



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).
 FL - FISHERY LEAFLETS.
 SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

- | Number | Title |
|----------|--|
| CFS-1763 | - Frozen Fish, 1957 Annual Summary, 14 pp. |
| CFS-1767 | - Massachusetts Landings, December 1957, 6 pp. |
| CFS-1785 | - New York Landings, February 1958, 4 pp. |
| CFS-1786 | - Maine Landings, 1957 Annual Summary by Months, 6 pp. |
| CFS-1791 | - Alabama Landings, 1957 Annual Summary, 4 pp. |
| CFS-1794 | - Fish Meal and Oil, March 1958, 2 pp. |
| CFS-1795 | - Frozen Fish Report, April 1958, 8 pp. |
| CFS-1796 | - Fisheries of the United States and Alaska, 1956 Annual Summary, 12 pp. |
| CFS-1798 | - South Carolina Landings, March 1958, 2 pp. |
| CFS-1799 | - Georgia Landings, March 1958, 2 pp. |
| CFS-1804 | - Massachusetts Landings, January 1958, 3 pp. |
| CFS-1806 | - Fish Meal and Oil, 1957 Annual Summary, 4 pp. |
| CFS-1807 | - Shrimp Landings, January 1958, 6 pp. |
| CFS-1808 | - New York Landings, March 1958, 4 pp. |
| CFS-1810 | - Mississippi Landings, March 1958, 2 pp. |
| CFS-1811 | - Rhode Island Landings, March 1958, 3 pp. |
| CFS-1812 | - Alabama Landings, March 1958, 2 pp. |
| CFS-1813 | - California Landings, February 1958, 4 pp. |
| CFS-1814 | - Ohio Landings, April 1958, 2 pp. |
| CFS-1815 | - New York Landings, April 1958, 4 pp. |
| CFS-1816 | - Georgia Landings, April 1958, 2 pp. |
| CFS-1818 | - South Carolina Landings, April 1958, 2 pp. |
| CFS-1821 | - Texas Landings, February 1958, 3 pp. |
| CFS-1822 | - North Carolina Landings, April 1958, 3 pp. |
| CFS-1823 | - Fish Meal and Oil, April 1958, 2 pp. |
| CFS-1824 | - Mississippi Landings, April 1958, 2 pp. |
| CFS-1827 | - Florida Landings, April 1958, 7 pp. |
| CFS-1828 | - Maine Landings, April 1958, 3 pp. |

Wholesale Dealers in Fishery Products (Revised):

- SL-1 - Maine, 1957.
 SL-2 - New Hampshire, 1958.
 SL-14 - South Carolina, 1958.
 SL-31 - New York (Lakes Area), 1957.
 SL-32 - Minnesota (Mississippi River and Tributaries Area), 1958.
 SL-41 - Arkansas, 1957.
 SL-43 - Alabama (Mississippi River and Tributaries Area), 1957.

Firms Canning (Fishery Products), Revised:

- SL-101 - Salmon, 1957.
 SL-103 - Tuna and Tunalike Fishes, 1957.
 SL-105 - Alewives and Alewife Roe, 1957.
 SL-106 - Shad or Shad Roe, 1957.
 SL-107 - Fish and Shellfish Specialties, 1957.
 SL-109 - Caviar and Fish Roe, 1957.
 SL-111 - Clam Products, 1957.
 SL-113 - Crab Meat, 1957.
 SL-119 - Squid, 1957.
 SL-152 - Firms Manufacturing Oyster Shell Products, 1957 (revised).
 SL-160 - Firms Manufacturing Menhaden Products, 1957 (revised).
 SL-161 - Producers of Packaged Fish, 1957 (revised).

SSR-Fish. No. 240 - Selected References on the Channel Catfish, *Ictalurus punctatus*, by Carl D. Riggs, 10 pp., February 1958.

SSR-Fish. No. 244 - Use of Diagnostic X-Ray for Determining Vertebral Numbers of Fish, by Doyle F. Sutherland, 14 pp., illus., March 1958. The purpose of this paper is to (1) describe the types of X-ray machines commonly used in fish radiography, (2) describe necessary accessory equipment and supplies, (3) present techniques for successful resolution of fish vertebrae by radiography, (4) show a cost analysis of investment and operation of an X-ray machine, and (5) furnish a parts list and a circuit diagram from which an efficient, inexpensive machine may be assembled. Diagnostic X-ray equipment and supplies are described and methods given for resolving vertebral centri of menhaden larger than approximately $\frac{1}{2}$ -inch in length. According to the author, "only a minimum amount of technical knowledge is necessary to produce satisfactory radiographs from which vertebral counts can be made, thus reducing the time required to determine the vertebral numbers of large samples of fish and forming a fixed impression of the vertebrae which can be conveniently stored for future reference."

