



RECENT FISHERY PUBLICATIONS

FISH AND WILDLIFE SERVICE

PUBLICATIONS

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

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

Number	Title
CFS-1999	- Mississippi Landings, 1958 Annual Summary, 3 pp.
CFS-2004	- Alabama Landings, 1958 Annual Summary, 3 pp.
CFS-2006	- Louisiana Landings, December 1958, 2 pp.
CFS-2027	- New Jersey Landings, March 1959, 3 pp.
CFS-2040	- Massachusetts Landings, 1958 Annual Summary, by ports, 16 pp.
CFS-2041	- Massachusetts Landings, 1958 Annual Summary, by gear and subarea, 16 pp.
CFS-2050	- Rhode Island Landings, January 1959, 3 pp.
CFS-2051	- California Landings, January 1959, 4 pp.
CFS-2052	- Massachusetts Landings, January 1959, 4 pp.
CFS-2053	- New York Landings, March 1959, 4 pp.
CFS-2054	- Alabama Landings, February 1959, 2 pp.
CFS-2059	- Shrimp Landings, January 1959, 6 pp.
CFS-2060	- Mississippi Landings, March 1959, 2 pp.
CFS-2064	- Fish Meal and Oil, April 1959, 2 pp.
CFS-2061	- North Carolina Landings, April 1959, 3 pp.
CFS-2062	- Georgia Landings, April 1959, 2 pp.
CFS-2063	- South Carolina Landings, April 1959, 2 pp.
CFS-2065	- Massachusetts Landings, February 1959, 5 pp.
CFS-2066	- Florida Landings, April 1959, 7 pp.
CFS-2067	- Rhode Island Landings, February 1959, 3 pp.
CFS-2068	- New York Landings, April 1959, 4 pp.
CFS-2069	- Frozen Fish Report, May 1959, 8 pp.
CFS-2070	- Maine Landings, April 1959, 3 pp.
CFS-2071	- California Landings, February 1959, 4 pp.
CFS-2072	- Texas Landings, March 1959, 3 pp.
CFS-2075	- Ohio Landings, April 1959, 2 pp.
CFS-2078	- Alabama Landings, March 1959, 2 pp.
CFS-2082	- Texas Landings, April 1959, 3 pp.

Wholesale Dealers in Fishery Products (Revised):

- SL- 7 - New Jersey, 1959.
 SL- 9 - Delaware, 1959.
 SL-13 - North Carolina, 1959.
 SL-14 - South Carolina, 1959.
 SL-15 - Georgia, 1959.
 SL-17 - Alabama, 1958.
 SL-18 - Mississippi Coastal Area, 1959.
 SL-22 - Oregon, 1959.
 SL-23 - Washington, 1959.
 SL-33 - Missouri (Mississippi River and Tributaries Area), 1959.
 SL-39 - Tennessee, 1959.
 SL-41 - Arkansas, 1959.
 SL-40 - Oklahoma, 1959.
 SL-43 - Alabama (Mississippi River and Tributaries Area), 1959.
 SL-45 - Mississippi (Mississippi River and Tributaries Area), 1959.
 SL-46 - Texas (Mississippi River and Tributaries), 1959.
 SL-47 - Louisiana (Mississippi River and Tributaries), 1959.

Firms Canning:

- SL-102A - Pacific Sardines, 1958.
 SL-103 - Tuna and Tunalike Fishes, 1958.
 SL-105 - Alewives or Alewife Roe, 1958.
 SL-106 - Shad or Shad Roe, 1958.

Canned Fish Retail Prices:

- FL-476h - May 1959, 27 pp.

Canned Fish Consumer Purchases:

- FL-478e - April 1959, 31 pp.
 FL-478f - May 1959, 31 pp.

SSR-Fish. No. 272 - Doctoral Dissertations on the Management and Ecology of Fisheries, Additional Listings, 1952-55, compiled by Harvey L. Moore, 35 pp., January 1959.

SSR-Fish. No. 287 - The Electrical Resistivity Meter in Fishery Investigations, by Robert E. Lennon, 17 pp., illus., January 1959. A portable resistivity (or conductivity) meter is easily used in fishery investigations to obtain rapid and precise measurements of the electrical resistance (or conductance) of waters. These measurements can be used to estimate the total dissolved solids content of waters, to facilitate the selection of appropriate gear for efficient electrofishing, and to determine the velocity, stretch-out, dilution, and effective range of a solute over miles of a stream in conjunction with chemical reclamation operations. Applications of resistivity measurements on Appalachian streams are discussed.

SSR-Fish. No. 295 - Fish and Shellfish Consumption in Public Eating and Drinking Places, vol. II,

213 pp., March 1959. This is the second of two volumes reporting on the results of a survey of fish and shellfish consumption in public eating places. Volume I, issued as Special Scientific Report--Fisheries No. 218, gave an analysis of the responses to the questionnaire on a national basis. Volume II gives an analysis of the cross-tabulated responses on a regional, type-of-establishment, sales-size, and city-size basis.

SSR-Fish-No. 300 - Passage of Salmonoids Through a Darkened Fishway, Clifford W. Long, 12 pp., illus., May 1959.

SSR-Fish. No. 301 - The Problem of Fishway Capacity, by Robert H. Lander, 8 pp., illus, May 1959.

Sep. No. 556 - Construction and Catch Selectivity of Albacore Gill Nets Used in the Central North Pacific.

Sep. No. 557 - Nutritional Values of Fish-Meal Proteins and Their Relation to Processing Variables.

Sep. No. 558 - Research in Service Laboratories (August 1959): Contains these articles--"Canned Tuna Quality Improvement Studies," "Chemical Composition of Pacific Coast Fish and Shellfish," "Control of Drip in Chilled and Frozen Fishery Products," "Freezing and Cold Storage of Pacific Oysters and Fresh-Water Fish," "New Products from Fish Oils," "Studies on Chemical Compounds Formed During Spoilage of Fish."

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

California Fishery Products Monthly Summary, May 1959, 13 pp. (Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif.) California cannery receipts of tuna and tunalike fish, mackerel, and anchovies; pack of canned tuna, mackerel, and anchovies; market fish receipts at San Pedro, Santa Monica, and Eureka areas; California imports; canned fish, imported canned tuna, and frozen shrimp prices; ex-vessel prices for cannery fish; and 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 1959, 13 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 for fresh- and salt-water fish and shellfish; and wholesale prices for fresh and frozen fishery products; for the month indicated.

Gulf of Mexico Monthly Landings, Production, and Shipments of Fishery Products, May 1959, 6 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; wholesale prices of fish and shellfish on the New Orleans French Market; sponge sales; and fishery imports at Port Isabel and Brownsville, Tex., for the month indicated.

New York City's Wholesale Fishery Trade--Monthly Summary for February and March 1959, 19 pp. and 20 pp., respectively (Market News Service,

155 John St., New York 38, N. Y.) Includes summaries and analyses of receipts and prices on wholesale Fulton Fish Market, imports entered at New York City, primary wholesaler prices for frozen products, and marketing trends; for the months indicated.

Receipts and Prices of Fresh and Frozen Fishery Products at Chicago, 1958, by G. A. Albano, 63 pp., processed, July 1959. (Available free from the Market News Service, U. S. Fish and Wildlife Service, 565 W. Washington St., Chicago 6, Ill.) In the analysis of receipts of fishery products at Chicago, the author discusses the gain in 1958 fishery products receipts and carload receipts at Chicago. He also discusses sources of receipts, trends in fishery products transportation, receipts by months, receipts by species and varieties, lake trout and whitefish fishery and receipts, cold-storage inventories, imports of fresh and frozen fresh-water fish from Canada, imports of frozen groundfish fillets, and trends and developments in 1958. Also included is a table giving the names, classifications, and approximate weights of certain fishery products as used in the Chicago wholesale markets. The second section presents statistical data on fresh and frozen fishery products receipts at Chicago by species and by states and provinces of origin, states and provinces by species, species by months, states and provinces by months, totals by species, and totals by states and provinces. Receipts are tabulated by method of transportation (truck, express, and freight). A table shows the monthly range of wholesale prices of some of the leading varieties of fresh and frozen fishery products handled in the Chicago market.

