



RECENT FISHERY PUBLICATIONS

FISH AND WILDLIFE SERVICE PUBLICATIONS

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CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES.
 FL - FISHERY LEAFLETS.
 SEP. - SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.
 SSR - FISH. - SPECIAL SCIENTIFIC REPORTS--FISHERIES (LIMITED DISTRIBUTION).

Number	Title
6-3973	- North Carolina Landings, October 1965, 4 pp.
6-3974	- South Carolina Landings, September 1965, 3 pp.
6-3980	- Frozen Fishery Products, November 1965, 8 pp.
6-3982	- Maryland Landings, September 1965, 4 pp.
6-3988	- Louisiana Landings, September 1965, 3 pp.
6-3992	- Maryland Landings, October 1965, 4 pp.
6-3994	- North Carolina Landings, November 1965, 4 pp.
6-3996	- Virginia Landings, September 1965, 4 pp.
6-3998	- South Carolina Landings, October 1965, 3 pp.
6-3999	- Georgia Landings, October 1965, 3 pp.
6-4000	- Frozen Fishery Products, December 1965, 8 pp.
6-4011	- Georgia Landings, November 1965, 3 pp.
6-4013	- South Carolina Landings, November 1965, 3 pp.
6-4018	- Virginia Landings, October 1965, 4 pp.
6-4025	- Maryland Landings, November 1965, 4 pp.
6-4026	- Manufactured Fishery Products, 1964 Annual Summary, 9 pp.
6-4030	- Virginia Landings, November 1965, 4 pp.
6-4031	- North Carolina Landings, December 1965, 3 pp.
6-4033	- Gulf Coast Shrimp Data, September 1965, 18 pp.
6-4035	- California Landings, September 1965, 4 pp.
6-4036	- Texas Landings, December 1965, 3 pp.
6-4037	- California Landings, October 1965, 4 pp.
6-4039	- Florida Landings, December 1965, 8 pp.
6-4042	- Mississippi Landings, November 1965, 3 pp.
6-4043	- Shrimp Landings, October 1965, 5 pp.
6-4045	- Alabama Landings, November 1965, 3 pp.
6-4047	- New York Landings, December 1965, 4 pp.

- CFS-4049 - New Jersey Landings, December 1965, 3 pp.
 - CFS-4050 - Rhode Island Landings, November 1965, 3 pp.
 - CFS-4051 - Alabama Landings, December 1965, 3 pp.
 - CFS-4052 - Mississippi Landings, December 1965, 3 pp.
 - CFS-4055 - Packaged Fishery Products, 1965 Annual Summary, 5 pp.
 - CFS-4056 - Industrial Fishery Products, 1965 Annual Summary, 9 pp.
 - CFS-4057 - Canned Fishery Products, 1965 Annual Summary, 17 pp.
 - CFS-4058 - California Landings, November 1965, 4 pp.
 - CFS-4059 - Fish Sticks, Fish Portions, and Breaded Shrimp, 1965 Annual Summary, 4 pp.
 - CFS-4061 - Maine Landings, December 1965, 4 pp.
 - CFS-4062 - Shrimp Landings, November 1965, 5 pp.
 - CFS-4063 - Massachusetts Landings, September 1965, 9 pp.
 - CFS-4064 - Massachusetts Landings, October 1965, 9 pp.
 - CFS-4065 - California Landings, December 1965, 5 pp.
 - CFS-4067 - Massachusetts Landings, November 1965, 9 pp.
 - CFS-4068 - Fish Meal and Oil, January 1966, 2 pp.
 - CFS-4072 - Louisiana Landings, December 1965, 3 pp.
 - CFS-4073 - Rhode Island Landings, December 1965, 3 pp.
 - CFS-4076 - Florida Landings, January 1966, 8 pp.
- Sep. No. 760 - Alaska Shrimp Explorations, 1962-64.
- Sep. No. 761 - Gear and Technique of the Sea Bass Trap Fishery in the Carolinas.
- FL-588 - List of Fishery Cooperatives in the United States, 1964-65, by Leslie D. McMullin, 16 pp., printed, August 1965. Includes names and addresses of fishery cooperatives throughout the United States. Gives in most instances the name of one of the officers of the coop, number of members, number of boats owned by members, type of each cooperative, and the major species of fish and shellfish caught.
- SSR-Fish. No. 522 - Pelagic Fur Seal Investigations, 1964, by Clifford H. Fiscus and Hiroshi Kajimura, 52 pp., illus., Nov. 1965.
- SSR-Fish. No. 524 - Stream Catalog of Southeastern Alaska, Regulatory District No. 9, edited by Norman Johnston, 199 pp., illus., Sept. 1965.
- SSR-Fish. No. 525 - Comparative Study of Juvenile American Shad Populations by Fin Ray and Scute Counts, by Paul R. Nichols, 13 pp., Feb. 1966.

Annual Report Exploratory Fishing and Gear Research, Bureau of Commercial Fisheries, Region 2, for Fiscal Year 1964, by Harvey R. Bullis, Jr. and John R. Thompson, Circular 236, 61 pp., illus., Jan. 1966. Includes a report of the base director, outlining the significant events in exploratory fishing which occurred during the fiscal year. Also includes a resume of accomplishments in fishery development made by the Bureau's research vessel Oregon, the Gulf of Mexico exploratory fishing and gear research program, Pascagoula; offshore gear research, photoinstrumentation, Pascagoula; off-season menhaden explorations--Gulf of Mexico, Pascagoula; Caribbean and tropical Atlantic exploratory fishing and gear research program, Pascagoula; and faunal survey program, Pascagoula. Also covers the South Atlantic exploratory fishing and gear research program, Brunswick; gear research program, Panama City, Panama; and BCF/AID Panama spiny lobster project, Panama City, Panama.

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

California Fishery Market News Monthly Summary, Part I - Fishery Products Production and Market Data, February 1966, 13 pp. (Market News Service, U. S. Fish and Wildlife Service, Post Office Bldg., San Pedro, Calif. 90731.) California cannery receipts of tuna and tunalike fish and other species used for canning; pack of canned tuna, tunalike fish, mackerel, and anchovies; market fish receipts at San Pedro, Santa Monica, and Eureka areas; California and Arizona imports; canned fish and frozen shrimp prices; ex-vessel prices for cannery fish; prices for fish meal, oil, and solubles; for the month indicated.

List of Primary Receivers of Imported Fishery Products and Byproducts, New York, 1965, 23 pp., 1966. (U. S. Bureau of Commercial Fisheries, Market News Service, 346 Broadway, New York, N. Y. 10013.)