SSR-Fish. No. 247 - Further Studies on Green or Offcolor Condition in Precooked Yellowfin Tuna,

by John J. Naughton, Michael M. Frodyma, and Harry Zeitlin, 18 pp., illus., November 1957. Results are reported from a study of the "greening" condition that appears in certain samples of yellowfin tuna on precooking. Evidence is presented that this is an actual color condition similar to discoloring processes that occur in other meats, and is caused by an anomalous heme protein oxidation. Related to this tendency to turn green on precooking are the presence of high concentrations of metmyoglobin, some denaturation, and a slightly high fat peroxide content in the raw meat. In addition, green meat generally has a high flesh pigment content. Oxygen starvation due to the exhaustion of the fish that might occur in the process of catching does not seem to produce the factors that lead to greening, but rather a deterioration that goes on even in the frozen state seems to be responsible. Spectral reflectance was employed in much of the work and revealed important in situ changes or processes in flesh pigments that would have been impossible to note by other means.

SSR-Fish. No. 250 - Catch Rate, Size, Sex, and Food of Tunas and other Pelagic Fishes Taken by Trolling off Oahu, Hawaii, 1951-55, by Albert L. Tester and Eugene L. Nakamura, 25 pp., illus., December 1957. Presents the catch rate, lure preference, size, weight-length relation, sex and maturity, and food data for four marine species--skipjack tuna, little tuna, yellowfin tuna, and dolphin. Where possible, similar data on frigate mackerel, wahoo, and jack mackerel have been reported.

FL-445 - Operation of North Atlantic Type Otter Trawl Gear, by Boris O. Knake, 19 pp., illus., May 1958. Describes and illustrates in detail the method of side-trawl fishing. The basic principles of operation apply to any size net or vessel since the weight of the otter doors has no effect on the basic procedure. Each step is given in the procedure of setting the net, "shooting" the trawl, hauling the net, and landing the catch. Also contains a list of available publications on fishing gear.

Sep. No. 514 - Freezing and Storing Deep-Sea Lobsters--Some Tests on Cooked Whole Lobsters.

Sep. No. 515 - Nutritional Value of Fish in Reference to Atherosclerosis and Current Dietary Research.

Sep. No. 516 - Research in Service Laboratories (July 1958): "Technical Note No. 45 - Preparation of Dried Fish Solubles from Concentrated Press Liquors on a Laboratory Scale."

Fresh or Frozen Yellowfin, Skipjack, and Bigeye Tuna (Report of the Secretary of the Interior to the President and the Congress), 83 pp., illus., processed, May 1958. This report is concerned only with the factors affecting the condition of the domestic yellowfin, skipjack, and bigeye tuna fisheries. The report, including several pages of tables and charts, covers such items as the world tuna fisheries, United States tuna fisheries, the Eastern Pacific fishery for yellowfin and skipjack, trends in vessel operations, trends in employment in the tuna fisheries,

price trends, effect of imports on domestic prices and operating costs, Japanese production, and the import situation. The tuna industry, the report points out, is composed of many segments--large canners, small canners, importers, fishermen, and operators of such large vessels as bait boats and purse seiners and of such smaller craft as albacore trollers. Each group is confronted with different problems, mainly associated with the species involved or the stage at which it handles the tuna. According to the report, such adverse trends as declining landings and lower prices for domestic tuna have been intensified by the general upturn in costs, which has increased the cost of operations for the United States tuna producers. The American fishery must compete with foreign fisheries having lower vessel construction costs, long-term loans at low interest rates, and government subsidies which have facilitated the construction, rebuilding, and insuring of vessels.

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

California Fisheries Trends and Review for 1957, by V. J. Samson, 43 pp., processed. (Available free from the Market News Service, Post Office Bldg., San Pedro, Calif.) This is a review of the 1957 trends and conditions in the California fisheries, including a resume of American Tuna Boat Association tuna auction sales. Among the subjects discussed are the tuna fishery (cannery receipts; total pack for 1946-57; imports of frozen tuna and canned tuna in brine; ex-vessel prices; domestic albacore fishery and prices; canned tuna market conditions, prices, and standards; changes in the tuna fleets; and tuna catch and weighted average prices per ton, 1948-57); California sardine (pilchard) fishery (landings, ex-vessel prices, canned pack, and canned sardine prices); mackerel fishery (cannery receipts, ex-vessel prices, and canned mackerel markets and price quotations); anchovy fishery; canned pet-food production; and changes in fishery regulations. Included in the statistical tables are data on tuna and tuna-like fish (canners' receipts by species and by months; domestic landings; cannery receipts of frozen imported tuna; and canned pack by style of pack and by months); sardines (landings, canned pack, and meal and oil produced); mackerel and jack mackerel (canners' receipts, and canned pack); cannery receipts and production of miscellaneous fishery products (receipts and canned pack of anchovies, herring, and squid; pet food pack; meal and oil production); California canned tuna price ranges, 1956/57; freezings of fish and shellfish by months; cold-storage holdings of fish and shellfish by months; landings of market fish and shellfish at Eureka, San Pedro-Santa Monica, and San Diego by species and by months; and imports of fresh, frozen, canned, dried, salted, smoked, and miscellaneous fishery products into Arizona and California by commodity and country of origin.

California Fishery Products Monthly Summary, April 1958, 11 pp. (Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif.) California cannery receipts of raw tuna and tunalike fish, herring, mackerel, anchovies, and squid; pack of canned tuna, herring

mackerel, anchovies, and squid; market fish receipts at San Pedro, Santa Monica, San Diego, and Eureka areas; California imports; canned fish and frozen shrimp prices; American Tuna Boat Association auction sales; for the month indicated.