Receipts of Fresh and Frozen Fishery Products at New York City's Fulton Fish Market, 1958 (Includes Statistics and Marketing Trends), by T. J. Risoli, 36 pp., processed. (Available free from the Market News Service, U. S. Bureau of Commercial Fisheries, 155 John St., New York 38, N. Y.) The first part of this annual summary discusses fishery products receipts and marketing trends in the salt-water section of New York City's wholesale Fulton Fish Market during 1958, and marketing trends in New York City's wholesale fresh-water fish market for 1958. The second part consists of a series of statistical tables giving the receipts of finfish and shellfish on the salt-water section of Fulton Fish Market, New York City, 1958; receipts by months and methods of transportation; receipts by species, methods of transportation, states and provinces; prices of selected frozen fishery products, 1958, in New York Metropolitan Area; finfish receipts by points of origin and methods of transportation; shellfish receipts by points of origin and methods of transportation; and imports of selected fresh and frozen fishery products, 1958 compared with 1957.

Seattle and Astoria--Landings, Receipts, and Value of Fishery Products, 1958, by Charles M. Reardon, 43 pp., processed. (Available free from the Market News Service, U. S. Fish and Wildlife Service, Pier 42, South, Seattle 4, Wash.) Reviews Pacific Northwest fisheries trends and their effect upon Seattle fishery products receipts for 1958, halibut landings, carload shipments of fishery products from Seattle by months, truckload shipments from Seattle by months, and

names, classifications, and approximate standards as used on Seattle wholesale market. The Astoria section presents fisheries trends and products receipts for 1958, landings and receipts, and annual totals of landings and receipts for 1957 and 1958. The report also contains a number of statistical tables on fresh and frozen salmon receipts at Seattle, halibut landings, and ex-vessel landings by the otter-trawl fleet.

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Fishery Statistics of the United States, 1957, by E. A. Power, Statistical Digest No. 44, 431 pp., illus., printed, \$2, 1959. This is the latest in a series of annual statistical reports on the fisheries of the United States and Alaska, which contains data on the catch and ex-vessel value of fishery products, employment in the fisheries, quantity of gear operated, the number of fishing craft employed in the capture of fishery products, and certain information on the production and value of manufactured fishery products and byproducts. The statistical surveys, conducted during 1958 for 1957 data, covered all sections of the United States. The catch of fishery products in all sections of the United States and Alaska during 1957 totaled approximately 4.8 billion pounds, valued at \$351 million ex-vessel--a decrease of 9 percent in quantity and 5 percent in value as compared with 1956.

Menhaden landings amounted to 1.7 billion pounds, and accounted for 35 percent of the total domestic catch of fish and shellfish. The Chesapeake area was the only region showing an increase in menhaden production.

Shrimp was again the most valuable single item taken by domestic fishermen, amounting to 204 million pounds valued at over \$73 million ex-vessel. The Gulf of Mexico is the major shrimp-producing area and accounted for 83 percent of the volume and 87 percent of the value of the total 1957 shrimp catch. Commercial quantities of small shrimp from Washington and Oregon, which became significant in 1956, registered important gains in 1957.

Several of the major food fish recorded noteworthy increases during the year: Pacific mackerel (up 12 million pounds); jack mackerel (up 6 million pounds); Maine sea herring (up 13 million pounds); and crabs (up 28 million pounds). One of the outstanding production gains made in the commercial fisheries was in the newly-developed New England otter-trawl fishery for industrial fish used in the manufacture of fish meal, oils, and animal food. During 1957, landings by otter-trawl craft of fish classified as industrial fish (189 million pounds) were 50 million pounds or 36 percent greater than in 1956. A sharp decline in the landings of menhaden, salmon, and tuna; and a falling off in the catches of anchovies. Atlantic ocean perch, haddock; Pacific sardines, and shrimp were primarily responsible for the decline in the 1957 landings as compared with the previous two years.

The pack of canned fishery products in the United States, Alaska, Hawaii, Puerto Rico, and

American Samoa in 1957 amounted to nearly 992 million pounds valued at \$336 million to the packers. Production of fresh and frozen packaged fish fillets and steaks in the continental United States totaled 154.5 million pounds, valued at 46.8 million dollars to the processors. This represented a decrease of 8.3 million pounds in volume and 579 thousand dollars in value as compared with the previous year.

United States foreign trade in fishery products in 1957 was valued at over 333 million dollars, of which 297 million dollars represented the value of imports and 36 million dollars the value of exports. The value of imported fishery products in 1957 established a new record over 1956, the former high year. Some of the most important imports during 1957 were fresh sea herring, frozen albacore, canned tuna in brine, and fresh and frozen groundfish fillets and steaks (including blocks and slabs). The value of exports of fishery products was 9 percent less than in 1956.

The economic data presented in this report are essential for use by persons engaged in the commercial fisheries and by governmental agencies concerned with the regulation and protection of commercial fisheries. Biological information included, which is important to sound fishery management, provides detailed information of fluctuations in the commercial catch by species, locality, gear, and type of craft operated.

Life History of the Threespine Stickleback GASTEROSTEUS ACULEATUS (Linnaeus) in Karluk Lake and Bare Lake, Kodiak Island, Alaska, by John Greenbank and Phillip R. Nelson, Fishery Bulletin 153 (from Fishery Bulletin of the Fish and Wildlife Service, vol. 59), pp. 537-559, illus., printed, 25 cents, 1959.

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.

ALASKA:

1957 Annual Report, Report No. 9, 123 pp., illus., printed. Alaska Department of Fish and Game, Juneau, Alaska. This report covers the activities of the Alaska Fish and Game Commission and the Alaska Department of Fish and Game for 1957. The statistical tables cover the preceding 10-year period, while the financial statement is based on the fiscal year from July 1, 1957 through June 30, 1958. The 1957 activities of the Biological Research Division continued the four field studies under way in 1956 on Taku River salmon, Kitoi Bay red salmon, Southeast Alaska silver salmon, and Kodiak king crab. This report also describes predator investigation and control, commercial fisheries, and sport-fish programs. The statistical part of the report contains data on the comparative

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value of canned salmon by species, 1948-1957; number of canneries and salmon pack, 1948-1957; salmon catch by species, gear, and district, 1948-1957; poundage and value of Alaska fisheries landings, 1948-1957; and poundage and value of Alaska fisheries products prepared for market, 1948-1957. The report concludes with a discussion of future plans of the Department.

ANIMAL FEEDING:

"Exploratory Rat and Chick Bioassays of Scales from Ocean Perch and Herring as Animal Feed," by N. I. Lemack, G. E. Livingston, L. R. Parkinson, C. R. Fellers, and D. L. Anderson, article, Food Research, vol. 23, November-December 1958, pp. 684-692, printed. Food Research, Department of Food Technology, University of California, Davis, Calif.

ANTIBIOTICS:

"Distribution of Chlortetracycline (CTC) Antibiotic in Ice Made from Hard Waters," by R. H. Moyer, B. A. Southcott, and H. L. A. Tarr, article, Progress Reports of the Pacific Coast Stations, No. 112, December 1958, pp. 21-22, printed. Fisheries Research Board of Canada, Pacific Fisheries Experimental Station, 898 Richards St., Vancouver, B. C., Canada.