Middle Atlantic Fishery Trends--Monthly Summary--January 1966, 16 pp. (Market News Service, U. S. Fish and Wildlife Service, 346 Broadway, Room 1003, New York, N. Y. 10013.) Includes summaries and analyses of receipts and prices on wholesale Fulton Fish Market, including both the salt- and fresh-water sections; imports entered at New York customs district; primary wholesalers' selling prices for fresh, frozen, and selected canned fishery products; marketing trends; landings at Fulton Fish Market docks and Stonington, Conn.; and trends in the fisheries of the New Jersey and Delaware Bay areas; for the month indicated. This publication succeeds New York City's Wholesale Fishery Trends.

New England Fisheries--Monthly Summary--February 1966, 21 pp. (Market News Service, U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston, Mass. 02210.) Review of the principal New England fishery ports. Presents data on fishery 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 Boston Fish Pier and Atlantic Avenue fishery landings and ex-vessel prices by species; for the month indicated.

Receipts of Fresh and Frozen Fishery Products at Baltimore's Wholesale Fish Market, 1965, by James A. Coyne, April 1966, 30 pp. (Fishery Market News Service, U. S. Fish and Wildlife Service, 103 South Gay Street, Baltimore, Md. 21202.) Includes arrivals of fresh and frozen fishery products receipts on the Baltimore wholesale market as reported by original receivers. Excluded are local cold-storage withdrawals, direct shipments to hotels, restaurants and retailers, and imports entered by steamship at Baltimore. Receipts are listed by states and countries from which they were shipped. In cases where the shipping point is unknown, they are shown by the state from which they were billed.

(Seattle) Washington and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, February 1966, 7 pp. (Market News Service, U. S. Fish and Wildlife Service, 706 New Federal Office Bldg. 909 First Ave., Seattle, Wash. 98104.) Includes landings by the halibut fleet reported by the Seattle Halibut Exchange; salmonfleets reported by primary receivers; landings of halibut reported by the International Pacific Halibut Commission; landings of otter-trawl vessels; receipts reported by the Fishermen's Marketing Association of Washington; local landings by independent vessels; coastwise shipments from Alaska by scheduled and non-scheduled shipping lines and airways; imports from British Columbia via rail, motor truck, shipping lines; and ex-vessel landings; and imports from other countries through Washington customs district; for the month indicated.

Seattle, Washington, Brokers, Importers and Exporters of Fishery Products, 1966, 7 pp., 1966. (Market News Service, U. S. Fish and Wildlife Service, 706 Federal Office Bldg., 909 First Ave., Seattle, Wash. 98104.)

THE FOLLOWING SERVICE PUBLICATIONS ARE FOR SALE AND ARE AVAILABLE ONLY FROM THE SUPERINTENDENT OF DOCUMENTS, U. S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D. C. 20402.

Fish, Wildlife, and Pesticides, 12 pp., illus., printed, 10 cents. Discusses many of the most commonly known pesticides and the purposes for which they are used. Reports on research by Fish and Wildlife Service scientists to assess various pesticides and to develop substitutes for those found to be most dangerous to fish and wildlife. The report also discloses that pesticides can be found virtually everywhere in the world, sometimes thousands of miles from where they were applied. It explains how groups of living organisms rate on a scale of sensitivity to pesticides and how pesticides kill or injure these organisms. It also tells how pesticides are particularly significant to the fishing industry since some of the most valuable species of fish and shellfish are among the most sensitive to pesticides.

Top O' the Mornin' with Fish and Shellfish, Test Kitchen Series No. 15, 19 pp., illus., printed, 1966, 25 cents. Nutritionists agree that one-fourth to one-third of our daily food requirements should be eaten at the morning meal; however, large groups of our population still do not take the time to eat a good

breakfast. A lack of protein in the morning meal no doubt accounts for the mid-morning letdown many experience. Researchers have found this let-down to be a characteristic aftermath of meals which are high in carbohydrates and low in high-quality proteins. Fish is a high-quality protein food abundantly supplied with vitamins and minerals; it cooks quickly and has a delicate, distinctive flavor. This booklet contains 17 "change-of-pace" eye-opener recipes developed by home economists of the Bureau of Commercial Fisheries. They will encourage your family to eat a hearty first-meal-of-the-day. Three of the recipes "Brunch for a Bunch," list ingredients for 25, 50, and 100 portions.

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.

AMINO ACIDS:

Articles from Chemical Abstracts, vol. 61, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006:

"Fish and fish products. IV--Evaluation of certain types of fish for their valuable constituents and essential amino acids," by M. Qudrat-i-Khuda, Kg. M. Quddusur Rahman, and N. A. Khan, July 6, 1964, Abstract No. 1178e.

"Free amino acids of marine invertebrates," by James S. Kittredge and others, June 8, 1964, Abstract No. 14882a.

ANTIBIOTICS:

Articles from Bulletin of the Japanese Society of Scientific Fisheries, printed. Japanese Society of Scientific Fisheries, Shiba-Kaigandori 6, Minato-ku, Tokyo, Japan:

Effect of metal ions upon the heat stability and antibacterial activity of Tylosin. I--Results obtained by the cylinder-plate assay method"; and "II--Results obtained by the Turbidimetric assay method," by Toshiharu Kawabata, Kimiyo Shibuya, and Takeshi Suzuki, vol. 31, May 1965, pp. 350-364.

"Heat inactivation of Tylosin included in muscle tissue and method of its prevention," by Tetuo Tomiyama and Etsuko Shiraishi, vol. 31, Apr. 1965, pp. 312-318.

"Studies on the behavior and the effect of some preservatives in fish products. I--Behavior of Tylosin in fish products on the basis of antibacterial action," by Motonobu Yokoseki, Chieko Nemoto, and Keishi Amano, vol. 30, Sept. 1964, pp. 772-777.

"Studies on food preservatives. VIII--Resistance studies on Tylosin," by Tomoaki Okitsu, Toshiharu Kawabata, and Tsuneo Kozima, vol. 31, Mar. 1965, pp. 219-226.

BIOCHEMISTRY:

"Kinetics of the reversible reaction of sperm whole myoglobin with zinc," by John R. Cann, article, Biochemistry, vol. 3, May 1964, pp. 714-722, printed. Biochemistry, Society for Experimental Biology and Medicine, 139th St. and Convent Ave., New York, N. Y. 10027.

"The oxygen equilibrium of some lamprey hemoglobins," by Eraldo Antonini and others, article, Archives of Biochemistry and Biophysics, vol. 105, May 1964, pp. 404-408, printed. Archives of Biochemistry and Biophysics, c/o Academic Press, Inc., 111 5th Ave., New York, N. Y. 10003.

