



FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PROCESSED PUBLICATIONS ARE AVAILABLE FREE FROM THE OFFICE OF INFORMATION, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON, D. C. 20240. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

- CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES.
- FL - FISHERY LEAFLETS.
- MNL - REPRINTS OF REPORTS ON FOREIGN FISHERIES.
- SEP.- SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.
- SL - STATISTICAL LISTS OF DEALERS IN AND PRODUCERS OF FISHERY PRODUCTS AND BYPRODUCTS.

Number	Title
CFS-3772	- Frozen Fishery Products, 1964 Annual Summary, 14 pp.
CFS-3789	- Fish Meal and Oil, 1964 Annual Summary, 4 pp.
CFS-3810	- Fish Sticks, Portions, and Breaded Shrimp, January-March 1965, 3 pp.
CFS-3816	- Virginia Landings, 1964 Annual Summary, 11 pp.
CFS-3818	- North Carolina Landings, 1964 Annual Summary, 10 pp.
CFS-3821	- Alabama Landings, 1964 Annual Summary, 6 pp.
CFS-3824	- Texas Landings, March 1965, 2 pp.
CFS-3826	- Mississippi Landings, 1964 Annual Summary, 7 pp.
CFS-3828	- Frozen Fishery Products, May 1965, 8 pp.
CFS-3830	- Alabama Landings, January 1965, 2 pp.
CFS-3831	- Mississippi Landings, January 1965, 2 pp.
CFS-3832	- Georgia Landings, January 1965, 2 pp.
CFS-3833	- South Carolina Landings, January 1965, 2 pp.
CFS-3834	- New Jersey Landings, March 1965, 3 pp.
CFS-3835	- New Jersey Landings, April 1965, 3 pp.
CFS-3836	- New York Landings, April 1965, 4 pp.
CFS-3837	- Alabama Landings, February 1965, 3 pp.
CFS-3838	- Georgia Landings, February 1965, 2 pp.
CFS-3839	- Mississippi Landings, February 1965, 2 pp.
CFS-3840	- South Carolina Landings, February 1965, 2 pp.
CFS-3841	- North Carolina Landings, May 1965, 4 pp.
CFS-3842	- Louisiana Landings, March 1965, 3 pp.
CFS-3843	- Louisiana Landings, April 1965, 3 pp.
CFS-3844	- Alabama Landings, March 1965, 3 pp.
CFS-3845	- Mississippi Landings, March 1965, 2 pp.
CFS-3846	- South Carolina Landings, March 1965, 2 pp.
CFS-3847	- Georgia Landings, March 1965, 2 pp.
CFS-3849	- Alabama Landings, April 1965, 3 pp.
CFS-3850	- Georgia Landings, April 1965, 2 pp.
CFS-3851	- South Carolina Landings, April 1965, 2 pp.

- CFS-3852 - Michigan, Ohio & Wisconsin Landings, Annual Summary, 5 pp.
- CFS-3853 - Michigan, Ohio & Wisconsin Landings, January 1965, 3 pp.
- CFS-3854 - Michigan, Ohio & Wisconsin Landings, February 1965, 3 pp.
- CFS-3856 - Florida Landings, May 1965, 8 pp.
- CFS-3857 - Maine Landings, April 1965, 4 pp.
- CFS-3858 - Fish Meal and Oil, May 1965, 2 pp.
- CFS-3859 - South Carolina Landings, May 1965, 2 pp.
- CFS-3861 - Georgia Landings, May 1965, 2 pp.
- CFS-3862 - Rhode Island Landings, February 1965, 2 pp.
- CFS-3863 - Alabama Landings, May 1965, 3 pp.
- CFS-3864 - Shrimp Landings, January 1965, 5 pp.
- CFS-3868 - Maryland Landings, March 1965, 3 pp.
- CFS-3870 - Middle Atlantic Fisheries, 1964 Annual Summary, 8 pp.
- CFS-3875 - Maine Landings, May 1965, 4 pp.