AUSTRALIA:

Australian Journal of Marine and Freshwater Research, vol. 10, no. 1, May 1959, 129 pp., illus., printed. Australian Journal of Marine and Freshwater Research, Commonwealth Scientific and Industrial Research Organization, 314 Albert St., East Melbourne, C. 2, Victoria, Australia. Contains, among others, the following articles: "The Populations of Australian 'Salmon,' *Arripis trutta* (Bloch & Schneider), in Australian Waters," by W. B. Malcolm; "Factors Influencing the Settling of the Principal Marine Fouling Organisms in Sydney Harbour," by B. Wisely; and "Reproduction in Australian Pearl Oysters (*Lamellibranchia*). V--*Pinctada fucata* (Gould)," by D. J. Tranter.

BELGIUM:

Rapport Annuel sur l'Evolution de la Flotte de Peche en 1958 (Annual Report on the Progress of the Fishing Fleet during 1958), 43 pp., illus., processed in French. Ministere des Communications, Administration de la Marine, Brussels, Belgium. A statistical report on the status of Belgium's fleet of vessels used in high seas and coastal fishing.

BIOCHEMISTRY:

Fatty Alcohol Esters, by Joseph W. Rizzo, U. S. Patent 2,801,934. U. S. Patent Office, Washington 25, D. C.

"On the Formation of Amine in Fish Muscle. VII--Effect of Freezing on the Histamine Formation in the Thawed Fish Muscle," by Fuyuo Ota, and Kosuke Kaneko, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 24, no. 2, 1958, pp. 140-143, printed in Japanese with English abstract. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori 6-Chome, Tokyo, Japan.

CAMBODIA:

Report on Fisheries in Cambodia, by John E. Bardach, 55 pp., illus., printed. Fisheries Service, USOM/Cambodia, Phnom Penh, Cambodia, June 1959. A detailed report on various aspects of Cambodian fish and fisheries. It covers hydrographic features underlying Cambodian fisheries, leading features of the fish fauna, fishing methods, spawning locations and migrations, food of some Cambodian fresh-water fish, fish culture, volume of production and trade, and utilization of the Cambodian fish catch. It also describes the administration of the fisheries in Cambodia and gives a summary of conservation and other recommendations. The author states that, "The report, it is hoped, will be instrumental in maintaining Cambodian fish production, in pointing to certain conservation problems now prevailing, and in suggesting some measures by which production for home consumption and export could be increased."

CANADA:

Journal of the Fisheries Research Board of Canada, vol. 16, no. 3, May 1959, pp. 247-386, illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada. Contains, among others, the following articles: "Effects of Some Aspects of Environment on the Distribution of Juvenile Herring in Barkley Sound," by Alan S. Hourston; "The Relationship of the Juvenile Herring Stocks in Barkley Sound to the Major Adult Herring Populations in British Columbia," by Alan S. Hourston; "Variations in Annual Average Weights of British Columbia Pink Salmon, 1944-1958," by Harold Godfrey; and "Mesh Selection in Herring Gill Nets," by Steinar Olsen.

Statistiques des Pecheries Maritimes, 1956-1957 (Maritime Fisheries Statistics, 1956-1957), 71 pp., illus., printed in English and French. Presents statistics of Quebec's maritime fisheries for the years 1956 and 1957. The first part describes 28 districts or fishing centers of the Province. The other two parts contain statistics for 1956 and 1957; the first on the quantities of fish caught and their value; the second on the labor force and equipment.

CANNED FISH:

"The Formation of Magnesium-Ammonium-Phosphate Crystals in Canned Seafoods. Part 6--Influence of Contained Substances Upon the Growth of the Formed $MgNH_4PO_4 \cdot 6H_2O$ Crystals in Test Tubes; Part 7--The Formation of the Separated Microscopical Crystal and Its Incipient Growth; Part 8--The Formation of the Crystals During Processing of the Cans," by E. Tanikawa, Y. Nagasawa, and T. Sugiyama; articles, Bulletin of the Faculty of Fisheries, Hokkaido University, vol. 8, no. 2, August 1957, pp. 115-146, printed. Faculty of Fisheries, Hokkaido University, Hakodate, Japan.

"The Formation of Magnesium-Ammonium-Phosphate Crystals in Canned Seafoods. Part 9--Method for Preventing the Formation of Crystals During Processing of Cans; Part 10--General Considerations," by E. Tanikawa, Y. Nagasawa, and T. Sugiyama; articles, Bulletin of the Faculty of Fisheries, Hokkaido University, vol. 8,

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no. 3, November 1957, pp. 195-213, printed. Faculty of Fisheries, Hokkaido University, Hakodate, Japan.

CANNING:

"Methods for Canning Suckers," article, Trade News, vol. 10, no. 10, April 1958, p. 16, printed. Department of Fisheries, Ottawa, Canada.

DEHYDRATION:

"New Developments in Dehydration," by D. K. Tressler, article, Refrigerating Engineering, vol. 66, no. 3, March 1958, pp. 50-51, printed. Refrigerating Engineering, 40 W. 40th St., New York 18, N. Y.

DOGFISH:

"What Shall We Do with the Pesky Dogfish?" by H. L. A. Tarr, article, Western Fisheries, vol. 56, no. 5, August 1958, p. 16-18, illus., printed. Roy Wrigley Publications Ltd., 1104 Hornby St., Vancouver 1, B. C., Canada.

ECHO-SOUNDERS:

"Ein Neuartiges Echoaufzeichnungsverfahren" (A New Method of Recording Sounds), by H. Kietz, article, Allgemeine Fischwirtschaftszeitung, vol. 10, no. 17/18, April 1958, pp. 26-27, illus., printed in German. Verlag Carl Th. Gorg, Postfach 269, Bremerhaven-F, W. Germany. From the practical standpoint, it is better to record fish traces in black while the sea bottom is recorded gray. This has been developed with the Atlas echo-sounders. This method of recording has the advantage that the more weakly-recorded sea-bottom echoes can never overlap the stronger fish traces. This is even prevented when there is a heavy sea. Moreover, the new method has the advantage that by recording weak traces from the bottom, lesser dust (caused by the burning of the recording paper by echoes) is developed and the echo-sounders will not get so clogged with burned paper so quickly.

ELECTROFISHING:

"Die Elektroden und deren Anordnung bei der Elektrofischerei" (The Electrodes and Their Arrangement in Electrofishing), by H. W. Hattop, article, Deutsche Fischerei Zeitung, vol. 5, no. 5, May 1958, pp. 148-152, printed in German. Neumann Verlag, Radebeul, E. Germany.

"Die Möglichkeiten der Bewirtschaftung von Stehenden Gewässern und Flussläufen mit Hilfe der Elektrofischerei" (Electrofishing in Stagnant Waters and Rivers), by H. W. Hattop, article, Zeitschrift für Fischerei und deren Hilfswissenschaften, vol. 7, no. 1/2, 1958, 90 pp., illus., printed in German. Neumann Verlag, Radebeul, E. Germany.

FILLETS:

"Some Problems of Transient-State Conduction in the Cooling of Fish Fillets," by D. L. Nichol, article, Journal of the Science of Food and Agriculture, vol. 9, February 1958, pp. 78-82, printed. Journal of the Science of Food and Agriculture, Society of Chemical Industry, 14 Belgrave Square, London SW. 1, England.

FISH-LIVER OIL:

"Studies on Shark Liver Oil. Part 1--Physico-Chemical Constants and Vitamin A Content of Liver Oil from Sharks off the Karachi Coast," by Ali Maqsood, Abdul Haq, and S. Mahdihassan, article, Pakistan Journal of Scientific and Industrial Research, vol. 1, no. 1, January 1958, pp. 70-72, printed. Pakistan Journal of Scientific and Industrial Research, Lahore, W. Punjab, Pakistan.

