliminary report on a new type of electrical barrier to sea lamprey. Section II outlines progress in constructing and maintaining barriers to

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spawning lamprey and includes 14 pages of sketches and photographs of some of the lamprey barriers.

HERRING:

Prospects for the 1956-57 Herring Fishing Season, by F. H. C. Taylor, Circular No. 43, 9 pp., illus., processed. Fisheries Research Board of Canada, Pacific Biological Station, Nanaimo, B. C., Canada, August 1956. The twelfth in an annual series of circulars dealing with the prospects of Canada's British Columbia fishery.

INDIA:

Agenda and Notes (All India Fisheries Conference, Madras, September 1956), 42 pp., printed. Government of India, Ministry of Food and Agriculture, Fisheries Division, Madras, India.

JAPAN:

Journal of the Tokyo University of Fisheries, vol. 42, no. 1, 102 pp., illus., printed. The Tokyo University of Fisheries, Shiba Kaigandori 6, Minato-ku, Tokyo, Japan, February 1956. Contains, among others, the following articles: "Determination Method of Freshness of Fish Muscle with Trimethylamine," by S. Horie and Y. Sekine; "Polarographic Studies on the Rancid Oil," by T. Kikuchi, I. Okada, I. Osakabe, and K. Fukushima; "Experiments on the Freezing of Fish by the Air-Blast Freezer," by J. Nagaoka, S. Takagi, and S. Hotani; "Refrigeration of Fish on Boats in Japan," by K. Tanaka; "Defrosting of Frozen Whale Meat," by K. Tanaka and T. Tanaka; "Biochemical Condition of Whalemeat Before or After Freezing and Cold Storage of Frozen Meat," by K. Tanaka and T. Tanaka; "Studies on the Quality Inspection of Frozen Tunny in Frozen State," by S. Hotani; and "A Coastal Survey of the Gulf of Mexico by Japanese Fishing Boats in 1936 and 1937," by H. Niino, N. Nasu, and R. H. Parker.

Journal of the Tokyo University of Fisheries, vol. 42, no. 2, 104 pp., illus., printed. The Tokyo University of Fisheries, Shiba Kaigandori 6, Minato-ku, Tokyo, Japan, March 1956. Contains, among others, the following articles: "Researches on the Fishing Grounds in Relation to the Scattering Layer of Supersonic Wave (Introductory Report)," by M. Uda; "Observations on the So-Called Deep Scattering Layer (DSL), with Special Reference to the Vertical Distribution of Plankton," by Y. Komaki and Y. Matsuye; "The Scattering Layer in Relation to Fishing," by K. Ozawa and J. Ihara; and "General Results of the Oceanographic Surveys (1952-1955) on the Fishing Grounds in Relation to the Scattering Layer," by M. Uda, N. Watanabe, and M. Ishino.

Second Fisheries Census as of January 1, 1954, Survey Result of Sea Fisheries, no. 47, 37 pp., mostly tables, printed in Japanese. Agriculture and Forestry Ministry, Tokyo, Japan. Presents statistical tables of the following: types of fishing done, types of vessels used, number of people engaged in fishing, number of fishing vessels used, and total catch by species; by individuals; by cooperative, production, and joint associations; by companies; and by government organizations. Also gives data on family income from fishery; number of families dependent on income

from sources other than fishery; fishermen's source of income from the fisheries and other employment; number of individuals, industries and others engaged in the various fisheries; and number of fishermen by districts.

MACKEREL:

"Utilization of Food by Mackerel, Pneumatophorus japonicus (Houttuyn)," by Masayoshi Hatanaka and Masao Takahashi, article, The Tohoku Journal of Agricultural Research, vol. VII, no. 1, September 1956, pp. 51-57, illus., printed. Faculty of Agriculture, Tohoku University, Sendai, Japan.