(Chicago) Monthly Summary of Chicago's Fresh and Frozen Fishery Products Receipts and Wholesale Market Prices, May 1958, 12 pp. (Market News Service, U. S. Fish and Wildlife Service, 656 W. Washington St., Chicago 6, Ill.) Receipts at Chicago by species and by states and provinces; fresh-water fish, shrimp, and frozen fillet wholesale prices; for the month indicated.

Gulf Monthly Landings, Production, and Shipments of Fishery Products, May 1958, 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 in Selected Areas of Virginia, North Carolina, and Maryland, May 1958, 4 pp. (Market News Service, U. S. Fish and Wildlife Service, 18 So. King St., Hampton, Va.) Fishery landings and 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 England Fisheries--Monthly Summary, May 1958, 21 pp. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston 10, Mass.) Reviews the principal New England fishery ports; presenting food fish landings by ports and species; industrial fish landings and ex-vessel prices; imports; cold-storage stocks of fishery products in New England warehouses; fishery landings and ex-vessel prices for ports in Massachusetts (Boston, Gloucester, New Bedford, Provincetown, and Woods Hole), Maine (Portland and Rockland), Rhode Island (Point Judith), and Connecticut (Stonington); frozen fishery products prices to primary wholesalers at Boston, Gloucester, and New Bedford; and landings and ex-vessel prices for fares landed at the Boston Fish Pier and sold through the New England Fish Exchange; for the month indicated.

(Seattle) Monthly Summary - Fishery Products, April 1958, 6 pp.; May 1958, 7 pp. (Market News Service, U. S. Fish and Wildlife Service, Pier 42, South, Seattle 4, 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 months indicated.

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

Description and Distribution of Larvae of Four Species of Tuna in Central Pacific Waters, by Walter M. Matsumoto, Fishery Bulletin 128

(From Fishery Bulletin of the Fish and Wildlife Service, vol. 58), 44 pp., illus., printed, 30 cents, 1958.

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.

ALMANAC:

The American Nautical Almanac for the Year 1959, 276 pp., illus., printed, \$2. Nautical Almanac Office, U. S. Naval Observatory, Washington, D. C., 1958. (For sale by Superintendent of Documents, Government Printing Office, Washington 25, D. C.) The object of this volume is to provide, in a convenient form, the data required for the practice of astronomical navigation at sea.

BELGIUM:

Belgium: An Act Empowering the Crown to Prescribe Measures to Protect Sea Reserves of Fish, Crustaceans, and Molluscs, Food and Agriculture Legislation, vol. 6, no. 3, XVI.5/57.2, 2 pp., printed. Food and Agriculture Organization of the United Nations, Rome, Italy. (For sale by the Columbia University Press, International Documents Service, 2960 Broadway, New York 27, N. Y.)

CANADA:

The Canadian Fish Culturist, Issue 22, May 1958, 26 pp., printed. Information and Educational Service, Department of Fisheries, Ottawa, Canada. Contains the following papers which were presented at a meeting of the Committee on Biological Investigations of the Fisheries Research Board of Canada held at Ottawa in January 1957: "Some Principles Involved in Regulation of Fisheries by Quota," by W. E. Ricker; "Regulation of the Atlantic Salmon Fisheries," by C. J. Kerswill; "Regulation of the Lobster Fishery," by D. G. Wilder; "Some Sociological Effects of Quota Control of Fisheries," by J. L. Hart; and "Some Economic Aspects of Control by Quota," by W. C. MacKenzie.

"A Century of B. C. Fishing," by L. G. Swann, article, Trade News, vol. 10, no. 10, April 1958, pp. 3-8, illus., printed. Department of Fisheries, Ottawa, Canada. A brief account of British Columbia's fishing industry, describing the early fishing and processing methods and the many changes that have occurred in this industry during the last century. Expansion of the various fisheries is discussed, as well as the early supervision and present regulation of the fisheries in British Columbia.

Journal of the Fisheries Research Board of Canada, vol. 15, no. 3, May 1958, 218 pp. text, 6 photographic plates, illus., printed. Fisheries Research Board of Canada, Ottawa, Canada. Contains, among others, the following articles: "The Fecundity of Pacific Herring (*Clupea pallasii*) in British Columbia Coastal Waters," by

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

Fezuko Nagasaki; "A Comparison of Sockeye Salmon Catches at Rivers Inlet and Skeena River, British Columbia, with Particular Reference to Age at Maturity," by Harold Godfrey; and "The Evolution of Migratory Behavior Among Juvenile Salmon of the Genus *Oncorhynchus*," by William S. Hoar.

COD:

Factors Influencing the Size of the Year Classes in the Arcto-Norwegian Tribe of Cod, by Kristian Fredrik Wiborg, *Fiskeridirektoratets Skrifter*, Report on Norwegian Fishery and Marine Investigations, vol. XI, no. 4, 24 pp., illus., printed. A. S. John Griegs Boktrykkeri, Bergen, Norway, 1957.