FISH MEAL:

"Covering Stacks of Cured Fish Meal," by G. H. Stander, article, Annual Report, Fishing Industry Research Institute, April-December 1956, vol. 10, 1957, p. 24, printed. Fishing Industry Research Institute, Cape Town, Union of South Africa.

"Curtailement of Malodor from Flame Fish Meal Driers," by R. H. Wright and F. E. Murray, article, Canadian Fisherman, vol. 45, no. 7, July 1958, pp. 11-13, illus., printed. National Business Publications Ltd., Gardenvale, Quebec, Canada.

"La Production de Farine de Poisson en Colombie Britannique" (Fish Meal Production in British Columbia), article, La Peche Maritime, vol. 37, no. 962, May 20, 1958, pp. 287-289, illus., printed in French. La Peche Maritime, 190, Blvd. Haussmann, Paris 8, France.

FISH MEAL AND OIL:

"Some Trends in the Norwegian Fish Meal and Oil Industry," article, Norwegian Fishing News, vol. 5, no. 3, 1958, pp. 6-8, printed. Norwegian Fishing News, Ltd., Bergen, Norway.

FISH OIL:

"Chemical Essentials to the Discoloration of Fish Oil," by Junsaka Nonaka, article, Journal of Tokyo University of Fisheries, vol. 43, 1957, pp. 127-165, printed. Tokyo University of Fisheries, Shiba-kaigandori 6-Chome, Tokyo, Japan.

"Isolation and Structure of the C₁₆ Unsaturated Fatty Acids in Menhaden Body Oil," by Willy Stoffel and E. H. Ahrens, Jr., article, Journal of the American Chemical Society, vol. 80, December 20, 1958, pp. 6604-6608, printed. American Chemical Society, 1801 K St., N. W., Washington, D. C.

"Studies on the Nutritional and Physiological Effects of Thermally Oxidized Oils," by O. C. Johnson, E. Perkins, M. Sugai, and F. A. Kummerow, article, Journal of the American Oil Chemists' Society, vol. 34, no. 12, pp. 594-597, printed. The American Oil Chemists' Society, 35 E. Wacker Dr., Chicago 1, Ill.

FISH SCHOOLS:

"An Attempt to Determine the Swimming Speed of Fish Schools with the Fish Finder--Preliminary Report," by Saburo Kawada, Yozo Tawara, and Chosei Yoshimuta, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 24, no. 1, 1958, pp. 1-4, printed in Japanese with English abstract. Japanese Society of Scientific Fisheries, Tokyo, Japan.

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Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori 6-Chome, Tokyo, Japan.

FLORIDA:

"Florida Fresh Water Fish and Fishing," 20 pp., illus., printed. Game and Fresh Water Fish Commission, Tallahassee, Fla. A handy booklet which discusses fresh-water sport fishing in Florida. Presents sections on popular fishing methods, favorite fishing spots, fishing Florida waters, largemouth black bass, chain pickerel, bream, shellcracker, speckled perch, redbreast, warmouth, stumpknocker, flier, and rock bass. It also covers other fresh-water fish and other information about fishing in Florida.

FOOD AND CONTAINER RESEARCH:

Activities Report, vol. 11, no. 1, first quarter, April 1959, 54 pp., illus., printed. Research and Development Associates, 1849 W. Pershing Rd., Chicago 9, Ill. Relates to food and container research and development work of the Quartermaster Food and Container Institute for the armed forces together with related information pertinent to improving military rations; also relates to activities of other governmental, industrial, or institutional groups engaged in food and container research of direct or indirect applicability to national defense. Of special interest is an article entitled "Preservation of Food by Radiation," which describes the research program dealing with the potentialities and limitations of the radiation preservation of foods. The author states that "Progress to date lies in two broad areas. First, preliminary successes have been achieved in several phases of the food radiation process which are of prime importance to the Department of Defense. Second, sound organizational groundwork has been established to encourage, organize, produce, and disseminate the information needed to irradiate food. Despite the obstacles that lie ahead, the program for the preservation of foods by radiation has shown much progress since its inception, with good hopes of final success."

FRANCE:

"Saint Jean de Luz, 1^{er} Port Thonier de France" (Saint-Jean-de-Luz, the Leading Tuna Fishing Port of France), article, *France Pêche*, vol. 40, no. 26, February 28, 1959, pp. 13-20, illus., printed in French with English abstract. *France Pêche*, 84, Rue Carnot, Lorient, France.

FREEZING:

"Calculating Freezing Time of Fish in Air-Blast Freezers," by F. L. Levy, article, *Journal of Refrigeration*, vol. 1, no. 3, March/April 1958, pp. 55-58, illus., printed. Foxlow Publications Ltd., 19 Harcourt St., London W. 1, England.

"Fish Handling and Freezing. III.--Changes During Freezing and Frozen Storage," by W. A. Empey, article, *Food Preservation Quarterly*, vol. 18, December 1958, pp. 76-78, printed. Commonwealth Scientific & Industrial Research Organization, Div. of Food Preservation and Transport, Hoembush, N. S. W., Australia.

"The Freezing of Cod Liver," by A. Kaminarskaya, article, *Kholodil'naia Tekhnika*, vol. 2, 1959, pp. 45-46, illus., printed in Russian with English summary. *Kholodil'naia Tekhnika*, c/o Four Continent Book Corp., 822 Broadway, New York 3, N. Y.

"Rates of Freezing and Temperatures of Storage," article, *D. S. I. R. Food Investigation Report for 1956*, pp. 11-12, printed. Her Majesty's Stationery Office, York House, Kingsway, London, W. C. 2, England, 1957. The recommended code for the quick-freezing of fish requires cooling through the critical range 32° to 23° F. in not more than 120 minutes. Recommended practice for storage is a temperature of -4° to -20° F.

"Spray- vs. Immersion-Brining of Hake Fillets for Quick Freezing," by A. G. Pienaar, article, *Annual Report, Fishing Industry Research Institute*, April-December 1956, vol. 10, 1957, pp. 16-17, printed. Fishing Industry Research Institute, Cape Town, Union of South Africa.

FREEZING AT SEA:

"Prawns Frozen at Sea," article, *Refrigeration Journal*, vol. 11, no. 9, March 1958, pp. 14-15, illus., printed. Refrigeration Journal, Australian Institute of Refrigeration, 156 Pelham St., Carlton, Victoria, Australia.

FREEZING FISH AT SEA:

"Some Modern Developments in Fish Freezing and Storage Equipment for Ships, Part 1," by M. B. F. Ranken, article, *The Fishing News*, no. 2369, September 12, 1958, p. 9; "Part 2--Modern Developments in Freezing and Storing in Trawlers," article, *The Fishing News*, no. 2370, September 19, 1958, p. 7, printed. Arthur J. Heighway Publications Ltd., Ludgate House, 110 Fleet St., London E. C. 4, England.

FROZEN FISH:

"Expressible Fluid of Fillets: Part 6--Electrophoretic Analysis of the Expressible Fluid of Cod Muscle," by J. J. Connel, article, *Journal of the Science of Food and Agriculture*, vol. 8, no. 13, December 1957, pp. 701-706; "Part 7--Freezing Damage and Protein Denaturation Under Pressure," by R. M. Love and O. Karsti; "Part 8--Cell Damage in Slow Freezing," by R. M. Love; "Part 9--Other Types of Cell Damage Caused by Freezing," by R. M. Love, articles, *Journal of the Science of Food and Agriculture*, vol. 9, no. 5, May 1958, pp. 249-268, printed. Journal of the Science of Food and Agriculture, Society of Chemical Industry, 14 Belgrave Square, London, S. W. 1, England.