BRAZIL:

"Atividade pesqueira atual no Nordeste Brasileiro" (Actual Fishing Activities in Northeast Brazil), article, Revista Nacional da Pesca, vol. 6, no. 48, January-February 1966, pp. 9-11, illus., printed. Revista Nacional da Pesca, Rua Xavier de Toledo, 210, Caixa Postal: 30.263, São Paulo, Brazil.

"La pesca en el Brasil" (Fishing in Brazil), article, Boletín de Informacion, no. 87, December 1965, pp. 17-19, printed. Sindicato Nacional de la Pesca, Paseo del Prado, 18-20, Madrid, Spain.

CALIFORNIA:

California Fish and Game, vol. 52, no. 1, Jan. 1966, 64 pp., illus., printed, single copy \$0.75. Office of Procurement, Documents Section, P. O. Box 1612, Sacramento, Calif. 95807. Some of the articles are: "Length frequencies of Pacific hake (Merluccius productus) landed in California through 1964," by E. A. Best and R. J. Nitsos; and "A Greenland halibut, Reinhardtius hippoglossoides (Walbaum) recorded on Southern California," by Jack W. Schott.

The California Marine Fish Catch for 1964, by Edward C. Greenwood and David J. Mackett, Fish Bulletin 132, 45 pp., printed. California Department of Fish and Game, Office of Procurement, Documents Section, P. O. Box 1612, Sacramento, Calif. 95807.

Fish and Game Code, 1965, 299 pp., printed, 1965. California Department of Fish and Game, Documents Section, P. O. Box 1612, Sacramento, Calif. 95807. Provisions of this code relate to the taking, processing, or use of birds, mammals, fish, mollusks, crustaceans, etc. The section pertaining to commercial fishing covers licensing, vessel registration, etc.; particular varieties of fish such as sardines, anchovies, salmon, lobster, crab, abalones, clams and other mollusks, salt-water and anadromous fish, and fresh-water fish. It also covers nets for particular varieties of fish, and other means of taking fish. Inside the back cover are the hunting and angling regulations for 1965, adopted by the Commission under its regulatory powers.

Natural Resources of California, 84 pp., illus., printed, 60 cents. U. S. Department of the Interior, Office of the Secretary, Office of Information, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

Ocean Fishing, 4 pp., illus., printed, 1965. State of California Resources Agency, Department of Fish and Game, 1416 Ninth St., Sacramento, Calif. 95814.

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CLAMS:

"Larval development of the brackish water mastrid clam, *Rangia cuneata*," by Paul Chanley, article, *Chesapeake Science*, vol. 6, no. 4, Dec. 1965, pp. 209-213, illus., printed, single copy 75 cents. Natural Resources Institute of the University of Maryland, Chesapeake Biological Laboratory, Solomons, Md. 20688.

"Temperature dependence of the activity of the anti-tumor factor in the common clam," by Andrew Hegyeli, article, *Science*, vol. 146, Oct. 2, 1964, p. 77-78, printed. Science, American Association for the Advancement of Science, 1515 Massachusetts Ave. NW., Washington, D. C. 20005.

COD:

Articles from *Journal of the Fisheries Research Board of Canada*, vol. 22, printed. Queen's Printer and Controller of Stationery, Ottawa, Canada:

"Lysolecithinase of cod muscle," by M. Yurkowski and H. Brockerhoff, May 1965, pp. 643-652.

"Studies on the quality of Newfoundland cod. 10--Effect of some commercial freezing rates on the frozen and stored quality of trap cod," by W. A. MacCallum, Dorothy A. Chalker, and E. J. Laishley, March 1965, pp. 411-420; 11--Thaw-drip polyphosphate-treated and untreated fillets," by Dorothy A. Chalker and W. A. MacCallum, May 1965, pp. 783-791.

"Trends in catch, age, and size of cod from the commercial longline fishery at Bonavista, Newfoundland, 1952-62," by A. M. Fleming, March 1965, pp. 465-474.

COMMISSIONS:

Gulf States Marine Fisheries Commission Sixteenth Annual Report, 1964-1965 (to the Congress of the United States and to the Governor and Legislators of Alabama, Florida, Louisiana, Mississippi, and Texas), 47 pp., illus., printed, limited distribution. Gulf States Marine Fisheries Commission, 312 Audubon Bldg., New Orleans, La. 70112. Outlines the Commission's activities for the period October 1964-October 1965, with a summary of actions and recommendations. Describes briefly the activities of each of the member States during that period. Includes short discussions of U. S. Fish and Wildlife Service activities in shellfish, menhaden, bottomfish, and pelagic fish exploration; offshore gear research; faunal survey; shrimp biology, shrimp dynamics, and experimental biology; estuarine studies; pesticides; red tide program; biochemical studies of shrimp; microbiology; seafood inspection and certification; marketing; Federal aid to States; and financial assistance to the commercial fishing industry. Also contains the financial report of the Commission for the year ended June 30, 1965.

16th and 17th Annual Reports of the Pacific Marine Fisheries Commission for the Years 1963 and 1964 (to the Congress of the United States and to the Governors and Legislatures of Washington, Oregon, California, and Idaho), 62 pp., illus., printed, April 1965. Pacific Marine Fisheries Commission, 741 State Office Bldg., 1400 SW. Fifth Ave., Portland,

Oreg. 97201. Reports briefly on the specific activities of the Pacific Marine Fisheries Commission during 1963 and 1964 and presents a review of developments in the fields of research, regulation, and coordination in the States of Washington, Oregon, California, and the new member Idaho. Reviews Commission activities during 1963, a few of which are: action on the exploitation by foreign fishing vessels, taking salmon on high seas, shrimp problem between Oregon and California, salmon spawning sanctuaries, power dam moratorium, Indian affairs, pesticide program and other topics. Also reviews Commission activities of 1964, among which are: permanent protection area for anadromous fish in the Salmon River, Idaho; oysters--causes of mortality; shrimp research and tariff on imported fish regarding international North Pacific Treaty.

CONSUMER PRICE INDEX:

Measuring Prices: An Inexact Science, by Arthur M. Ross, 2 pp., printed. (Reprinted from *The Wall Street Journal*, Thursday, Feb. 10, 1966.) U. S. Department of Labor, Bureau of Labor Statistics, Washington, D. C. 20210.