COLUMBIA RIVER BASIN:

Columbia River Basin Fishery Program, Part I--Comprehensive Research Program for Development of the Fishery Resources, 55 pp., processed; and Part II--Inventory of Streams and Proposed Improvements for Development of the Fishery Resources, 100 pp., illus., processed. Fishery Steering Committee, Columbia Basin Interagency Committee, 206 Custom House, Portland 9, Ore., January 1957.

DELAWARE:

Annual Report of the Delaware Commission of Shell Fisheries of the State of Delaware for the Fiscal Year July 1, 1956 to June 30, 1957, 7 pp., processed. The Delaware Commission of Shell Fisheries, State House Annex, Dover, Del., 1957. An annual report of the Delaware Commission of Shell Fisheries describing its activities in Delaware Bay, Indian Bay, and Rehoboth Bay. Also includes a report of the Commission's appropriations and disbursements during the fiscal year beginning July 1, 1956, and ending June 30, 1957.

EXPORTS:

Schedule B--Statistical Classification of Domestic and Foreign Commodities Exported from the United States, January 1, 1958, Edition, 1180 pp., printed, \$6.00 domestic and \$7.50 foreign. Foreign Trade Division, Bureau of the Census, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C.) Schedule B is the statistical classification of commodities exported from the United States used in compiling the official United States export statistics. It shows for each commodity description (including fishery products and related commodities) the commodity code numbers to be shown on the required Shipper's Export Declaration. Also includes classification of country designations used in compiling United States foreign trade statistics (Schedule C); code classification of customs districts and ports (Schedule D); units of quantity and conversion factors; code classification of economic classes; and export commodity group and subgroup classifications. The price of the Schedule, includes supplemental bulletins and pages which will be issued irregularly to keep the Schedule which is in loose-leaf form, up to date for an indefinite period.

FISH HANDLING:

Handling Fish in Trawlers at Sea to Produce a Quality Product, 22 pp. photographs, processed. Inspection and Consumer Service, Department of Fisheries, Ottawa, Ontario, Canada, 1958. Presents 11 examples of the right and wrong way to handle fish in trawlers at sea. Brief explanatory captions are included with each illustration.

Handling Fish in Inshore Boats to Produce a Quality Product, 16 pp. photographs, processed. Inspection and Consumer Service, Department of Fisheries, Ottawa, Ontario, Canada, 1958. Presents 8 examples of the right and wrong way to handle fish to ensure a first-quality product for consumption. Brief explanatory captions are included with each illustration.

FOOD AND AGRICULTURE ORGANIZATION:

Films on Fisheries and Related Subjects, 111 pp., processed. Food and Agriculture Organization of the United Nations, Rome, Italy, 1957. This is a revised list and augmented edition of the first list of films on fisheries and related subjects which was issued by FAO in May 1953. The title, technical data, and content summary of 401 films are given, as well as the addresses of the distributors.

FOREIGN TRADE:

"A Progress Report on the European Common Market and the Proposed Free Trade Area," by Wilfred Lavoie, article, *Foreign Trade*, vol. 109, no. 13, June 21, 1958, pp. 37-41, printed, single copy 20 Canadian cents. Department of Trade and Commerce, Ottawa, Canada. (For sale by the Queen's Printer, Government Printing Bureau, Ottawa, Canada.) Presents the provisions and outlines the steps being taken for implementation of the Treaty of Rome, instituting the European Economic Community (also known as the Common Market Treaty)--between Belgium, the Netherlands, Luxembourg, France, West Germany, and Italy--which came into force on January 1, 1958. Also reports on the progress made in negotiations for a Free Trade Area.

FRESHNESS TESTS:

"Problems in Determining Fish Freshness," article, *Food Technology*, vol. 12, no. 5, May 1958, pp. 260-262, printed, single copies of periodical--domestic US\$1.50, foreign US\$1.75. (Published monthly by the Institute of Food Technologists.) The Garrard Press, 510 North Hickory, Champaign, Ill.

GERMANY:

Seefischerei und Fischversorgung im Jahre 1956 (See Fisheries and Fish Situation in the Year 1956), Statistik der Bundesrepublik Deutschland Bank 178, 71 pp., illus., printed in German. W. Kohlhammer Verlag, Stuttgart, Germany.

HAKE:

"Fresh Fish. 3--Chilled Storage of Hake," by C. E. B. Cooper and C. E. Rosseau, article, Annual Report of the Fishing Industry Research Institute, 1955-56, vol. 9, pp. 8-9, printed. Fishing Industry Research Institute, Cape Town,