MARINE SCIENCE:

"Marine Science in the South-East Pacific Ocean" by G. E. R. Deacon, article, Nature, vol. 17, no. 4550, January 12, 1957, pp. 66-68, printed. MacMillan and Co., Ltd., St. Martin's St., London, W. C. 2, England. Following its policy of ranging discussions on marine science in areas where they are likely to attract new interest, the United Nations Educational, Scientific and Cultural Organization invited its Marine Science Advisory Committee and other specialists to meetings in Lima. The Committee met for the time during October 22-24, though the ground had been prepared by an interim committee in Tokyo, and by reports on the needs of marine science from national commissions and international organizations. The Committee considered a wide range of problems and recommended direct or indirect support for work that will cultivate interest in the oceans and understanding of their behaviour, especially in countries where little attention has been paid to them. It also urged support for organizations engaged in perfecting various aspects of the science to the point where they can become really effective practical problems. In addition to the Committee's recommendations, this article discusses the work that has been done in the past on marine science in the south-east Pacific Ocean and the many problems that still have to be solved.

MIDWATER TRAWLING:

"Some Problems in Mid-Water Trawling," by I. D. Richardson, article, World Fishing, vol. 6, no. 2, February 1957, pp. 28-31, illus., printed. John Trundell (Publishers) Ltd., Temple Chambers, Temple Avenue, London E.C. England. Describes in detail the problems confronting users of midwater trawls and discusses suggested methods for overcoming those problems. Specifications and methods of opening midwater trawl are shown in diagrammatical form.

NEWFOUNDLAND:

The Bonavista Longlining Experiment, 1950-1956, by Wilfred Templeman and A. M. Fleming, Bulletin No. 109, 60 pp., illus., printed, 50 Canadian cents. Queen's Printer, Ottawa, Canada, 1956. Describes longlining experiments which were carried on from 1950-1953 at Bonavista using Cape Island-type longliners from Nova Scotia. These boats were larger than those typically used in the trap, handline and inshore trawl fishery on the east coast of Newfoundland. In 1950 the operations were wide-ranging and

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exploratory. In 1951, from early June to mid-December, a commercial fishing trial was carried out to compare the financial returns from a 42-foot boat with a 3-man crew, and a 51-foot boat with a 4-man crew. In 1953, two 55-foot longliners fished the offshore grounds in May. Their excellent catches demonstrated that longlining on a commercial basis could be successful throughout May and probably in April. Bonavista fishermen, stimulated by the successful fishing of the experimental longliners, began longlining either in converted boats or ones expressly built for long-line fishing. From three boats in 1951 the local fleet increased to 10 during 1952 and to 14 in 1953. Though there was considerable variation in the yearly total catch from long-line boats fishing mainly offshore, the yearly catch per unit of gear showed little variation from boat to boat, and those which fished 50 to 60 trips were financially successful. During June and July, when landings of cod from traps, handlines and linetrawls are at their peak, the proportion of the total catch attributable to longliners is small. Following this, the longliner proportion of the catch increases with advance of the season until toward the end longliners are landing the bulk of the cod. In many years long-line boats could fish the deep water profitably in May and early June, and sometimes in April, while the large inshore codfishery by other methods usually begins late in June.

Danish-Seining Explorations in Newfoundland and Cape Breton Areas, by T. N. Stewart, Bulletin No. 108, 31 pp., illus., printed, 50 Canadian cents. Queen's Printer, Ottawa, Canada, 1956. The Danish seine can be operated only on a smooth sea bottom, and in 1952 the only known fishing ground suitable for it around Newfoundland was a small area in Fortune Bay, where Danish seining for the witch flounder or grey sole began in 1951. In 1953 and 1954 a survey of the coast of Newfoundland, the southwest edge of the Grand Bank of Newfoundland, and the area to the west of Cape Breton Island was made to locate additional grounds suitable for seining. A 56-foot wooden Danish seiner was used for these explorations. No new grounds were found close to the Newfoundland coast. The southwest edge of the Grand Bank could be fished by Danish seine, but a larger vessel would be required. The rather small size of the fish and the extra work in culling might make such a fishery uneconomic at 1955 prices. Excellent catches were obtained in the Gulf of St. Lawrence in North Bay near Cape Breton Island, and it is probable that a good Danish seine fishery could be developed there under present economic conditions.