CRABS:

"Hemolymph calcium fluctuations as related to environmental salinity during ecdysis of the blue crab, *Callinectes sapidus*," by Paul A. Haefner, Jr., article *Chemical Abstracts*, vol. 61, Oct. 26, 1964, Abstract No. 11071e, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

"Record crab yield paves way for vigorous market push," by Duane D. Shelton, article, *Quick Frozen Foods*, vol. 17, Mar. 1965, pp. 85-89, printed. Quick Frozen Foods, 1776 Broadway, New York, N. Y. 10019.

"A study of the hatching process in aquatic invertebrates. XX--The blue crab, *Callinectes sapidus*, Rathbun; XXI--The nemertean, *Carcinonemertes carcinophila* (Kölliker)," by Charles C. Davis, article, *Chesapeake Science*, vol. 6, no. 4, Dec. 1965, pp. 201-208, illus., printed, single copy 75 cents. Natural Resources Institute of the University of Maryland, Chesapeake Biological Laboratory, Solomons, Md. 20688.

CUBA:

"Nuevos horizontes en la pesca del bonito" (New Horizons in Bonito Fishing), article, *Mar y Pesca*, vol. 6, March 1966, pp. 4-11, illus., printed. Instituto Nacional de la Pesca, Amargura 103, Havana, Cuba.

CZECHOSLOVAKIA:

Articles from *Bulletin*, vol. 1, no. 3, July-September 1965, printed in Czech. Fisheries Research Institute, Vodnan, Czechoslovakia:

"Further new experiences on the use of antibiotics in our fishery," by Josef Havelka and Frantisek Volf, pp. 12-20.

"Application of herbicides for the killing of aquatic plants," by Miroslav Vejvoda, pp. 21-27.

"The newly built experimental ponds of Fisheries Research Institute as a base for solving research tasks," by Rudolf Berka and Emanuel Eliasek, pp. 33-35.

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FISH:

Occurrence of Spiny Dogfish (*Squalus acanthias*), and Other Elasmobranchs in South Carolina Coastal Waters, 1 pp., printed. (Reprinted from *Copeia*, no. 7, Sept. 30, 1965, p. 378.) American Society of Ichthyologists and Herpetologists, 18111 Nordhoff St., Northridge, Calif. 91324.

ECOLOGICAL:

Articles from *Ecology*, vol. 46, no. 6, Autumn 1965, illus., printed. Duke University Press, P. O. Box 6697 College Station, Durham, North Carolina 27708:

Vertical zonation of inshore fishes in the upper water layers of the Hawaiian Islands," by William A. Gosline, pp. 823-831.

Respiration and some phosphorus excretion in some marine populations," by Masako Satomi and Lawrence R. Pomeroy, pp. 877-881.

Chronic exposure of blue crabs, *Callinectes sapidus*, to sublethal concentrations of DDT," by Jack I. Lowe, pp. 899-900.

FEEDING:

Possible interference of fats, carbohydrates, and salts in amino-acid determinations in fish meals, fish protein concentrates, and mixed animal feeds," by Preston Smith, Jr., M. E. Ambrose, and G. M. Knobl, Jr., article, *Journal of Agricultural and Food Chemistry*, vol. 31, May-June 1965, pp. 266-268, printed. *Journal of Agricultural and Food Chemistry*, The American Chemical Society, 1155 - 16th St. NW., Washington, D. C. 20006.

FISH MORTALITIES:

Catastrophic Fish Mortalities on Kentucky Lake, 8 pp., processed, Nov. 1965. The Executive Secretary, Tennessee Stream Pollution Control Board, 620 Cordell Hull Bldg., Nashville, Tenn. 37219.

FISH OIL:

Absorptive bleaching and molecular distillation of menhaden oil," by E. J. Gauglitz, Jr., and E. H. Gruger, Jr., article, *Journal of the American Oil Chemists' Society*, vol. 42, June 1965, pp. 561-563, printed. American Oil Chemists' Society, 35 E. Wacker Dr., Chicago, Ill. 60601.

Biological availability of calcium and phosphorus in menhaden fish oils," by A. H. Spandorf and K. C. Leong, article, *Poultry Science*, vol. 44, July 1965, pp. 1107-1113, printed. Poultry Science Association, Kansas State University, Manhattan, Kansas 66504.

Studies of the distributions of lipids in hypercholesteremic rats. 3--Changes in hypercholesteremia and tissue fatty acids induced by dietary fats and marine oil fractions," by James J. Peifer and others, article, *Archives of Biochemistry and Biophysics*, vol. 110, May 1965, pp. 270-283, printed. *Archives of Biochemistry and Biophysics*, c/o Academic Press, 111 5th Ave., New York, N. Y. 10003.

FISH POPULATIONS:

An Analysis of the Variability of Fish Populations Taken by Otter Trawl in Biscayne Bay, Florida, by

Martin Roessler, Contribution No. 594, 8 pp., printed. (Reprinted from *Transactions of the American Fisheries Society*, vol. 94, no. 4, Oct. 1965, pp. 311-318.) The Marine Laboratory, Institute of Marine Science, University of Miami, Miami, Fla. 33124.

FISHWAYS:

"Fish, Wildlife, and Water Development," by J. C. Fraser, article, *Outdoor California*, vol. 27, no. 2, Feb. 1966, pp. 3-5, 14, illus., printed, annual subscription \$2.00. *Outdoor California*, State of California, Office of Procurement, Documents Section, P. O. Box 1612, Sacramento, Calif. 95807.

FREEZE-DRYING:

"Browning of freeze-dried fish," by H. L. A. Tarr and R. E. A. Gadd, article, *Journal of the Fisheries Research Board of Canada*, vol. 22, May 1965, pp. 755-760, printed. Queen's Printer, Ottawa, Canada.

FRESH-WATER FISH:

"Some pan fishes of New York--yellow perch, white perch, white bass, freshwater drum," by Edward C. Raney, article, *The Conservationist*, vol. 10, no. 3, 1965, pp. 22-28, printed. The Conservationist, New York State Conservation Dept., Albany, N. Y.

FROZEN FISH:

"Puff-type batter coating creating profitable market for deep-fry frozen food," article, *Quick Frozen Foods*, vol. 27, June 1965, pp. 117-120, printed. *Quick Frozen Foods*, 1776 Broadway, New York, N. Y. 10019.

GEAR:

"Adjusting ship-type with gear handling in sterntrawler design," by Conrad Birkhoff, article, *The South African Shipping News and Fishing Industry Review*, vol. 20, no. 9, Sept. 1965, pp. 100-103, illus., printed, single copy 30c. (about US\$0.45). Thomson Newspapers, South Africa (Pty.) Ltd., Thibault Sq., Box 80, Cape Town, South Africa Republic.