Wholesale Dealers in Fishery Products (Revised):

- SL- 2 - New Hampshire, 1964, 1 p.
- SL- 3 - Massachusetts, 1964, 11 pp.
- SL- 4 - Rhode Island, 1964, 2 pp.
- SL- 5 - Connecticut, 1964, 1 p.
- SL- 6 - New York Coastal Area, 1964, 10 pp.
- SL- 7 - New Jersey, 1964, 4 pp.
- SL- 8 - Pennsylvania, 1964, 3 pp.
- SL- 9 - Delaware, 1964, 1 p.
- SL- 11 - Washington, D. C., 1964, 1 p.
- SL- 21 - California, 1964, 9 pp.
- SL- 29 - Ohio (Great Lakes Area), 1964, 2 pp.
- SL- 30 - Pennsylvania (Great Lakes Area), 1964, 1 p.
- SL- 31 - New York (Great Lakes Area), 1964, 2 pp.
- SL- 33 - North Dakota (Mississippi River and Tributaries), 1964, 1 p.
- SL- 39 - Tennessee (Mississippi River and Tributaries), 1964, 2 pp.
- SL- 40 - Oklahoma (Mississippi River and Tributaries), 1964, 1 p.
- SL- 43 - Alabama (Mississippi River and Tributaries), 1964, 1 p.
- SL- 44 - Nebraska (Mississippi River and Tributaries), 1964, 1 p.
- SL- 45 - Mississippi (Mississippi River and Tributaries), 1964, 1 p.
- SL- 46 - Texas (Mississippi River and Tributaries), 1964, 2 pp.
- SL- 49 - South Dakota (Mississippi River and Tributaries), 1964, 1 p.
- SL-151 - Firms Manufacturing Marine Animal Scrap Meal, Oil, Solubles and Homogenized Condensed Fish, 1963 (Revised), 8 pp.
- SL-161 - Producers of Packaged Fish, 1963 (Revised), 8 pp.

741 - Bottom Trawling Surveys of the Northern Gulf of Alaska (Summer and Fall of 1961 and Spring of 1962).

7 - Haul Seining in the Great Lakes, by William Gordon, 18 pp., illus., May 1965. Presents method of construction and operation that are practical for the present haul seine fishery of the Great Lakes. Lists materials used and details of construction of seines, care and treatment of them, seining equipment, and fishing grounds and procedures. Illustrations, diagrams and photographs aid in easy understanding.

THE FOLLOWING MARKET NEWS LEAFLETS ARE AVAILABLE FROM THE FISH MARKET NEWS SERVICE, U. S. BUREAU OF COMMERCIAL FISHERIES, 1815 N. FORT MYER DR., ARLINGTON, VA. 22209.

Number	Title
MI 11	- Fishing Industry in Spain, 1964, 7 pp.
MI 22	- (Supplement) Republic of South Africa and South West Africa Fisheries, 1964, 12 pp.
MI 38	- Developing the Costa Rican Fish Industry, 14 pp.
MI 44	- Iceland's Fishing Industry, 1964, 30 pp.
MI 48	- Pakistan's Fisheries Statistical Report, 1964, 20 pp.
MI 75	- Argentina's Fishing Industry, 1964, 8 pp.
MI 81	- France's Fishing Industry, 1964, 12 pp.

THE FOLLOWING REPRINTS FROM FISHERY BULLETIN, VOL. 63, NO. 3, ARE AVAILABLE FROM THE OFFICE OF INFORMATION, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON, D. C. 20240.

4 - Growth, Sex Ratio, and Maturity of the Whitefish in Central Green Bay and Adjacent Waters of Lake Michigan, by Donald Mraz, pp. 619-634, illus.,

4 - Updated Bibliography on Biology of Menhaden and Menhadenlike Fishes of the World, pp. 531-549.

4 - Statistical Study of Pribilof Fur Seal Population Estimates, pp. 657-669.

4 - Spawning and Growth of Juvenile Softshell Clams, MYA 62, ENRARIA, pp. 635-642, illus.

4 - History of Lake Herring in Lake Superior, pp. 528-530.

4 - Genetic Variation in the Hexagrammid Fishes, pp. 595-609, illus.,

4 - Method of Measuring Mortality of Pink Salmon Eggs and Larvae, pp. 575-588, illus.

4 - Recaptures, Growth and Rate of Recapture of Whitefish Tagged in the Apostle Islands Area of Lake Superior, pp. 611-618.

4 - Mortality and Maturity Schedules of Karluk River Sockeye Salmon and Some Comparisons of Mortality and Growth and Mortality Rates, pp. 551-574, illus.

4 - AVAILABLE FROM THE BRANCH OF REPORTS, U. S. BUREAU OF COMMERCIAL FISHERIES, 2725 MONTLAKE BLVD. E., SEATTLE, WASH. 98102.