GEAR:

"Experiments to See the Effect of Color and Its Depth on the Driving Net by the Centralizing Method," by Takaya Kusaka, article, *Bulletin of the Japanese Society of Scientific Fisheries*, vol. 23, no. 12, 1958, pp. 766-769, printed in Japanese with English abstract. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori 6-Chome, Tokyo, Japan.

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

"Un Nouveau Type de Chalut" (A New Type of Trawl), by Robert Lenier, article, France Peche, vol. 40, no. 26, February 28, 1959, pp. 30-34, illus., printed in French with English abstract. France Peche, 84, Rue Carnot, Lorient, France.

"The Specification of Fish Pound Boards," by G. C. Eddie and J. J. Waterman, article, World Fishing, vol. 7, no. 7, July 1958, pp. 65-66, printed. John Trundell Ltd., Temple Chambers, Temple Ave., London E. C. 4, England.

GENERAL:

"FTC and Guides Against Deceptive Pricing," by Charles E. Grandey, Small Marketers Aids no. 42, April 1959, 4 pp., printed. Small Business Administration, Washington 25, D. C. This leaflet describes the Federal Trade Commission's publication, "Guides Against Deceptive Pricing," which attempts to point out to the business community the legal boundaries of pricing representations, and put the spotlight on advertising evil. That evil--deceptive advertising--has misled the public in its purchases and worked a competitive hardship on merchants who advertise honestly. The guides are directed against nine major types of fictitious pricing: (1) savings claims; (2) pricing problem; (3) comparable merchandise; (4) special sale prices; (5) "two-for-one sales;" (6) special sales claims; (7) "factory" and "wholesale" ads; (8) fictitious pre-ticketing; and (9) comparative prices.

"How Better Business Bureaus Help Small Business," by Robert J. Bauer, Small Marketers Aids no. 43, pp. 1-4, printed. Small Business Administration, Washington 25, D. C., May 1959.

"The Mohole," by Willard Bascom, article, Scientific American, vol. 200, no. 4, April 1959, pp. 41-49, illus., printed. Scientific American, Inc., 415 Madison Ave., New York 17, N. Y. The author discusses a proposal to drill a hole through the earth's crust beneath the floor of the ocean to reach the interior of the earth. He states that a floating drilling station anchored in water three miles deep and capable of drilling into the bottom another 18,000 feet may do the job. The total reach of the drill pipe must be two miles longer than that used in the deepest hole yet drilled. But the hole will return such valuable direct evidence about the composition of the earth and its geological and biological history that it seems well worth the effort."

We Come From the Sea, by Hans Hass, translated from German by Alan Houghton Brodrick, 288 pp. illus., printed, \$6.50. Doubleday & Co., Garden City, N. Y. Picture-and-text study of marine life by marine biologist and skin-diver.

GILL NETS:

"Comparison Efficiency of Differently Colored Gill Nets in the North Sea Salmon Fishing," by A. Koike, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 24, no. 1, 1958, pp. 9-12, printed in Japanese with English summary. Bulletin of the Japanese Society of Scientific Fisheries, c/o Tsukishima, Chuo-ku, Tokyo, Japan.

ISRAEL:

Bamidgeh--Bulletin of Fish Culture in Israel, vol. 11, no. 1, April 1959, 52 pp., illus., printed in English and Hebrew. Joint Agricultural Extension Center, Division of Fisheries, Ministry of Agriculture, Tel Aviv, Israel. Contains the following articles: "Chemical Fluctuations of the Water of Fertilized and Unfertilized Fishponds in a Subtropical Climate," by B. Hopher; "The Problem of 'Wild' Spawning and Its Use in the Carp Ponds," by Aza Ben-Ari; "Instructions for the Construction and Repair of Fish Ponds," by J. Pruginin and Aza Ben-Ari; and "Rentability of Chemical Weed Control in Drainage Canals," by J. Pruginin.

Fishermen's Bulletin, no. 19, March 1959, 32 pp., illus., printed in Hebrew with English abstracts. Fishermen's Bulletin, P.O.B. 699, Haifa, Israel. Contains, among others, the following articles: "Chapters on the Expansion of Israel Fishing in Lake Tiberias," by M. Nun; "The Use of Copper Naphtenate and Other Copper Soaps for the Treatment of Fishing Nets," by J. H. White and B. Komarovskiy; "Tuna Fishing on F/V Shinio Maru," by J. Carmel; "Experiments with the Danish Trawl Net on R.F.V. Hazwi," by D. Bernstein; "Trawler and Trawl Gear in Action," by M. Ben-Yami; "Japanese Long-Line Tuna Fishing Experiment at Eylath," by Z. Fried; and "Israeli Shrimp Export (1957-1958)."

JAPAN:

Bulletin of Tokai Regional Fisheries Research Laboratory, no. 22, December 1958, 61 pp., illus., printed in Japanese with English summaries. Tokai Regional Fisheries Research Laboratory, Tsukishima, Chuo-Ku, Tokyo, Japan. Includes, among others, the following articles: "Bottom Character of Pearling Bed in the Arafura Sea. I--Size Distribution and Mud Contents of the Thursday Island and East Regions," by Y. Takemura; "On the Optimum Temperature and Salinity for the Development of Hard Clam, *Meretrix meretrix lusoria* (Rodrig)," by J. Sagara; "Studies on Trawl-Net. II--Determination of the Angle of Inclination of Triangular Brackets Giving the Optimal Angle of Attack to the Otter Board," by S. Takayama and T. Koyama; "Fundamental Study of the Detection of Fish by Supersonic Wave. I--Preliminary Tests on the Supersonic Reflection of Fish and Fishing Net with a 50 kc. Supersonic Fish Finder," by S. Takayama and C. Yoshimuta; "The Vitamin B₆ Content of Fish Liver," by M. Yanase; and "Fluorodermin, a Newly Found Fluorescent Hydrocarbon in the Skin of Fishes," by S. Hirao and R. Kikuchi.

Encyclopaedia Zoologica Illustrated in Colours, vol. 2, "Pisces," by Ichiro Tomiyama and Tokiharu Abe; "Prochordata," by Takashi Tokioka, 478 pp., illus., printed, \$25. Hokuryukan, Tokyo, Japan, 1958. This volume illustrates the fishes and prochordates of Japan and is divided into three sections. The first section covers 912 species of marine fishes; the second section, on aquarium fishes, covers 108 species; and the third section, on Prochordates, contains 11 illustrations of 135 species. For each species,

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

the scientific and common names, a brief description, and size and distribution are given.

Memoirs of the Faculty of Fisheries of Kagoshima University, vol. 7, February 1959, 215 pp., illus., printed in Japanese with summaries in English. The Faculty of Fisheries, Kagoshima University, Kagoshima, Japan. Contains, among others, the following articles: "Studies on the Life Histories of the Flying-Fishes Found in the Adjacent Waters of Japan--I," by Sadahiko Imai; "Correlation Between the Movement and Appearance of Fish School," by Toshiro Kuroki; "Fundamental Studies on the Relations Between Underwater Sound and Fish Behaviour. III--About the Echoless-Wall of Aquarium," by Toshiro Kuroki; "On the Fluctuation of Mackerel-Long-Line Catch Under the Influence of the Solar-Eclipse," by Toyotaka Tanoue; and "On the Fishing Condition of Tuna and Marlin at the Sea Fronts off the Mangoli and Taliabu Islands--I," by Soichi Ueda and Tatsuo Tamari.

LIGHTS AND FISHING:

"Japanese Find Blue or Green Lights Catch Most Shellfish," article, The Fishing News, no. 2365, August 15, 1958, p. 13, printed. Arthur J. Heighway Publications Ltd., Ludgate House, 110 Fleet St., London E. C. 4, England.