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

Union of South Africa. Covers a study of possible differences in the storage life of two different sizes of trawl-caught hake. These hake were headed and gutted, packed in crushed ice, delivered to the Institute's laboratory less than 24 hours after removal from the sea, and divided into two weight groups. Group 1 contained hake weighing from $1\frac{1}{2}$ to $2\frac{1}{2}$ pounds, whereas group 2 contained hake weighing from 4 to 6 pounds. Their rates of decomposition during storage in crushed ice were compared on the basis of belly-cavity odor, meat odor when separated from the backbone by a deep internal cut, and odor of the steamed and broiled meat. The external appearance of the skins and cut surfaces and the meat firmness of the two size groups did not differ significantly. Comparisons of hake caught during February and March showed that large hake stayed fresh for 8 days without the development of objectionable odors in raw or cooked samples. On days 9 and 10, however, the larger fish were judged to be off in odor. Small hake remained fresh for an average of 7 days, after which they were judged off in odor. Further comparisons will be made throughout the year, particularly during the winter when the storage life of hake is believed to be rather long. Hake stored at 70° to 75° F. and 95 percent relative humidity were compared for deterioration with hake stored at the same temperature and 30 to 35 percent relative humidity. These hake were suspended in still air in sealed containers. Their condition (deterioration) was evaluated by the degree of off-odor development in the belly-cavity. Comparisons of similar hake showed that hake held under humid conditions developed fishy, sour odors within 20 hours; whereas hake stored under relatively dry conditions were either fresh smelling or possessed only slightly fruity odors after 20 hours of storage. Both groups of hake had developed objectionable odors after 30 hours of storage. Hake stored at the low relative humidity showed surface drying. Earlier studies have shown that the storage life of trawled hake can be extended by dipping the hake before they are iced in a solution that contains a preservative such as sodium benzoate. A further confirmatory test of sodium benzoate dips was carried out aboard the trawler *Gilia* during May of 1955. In this study, headed and gutted hake weighing 2 to 3 pounds were dipped immediately after they were gutted--in groups of 24--for 30 minutes in 8 gallons of either 1-percent sodium benzoate dissolved in fresh water or 1-percent sodium benzoate dissolved in 10-percent brine. A third group of 24 hake was retained undipped as a control. All 3 groups of hake were then stored separately in crushed ice.

Hake that had been dipped in either of the benzoate solutions remained fresh and without the development of objectional odors in raw or cooked samples for 11 days. These fish, however, were judged off in odor after 13 to 14 days of storage. Undipped control hake remained fresh for 8 days after they were caught. These hake were judged off in odor after 10 to 11 days.

HONDURAS:

Investigacion y Estudio de Puertos Pesqueros de Honduras Costa Norte y Costa Sur (Investigations and Studies of the North and South Coast Fishery Ports of Honduras), by Adolfo Naranjo Betancourt, 137 pp., map folder, processed in Spanish. Banco Nacional de Fomento, Division Tecnica, Tegucigalpa, Honduras, 1957. Reports on the present fishery activities in Honduras and discusses the possibilities of developing the fishery industry to elevate it to a position of major importance in the national economy. Contains a list of the common and scientific names of the most important commercial species of fish, crustaceans, and mollusks; fishery production statistics; statistics on vessels and gear; and comprehensive surveys of the most important fishery ports of Honduras.

IMPORTS:

United States Imports of Merchandise for Consumption (Commodity by Country of Origin), Calendar Year 1957, Report No. FT 110, 197 pp., processed \$1. Bureau of the Census, U. S. Department of Commerce, Washington, D. C. June 1958. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) The import statistics include government as well as nongovernment shipments of merchandise (including fish and shellfish and fishery byproducts) from foreign countries to the United States.

INTERNATIONAL COMMISSIONS:

International Fisheries Convention of 1946 (Report by the President on the Sixth Meeting of the Permanent Commission), 34 pp., processed in English and French. Office of the Permanent Commission, 3 Whitehall Place, London, S. W. 1, England, 1958. A complete report of the Sixth Meeting of the Permanent Commission which was held in London during October 1957. All thirteen member governments were represented by Delegations. Observers were present from the United States and the Union of Soviet Socialist Republics. Observers from the International Council for the Exploration of the Sea, the International Commission for the Northwest Atlantic Fisheries, and the Food and Agriculture Organization of the United Nations also attended.

ISRAEL:

Fishermen's Bulletin, no. 15, March 1958, 40 pp., illus., printed in Hebrew with summaries in English. Ministry of Agriculture, Division of Fisheries, P. O. B. 699, Haifa, Israel. Contains, among others, the following articles: "Around the Fisheries of Israel," by M. Shavit; "The International Council for the Exploration of the Sea Conference in Bergen, 1957," by E. Gottlieb; "Ancient Fishing of the Hebrews from Foreign Literary Sources," by M. Nun; "Know Your Fish," and "A Comparison between the Fish Fauna of the Eastern Mediterranean and the Red Sea," by Dr. A. Ben-Tuvia; "Measurements of Trawl Gear by Means of Underwater Equipment," by M. Ben-Yami; and "On the Performance of the Portuguese Otter Boards."

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

ITALY:

Bollettino di Pesca, Piscicoltura e Idrobiologia (Bulletin of Fishery, Fish Culture, and Hydrobiology), vol. 12, no. 1, January-June 1957, 115 pp., 6 pp. photographs, illus., printed in Italian with English summaries. Laboratorio Centrale di Idrobiologia, Piazza Borghese, 91, Rome, Italy. Contains, among others, the following articles: "Prime Osservazioni sulla Biologia della Sardina (*Sardina pilchardus* Walb.) del Tirreno e Considerazioni Relative alla Pesca" (Preliminary Observations on the Biology of the Sardine (*Sardina pilchardus* Walb.) in the Tyrrhenian Sea and Factors Related to the Fishery), by Ernesto Sommani; and "Omologazione delle Voci Locali-Dialettali coi Momi Italiani e Scientifici di Pesci, Crostacei, Molluschi, ecc., che si Pescano nello Stretto di Messina e Zone Viciniori, e che Interessano, in Massima Parte l'Alimentazione" (List of the Italian and Scientific Names of the Most Common and Generally Edible Fish, Crustaceans, Mollusks, etc., Found in the Strait of Messina and Vicinity), by Antonino Cavaliere.