OCEANOGRAPHY:

Data Collected by Scripps Institution Vessels on Eastrop Expedition, September-December 1955, SIO Reference 56-28, 156 pp., illus., processed. Scripps Institution of Oceanography, University of California, La Jolla, Calif., October 15, 1956.

Physical and Chemical Data, CCOFI Cruise 5205 (MLR 37), May 9-26, 1952, SIO Reference 56-24, 78 pp., illus., processed. Scripps Institution of Oceanography, University of California, La Jolla, Calif., August 17, 1956.

OHIO:

Summary of the Ohio Lake Erie Commercial Fish Catch, 1885-1955, no. 281-F, 60 pp., illus., processed. Division of Wildlife, Ohio Department of Natural Resources, 1500 Dublin Rd., Columbus 12, Ohio, 1956. A summary of available statistical information pertaining to the Ohio commercial fishery of Lake Erie dating from the first record in 1885 through the 1955 season. Catch statistics for 1954 are shown by species, seasons, months, gear, districts, counties, and major ports. Data on the trap-net catch, percent of total catch (all gear), and average pounds per lift are given for 1948-55. Total production of Ohio Lake Erie commercial fisheries is shown for 1935-55.

Summary of the Ohio Lake Erie Commercial Fisheries 1955, 18 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 1955. Catch statistics are shown by species, seasons, months, gear, districts, counties, and major ports. Data on the trap-net catch, percent of total catch (all gear), and average pounds per lift are given for 1955.

OREGON:

Biennial Report of the Fish Commission of the State of Oregon to the Governor and the Forty-Ninth Legislative Assembly, 1957, 28 pp., printed. Fish Commission of the State of Oregon, 307 State Office Bldg., Portland 1, Ore. A report of the operation of the Commission together with a financial statement for the biennial period July 1, 1954 to June 30, 1956. During this period, according to the report, the fisheries management and conservation program has reflected the rapid increase in the number of hydroelectric and water development projects within the State. These have imposed unprecedented demands for studies which will provide the basis for measures which will protect the fisheries values as they are affected by an expanding economy. This report includes a condensed resume of the work which has been carried on by the Division of Engineering, Division of Fish Culture, and Research Division of the Commission during the period under review. It also shows the pack of canned salmon on the Columbia River during the years 1928-1955.

Preliminary Report on Stream Surveys and Fish Relocation Feasibility Studies Made Necessary by the Construction of Mt. Sheep and Pleasant Valley Dams, 91 pp., illus., printed. Oregon Game Commission, Portland, Ore., 1956.

PORTUGAL:

IV Congresso Nacional de Pesca (Fourth National Fishery Congress), no. 28, 313 pp., illus., printed on Portuguese. Gabinete de Estudos das Pescas, Lisbon, Portugal, 1955. Gives brief summaries and conclusions derived from each of 108 reports presented to the Fourth National Fishery Congress held in Lisbon June 20 through 30, 1955.

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE ORGANIZATION ISSUING THEM.

QUALITY:

Volatile Bases and Sensory Quality-Factors in Iced White Fish, by A. S. C. Ehrenberg and J. M. Shewan, DSIR Food Investigation Memoir No. 928, 11 pp., illus., printed. (Reprinted from Journal of the Science of Food and Agriculture, vol. 6, no. 4, 1955, pp. 207-217.) Department of Scientific and Industrial Research, London, England.

REFRIGERATION:

The Expressible Fluid of Fish Fillets: II. -- Method of Determination, by A. Banks, 5 pp., illus., printed. (Reprinted from Journal of the Science of Food and Agriculture, vol. 6, no. 5, 1955, pp. 282-286.) Department of Scientific and Industrial Research, Torry Research Station, Aberdeen, Scotland. Describes a method for measurement of expressible fluid in whole fish fillets during cold storage.