GENERAL:

The Common Wealth in Ocean Fisheries, by Francis T. Christy and Anthony Scott, 294 pp., printed, 1965, \$6.00. The Johns Hopkins Press, Baltimore, Md. 21218. The authors examine the fishery resources of international waters, pointing out that intense competition can lead to conflict between nations, depletion of resources, and wastage of capital and labor. The first part of the book discusses the common property aspects of fisheries and reviews the potential physical productivity of the oceans, and on the supply and demand situation which is likely to develop for ocean products. The remainder of the book examines the legal principles that guide the present use of the seas and concludes that new practices and regulations are called for if the world's fisheries are to be developed in an orderly and rational fashion.

GERMAN FEDERAL REPUBLIC:

Informatione für die Fischwirtschaft (Information for the Fishing Industry), vol. 12, no. 4/5, 1965, 53 pp., processed in German. Includes among others, these articles: "Such-und Forschungsreise mit FFS 'Walther Herwig'--10. Reise" (Exploratory and Research Trip of the FFS "Walther Herwig"--10th Trip); "Bericht über die 88. Reise des FFS 'Anton Dohrn' nach Labrador und Westgrönland" (Report on the 88th

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trip of the FFS "Anton Dohrn" to Labrador and West Greenland); "Überblick über die deutsche Heringsfischerei 1964" (Review of the German Herring Fishery 1964); "Neue Ergebnisse aus der internationalen Forschung über den Roten Thun" (New Findings from the International Research on Red Tuna); and "Methoden der Qualitätsbeurteilung tiefgefrorener Fischerzeugnisse" (Methods of Determining Quality of Deep Frozen Fishery Products).

HALIBUT:

"Chalkiness in halibut in relation to muscle pH and protein denaturation," by N. Tomlinson, S. E. Geiger, and E. Dollinger, article, Journal of the Fisheries Research Board of Canada, vol. 22, May 1965, pp. 653-663, printed. Queen's Printer, Ottawa, Canada.

ICHTHYOLOGY:

Copeia, No. 4, Dec. 31, 1965, 175 pp., illus., printed. American Society of Ichthyologists and Herpetologists, 18111 Nordhoff St., Northridge, Calif. 91324. Includes, among others, articles on: "Osteology of the Zoarcid fish Melanostigma pammelas," by Edgar L. Yarberry; "A Review of the razorfish genus Hemipteronotus (Labridae) of the Atlantic Ocean," by John E. Randall; "Cubiceps athenae, a new nomeid fish from the western North Atlantic Ocean, and its systematic position among stromateoids," by Richard L. Haedrich; and "Ichthyological notes: New locality records for Alaskan fishes."

IRRADIATION PRESERVATION:

"Irradiation preservation of Pacific Coast fish and shellfish. III - Storage life of petrale sole filets at 33° and 42° F.," by J. Spinelli and others, article, Food Technology, vol. 19, June 1965, pp. 126-130, printed, single copy \$1.50. Food Technology, Institute of Food Technologists, Suite 1350, 176 N. Adams St., Chicago, Ill. 60603.

Radiation Processing of Foods (Hearings before the Subcommittee on Research, Development, and Radiation of the Joint Committee on Atomic Energy, Congress of the United States, Eighty-Ninth Congress, 1st session, June 9 and 10, 1965), 826 pp., illus., printed, \$2.50. The Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. Contents include statements and correspondence from various Federal Officials, doctors, and representatives of business firms. It includes, among others, a report on "Marketing feasibility study of radiation processed fishery products"; and "Irradiation nears reality--pilot plant will pioneer processing, shipping, and marketing of irradiated seafoods." Fish meal is included in the study of the economics of controlling Salmonellae in foods by the use of ionizing radiation.

"Studies on food irradiation in Japan," article, Food Irradiation Quarterly, vol. 5, no. 3, January-March 1965, pp. A8-A11, printed. Centre Europeen d'Information pour l'Irradiation des Aliments, B. P. No. 6, Gid-sur-Yvette (S. -et-O), France. (For sale by O.E.C.D. Mission, Suite 1223, 1346 Connecticut Ave. NW., Washington, D. C. 20006.)

JAPAN:

Fisheries Census for FY 1964, 181 pp., printed in Japanese, December 1965. Statistics and Survey Division, Agriculture-Forestry Ministry, Tokyo, Japan.

Fisheries Production Indexes for 1964, 6 pp., processed in Japanese, November 1965. Japanese Fisheries Agency, Tokyo, Japan.

Statistic Tables of Fishing Vessels, General Report No. 17, As of the End of 1964, 280 pp., printed in Japanese and English. Japanese Fisheries Agency, Tokyo, Japan.

On Japan-Soviet Fisheries Commission, 29 pp., and map, processed in Japanese, February 1966. Fisheries Agency of Japan, Agriculture-Forestry Ministry, Tokyo, Japan. Includes information for 1965 on Japanese and Soviet catches of salmon, king crab, and herring, showing prices and number of vessels engaged in the fisheries.

Memoirs of the Faculty of Fisheries, Kagoshima University, vol. 14, 180 pp., illus., printed, December 1965. The Faculty of Fisheries, Kagoshima University, Kagoshima, Japan. Contains some articles in Japanese with English abstracts, and some articles in English. Some of the articles are: "Studies on some marine algae from southern Japan--VI," by Takeshi Tanaka, in English; "Developmental process of fishery economy--a case study on the bonito fisheries at Botomari," by Takeshi Hara, in Japanese; "Changes in chemical components, especially in inosonic acid, of cold stored bonitos," by Muneo Sameshima, in Japanese; "Correlation between the fish-tissue-pieces size in the homogenate viscosity," by Jun-ichi Nishimoto and Ohta Fuyuo, in Japanese; "Effect of freezing on activation of protease contained in skipjack muscle," by Zentaro Ooshiro, in Japanese; "On the formation of tyramine in fish and shellfish," by Fuyuo Ohta, in Japanese; "Formation of volatile carbonyls in cooked fish as related to the rancidity," by Fuyuo Ohta, in Japanese.

LAMPREY:

"A preliminary annotated list of the lampreys and fishes of Illinois," by Philip W. Smith, article, Illinois Natural History Survey Biological Notes, vol. 54, 1965, pp. 1-12, illus., map, printed. Illinois Natural History Survey, Natural Resources Bldg., Urbana, Ill. 61801.