4 - FOLLOWING REPRINTS FROM FISHERY INDUSTRIAL RESEARCH, VOL. 2, NO. 4, MAY 1965:

4 - Cholesterol Content of Various Species of Shellfish. I - Method of Analysis and Preliminary Survey of Variables, by Mary H. Thompson, pp. 11-15.

4 - Comparison of Chemical and Sensory Tests for Assessing Storage Life of Iced Calico Scallops (PECTEN GIBBUS), by Melvin E. Waters, pp. 5-10.

4 - Comparison of the Picric Acid Turbidity and Nessler Tests with Subjective Evaluations of Quality of Shrimp, pp. 53-56.

4 - Economic Study of Sea Scallop Production in the United States and Canada, pp. 57-79.

4 - Evaluation of the Micro-Diffusion Method for the Determination of Tertiary Volatile Base in Marine Products, by John Spinelli, pp. 17-19.

4 - Free Liquid Content of Gulf Oysters and Suggested Change in Standards, by Arthur F. Novak, E. A. Fieger, and J. A. Liuzzo, p. 3.

4 - Observations of the "Blueing" of King Crab, PARALITHODES CAMTSCHATICA, pp. 47-52.

4 - Preparation of Chilled Meat from Atlantic Blue Crab, by David H. B. Ulmer, Jr., pp. 21-45.

4 - FOLLOWING REPRINTS FROM FISHERY INDUSTRIAL RESEARCH, VOL. 2, NO. 4, MAY 1965:

4 - Drip Formation in Fish. 3--Composition of Drip from Defrosted Pacific Cod Fillets, by David Miyauchi, John Spinelli, and John A. Dassow, 6 pp.

4 - Economic Aspects of the U. S. Albacore Fishing Industry, by E. A. Hale and D. B. Ferrel, 39 pp.

4 - Frozen King Crab (PARALITHODES CAMTSCHATICA) Meat: Effect of Processing Conditions on Fluids Freed upon Thawing, by Jeff Collins and Russel L. Brown, 9 pp., illus.,

4 - Technological Investigations of Pond-Reared Fish. 2--Extension of the Shelf Life of Buffalo Fish Products Through Use of Antioxidants, 4 pp., illus., printed, April 1965.

4 - Thiaminase Activity in Fish: An Improved Assay Method, by R. H. Gnaedinger, 5 pp., illus.,

4 - THE FOLLOWING PUBLICATIONS ARE AVAILABLE ONLY FROM THE SPECIFIC OFFICE MENTIONED.

4 - California Fishery Market News Monthly Summary, Part I - Fishery Products Production and Market Data, June 1965, 15 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.

4 - California Fishery Market News Monthly Summary, Part II - Fishing Information, June and July 1965, 10 and 12 pp., respectively, illus. (U. S. Bureau of Commercial Fisheries, Tuna Resources Laboratory, P. O. Box 271, La Jolla, Calif. 92038.) Contains sea-surface temperatures, fishing and research information of interest to the West Coast tuna-fishing industry and marine scientists; for the months indicated.

(Chicago) Monthly Summary of Chicago's Wholesale Market Fresh and Frozen Fishery Products Receipts, Prices, and Trends, May and June 1965, 15 pp. each. (Market News Service, U. S. Fish and Wildlife Service, U. S. Customs House, 610 S. Canal St., Rm. 704, Chicago, Ill. 60607.) Receipts at Chicago by species and by states and provinces for fresh- and salt-water fish and shellfish; and weekly wholesale prices for fresh and frozen fishery products; for the months indicated.

Gulf of Mexico Monthly Landings, Production and Shipments of Fishery Products, June 1965, 11 pp. (Market News Service, U. S. Fish and Wildlife Service, Rm. 609, 600 South St., New Orleans, La. 70130.) 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; Gulf menhaden landings and production of meal, oil, and solubles; fishery imports at Mobile, Ala., Morgan City and New Orleans, La., Miami, Fla., and Houston, Port Isabel, and Brownsville, Tex.; and sponge sales; for the month indicated.