Statistica della Pesca e della Caccia, 1957 (Fishing and Hunting Statistics, 1957), 131 pp., illus., printed in Italian. Istituto Centrale di Statistica, Rome, Italy, 1957. Landings of fish in 1956, ex-vessel prices by species, average wholesale prices, number of fishing vessels by type on December 31, 1956.

JAPAN:

Memoirs of the Faculty of Fisheries, Hokkaido University, vol. 5, no. 2, 52 pp., illus., printed. The Faculty of Fisheries, Hokkaido University, Hakodate, Japan, 1957.

REPUBLIC OF KOREA:

A Report on the Development of the Fresh Water Fisheries of South Korea, by Charles L. Fuqua, 23 pp., illus., processed. Office of the Economic Coordinator Korea, Division of Agriculture, Branch of Fisheries, Seoul, South Korea, May 1958. A study and evaluation of the fresh-water fishery resources of South Korea was made to assist the Korean Government in its program to secure greater food production. This study includes information on the species of fresh-water fish; the carp fishery and the possibility of producing about 220 million pounds of carp annually; fish production in water impoundments; the salmon fishery; trout; eels and other species; and tilapia. Fish culture and management, research and education, construction of new hatcheries, and related subjects are also discussed. The report contains definite conclusions and recommendations regarding the future development of the fresh-water fisheries and presents a basis for the development of a fresh-water fisheries program for South Korea.

LOBSTER:

"The Yarmouth Project," by G. J. Gillespie, article, Trade News, vol. 10, no. 10, April 1958, pp. 9-11, illus., printed. Department of Fisheries, Ottawa, Canada. Undersea experiments in Yarmouth, Nova Scotia, waters to study the efficiency of metal traps have been completed.

The original project involved the use of steel traps fishing against wooden traps. In the experiment just completed, steel traps and different types of aluminum traps were used. Nylon rope and twine, aluminum floats, aluminum and fiberglass lobster buoys were also tested. The author states that "Assessments of the results of the Yarmouth experiment cannot be made until all findings are correlated and studied by fisheries biologists and engineers. Statistics on comparative catches by wooden and metal traps have been compiled and these figures will be used in the general appraisal of the whole operation. If the efficiency of metal traps can be established, the use of such equipment could have far-reaching effects on the lobster fishery of Canada's Atlantic Provinces."

MULLET:

The Age and Growth of the Red Mullet *MULLUS BARBATUS* L. in Israel Waters, 1953-1955, by E. Gottlieb, Bulletin No. 12, 20 pp., illus., printed. Sea Fisheries Research Station, Haifa, Israel, June 1956.

NEW GUINEA:

"Freshwater Crayfish in Netherlands New Guinea Mountains," by L. B. Holthuis, article, SPC Quarterly Bulletin, vol. 8, no. 2, April 1958, pp. 36-39, illus., printed, single copy 30 US cents. South Pacific Commission, Noumea, New Caledonia. Reports on the fresh-water crayfish resources of the Wissel Lakes region of Netherlands New Guinea. The article is especially timely since the South Pacific Commission has begun to explore the possibilities of introducing new species of edible pond fish to this area.

NORWAY:

Norges Fiskerier, 1956 (Fishery Statistics of Norway), Norges Offisielle Statistikk XI, no. 293, 99 pp., illus., printed in Norwegian with foreword, table of contents, and summary in English. Fiskeridirektoren, Bergen, Norway, 1958. A detailed statistical report on the fisheries of Norway with discussions of the number of fishermen, craft, processing plants, and gear; quantity and value of total landings; herring, sprat, cod, mackerel, tuna, dogfish, and capelin fisheries; fisheries in distant waters; and catch of small whales, and sealing. Statistics are given on quantity, value, and average prices of all species of fish caught commercially. Also contains a list of scientific and common names, in four different languages, of fish, crustaceans, mollusks, and other aquatic organisms in Norwegian waters; drawings of the principal species of fish, mollusks, and crustaceans; and drawings of the different types of fishing gear.

OYSTERS:

"Chlortetracycline for Preserving Gulf Oysters," by A. F. Novak, E. A. Fieger, and M. E. Bailey, article, Food Technology, vol. 12, no. 5, May 1958, pp. 237-239, printed, single copies of periodical--domestic US\$1.50, foreign US\$1.75. (Published monthly by the Institute of Food Technologists.) The Garrard Press, 510 North Hickory, Champaign, Ill.

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

El Ostion Cubano (The Cuban Oyster), by Dr. Mario Sanchez Roig and Federico Gomez de la Maza, Folleto de Divulgacion No. 1, 52 pp., illus., printed in Spanish. Ministerio de Agricultura, Asesoria Tecnica de Pesca, Havana, Cuba, 1954. Reviews the biology of the Cuban oyster (Crassostrea rhizophorae Guiding), presenting comparative background data on Crassostrea virginica, the most important oyster species of the United States Atlantic coast. Also covers the possibilities of artificial cultivation of oysters in Cuba and governmental regulations for the protection and conservation of Cuba's oyster resources.