Frozen Food Lockers--Highlights of a Survey, by P. C. Wilkins, L. B. Mann, and B. D. Miner, FCS Circular 17, 21 pp., illus., printed. Farmer Cooperative Service, U. S. Department of Agriculture, Washington 25, D. C., June 1956. This report is designed to provide a broad view of the frozen food locker industry. It describes the industry in terms of location, size, services, rates, patronage, and volume. The information was assembled from reports received from 6,390 locker operators and covers 1954 operations. Comparisons were made with information secured in earlier surveys, particularly surveys made in 1950 and 1946. To compare figures in this report with previous surveys, this publication shows the number and types of plants and patrons, number of lockers, and rates charged on January 1, 1955. Business volume figures for the plants cover the year 1954. The authors state that, "For the past 5 years and to some degree since the close of World War II, this industry has been adjusting its operations to take advantage of opportunities arising from the increasing use of home freezers. It has also been processing more locally-produced foods for sale, thereby improving operating efficiency. Thus the industry can compete more successfully with other segments in the food processing field. Indications are that future expansion in the frozen food locker industry will be in the field of processing and merchandising. While renting lockers will continue as an important phase of the business, revenue from this service will probably decline in relative importance."

SALMON:

"Salmon Stock Fluctuations in the Baltic Sea," by Gunnar Svardson, article, Annual Report for the Year 1954 and Short Papers, no. 36, pp. 225-262, printed, Institute of Freshwater Research, Fishery Board of Sweden, Stockholm, Sweden, 1955.

SALT FISH:

The Browning of Salt Cured White Fish, by J. M. Shewan, DSIR Food Investigation Memoir No. 927, 4 pp., illus., printed. (Reprinted from Food Manufacture, May 1955.) Torry Research Station, Food Investigation Organization, Department of Scientific and Industrial Research, London, England, 1955.

"Quemado" de las Salazones Secas de Pescado ("Sunburn" of Dried Salted Fish), by Dr. Victor H.

Bertullo, Dr. Hugo Ferrando, and Emilio La Mata, 8 pp., illus., printed in Spanish with a brief summary in English. (Reprinted from Anales de la Facultad de Veterinaria del Uruguay, vol. VI, no. 3.) Contralor Sanitario de Servicio Oceanografico y de Pesca, Montevideo, Uruguay.

SPORENDONEMA EPIZOUM (Corda) Cif. y Red. Agente Productor de las "Pecas" o "Mosques en el Pescado Salado, Seco (Sporendonema epizoum (Corda) Cif. and Red., the Cause of "Spots" on Dried Salted Fish), by Victor H. Bertullo, 7 pp., illus., printed in Spanish with a brief summary and bibliography in English. (Reprinted from Anales de la Facultad de Veterinaria del Uruguay, vol. VI, no. 3.) Contralor Sanitario de Servicio Oceanografico y de Pesca, Montevideo, Uruguay.

SAURY:

"Spawning Ground of the Saury, Cololabis saira (Breboort), in the Japan Sea," Masayoshi Hanaka and Kiyonari Sekino, article, The Tohoku Journal of Agricultural Research, vol. VII, no. 9, September 1956, pp. 59-64, illus., printed. Faculty of Agriculture, Tohoku University, Sendai, Japan.

SCALLOPS:

Escallops (PECTEN MAXIMUS L.) in Irish Waters, by F. A. Gibson, 20 pp., illus., printed, 5s. (70 U. S. cents). (Reprinted from The Scientific Proceedings of the Royal Dublin Society, vol. no. 8, October 12, 1956, pp. 253-271.) The Royal Dublin Society, Ball's Bridge, Dublin, Ireland, 1956.

SHAD:

"The Migratory Shad," by Bernard L. Gordon, article, The Fisherman, vol. VIII, no. 2, February 1957, pp. 14-16, 80, illus., printed, single copy 50 cents. Fisherman Press Inc., Oxford, Ohio. Describes the early colonial shad fishery on Connecticut River. Also discusses the methods developed for transporting shad over the dam at the Holyoke (Massachusetts) Power Company spawning and feeding habits and migratory routes of shad. Three photographs of the unique shad elevator at the Hadley Falls, Mass., dam are also included.