Monthly Summary of Fishery Products Production in Selected Areas of Virginia, North Carolina, and Maryland, June and July 1965, 4 pp. each. (Market News Service, U. S. Fish and Wildlife Service, 18 S. King St., Hampton, Va. 23369.) Landings of food fish and shellfish and production of crab meat and shucked oysters for the Virginia areas of Hampton Roads, Chincoteague, Lower Northern Neck, and Lower Eastern Shore; the Maryland areas of Crisfield, Cambridge, and Ocean City; and the North Carolina areas of Atlantic, Beaufort, and Morehead City, together with cumulative and comparative data on fishery products and shrimp production; for the months indicated.

New England Fisheries--Monthly Summary, May 1965, 22 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, and Provincetown), 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.

New York City's Wholesale Fishery Trade--Monthly Summary--April and May 1965, 19 pp. each. (Market News Service, U. S. Fish and Wildlife Service, 346 Broadway, 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; and landings at Fulton Fish Market docks and Stonington, Conn.; for the months indicated.

Oceanographic Observations, 1962, East Coast of the United States, by Joseph Chase, Data Report 9, 3 microfiche cards, illus., Aug. 1965, distribution

limited. (Branch of Reports, Bureau of Commercial Fisheries, U. S. Department of the Interior, Washington, D. C. 20240.)

(Seattle) Washington and Alaska Receipts and Landings of Fishery Products for Selected Areas and Fisheries, Monthly Summary, June and July 1965, 9 pp. each. (Market News Service, U. S. Fish and Wildlife Service, 706 Federal Office Bldg., 909 First Ave., Seattle, Wash. 98104.) Includes Seattle's landings of the halibut and salmon fleets reported through the exchanges; landings of halibut reported by the International Pacific Halibut Commission; landings of bottom-trawl vessels reported by the Fishermen's Marketing Association of Washington; local landings of 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; imports from other countries through Washington customs district; for the months indicated.

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"Effect of temperature on the development of salmon eggs," by Bobby D. Combs, article, The Progressive Fish-Culturist, vol. 27, no. 3, July 1965, pp. 134-137, processed, single copy 25 cents.

This is a Salmon Hatchery, Circular 25, 7 p., illus., printed, revised 1963, 5 cents.

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 SHOULD BE ADDRESSED TO THE RESPECTIVE ORGANIZATION OR PUBLISHERS MENTIONED. DATA ON PRICES, IF READILY AVAILABLE, ARE SHOWN.

ACCLIMATIZATION:

Transplantation of Fish and Aquatic Invertebrates to the USSR, 1962, U.S.S.R., by A. F. Karpevich and I. Ye. Loshina, Technical Translation No. 65-30833, 27 pp., printed, April 27, 1965, \$2. (Translated from the Russian, Voprosy Ikhtiologii, vol. 5, no. 1, 1965.) Clearinghouse for Federal Scientific and Technical Information, U. S. Department of Commerce, P.O. Box 37, Royal and Braddock Rds., Springfield, Va., 22151.

AMINO ACIDS:

"The composition of essential and certain nonessential amino acids in selected Hawaii fish," by Felicitas Cabbat and Bluebell R. Standal, article, Journal of Food Science, vol. 30, no. 1, 1965, pp. 172-177, printed. Institute of Food Technologists, 510-522 North Dearborn St., Champaign, Ill. 61823.

ANTARCTIC RESEARCH:

Biology of the Antarctic Seas II, Antarctic Research Series, vol. 5, 265 pp., illus., printed, August 1965, \$12.00. American Geophysical Union, 1145 19th St., N.W., Washington, D. C. 20036. Among other chapters includes "Oceanographic Investigations in McMurdo Sound, Antarctica"; and "Studies of the Midwater Fishes of the Peru-Chile Trench."

AUSTRALIA:

Australian Journal of Marine and Freshwater Research, vol. 16, no. 1, April 1965, 131 pp., illus., printed, single copy 10s. (about US\$1.40). Editorial and

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lic... Section, CSIRO, Sixth Floor, 372 Albert St., Melbourne, C2, Australia. Contains the following articles: "Studies on the physiology of a shrimp, *Metapenaeus* sp. (Crustacea: Decapoda: Penaeidae). II--Hormones and control of moulting; and III--Composition and structure of the integument"; by W. H. ... Also, "Southern bluefin tuna populations in southern West Australia," by J. S. Hynd; and "Dynamics of populations of the humpback whale, *Megaptera novaeangliae* (Borowski)," by R. G. Chittleborough.