LOBSTER:

"Zinc regulation in the lobster, Homarus vulgaris. I--Tissue zinc and copper concentrations," by G. W. Bryan, article, Chemical Abstracts, vol. 62, Feb. 15, 1965, Abstract No. 4377c, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

MAMMALS:

Marine Mammals, by Richard J. Harrison and Judith E. King, 192 pp., illus., printed, 1965, \$3.00. Hillary House Publishers, Ltd., 303 Park Ave., South, New York, N. Y. 10010. This book describes the appearance, distribution and fossil representatives of marine mammals--whales and dolphins, seals and sea-lions, manatees and dugongs--and their classification into three orders, cetacea, sirenia, and pinnipedia. Much of the book is devoted to explaining how the anatomy and physiology of a normal mammal has been adapted to marine life. Recent research has shown how remarkably intelligent some of these animals are; for as well as being able to learn and communicate they swim underwater guided by a form of echo-

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education. The authors stress, though, that much research is still needed both on this subject of intelligence and on the habits of cetaceans and seals. The references at the end of the book give an extensive list of current, as well as standard books and articles to which the student may refer.

IMMUNE BIOLOGY:

Biological Investigation of the Caloosahatchee Estuary of Florida, by Gordon Gunter, Gulf Research Report, vol. 2, no. 1, 72 pp., illus., printed, Dec. 1965. Gulf Coast Research Laboratory, Ocean Springs, Miss.

MARKETING:

Small Marketers Aids--Annual No. 7, edited by Jean MacArthur, 100 pp., 1965, printed, 40 cents. Small Business Administration, Washington, D. C. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. (402.) Contains a series of 12 Aids published during 1962. Advises the small businessman how to deal with all aspects of running a small merchandising operation. It also discusses buying habits of customers, motivation research, building the right reputation, installment selling, advertising, etc.

MINERALS:

General content of fish. Studies of minerals (NA, CA, P, MG) in fish and their importance in the diet of healthy and sick people," by J. G. Rauschroo and M. Breckwoltd, article, Chemical Abstracts, vol. 61, Dec. 21, 1964, Abstract No. 703a, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

MOLLUSK SHELLS:

Trace elements in recent mollusk shells," by Orrin Pilkey and H. G. Goodell, article, Chemical Abstracts, vol. 62, Feb. 1, 1965, Abstract No. 3121e, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

MOLLUSKS:

Highlights in the Study of Mollusks on the United States Gulf Coast, by Gordon Gunter, 1 p., printed. (Reprinted from Annual Reports for 1964 of the American Malacological Union, p. 12.) Gulf Coast Research Laboratory, Ocean Springs, Miss.

NEW JERSEY:

Annual Report of the Division of Fish and Game, 62 pp., printed. Department of Conservation and Economic Development, Division of Fish and Game, Trenton, New Jersey. Contains, among others, summary of activities of "Bureau of fisheries management, freshwater research and development section."

OCEANOGRAPHY:

Available from the U. S. Naval Oceanographic Office, Washington, D. C. 20390:

Oceanographic Atlas of the North Atlantic Ocean. Section I--Tides and Currents, 82 pp.; Section V--Marine Geology, Publication No. 700, 77 pp., processed, 1965, each Section \$2.00.

Oceanography and Underwater Sound for Naval Applications, Special Publication 84, 145 pp., illus., processed, 75 cents, 1965.

Wave Hindcast Project North Atlantic Ocean, by Donald C. Bunting, TR-183, 43 pp., processed, 75 cents, Jan. 1966.

Annual Report of Oceanographic Observations, vol. 13, 1964, 222 pp., illus., printed, February 1965. Fisheries Research and Development Agency, The Republic of Korea, Pusan, Korea.

Proceedings of the National Conference on the Concept of a Sea-Grant University, 96 pp., printed, Oct. 28 and 29, 1965, US\$4.00. Graduate School of Oceanography, University of Rhode Island, Kingston, R. I. 02881. Contains the speeches, panel discussions, and other proceedings of the National Conference on the "Concept of a Sea-Grant University."

"U. S. needs new oceanography program," by James H. Wakelin, Jr., article, Chemical and Engineering News, vol. 43, June 21, 1965, p. 21, printed. Chemical and Engineering News, McGraw Hill Publishing Co., 330 W. 42nd St., New York, N. Y. 10036.

University Curricula in Oceanography, Academic Year 1965-66, ICO Pamphlet No. 23, 118 pp., processed, Dec. 1965. Interagency Committee on Oceanography, Bldg. 159E, Washington Navy Yard, Washington, D. C. 20390. This catalog is a compilation of courses offered in the marine sciences at accredited American colleges and universities. In addition to providing information for students, its purpose is to increase the exchange of information among the schools, and between them and employers of oceanographic manpower. Courses described are not restricted to those designated as "oceanography" by the institutions offering them, but include all courses dealing with the study of marine environment. Undergraduate curricula include marine biology, oceanography, fisheries, and marine geology. It also includes information on noninstitutional financial aid programs.

OCEAN PERCH:

"Redfish," by E. J. Sandeman, article, Trade News, vol. 18, no. 8, February 1966, pp. 19-21, illus., printed. Department of Fisheries, Ottawa, Canada.

OKLAHOMA:

Know Your Oklahoma Fishes, by Hubert C. Ward, 40 pp., illus., printed. Oklahoma Department of Wildlife Conservation, Oklahoma City, Okla. Describes and illustrates 16 of the known fish families in Oklahoma and about one-third of the species. A brief discussion of each species is also included.

OYSTERS:

Gonad Development and Discharge of Spawn in Oysters of Long Island Sound, by Victor L. Loosanoff, 17 pp., illus., printed. (Reprinted from Biological Bulletin, vol. 129, no. 3, Dec. 1965, pp. 546-561.) The Biological Bulletin, The Marine Biological Laboratory, Woods Hole, Mass. 02543.

"Oysters: composition of the larval shell," by H. B. Stenzel, article, Science, vol. 145, July 10, 1964, pp. 155-156, printed, single copy 35 cents. Science, American Association for the Advancement of Science, 1515 Massachusetts Ave. NW., Washington, D. C. 20005.

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

PEARL ESSENCE:

"Frosted flattery," by Mark R. Havass and Irene M. Kanagowski, article, Drug and Cosmetic Industry, vol. 97, Aug. 1965, pp. 167-168, 289-291, printed. Drug Markets Inc., 101 W. 31st St., New York, N. Y. 10001.

PLANKTON:

"Ecological studies related to plankton productivity in two Chesapeake Bay estuaries," by R. W. Ward and others, article, Chesapeake Science, vol. 6, no. 4, Dec. 1965, pp. 214-225, illus., printed, single copy 75 cents. Natural Resources Institute of the University of Maryland, Chesapeake Biological Laboratory, Solomons, Md. 20688.