"Reactions of Fish to Artificial Light, with Special Reference to Large Herring and Spring Herring in Norway," by O. Dragesund, article, Journal du Conseil, vol. 23, no. 2, April 1958, pp. 213-226, illus., printed. Journal du Conseil, Charlottenlund Slot, Denmark.

LOBSTERS:

The Lobster, HOMARUS AMERICANUS, and the Red Crab, GERYON QUINQUEDENS, in the Off-shore Waters of the Western North Atlantic, by William C. Schroeder, 17 pp., illus., printed. (Reprinted from Deep-Sea Research, vol. 5, 1959, pp. 266-282.) Pergamon Press Ltd., London, England. A population of lobsters, large enough to support commercial fishing, is present off the east coast of the United States along the outer shelf and upper slope between the eastern part of Georges Bank and the offing of Delaware Bay. Although there are all sizes from "shorts" to very large, a much greater percentage than in the shoal water populations are large. Since 1953, several otter trawlers have been fishing offshore exclusively for lobsters and have made very substantial catches in this area. A deep-water crab, as yet unexploited, might become the source of a commercial fishery along the North and Middle Atlantic coast. It inhabits depths between 150-700 fathoms or more and ranges from the offing of Nova Scotia to Virginia and southward, perhaps in diminishing numbers, at least to Cuba.

"Working a Florida Crawfish Boat Can Pay," by W. A. King Webster, article, World Fishing, vol. 8, no. 6, June 1959, pp. 63-71, illus., printed. John Trundell Ltd., St. Richards House, Eversholt St., London N. W. 1, England.

MARINE ANIMALS:

Dangerous Marine Animals, by Bruce W. Halstead, 176 pp., illus., printed, \$4. Cornell Maritime Press, Cambridge, Md. 1959. This book is divided into four chapters: Dangerous Marine Animals--Our Knowledge of the Past; Marine Animals that Bite; Marine Animals that Sting; and Marine Animals that are Poisonous to Eat. This is followed by a short general selected bibliography on important aspects or groups that have been discussed. In every case, the species identification, geographical distribution, habits, and noxious characteristics are briefly discussed along with the medical aspects, treatment, and prevention.

MIDWATER TRAWL:

"Control of the Midwater Herring Trawl," article, World Fishing, vol. 8, no. 6, June 1959, pp. 44-46, illus., printed. John Trundell Ltd., St. Richards House, Eversholt St., London N. W. 1, England. An account of some Russian experiments which are claimed to have led to much greater accuracy in trawling operations, especially for fleet fishing.

NETS:

"The Study on the Color of Fishing Net. I--Observations on the Passage of Fishes Through a Colored Net," by Kenji Kanda, Atushi Koike, and Mitto Ogura, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 23, no. 10, 1958, pp. 612-616, printed in Japanese with English abstract. Japanese Society of Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori, 6-Chome, Tokyo, Japan.

"The Study of the Color of Fishing Nets: Part 2--Behavior of Fish Shoals in the Neighborhood of a Colored Net; Part 3--Effect of Depth of Color of a Net on the Behavior of Fish Schools Near the Net," by K. Kanda, A. Koike, and M. Ogura; "Part 4--A Change in Illumination and Behavior of a Fish School Near the Net," by K. Kanda and A. Koike; articles, Bulletin of the Japanese Society of Scientific Fisheries, vol. 24, no. 1, 1958, printed in Japanese with English summaries. Bulletin of the Japanese Society of Scientific Fisheries, c/o Tsukishima, Chuo-ku, Tokyo, Japan.

ODORS:

"Tests on the Transfer of Odors and Flavors in Refrigerated Cabinets," by J. Gutschmidt, article, Kaltetechnik, vol. 10, no. 8, August 1958, pp. 255-262, illus., printed. Kaltetechnik, Verlag C. F. Muller, Karlsruhe, Germany.

PACKAGING:

"Packaging Material Odor Can Affect Flavor and Sales of Frozen Fish," by L. B. Sjostrom, Quick Frozen Foods, vol. 20, no. 12, July 1958, pp. 131-134, printed. E. W. Williams Publications, Inc., 82 Wall St., New York 5, N. Y.

PARASITES:

BIVESICULA TARPONIS, a New Trematode in the Tarpon, MEGALOPS ATLANTICUS (Cuv. & Val.), from the West Coast of Florida, by Franklin Sogandares-Bernal and Robert F. Hutton, 5 pp.,

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

illus., printed. (Reprinted from The Journal of Parasitology, vol. 45, no. 1, February 1959, pp. 114-118.) Florida State Board of Conservation Marine Laboratory, Maritime Base, Bayboro Harbor, St. Petersburg, Fla.

Studies on Helminth Parasites of the Coast of Florida. I--Digenetic Trematodes of Marine Fishes from Tampa and Boca Ciega Bays with Descriptions of Two New Species, by Franklin Sogandares-Bernal and Robert F. Hutton, 16 pp., illus., printed. (Reprinted from Bulletin of Marine Science of the Gulf and Caribbean, vol. 9, no. 1, March 1959, pp. 53-68.) Florida State Board of Conservation, Marine Laboratory, St. Petersburg, Fla.

POISONOUS FISH:

"Wanted: Poisonous Fish," by Ralph Segman, article, Science News Letter, vol. 75, no. 26, June 27, 1959, pp. 407, 410, illus., printed. Science Service, Inc., 1719 N St., NW., Washington 6, D. C. A unique "fishing expedition" has begun a hunt for venomous and poisonous fish. The author states that "A whole new arsenal of drugs may be squeezed out of deadly fish chemicals."

PORTUGAL:

Boletim da Pesca, vol. XII, no 63, June 1959, 146 pp., illus., printed in Portuguese. Gabinete de Estudos das Pescas, R. S. Bento, 644, 4^o-Esq., Lisbon, Portugal. Contains, among others, the following articles: "Aspectos Tecnologicos da Preparacao de Bacalhau desde a Captura a Secagem" (Technological Aspects of the Processing of Cod from Its Capture to Drying), by A. Torres Botelho; and "Da Evolucao das Instalacoes Frigorificas nos Arrastoes Portugueses de Pesca do Alto" (Development of Cold-Storage Installations of the Portuguese High Seas Trawl Fishery), by Adriano Duque Monteiro Leite.

Cooperativa dos Armadores da Pesca da Baleia, Relatorio e Contas do Exercicio de 1958 (Whaling Vessel Owner's Cooperative, Statement of Operations in 1958), 12 pp., printed in Portuguese. Cooperativa dos Armadores da Pesca da Baleia, Lisbon, Portugal.

Gremio dos Armadores da Pesca de Arrasto, Relatorio e Contas do Exercicio de 1958 e Orcamento para 1959 (Trawler Owners' Guild, Statement of Operations for 1958 and Budget for 1959), 50 pp., printed in Portuguese. Gremio dos Armadores da Pesca de Arrasto, Lisbon, Portugal.

Gremio dos Armadores da Pesca da Baleia, Relatorio e Contas do Exercicio de 1958 e Orcamento para 1959 (Whaling Vessel Owners's Guild, Report of Operations in 1958 and Budget for 1959), 35 pp., printed in Portuguese. Gremio dos Armadores da Pesca da Baleia, Lisbon, Portugal.

PRESERVATION:

Chemical Preservation of Foods, by Hugh L. A. Tarr, Studies in 1957 from the Stations of the Fisheries Research Board of Canada, FRB 499, 14 pp. printed. Fisheries Research Board of Canada, Ottawa, Canada.

"Efficacy of Some Antibiotics as Preservatives for Fresh Tunny," by Noboru Takatsuka, Tadashi Tawara, and Hokoto Ono, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 24, no. 3, 1958, pp. 221-226, printed in Japanese with English abstract. Japanese Scientific Fisheries, c/o Tokyo University of Fisheries, Shiba-kaigandori 6-Chome, Tokyo, Japan.