Current Research on Australian Fishes, by G. L. Kerston. Collected Reprint 558, 9 pp., illus., printed. (Reprinted from Proceedings of Australian Society of Fish Production, vol. 5, Aug. 1964, pp. 312-322.) Division of Fisheries and Oceanography, Commonwealth Scientific and Industrial Research Organization, Cronulla, N.S.W., Australia.

Canadian Fish Culturist, Issue 34, May 1965, 39 pp., illus., printed. Information and Consumer Service Department of Fisheries, Ottawa, Canada. Some of the articles are: "The effect of a marine seismic operation on fish populations in British Columbia coastal waters," by Roger K. Kearns and Forbes C. Ebband; and "A device for injecting juvenile fish into an air pressure conduit," by P. Ryan.

Chemical synthesis of fish meat to tin-plate," by Toyoo Terai and Teruko Tanaka, article, Chemical Abstracts, vol. 62, April 12, 1965, Abstract No. 9695e, p. 14. American Chemical Society, 1155 16th St. N.W. Washington, D. C. 20006.

Fighting channel catfish," by C. W. Deyoe, O. W. ... and S. Wearden, article, Feedstuffs, vol. 3, no. 2, 1965, pp. 53-54, printed. Miller Publishing Co., 2501 Wayzata Blvd., Minneapolis, Minn.

Aspectos da preparação de caviar" (Some aspects of caviar preparation), by A. Torres Botelho, article, Conservas de Peixe, vol. 20, no. 230, 1965, pp. 29, 32, printed in Portuguese. Sociedade Revista Conservas de Peixe, Lda., Regueiros Anjos, 68, Lisbon, Portugal.

of the Fisheries Research Station, Ceylon, no. 2, Dec. 1964, 160 pp., illus., printed, copy Rs. 5.00 (about US\$1). The Fisheries Research Station, P. O. Box 531, Colombo, Ceylon. Some of the articles are: "A guide to the freshwater fauna of Ceylon. supplement 2," by C. H. Fernando; "Predation of tuna long-line catches in the Indian Ocean by killer-whales and sharks," by K. Subramaniam; "Pearl oyster survey, Gulf of Mannar, 1964," by C. H. Fernando; "Gill damage in *Tilapia mossambica* Peters," by C. H. Fernando and M. T. T. Fernando; "Hatching and rearing of carp in the Polonnaruwa Nursery," by H. H. ... and W. B. Ellepola; and "The development of Ceylon's fisheries: a symposium."

Rough Ground and Wrecks, Research Development Bulletin No. 5, 2 pp., processed, Nov.

1964. White Fish Authority, Lincoln's Inn Chambers, 2/3 Cursitor St., London EC4, England.

CHESAPEAKE BAY: Atlas of the Distribution of Dissolved Oxygen and pH in Chesapeake Bay 1949-61, by R. I. Hires, E. D. Stroup, and R. C. Seitz, Graphical Summary Report No. 3, Reference 63-4, 417 pp., illus., processed, Dec. 1963. Chesapeake Bay Institute, The Johns Hopkins University, Baltimore, Md.

CHILLING: Superchilling, Research Development Bulletin No. 2, 4 pp., processed, Sept. 1964. White Fish Authority, Lincoln's Inn Chambers, 2/3 Cursitor St., London EC4, England.

CLAMS: "Salinity, temperature, and food requirements of soft shell clam larvae in laboratory culture," by Alden P. Stickney, article, Ecology, vol. 45, no. 2, Spring 1964, pp. 283-291, illus., printed. Ecology, Ecological Society of America, Duke University Press, Box 6697, College Station, Durham, N. C.

Soft Clam Depuration Studies. Chapter I--Design and Operation of a Cleansing Plant, by Bradford Sterl, Paul J. DeRocher and John W. Hurst; Chapter II--Laboratory Studies on Shellfish Purification, by Philip L. Goggins, John W. Hurst and Peter B. Mooney, 37 pp., illus., processed, September 1964. Maine Department of Sea and Shore Fisheries, Augusta, Me.

Reprints from Proceedings of the National Shellfish Association, vol. 53, 1962. Oceanographic Institute, The Florida State University, Tallahassee, Fla. 32306:

Experimental Farming of Hard Clams, MERCENARIA MERCENARIA, in Florida, by R. W. Menzel and H. W. Sims, Contribution No. 202, processed.