PORTUGAL:

Estatistica das Pescas Maritimas no Continente e Ilhas Adjacentes no Ano de 1955 (Marine Fisheries Statistics of the Mainland and Adjacent Islands, 1955), 133 pp., printed in Portuguese. Ministerio da Marinha, Comissao Central de Pescarias, Lisbon, Portugal, 1957. Covers fisheries production by districts, species, and methods of catch; catch of marine mammals; vessels and gear; and number of fishermen.

Gremio dos Armadores da Pesca da Baleia, Relatório e Contas do Exercício de 1957 e Orçamento para 1958 (Whaling Vessel Owner's Guild, Report of Operations in 1957 and Budget for 1958), 35 pp., printed in Portuguese. Gremio dos Armadores da Pesca da Baleia, Rua D. Pedro V, 29-1, Lisbon, Portugal

Resumo Estatístico das Pescas Portuguesas 1938-1956 (Statistical Account of Portuguese Fisheries, 1938-1956), Publicacao No. 34, 52 pp., illus., printed in Portuguese and English. Gabinete de Estudos das Pescas, Avenida da Liberdade, 211, 4, dt, Lisbon, Portugal, 1957.

RED SEA:

Contributions to the Knowledge of the Red Sea--1. Sur Quelques Annelides Polychetes du Golfe d'Aqaba (On Some Annelid Polychaeta of the Gulf of Aqaba), by Pierre Fauvel and 2. Pycnogonida from the Gulf of Aqaba, by J. H. Stock, Bulletin No. 13, 14 pp., illus., printed, no. 1 in French and no. 2 in English. State of Israel Ministry of Agriculture, Division of Fisheries, Haifa, Israel, July 1957.

SAFETY OF LIFE AT SEA:

Convenio Internacional para la Seguridad de la Vida Humana en el Mar (International Conference on the Safety of Life at Sea)--London, 1948, 208 pp., printed in Spanish. Ministerio de Asuntos Exteriores, Madrid, Spain, 1953.

SALMON:

The Movements of Salmon Tagged in the Sea, Altens, Kincardineshire, 1952, by K. A. Pyefinch and W. M. Shearer, Scottish Home Department Freshwater and Salmon Fisheries Research No. 19, 10 pp., illus., printed, 3s. (42 U. S. cents). Her Majesty's Stationery Office, Edinburgh, Scotland.

Notes on the Relationship between Plankton Sampling and the Food of Pacific Salmon, by George H. Allen, Fishery Report No. 3, 41 pp.,

illus., processed. Department of Oceanography, University of Washington, Seattle 5, Wash., November 1956.

SARDINES:

"A Consumer Survey Versus Panel Testing for Acceptance Evaluation of Maine Sardines," by Elizabeth F. Murphy, Berton S. Clark, and Ralph M. Berglund, article, Food Technology, vol. 12, no. 5, May 1958, pp. 222-226, printed, single copies of periodical--domestic US\$1.50, foreign US\$1.75. (Published monthly by the Institute of Food Technologists.) The Garrard Press, 510 North Hickory, Champaign, Ill.

Etude sur les Differentes Methodes de Cuisson de la Sardine (Study of the Different Methods of Cooking Sardines), by R. Meesemaeker and Y. Sohier, French version 34 pp., English version 28 pp., processed, available in either French or English. Federation des Industries de la Conserve au Maroc, 37 Rue Mareuil, Casablanca, Morocco, October 1957. Presents brief reports of the results obtained in cooking sardines by various methods--in water, brine, oil, hot air, and steam--discussing the advantages and disadvantages of each method. Includes statistical tables showing, for each method of cooking, the variations in weight and composition of sardines during cooking as compared with turnips, carrots, and beef cooked in the same manner.

SEA LAMPREY:

"Attack on the Sea Lamprey," by J. W. Moffett, article, Michigan Conservation, vol. XXVII, no. 3, May-June 1958, pp. 21-27, illus., printed. Michigan Department of Conservation, Lansing, Mich. Describes the use and effectiveness of various mechanical and chemical devices to control the sea lamprey in the Great Lakes. Briefly covers the problems of reestablishing the depleted lake trout populations of the upper Great Lakes.

SEAWEED:

"Bright Future for Seaweed," article, Food Manufacture, vol. 33, March 1, 1958, p. 90, printed. Leonard Hill, Ltd., Stratford House, 9 Eden Street, London, NW1, England. Discusses the encouraging prospects of the seaweed industry as a result of the high mineral and vitamin content of seaweed. Reports on a new seaweed meal being produced in Norway which has provided beneficial results in use as an animal food supplement--especially in feeding experiments with dairy cattle and sheep.

SHARK:

Notes on the Greenland Shark, ACANTHORHINUS CARCHARIAS (Gunn), Fiskeridirektoratets Skrifter, Report on Norwegian Fishery and Marine Investigations, vol. XI, no. 10, 12 pp., illus., printed. A. S. John Griegs Boktrykkeri, Bergen, Norway, 1957. Contains two papers: (1) "The Reproduction Problem of the Greenland Shark," by Paul Bjerkan; and (2) "A Uterine Foetus and the Uterus from a Greenland Shark," by Einar Koefoed.