SHELLFISH CULTURE:

"On Utilization of Salt Water Ponds for Shellfish Culture," by Victor L. Loosanoff, article, Ecology, vol. 37, no. 3, July 1956, pp. 614-616, printed, single copy \$2. Circulation Office, University Press, Box 6697, College Station, Durham, N. C. Considerable interest has been displayed in the possibilities of cultivating the American oyster, Crassostrea virginica, and other molluscs in small, enclosed or semi-enclosed salt-water bodies, such as the numerous ponds that are found along the shoreline of a mainland and also on some large islands, such as Gardiners Island, New York; Martha's Vineyard, Mass.; and others. This interest is stimulated because the oyster beds in such large areas of Long Island Sound are severely damaged by frequent hurricanes and storms, and because the efficient control of oyster enemies there is extremely difficult. These disadvantages, how

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can be eliminated if oysters are grown in relatively small bodies of water that are well protected against the action of storms, and where the control of oyster enemies is more feasible. This article proposes the approaches for ascertaining the suitability of small, enclosed or semi-enclosed salt-water bodies for the propagation of oysters and other molluscs. It suggests the steps to be taken in studying the physiological, chemical, and biological characteristics of such ponds, and recommends certain devices and methods that should improve their conditions.

SMELT:

"Studies on Columbia River Smelt, *Thaleichthys pacificus* (Richardson)," by Wendell E. Smith and Robert W. Saalfeld, article, *Fisheries Research Papers*, vol. 1, no. 3, February 1955, pp. 3-26, printed. Department of Fisheries, Fishermen's Terminal, Salmon Bay, 4015 20th Ave., West, Seattle 99, Wash.

SOUTH CAROLINA:

(Bears Bluff Laboratories) *Annual Report 1955-1956*, Contribution No. 24, 19 pp., illus., printed. (Reprinted from Report of South Carolina Wildlife Resources Department, Fiscal Year July 1, 1955-June 30, 1956.) Bears Bluff Laboratories, Wadmalaw Island, S. C., January 1957. The activities of the Laboratories are described. Research was conducted on oysters, shrimp, crabs, finfish, and salt-water ponds.

SPAIN:

La Peche a Bermeo--Espagne (Fishery in Bermeo, Spain), by F. Doumenge, 19 pp., illus., printed in French. (Reprinted from *Vie et Milieu*, vol. VII, no. 3, 1956, pp. 307-325.) Centre Regional de la Productivite et des Etudes Economiques, Rue de Verdun 22, Montpellier, France. Discusses the economic importance of fishery at the port of Bermeo on the North Atlantic coast of Spain.

Sobre el fomento de la produccion pesquera de las aguas marinas y salobres confinadas; en el litoral de España y en el de sus Territorios de Soberania y de Protectorado (Concerning the Improvement of Fishery Production in Marine Waters and Confined Salt Waters of the Shores of Spain and Its Possessions and Protectorates), by Luis Lozano Rey, *Boletin del Instituto Espanol de Oceanografia*, no. 74, 83 pp., illus., printed in Spanish. Instituto Español de Oceanografia, Ministerio de Marina, Madrid, Spain, January 10, 1956. Presents a brief history of salt-water fisheries in Spain and Spain's possessions and protectorates. Discusses the possibilities of increasing fishery production by: intensifying the catch of fish that prey on other fish of commercial value; improving fishing methods and technology; augmenting research in fish species, fishery banks, and fishing industry, especially canning; cultivating and transplanting fish from other waters; and expanding fishery legislation. Also includes brief reports of the principal species of fish produced in specific regions of Spain and in the Balears Islands, Morocco, Ifni, Spanish Sahara, and Spanish Guinea.