Seasonal Growth of Northern and Southern Quahogs, MERCENARIA MERCENARIA and M. CAMPECHLENSIS, and Their Hybrids in Florida, by R. W. Menzel, Contribution No. 201, processed.

COD: "Future of Greenland cod in doubt," article, The Fishing News, no. 2714, June 11, 1965, pp. 11, 13, illus., printed, single copy 9d. (about US\$0.10). Arthur J. Heighway Publications, Ltd., Ludgate House, 110 Fleet Street St., London EC4, England.

COD AND HADDOCK: Causes of Seasonal and Annual Variations in the Density of Cod and Haddock Schools in the Barents Sea, by M. M. Kamshilov, N. V. Mironova and O. F. Kondratsova, OTS-63-11112, 5 pp., printed, 1964, 50 cents. (Translated from the Russian, Trudy Soveshchaniia Iktiologicheskoi Komissii Akademii Nauk SSSR, no. 10, 1960, pp. 117-121.) Clearinghouse for Federal Scientific and Technical Information, U. S. Department of Commerce, Port Royal and Braddock Rds., Springfield, Va. 22151.

COMMERCIAL FISHING: The First Book of Commercial Fishing, by C. W. Harrison, 80 pp., illus., printed, 1964, \$2.65. Franklin Watts, Inc., 575 Lexington Ave., New York, N. Y. 10022. A compact exposition of many aspects of the

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United States commercial fishing industry. The first few sections give general information on fishing for profits; what happens to the fish we do not eat; fisheries, a vital natural reserve; and the fisherman's watery world. The next several sections cover details of fishing--boats and gear; finding the fish; making the catch; whales, crustaceans, and molluscs; and harvesting the sea's forests. Finally, the author explains about the more than 30,000 species of finfish and many thousands of species of aquatic mammals, crustaceans, and molluscs (illustrated with nearly 200 drawings); fisheries and fishing ports; importance of conservation; and fish for the future. The author emphasizes the need for fishery conservation and management thus: "In one of his State of the Union messages, the late President John F. Kennedy said that in order to meet the nutritional needs of America's swiftly growing population it would be necessary during the next 20 years for commercial fishermen to increase their annual catch of fish and shellfish by 3 billion pounds--an increase of 60 percent over present levels." A short index and a glossary of fishing terms complete this book. Although intended primarily for students, the book should be interesting to the general reader. It is well illustrated with numerous photographs.

COMPOSITION:

"Sodium, potassium, and magnesium concentration and weight changes in fish stored in refrigerated sea-water in relation to biochemical changes associated with rigor mortis," by N. Tomlinson, S. E. Geiger, and W. W. Kay, article, Journal of Food Science, vol. 30, no. 1, 1965, pp. 126-134, printed. Institute of Food Technologists, 510-522 No. Hickory St., Champaign, Ill. 61823.

CRABS:

Report on Preliminary Studies on the Blue Crab in Alligator Harbor and Adjacent Gulf of Mexico with Some Observations on Stone Crab Larvae, by R. W. Menzel, processed, 1964. Oceanographic Institute, The Florida State University, Tallahassee, Fla. 32306.

DENMARK:

Foreign Trade Regulations of Denmark, by William Nagel, OBR 65-32, 8 pp., printed, June 1965, 15 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

DOLPHIN:

"The dolphins: 'Like an arrow they fly through the sea'," by Emory W. Brown, Jr., article, United States Naval Institute Proceedings, vol. 91, no. 7, July 1965, pp. 42-50, illus., printed, single copy 75 cents. U. S. Naval Institute, Annapolis, Md. 21402.

ECHO-SOUNDER:

Echo Sounders of Advanced Design, Research Development Bulletin No. II, 3 pp., processed, May 1965. White Fish Authority, Lincoln's Inn Chambers, 2/3 Cursitor St., London EC4, England.

ENZYMES:

"Enzymes in the body cavity of fish," by G. Siebert and I. Bottke, article, Chemical Abstracts, vol. 60, March 30, 1964, Abstract No. 8377e, printed, Amer-

ican Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

EXPORTS:

U. S. Exports--Commodity by Country, 1964 Annual Report, FT 410, 592 pp., processed, June 1965, single copy \$2.25. Bureau of the Census, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) Presents of United States exports during 1964 by SITC (Standard International Trade Classification) section and SITC group. Commodity detail shown is that of Schedule B (Statistical Classification of Domestic and Foreign Commodities Exported from the United States) arranged within 3-digit groups of the SITC. Includes data on fresh, processed, and preserved fish and shellfish products by country of destination.