SHRIMP:

Comparative Fishing Trials with Shrimp Nets, 1954-1956, by M. N. Mistakidis, Fishery

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

Investigations Series II, vol. XXII, no. 1, printed, 5s. 10d (80 U. S. cents). Her Majesty's Stationery Office, York House, Kingsway, London, W. C. 2, England.

Los Camarones de Mar Cubanos (The Marine Shrimp of Cuba), by Dr. Mario Sanchez Roig and Federico Gomez de la Maza, Folleto de Divulgacion No. 2, 83 pp., illus., printed in Spanish. Ministerio de Agricultura, Asesoria Tecnica de Pesca, Havana, Cuba, 1954. Covers the biology of Cuba's most important commercial species of shrimp--*Penaeus setiferus*, *P. schmitti*, *P. duorarum*, *P. aztecus*, and *P. brasiliensis*. Reports on the possibilities of developing Cuba's shrimp fisheries through improved fishery methods and exploratory research. Presents extensive background material on the shrimp fisheries of the United States Gulf Coast.

Prawn and Prawn Fishery of East Pakistan, Nazir Ahmad, 31 pp., 10 plates, illus., printed. Director of Fisheries, Dacca, East Pakistan, 1957.

TROUT:

"Freezing at World's Largest Trout Hatcher," article, Quick Frozen Foods, November 1957, pp. 50-51, 117, illus., printed. Quick Frozen Foods, E. W. Williams Publications, 82 Wall St., New York 5, N. Y. This article describes the

process of freezing trout at the world's largest trout hatchery. Trout are caught, dressed, and placed in the freezer within 30 minutes. The trout are seined while still alive and are placed into individual grading boxes. After evisceration and dressing, the fish are placed on trays and then loaded on carts and rolled to the sharp freezer at -50° F. They are glazed with 3 coats of ice, then packaged and carried to the storage room.

The Migrations and Homing Behaviour of Brown Trout, (SALMO TRUTTA L.), by T. A. Stuart, Scottish Home Department Freshwater and Salmon Fisheries Research No. 18, 30 pp., illus., printed, 8s. (US\$1.12). Her Majesty's Stationery Office, Edinburgh, Scotland.

VESSELS:

Driving Efficiency with Active Rudder (Advantages of Main and Auxiliary Propellers in Tandem), by F. Busmann, 4 pp., illus., printed. (Reprinted from The Shipping World, December 30, 1953.) The Shipping World, 1 Arundel St., London, W. C. 2, England.

The Pleuger Active Rudder, 4 pp., illus., printed. (Reprinted from Ship and Boat Builder, July 1953.) Ship and Boat Builder, John Trundell Ltd., Temple Chambers, Temple Ave., London, E. C. 4, England.



CONTENTS (CONTINUED)

	Page		Page
FOREIGN (Contd.):		FEDERAL ACTIONS (Contd.):	
U. S. S. R.:		Department of State:	
Fisheries Programs Extensive FAO Biologist Reports	83	United States Repeats Protest of Russian Claim That Peter the Great Bay is Internal Waters	110
Sponge Rubber Fenders for Vessels Loading at Sea	83	Treasury Department:	
United Kingdom:		Bureau of Customs:	
Fishing Industry Urges Government to Conduct Trawl Efficiency Studies	84	Customs Restriction on Obtaining Data from Vessels' Manifests Liberalized	111
Freeze-Drying Foods Tried Commercially	85	White House:	
Fried Fish Shops Use Portion-Pack Fish Fillets	85	Pacific Halibut Fishery Regulations for 1958 Approved by the United States	112
Proposed Icelandic Decree on 12-Mile Fishing Limits Rejected	86	Eighty-Fifth Congress (Second Session)	116
Studies on Boxing Fish at Sea	86	FISHERY INDICATORS:	121
Yugoslavia:		Chart 1 - Fishery Landings for Selected States	121
Marine Fishing Industry, 1957	86	Chart 2 - Landings for Selected Fisheries	122
FEDERAL ACTIONS:	87	Chart 3 - Cold-Storage Holdings and Freezings of Fishery Products	123
Federal Trade Commission:		Chart 4 - Receipts and Cold-Storage Holdings of Fishery Products at Principal Distribution Centers	124
Primary Broker of Canned Salmon Charged with Illegal Brokerage Payments	87	Chart 5 - Fish Meal and Oil Production - U. S. and Alaska	124
Primary Seafood Broker Charged with Payment of Illegal Brokerage	87	Chart 6 - Canned Packs of Selected Fishery Products	125
Department of the Interior:		Chart 7 - U. S. Fishery Products Imports	126
Whaling Regulations	88	RECENT FISHERY PUBLICATIONS:	127
Fish and Wildlife Service:		Fish and Wildlife Service Publications	129
Changes in Fishery Loan Fund Regulations Proposed	91	Miscellaneous Publications	129
Fishery Products Inspection and Certification Regulations, and Standards for Fish Sticks, Breaded Shrimp and Frozen Fish Blocks Reissued	93		