"Marine life dependent upon plankton," by George T. Martin, article, South Carolina Wildlife, vol. 13, no. 1, Winter 1966, pp. 4-5, and 14-15, illus., printed. South Carolina Wildlife Resources Department, Box 360, Columbia, S. C. 29202.

SALMON:

"The Retreat of the Atlantic Salmon," by Anthony Netboy, article, American Forests, vol. 71, no. 10, October 1965, pp. 25-29, 59-63, illus., printed. The American Association, 919 Seventeenth Street NW. Washington, D. C. 20006.

"The West Greenland Salmon Fishery," by Richard L. Saunders, article, Trade News, vol. 18, no. 8, February 1966, pp. 3-6, illus., printed. Information and Educational Service, Department of Fisheries, Ottawa, Canada.

SALT FISH:

"Changes in the properties of salted fat Atlantic herring during storage," by N. N. Rulev, article, Chemical Abstracts, vol. 62, June 21, 1965, Abstract No. I6883F, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

SCALLOPS:

"Orange-red meats in sea scallops," by Neil Bourne and E. G. Bligh, article, Journal of the Fisheries Research Board of Canada, vol. 22, May 1965, pp. 861-864, printed. Queen's Printer and Controller of Stationery, Ottawa, Canada.

SEISMIC OPERATIONS:

Observation of Bristol Bay Seismic Operation, August 2-August 10, 1965, by Nevin Aspinwall and Gordon Tetsell, Information Bulletin 73, 18 pp., processed. Alaska Department of Fish and Game, Subport Bldg., Juneau, Alaska.

SHARKS:

"Canadian Atlantic Sharks," by S. N. Tibbo and W. B. Scott, article, Trade News, vol. 18, no. 8, February 1966, pp. 7-10, illus., printed. Information and Educational Service, Department of Fisheries, Ottawa, Canada.

"Sharks of the central Gulf Coast of Florida," by Eugenie Clark and Katherine von Schmidt, article, Bulletin of Marine Science, vol. 15, no. 1, 1965, pp. 13-83, printed, single copy \$3.50. Marine Laboratory, University of Miami, #1 Rickenbacker Causeway, Miami, Fla. 33149.

SHELLFISH:

"Shellfish 'farms' may soon be a profitable enterprise," article, Maritimes, winter 1966, pp. 7-10, illus., printed. Librarian, Graduate School of Oceanography, University of Rhode Island, Kingston, R. I. 02881.

SHRIMP:

"Electrical threshold responses of pink shrimp Penaeus duorarum, Burkenroad," by Doyne W. Kessler, article, Bulletin of Marine Science, vol. 15, no. 4, Dec. 1965, pp. 885-895, illus., printed, single copy \$3.50. Institute of Marine Science, University of Miami, 1 Rickenbacker Causeway, Virginia Key, Miami, Fla. 33149.

SMALL BUSINESS MANAGEMENT:

Management Aids for Small Manufacturers--Annual No. 11, edited by Jean B. MacArthur, 107 pp., 1965, printed, 40 cents. Small Business Administration, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) A series of 12 Aids published during the year ending June 30, 1963, and 4 Aids published in October 1961. Contains advice of experts from all over the country and in every area of business management, specifically gathered and developed for owners and managers of small businesses.

SMOKING:

Abstracts from Chemical Abstracts. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006:

"Aqueous smoke solution for use in foods," by Clifford M. Hollenbeck, vol. 60, Jan. 20, 1964, Abstract No. 2260g.

"Electric smoking, a very promising method for smoking fish," by N. A. Voskresenskii, vol. 62, Apr. 12, 1965, Abstract No. 9695a.

"Smoke extract to enhance the flavor of canned sprats and herring as well as of preserved salmon in oil," by I. B. Schober, vol. 61, July 20, 1964, Abstract No. 2397b.

SOUTH CAROLINA:

Annual Report, 1964-1965, Contributions from Bears Bluff Laboratories No. 43, 12 pp., illus., printed, Jan. 1966. (Reprinted from Report of South Carolina Wildlife Resources Department, Fiscal Year July 1, 1964-June 30, 1965.) Bears Bluff Laboratories, Wadmalaw Island, S. C. A detailed description of the activities of Bears Bluff Laboratories for the period under review, covering shrimp and finfish studies, fish kills, pond cultivation, shrimp feeding experiments, the pesticide monitoring program, and area biological studies.

SPORT FISHING:

Artificial Reefs as Tools of Sport Fishery Management in Coastal Marine Waters, SFI Bulletin no. 170, Jan. 1966, 8 pp., illus., printed. Sport Fishing Institute, 719 13th St. NW., Washington, D. C. 20005.

SQUID:

"Studies on complete utilization of squid (Ommastrephes sloani pacificus). XX - Manufacture of smoked squid meat (2)," by Eiichi Tanikawa, Minoru Akiba,

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and Terushige Motohiro, article, Bulletin of the Faculty of Fisheries, Hokkaido University, vol. 14, February 1964, pp. 243-261, printed. Faculty of Fisheries, Hokkaido University, Kameda-Machi, Hakodate, Japan.

WORDFISH:

"The Swordfish," by S. N. Tibbo, article, Trade News, vol. 18, no. 8, February 1966, pp. 16-18, illus., printed. Information and Educational Service, Department of Fisheries, Ottawa, Canada.

TRAWL NETS:

"Trawl twine testing program points way to new advances," article, Fishing Gazette, vol. 82, March 1965, pp. 12-13, 24, printed. Fishing Gazette Publishing Corp., 461 8th Ave., New York, N. Y. 10001.

ROUT:

"Effect of cold acclimation on electrolyte distribution in rainbow trout," by C. P. Hickman, Jr. and others, article, Chemical Abstracts, vol. 61, Oct. 16, 1964, Abstract No. 11071a, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

"Leaping rainbows of the Finger Lakes," by Dwight A. Webster, article, The Conservationist, vol. 10, no. 3, 1965, pp. 10-13, printed. The Conservationist, New York State Conservation Dept., Albany, N. Y.

"Persistence of the native rainbow trout type following introduction of hatchery trout," by Richard Gard and Donald W. Seegrist, article, Copeia, no. 2, 1965, pp. 182-185, printed. Copeia, American Society of Ichthyologists and Herpetologists, 1811 Nordhoff St., Northridge, Calif. 91324.

"Rainbow trout culture in Japan," by Y. Yoshioka, article, U. S. Trout News, vol. 10, no. 4, Nov.-Dec. 1965, pp. 12, 14, 15, and 19, illus., printed. U. S. Trout Farmers Association, 67 W. 9000 South, Sandy, Utah 84070.