FISH COOKERY:

Fish 'n' Tips, 15 pp., illus., printed. Fishery Council, 118 South St., New York, N. Y. 10038. Tells of a wide and varied selection of seafood available to and of its value as a supplier of proteins, minerals and vitamins. Discusses the advantages of fish for salt-free dieters and for those interested in low cholesterol intake. Points out what to look for in buying fresh fish and shellfish, and how to store them. Suggests methods of cleaning and cooking to insure maximum retention of flavor. Contains instructions for pan frying, broiling, baking, and steaming various types of fish, including time and temperature charts for preparing fish dishes. Special attention is given to the cooking of clams, lobsters, shrimp, oysters and scallops. Recipe suggestions for those and other species are included, as well as recipes for sauce.

FISH CULTURE:

Fish Cultivation, Research Development Bulletin No. 3, 3 pp., processed, Oct. 1964. White Fish Authority, Lincoln's Inn Chambers, 2/3 Cursitor St., London EC4, England.

FISHERY RESOURCES:

Trend of Researches and Conservation on Fishery Resource in the World, by S. J. Holt, 44 pp., illus., printed in Japanese. Japan Fisheries Resource Conservation Association, 6th Floor, Zenkoku Chosokabe Kaikan Bldg., 1-17, Nagata-cho, Chiyoda-ku, Tokyo, Japan.

FISH-LIVER OIL:

"Polyunsaturated fatty-acid content of cod-liver oil," by R. R. Perepletchik, Yu. S. Davydova and E. I. Vikova, article, Chemical Abstracts, vol. 59, December 1963, Abstract No. 14206a, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

FISH MEAL:

"Potentiometric method for the determination of uric acid in fish meal," by N. Sevkovik, D. Veselinov, N. Stojanovik, article, Chemical Abstracts, vol. 59, April 15, 1963, Abstract No. 8356a, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

Sanitation Guidelines for SALMONELLA Control in Processing Industrial Fishery Products, ARS 91-16 pp., illus., printed, May 1965. Animal Disease

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Erased Division, Agricultural Research Service, Department of Agriculture, Hyattsville, Md. Offers guidelines for operating procedures for product handling methods for fish meal products that should result in a Salmonella-free product. The guidelines contain specifications for fish plant buildings, moisture control, workers' hygienic procedures, raw material handling, cleaning and disinfecting, dust control, containers and transportation of processed material, and final weighing and laboratory examination. Salmonella bacteria cause infectious diseases, including Typhoid fever, in both man and animals.

"Value of fishmeal preserved with formalin for fattening pigs," by F. Dejneka, article, Roczniki Nauk Rolnych, vol. 83, 1963, p. 193, printed in Polish. Polska Akademia Nauk, Warsaw, Poland.

"Gas chromatographic investigations on the composition of oil extracted from Xiphias gladius (swordfish) and bones," by I. G. Labruto and A. Pastura, article, Chemical Abstracts, vol. 60, Feb. 3, 1964, Abstract No. 3208d, printed. American Chemical Society, 1155 16th St. N.W., Washington, D. C. 20006.

"Study on prevention of deterioration in commercial cod liver oil," article, Annual Report of the Central Institute of Fisheries Technology, Ernakulam, India, 1963-64, p. 31, printed. Pai and Co., Broadway, Ernakulam, India.

FISH MEDICINE:

"Fish poisonings: Their diagnosis, pharmacology, and treatment," by Bruce W. Halstead, article, Clinical Pharmacology and Therapeutics, vol. 5, no. 5, 1964, pp. 615-627, printed. C. V. Mosby Co., 325 Washington Bldg., St. Louis, Mo.

FISH POPULATIONS:

"Methods of Fish Population Analysis," by J. U. Gilland, Fb/T40, 64 pp., illus., processed, 1964, distribution restricted. Biology Branch, Fisheries Division, Food and Agriculture Organization of the United Nations, Via delle Terme di Caracalla, Rome, Italy.

FISH MEAL PROTEIN CONCENTRATE:

"Development of Aquatic Animal Products, Japanese Patent," March 29, 1961. Tokkyocho (Patent Office), Sannenn-cho, Kojimachi-ku, Tokyo, Japan. A processed fishery product (fish meal), suitable for use as supplementary protein for human beings or as additives to sausages and ice-cream, is produced by extracting fat from the fish meal with an organic solvent and then carrying through additional chemical procedures.