SPOILAGE:

"Spoilage of Fish in the Vessels at Sea: 5. Bilgy Fish," by Norma L. McLean and C. H. Castell,

article, *Journal of the Fisheries Research Board of Canada*, vol. 13, no. 6, November 1956, pp. 861-868, illus., printed. Queen's Printer, Ottawa, Canada. A study of spoilage of fish in vessels at sea shows that offensive "bilgy" odors develop when fish are stored in contact with slime-soaked wooden surfaces. Anaerobic bacteria develop in the slime layer between the surfaces of the fish and the wood. The muscle of bilgy fish has a higher hydrogen sulphide and a lower mercaptan content than that of similar fish spoiling in ice but not in contact with wood. The trimethylamine and volatile acid values are usually, but not consistently, high in bilgy fish. In these experiments the bilgy odor became evident in the muscle of fish jammed up against heavily contaminated wood surfaces only when the hydrogen sulphide content reached approximately 0.05 mg. per 100 g. of fish.

TERRITORIAL WATERS:

"Comments by Certain Governments on the Provisional Articles Concerning the Regime of the High Seas and the Draft Articles on the Regime of the Territorial Sea Adopted by the United Nations International Law Commission at Its Seventh Session in 1955," article, *The American Journal of International Law*, vol. 50, no. 4, October 1956, pp. 992-1049, printed, single copy \$2.50. The American Society of International Law, 1826 Jefferson Place, NW., Washington 6, D. C. Presents the comments of six governments--Sweden, Israel, United Kingdom, United States, Cambodia, and Iceland--on the texts of draft articles concerning the regime of the high seas, the regime of the territorial sea, and conservation of living resources of the sea. Comments from member nations were requested by the United Nations International Law Commission to help prepare the final report on the law of the sea at the Commission's eighth session.

"Continental Shelf and International Law: Confusion and Abuse," by Josef L. Kunz, article, *The American Journal of International Law*, vol. 50, no. 4, October 1956, pp. 828-853, printed, single copy \$2.50. The American Society of International Law, 1826 Jefferson Place, NW., Washington 6, D. C. Discusses the great controversy of the doctrine of the continental shelf and its infringement upon the freedom of the high seas. Location of petroleum beneath the waters of the continental shelf has caused coastal nations to secure sovereignty over those waters. According to the author, such sovereignty should cover only petroleum and mineral rights but confusion of existing laws has arisen and the coastal states have also claimed sovereignty over fisheries, navigation, and other rights included in freedom of the high seas. The article stresses the need to strike a just balance between the legitimate interests of the coastal state and the high seas requirements of the international community.

(International Law Commission) *Report of the International Law Commission on the Work of its Eighth Session: (a) Final Report on the Regime of the High Seas, the Regime of the Territorial Sea and Related Problems*, A/C.6/L.387, November 28, 1956, 8 pp., processed. United Nations, International Law Commission, New York, N. Y.

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"Pan American Discussions on Offshore Claims," by Richard Young, editorial, The American Journal of International Law, vol. 50, no. 4, October 1956, pp. 909-916, printed, single copy \$2.50. The American Society of International Law, 1826 Jefferson Place, NW., Washington 6, D. C. Briefly relates the evolution of the concept of the continental shelf from its origin in the United States Proclamation of September 28, 1945, to the present. Discusses the outcome of several inter-American conferences, especially the Ciudad Trujillo Conference of March 1956 held expressly for the purpose of solving some of the existing problems caused by over-extension of the doctrine of the continental shelf.

"United Nations Report of the International Law Commission Covering the Work of Its Eighth Session, April 23-July 4, 1956," article, The American Journal of International Law, vol. 51, no. 1, January 1957, pp. 154-256, printed, single copy \$2.50. The American Society of International Law, 1826 Jefferson Place, NW., Washington 6, D. C. A report in four chapters. Chapter I covers the organization of the Commission's eighth session. Chapter II describes the accomplishments of the Commission, during past sessions, in regard to questions of high seas and the territorial sea; presents the text of the articles concerning the law of the sea; and includes a full commentary by the Commission on each of the articles of the law of the sea. Chapter III briefly covers progress on other subjects under study. Chapter IV reports on other decisions of the Commission.