"Some effects of environment on egg production in brown trout (Salmo trutta)," by James T. McFadden, Edwin L. Cooper, and John K. Andersen, article, Limnology and Oceanography, vol. 10, no. 1, 1965, pp. 88-95, printed. Limnology and Oceanography, K. M. Rae, c/o George H. Lauss, University of Michigan, Ann Arbor, Mich.

IANA:

"1965 Canners Statistical Handbook, 521 pp., processed, 1965, \$2.75. Division of Statistics and Economics, National Canners Association, 1133 20th Street NW., Washington, D. C. 20036.

"A report on the survey of tuna," by A. G. York, article, Commercial Fishing, vol. 3, March 1965, pp. 31, 33-34, printed. Trade Publications Ltd., 26 Albert Street, Auckland, New Zealand.

"Studies on 'green' tuna. I - The significance of trimethylamine oxide; II - Discoloration of cooked tuna meat due to trimethylamine oxide," by Chiaki Koizumi and Yoshiro Hashimoto, article, Bulletin

of the Japanese Society of Scientific Fisheries, vol. 31, February 1965, pp. 157-160, June 1965, pp. 439-447, printed. Japanese Society of Scientific Fisheries, Shiba-Kaigandori 6, Minato-ku, Tokyo, Japan.

U. S. S. R.:

Japanese-Soviet Fisheries Technical Cooperation Data Subcommittee Leaflets, printed in Japanese, Dec. 1965. Japan Fisheries Association, Tokyo, Japan:

No. 1 - Data on the Present Status of Soviet Fisheries, 39 pp.

No. 2 - (A) Data on Soviet 7-Year Fisheries Plan and on Next 5-Year Fisheries Plan; (B) Structure and Capacities of Large-Sized Trawlers, 98 pp., illus.

Prakticheskoe rukovodstvo po bor'be s vrediteliami rybnikh produktov (Practical Guidance in the Control of Pests Harmful to Fishery Products), by S. A. Dorokhov, 92 pp., printed in Russian, 1965. Izd-vo 'Pishchevaia Promyshlennost', Moscow, U. S. S. R. The booklet describes modern methods to control insects (flies, beetles, moths), rodents, and other harmful pests in processing fishery products.

"Razvedenie rakov v mestnykh vodoemakh" (Breeding crayfish in local water reservoirs), by S. Brodskii, article, Rybovodstvo i Rybolovstvo, vol. 5, 1959, pp. 25-26. Ministerstvo Sel'skogo Khoziaistva SSSR, Moskva, U. S. S. R.

UNITED KINGDOM:

"Fillets or Whole Fish?" article, World Fishing, vol. 15, no. 2, February 1966, pp. 25-27, 31, illus., printed, single copy 3s. 6d. (about 50 U. S. cents). Grampian Press Ltd., The Tower, 229-243, Shepherd's Brush Road, Hammersmith, London, W. 6, England. With two new British freezer stern trawlers fitted out for filleting and in commission and more on the way, it seems that Britain may soon follow Germany in the production of sea-frozen fillets by the medium stern trawler. Since this possibility was last considered in World Fishing (January 1962), the practicability of this system has moved closer, though certain problems are not yet fully solved. The article draws on expert opinion to define and discuss these problems as they stand today.

VESSELS:

"Economics of outboard motors in small fishing crafts in Saurashtra (India)," by K. Chidambaram, article, Current Affairs Bulletin, vol. 41, no. 1, December 1964, pp. 8-13, printed. Indo-Pacific Fisheries Council, Food and Agriculture Organization of the United Nations, Regional Office for Asia and the Far East, Maliwan Mansion, Phra Atit Road, Bangkok, Thailand.

VIRGINIA:

Sixty-sixth and Sixty-seventh Annual Reports of the Commission of Fisheries of Virginia (for the Fiscal Year Ending June 30, 1964 and June 30, 1965), 40 pp., illus., printed, 1965. Virginia Commission of Fisheries, Newport News, Va. A summary of the functions and operations of the Commission. Shows the amount of revenue derived from the fish and

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shellfish industries and royalties, all the expenditures of the Commission, and the general condition of the fish and shellfish industries under the supervision of the Commission. Discusses enforcement and personnel, working of the engineering department, Potomac River activities, fishery statistical collection, and oyster research. Also covers accomplishments by the Commission in conservation and rehabilitation, pollution control, and James River study. Statistical tables present data showing

receipts from the fish and oyster industry by districts; recorded oyster planting grounds; and other related information.

WHITEFISH:

"Candling for the detection of triaenophorus crassus cysts in whitefish," by W. Budde, article, *Journal of the Fisheries Research Board of Canada*, vol. 22, May 1965, pp. 865-867, printed. Queen's Printer and Controller of Stationery, Ottawa, Canada.



RADIATION PRESERVATION OF FOOD IS GAINING

The preservation of food by ionizing radiation "is fast approaching commercialization," and within the decade, irradiation will be recognized as a major technique for preservation, the U. S. Department of Commerce said on June 1, 1965.

These conclusions were presented in a report--"Current Status and Commercial Prospects for Radiation Preservation of Food," prepared by the Food Irradiation Unit in the Office of Chemicals and Consumer Products of the Department's Business and Defense Services Administration (BDSA). The BDSA is a member of a 10-member interagency group dealing with radiation preservation of food. The report was prepared under contract for the Atomic Energy Commission, another member.

The report explains that the Food and Drug Administration has cleared radiation-treated bacon, wheat and wheat products, and potatoes for human consumption, as well as a number of packaging materials for use in connection with irradiated foods. Other petitions for clearance are pending or in preparation.

Of the 28 products considered in the study in connection with 6 different irradiation processes, 17 were found to have either "good" or "excellent" prospects for domestic or international markets.

Those products for which radiation is believed to hold the most promise at this time are: pasteurized poultry, marine products, and strawberries; sterilized poultry and ham; improved dehydrated vegetables; and disinfected eggs, liquid, frozen, and dried.

The study also identifies the direction and magnitude of possible changes or problems which may affect segments of the economy concerned with food processing, as adoption of the radiation technique increases.

It also includes an analysis and discussion of international aspects, Government regulation, consumer reaction, and other factors.

The report says that major benefits of this new method of food preservation will be felt in areas not reached by other processes. In some instances, it is expected to replace present methods of preservation, and elsewhere, to be used in combination with other processes.

The benefits anticipated include elimination of food-borne hazards to health; the availability of new and more convenient foods; improvement in quality; savings from reductions in spoilage; and market expansion as the result of extensions of shelf life and shipping distances.

Note: "Current Status and Commercial Prospective for Radiation Preservation of Food" is for sale by the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Price 55 cents.