QUALITY:

"Die Bacteriologische Gestelheid van Geokochte Gebakken vis" (The Bacteriological Condition of Fried Fish), by Br. Melanius and Br. Ansbertus, article, Voeding, vol. 19, no. 3, March 1958, pp. 93-97, printed in Dutch. Voeding, Koningin-negracht 42, The Hague, Netherlands.

"Effect of Chlortetracycline (CTC) Antibiotic on the Keeping Quality of Lingcod Stored in Refrigerated Sea Water," by E. G. Baker, B. A. Southcott, and H. L. A. Tarr, article, Progress Reports of the Pacific Coast Stations, No. 112, December 1958, pp. 15-17, printed. Fisheries Research Board of Canada, Pacific Fisheries Experimental Station, 898 Richards St., Vancouver, B. C., Canada.

"Further Study of the Influence of Short Storage Periods, 3 Days to 2 Weeks at 15° F., on the Quality of Frozen Cod Stored at 0° F.," by W. J. Dyer, D. I. Fraser, and W. A. MacCallum, article, Journal of the Fisheries Research Board of Canada, vol. 14, no. 6, November 1957, pp. 925-929, printed, Queen's Printer and Controller of Stationery, Ottawa, Canada. Storage for periods of 3 to 14 days at 15° F. caused a very definite deterioration in the quality of frozen fish held under conditions that simulate refrigerated car transportation. This deterioration is equivalent to a loss of 2 to 3 months out of the 2 to 8 months of storage life that normally can be expected from commercially-frozen cod fillets that are stored continuously at 0° F.

"Grading for Quality. Part 1--Trimethylamine Values of Fillets Cut from Graded Fish," by C. H. Castell, M. F. Greenough, R. S. Rodgers, and A. S. MacFarlane, article, Journal of the Fisheries Research Board of Canada, vol. 15, no. 4, July 1958, pp. 701-716, illus., printed. Queen's Printer and Controller of Stationery, Ottawa, Canada.

"Studies on Freshness Determination of Fish Meat by the Distillation Ratio of Volatile Acids, Part 8--On the Form of Volatile Acids in Fish Meat," by S. Asakawa, article, Bulletin of the Japanese Society of Scientific Fisheries, vol. 23, nos. 7/8, 1957, pp. 463-465, printed in Japanese with English summary. Japanese Society of Scientific Fisheries, c/o Tsukishima, Chuo-ku, Tokyo, Japan.

"Time-Temperature Tolerance of Frozen Foods. XV--Method of Using Temperature Histories to Estimate Changes in Frozen Food Quality," by W. B. VanArsdel and D. G. Guadagni, article, Food Technology, vol. 13, January 1959, pp. 14-19, printed. Food Technology, The Garrard Press, 510 No. Hickory, Champaign, Ill.

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REFRIGERATION:

"International Survey on Refrigeration Equipment and Activities, 1957," section, Bulletin de l'Institut International du Froid, vol. 39, no. 2, 1959, pp. 557-607, printed in English and French. Institut International du Froid, 177, Boulevard Malesherbes, Paris (17^e), France. The second part of the results of a general survey of refrigeration activities in various countries made in 1958. The first part was published in issue no. 1 of the Bulletin, 1959.

Kholodil'naia Tekhnika (Refrigeration Journal), vol. 3, 1959, 80 pp., illus., printed in Russian with English summaries. Four Continent Book Corp., 822 Broadway, New York 3, N. Y. Contains, among others, the following articles: "Experimental Investigation of the Freezing-on of Ice in Thin Layers," by N. Kudryashev and "The Centrifugal Purging of Refrigerating Brines of Corrosion Products," by N. Lipatov and N. Mizretskii.

"On the Stability of the Red Skin Pigment of Fish Kept in Ice or Refrigerator," by Y. Tsuchiya and K. Hong, article, Refrigeration (Japan), vol. 33, no. 271, September 1958, pp. 1-6, illus., printed. Nihon Reito Kyokai (Japanese Society of Refrigeration), No. 3, 1-Chome, Ginza Nishi, Chuo-ku, Tokyo, Japan.

SALMON:

Sampling of 1958 B. C. Salmon Catches and Escapements for Age and Sex Composition, by T. H. Bilton, M. P. Shepard, and D. W. Jenkinson, circular no. 52, May 1959, 6 pp., illus., processed. Fisheries Research Board of Canada Biological Station, Nanaimo, B. C., Canada.

SOUTH PACIFIC:

"Norfolk Island Fisheries Survey," by H. van Pel, article, South Pacific Commission Quarterly, vol. 9, no. 2, April 1959, pp. 21, 36, illus., printed, single copy 30 U. S. cents. South Pacific Commission, Box 5254, G.P.O., Sydney, Australia. A brief article describing the fish which are plentiful around Norfolk Island in the South Pacific area. The author states that transport and marketing are the main problems in the development of commercial fisheries on the island. A whaling station has been established on Norfolk Island and its allotted quota is 120 whales a year. These are humpbacks, caught near the shore during their migrations to and from warmer waters near the equator.

STARFISH:

"Biological Studies on the Population of the Starfish, Asterias amurensis, in Sendai Bay," by Masayoshi Hatanaka and Masaya Kosaka, article, The Tohoku Journal of Agricultural Research, vol. 9, no. 3, January 1959, pp. 159-178, illus., printed. Faculty of Agriculture, Tohoku University, Sendai, Japan.

STERILIZATION:

"A Esterilizacao de Conservas de Peixe pelo Calor" (Heat Sterilization of Canned Fish), by J. Freixo, article, Conservas de Peixe, vol. 13, no. 150, September 1958, pp. 19-20, printed in

Portuguese. Conservas de Peixe, Regueirao dos Anjos 68, Lisbon, Portugal.

STICKWATER:

"Storage of Stickwater Concentrate," by G. M. Dreosti and A. M. Lewis, article, Annual Report, Fishing Industry Research Institute, April-December 1956, vol. 10, 1957, pp. 30-31, printed. Fishing Industry Research Institute, Cape Town, Union of South Africa.

TASMANIA:

The Sea Fisheries Regulations, 1950, 32 pp., printed. (Reprinted from Tasmanian Government Gazette, July 5, 1950, pp. 1966-1997.) Government Printer, Hobart, Tasmania, Australia.

TRADE AGREEMENTS:

Trade Agreements Manual (A Summary of Selected Data Relating to Trade Agreements Negotiated by the United States Since 1934), Third Edition, Miscellaneous Series TC 1.16/2:T67, 38 pp., printed, 20 cents. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.) United States Tariff Commission, Washington, D. C., 1959.

TRAWLERS:

"Gefriertrawler mit Heckaufschleppe von Russischen Werften" (Freezing Trawler with Stern Slipway from Soviet Yards), article, Hansa, vol. 95, no. 37, September 1958, pp. 1789-1791, illus., printed in German. C. Schroedter und Co., Stubbenhuk 10, Hamburg 11, W. Germany. To enlarge the utilization of fish, a series of new factoryships, with stern chutes for hauling in the nets, are being built in the U.S.S.R. These ships, though similar to the Pushkin class, carry 20 percent less crew (102 persons). The fish are filleted, packaged, and frozen; the offal is reduced to meal; and liver oil is extracted. Some of the selected livers are canned and the rest is treated in a liver-oil plant with an extractive capacity of 1.6 tons a day. The fish-meal plant has a capacity of 20 tons of offal a day.

TRAWLING:

"Pinta - Ja Valivesi Trooli" (Surface and Mid-Water Trawl), by A. F. Aalberg, article, Kalomiehini Viesti, nos. 1 and 2, February 6 and March 16, 1958, printed in Finnish. Kalomiehini Viesti, Kotka, Finland.