TILAPIA:

The Breeding Behaviour of TILAPIA Species (Pisces: Cichlidae) in Natural Waters: Observations on T. KAROMO Poll and T. VARIABILIS Boulenger, by R. H. Lowe (McConnell), 24 pp., illus., printed. (Reprinted from Behaviour, vol. IX, 2-3.) East African Fisheries Research Organization, Jinja, Uganda, 1956.

Observations on the Biology of Tilapia (Pisces: Cichlidae) in Lake Victoria, East Africa, by Rosemary H. Lowe (McConnell), Supplementary Publication No. 1, 79 pp., illus., printed. East African Fisheries Research Organization, P. O. Box 343, Jinja, Uganda, 1956.

TRADE LIST:

The Office of Intelligence and Services, Bureau of Foreign Commerce, U. S. Department of Commerce, Washington 25, D. C., has published the following mimeographed trade list. Copies of this list may be obtained by firms in the United States from that office or from Department of Commerce field offices at \$2 each.

Oils (Animal, Fish and Vegetable)--Importers, Dealers, Producers, Refiners, and Exporters--Portugal, 14 pp. (January 1957). Contains the names and addresses, size of firm, and type of product handled by each firm. The report is divided into four parts and includes the following: Part 1(c) - Producers of Fish and Animal Oils; Part 2(b) - Refiners of Cod Liver Oil; and Part 4 - Exporters of Fish and Animal Oils. Exports

of marine animal oils totaled 8,376 metric tons in 1955. The United States imported about 27 percent of the 1,943 tons of cod liver oil exported from Portugal in 1955

TUNA:

"Observation of Schooling Juvenile Tuna, Euthyrnus alleteratus, in the Gulf of Mexico," by Harvey R. Bullis, Jr., article, Copeia, no. 2, May 20, 1955, pp. 153, printed, single copy \$2. American Society of Ichthyologists and Herpetologists, Mt. Royal and Guilford Aves., Baltimore, Md.

TURKEY:

"On the Turkish Fishing Boats," by H. I. Chapel and M. N. Ozerdem, article, Balik ve Balikcili (Fish and Fishery), vol. V, no. 1, January 1955, pp. 14-18, illus., printed in Turkish. Et ve Bal Kurumu, Istanbul, Turkey. A feature article giving the details of the Turkish type of fishing boats.

Some Observations on the Hydrography and Occurrence of Fish off the Turkish Black Sea Coast October 11-November 1, 1954, by Olav Aasen and Ilham Artuz, Marine Research Series Report No. 1, 23 pp., illus., printed. Fishery Research Center of the Meat and Fish Office, Istanbul, Turkey, 1956.

URUGUAY:

Neoplasma de los Peces de las Costas Uruguayas (Neoplasm of Fish from Uruguayan Shores), by Victor H. Bertullo and Roberto M. Traibel, 5 pp., illus., printed in Spanish with a brief summary in English. (Reprinted from Anales de la Facultad de Veterinaria del Uruguay, vol. VI, no. 3, Contralor Sanitario del Servicio Oceanografico y de Pesca, Montevideo, Uruguay.

VESSELS:

Analysis of the Fishing Operations of Small and Medium-Sized Modern Long-Liners and Draggers in the Atlantic Provinces, 1955, by John Proskie, Production Studies, vol. 5, Part 1, 47 pp., processed. Department of Fisheries of Canada, Markets and Economics Service, Ottawa, Canada, August 1956. A report, including many tables, of a 1955 study of performance of fishing boats of various sizes, gear and operational methods, capital cost, and problems of financing and related topics.

WHALES:

"Whale Off!" (The Story of American Shore Whaling), by Everett J. Edwards and Jeannette Edwards Rattray, 308 pp., illus., printed. Coward-McCann, Inc., New York, N. Y., 1955. A very interesting and well-written book on American shore whaling in general, and the small-boat whaling carried on off the eastern end of Long Island from 1640 to 1918, in particular--the first and last whaling of this sort done anywhere in America. It describes not only the thrills of the whale chase, but the everyday work and play of these shore-whalers who were farmers and fishermen in the intervals between whales.