TUNA:

Morphometric Comparisons Among Yellowfin Tuna, NEOTHUNNUS MACROPTERUS, from the Eastern Tropical Pacific Ocean, by Gordon C. Broadhead, 39 pp., printed in English and Spanish. (Reprinted from Inter-American Tropical Tuna Commission Bulletin, vol. III, no. 8, pp. 355-391.) Inter-American Tropical Tuna Commission, LaJolla, Calif., 1959.

Morphometric Comparison of Skipjack from the Central and Eastern Tropical Pacific Ocean, by Richard C. Hennemuth, 66 pp., illus., printed in English and Spanish. (Reprinted from Inter-American Tropical Tuna Commission Bulletin, vol. III, no. 6, pp. 241-304.) Inter-American Tropical Tuna Commission, LaJolla, Calif., 1959.

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

The Relationships Between Length and Weight of Yellowfin Tuna (NEOTHUNNUS MACROPTERUS) and Skipjack Tuna (KATSUWONUS PELAMIS) from the Eastern Tropical Pacific Ocean, by Bruce M. Chatwin, 48 pp., illus., printed in English and Spanish. (Reprinted from Inter-American Tropical Tuna Commission Bulletin, vol. III, no. 7, pp. 307-352.) Inter-American Tropical Tuna Commission, LaJolla, Calif., 1959.

"Spectral Reflectance Studies of the Heme Pigments in Tuna Fish Flesh, Some Characteristics of the Pigments and Discoloration of Tuna Meat," by John J. Naughton, Harry Zeitlin, and Michael M. Frodyma, article, Journal of Agriculture and Food Chemistry, vol. 6, December 1958, pp. 933-938, printed. American Chemical Society, 1801 K St., NW., Washington, D. C.

"Studies on Canned Tuna. Part 1--Determination of Various Components in Canned Tuna; Part 2--On the pH Determination of Canned Tuna Liquids," by M. Kochi and S. Era, article, Journal of the Shimonoeki College of Fisheries, vol. 7, no. 1, November 1957, pp. 33-42, printed in Japanese with English summary. Shimonoseki College of Fisheries, Yoshimi, Shimonoseki City, Japan.

TURKEY:

Balık ve Balıkçılık (Fish and Fishery), vol. 7, no. 6, June 1959, illus., printed in Turkish with English table of contents. Balık ve Balıkçılık, Yeni Valde Han. Kat 5, Yeni Postane Karsisi, Istanbul, Turkey. Contains, among others, the following articles: "General Effects of Technological Developments on Fisheries," by Bedia Taneri; "About the Technical Problems of Our Fish Canning Industry (Part V)," by A. Baki Ugur; "Tuna in Turkish Sea-Waters and Its Catch (Part III)," by M. Ilham Artuz; "Sarda sarda and Its Catch (Part IV)," by Sitki Uner; and "Photographing the Deep Sea Creatures."

Balık ve Balıkçılık (Fish and Fishery), vol. 7, no. 7, July 1959, 26 pp., illus., printed in Turkish with table of contents in English. Balık ve Balıkçılık, Yeni Valde Han. Kat 5, Yeni Postane Karsisi, Istanbul, Turkey. Contains, among other items, the following articles: "About the Technical Problems of Our Fish Canning Industry (Part VI)," by A. Baki Ugur; "Tuna in Turkish-Sea-Waters and Its Catch (Part IV)," by M. Ilham Artuz; "Some Information about Packing Cans," by Fehmi Ergan; "About Sharks (Part 1)," by Sitki Uner; and "Among Amateur and Professional Fishermen: An Interview with Sirri Hitay."

UNDERWATER TV:

"Underwater TV and the Fisheries" (Part 1), by Jay Russell, article, World Fishing, vol. 8, no. 6, June 1959, pp. 40-43, illus., printed. John Trundell Ltd., St. Richards House, Eversholt St., London N.W. 1, England. This two-part article describes some of the experiments in which the underwater TV camera has been used, and shows clearly the increasingly valuable role which this research tool can play in adding to knowledge of fish behavior and gear.

UNITED KINGDOM:

Herring Industry Accounts, 1957-58, 7 pp., printed. Her Majesty's Stationery Office, London, England.

Scottish Sea Fisheries Statistical Tables, 1958, 47 pp., printed, 5s. (about 70 U. S. cents). Her Majesty's Stationery Office, 13a Castle St., Edinburgh 2, Scotland, 1959. Contains 24 statistical tables of the fish landed and cured, vessels and fishermen, and creek returns. Tables 1 through 17 cover quantity and value of fish landed by British and foreign vessels; landings of British vessels according to method of fishing, 1938-58; quantity, value and average value of each kind of fish landed by British vessels in 1913, 1938, and 1951-1958; quantity and value of each kind of fish landed in specific districts by British vessels of various types; quantity of each kind of fish landed from and expenditure of fishing effort in each fishing region by British vessels; quantity of each kind of fish landed by foreign vessels from each fishing region and quantity and value of fish landed by each nationality; and seasonal landings of herring. Tables 18 through 24 cover quantity of herring cured from 1913 through 1958; quantity and value of white fish cured and herring cured in each district, according to method of cure; fishing vessels; fishermen employed; greatest number of vessels and persons employed by districts in herring fishing; and vessels, fishermen, and quantity and value of fish landed in creeks.

The White Fish Authority, 46 pp., illus., printed. The White Fish Authority, Lincoln's Inn Chambers, 2/3 Cursitor St., London, E.C.4, England. This booklet is about the white fish industry, which is concerned not only with white fish proper, or demersal fish as it is called, but also with pelagic fish other than herring, and with shellfish. It is very attractively illustrated and tells about the white fish that is eaten in Britain, and the waters where it is caught; about the ways of catching, processing and distributing it; and about the organization and the men who carry out this essential work.

White Fish Authority, Eighth Annual Report and Accounts for the Year Ended 31st March, 1959, 51 pp., printed. Her Majesty's Stationery Office, London, England. Covers the activities and functions of the White Fish Authority for the fiscal year ending March 31, 1959, its income, expenditures, and fishery loans. Also includes sections on production of fishery products, marketing and distribution, research and experiments, training courses, and investigations.

WEST INDIES:

West Indies Fisheries Bulletin, No. 2, March-April 1959, 38 pp., processed. Ministry of Natural Resources and Agriculture, Federal House, Port-of-Spain, Trinidad, W. I. Contains, among other items, an article entitled "Fish Culture Prospects in Trinidad and Tobago." a brief outline of existing inland fisheries is given in this article and the potential for development of four island fisheries is discussed. Of these, fish culture or fish farming shows the greatest potential. The historical background of fish culture is recorded and reference made to the basic problems faced in establishing fish culture as part of the Trinidad economy. Methods of cultivation of tilapia developed at the Bamboo

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

Grove Station are described with particular reference to preparation of ponds, stocking, fertilization, and harvesting, and a breakdown of cost of production shown. Brief mention is made of the likely areas in Trinidad and Tobago where fish culture may be established on a commercial basis. Other news items include tuna long-line experiments in Antigua, capture of albacore in Barbados, deep-sea fishing in Barbados, and related subjects.

WHALE MEAT:

"Biochemical Conditions of Whale Meat Before or After Freezing and Cold Storage of Frozen Meat," by Kazuo Tanaka and Takeo Tanaka, article, *Journal of Tokyo University of Fisheries*, vol. 42, 1958, pp. 83-88, printed. Tokyo University of Fisheries, Shiba-kaigandori 6-Chome, Tokyo, Japan.



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Editorial Assistant--Ruth V. Keefe

Illustrator--Gustaf T. Sundstrom

Compositors--Jean Zalevsky, Alma Greene, Helen Joswick, and Vera Eggleston

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