"Study on the effect of drying on the nutritive value of fish meals," article, Annual Report of the Central Institute of Fisheries Technology, Ernakulam, India, 1963-64, p. 93, printed. Pai and Co., Broadway, Ernakulam, India.

FISH SAUSAGE:

"Manufacturing sausages from frozen yellowtail tuna," by A. Yakovleva and G. S. Khristoferzen, article, Rybnoe Khoziaistvo, vol. 40, no. 7, 1964, pp. 69-70,

printed in Russian, single copy 50 Kop. (about US\$0.55). Rybnoe Khoziaistvo, V. Krasnosel'skaia 17, Moscow B-140, U.S.S.R.

FISH SILAGE:

"Fish waste for feeding pigs. 3--'Siloryb'-fish silage made from waste of fat fish for fattening pigs; 4--Flakes of potato and fish made with waste of fat fish as feed for fattening pigs," by C. Lewicki, article, Roczniki Nauk Rolnych, vol. 83, 1963, pp. 135, 305, printed in Polish. Polska Akademia Nauk, Warsaw, Poland.

FOOD:

"Fish as Food, Vol. III--Processing: Part I, edited by Georg Borgstrom, 503 pp., illus., printed, 1965, \$17.50. This is the third volume of a four-volume work which reviews the knowledge of marine and fresh-water animals and plants used as food. The basic fields of production, biochemistry, and microbiology were covered in volume I. The second volume presented the "public health" aspects of fish--nutrition, sanitation, handling, and uses. The fourth volume is expected to discuss canning, handling of fresh fish, freezing, and radiation preservation. This volume, which was intended originally to have been the last, covers several types of fish processing--drying and dehydration, smoking, salting (especially herring and cod), marinating, and some others unique to particular regions of the world and to highly industrialized nations. Historically, the processing of fish and shellfish through drying and salting predates the preservation of any other food. The importance to human as well as animal nutrition of appropriately processed fishery products can scarcely be overemphasized. The first chapter of this book covers theoretical and practical aspects of fish drying and dehydration. The physics and chemistry of wood smoke as well as techniques for smoking fish are explained in the next chapter. Following are chapters discussing the salting of herring and cod; manufacturing processes, keeping properties, and chemical and microbiological actions of cold, cooked, and fried marinades; Scandinavian anchovies and herring tidbits and their preparation; processing of the genuine cured anchovy from Engraulis encrasicolus Linnaeus. Other chapters explain the preparation of exotic fermented and dried seafood products in Southeast Asia in some detail; whale products as food and fish sausage manufacturing (both almost exclusively Japanese); recently developed concepts and their application to industrial fish processing, especially fish solubles; regional development of fisheries and processing; and fish meal manufacture, properties, and utilization. "Only through wise utilization and efficient processing is it possible to save these extremely perishable riches of the oceans and fresh waters and place them within reach of the consuming public independent of seasons and of fishing fortunes--and mostly far removed from the catching grounds," comments the editor. This volume should be of primary interest to food technologists, but will also be valuable to those in import-export trade, processing (canning, freezing, etc.), marketing, and distribution. (See Commercial Fisheries Review, Sept. 1962, p. 132, for review of Volume I; March 1963, p. 106, for review of Volume II.) Anyone wishing to learn more about fish as food should read all three volumes.

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

FOOD AND AGRICULTURE ORGANIZATION:

General Fisheries Council for the Mediterranean, Eighth Session, FAO/Rome, 10-15 May 1965, Report, 41 pp., processed in French and English, 1965. General Fisheries Council for the Mediterranean, Food and Agriculture Organization of the United Nations, Via delle Terme di Caracalla, Rome, Italy. Contains a summary record of the plenary meetings; program of work, recommendations, and resolutions adopted at the session; a list of participants; and summary record of the technical committees' meetings and review of the implementation of the work program of the 7th Session. Strengthening of the Fisheries Division of FAO was endorsed by the Council.

Inter-session Report (1963-1964) of Technical Committee II, Craft and Gear Sub-Committee, Food Technology Sub-Committee and Socio-Economics and Statistics Sub-Committee Submitted to the 11th Session of the IPFC, Occasional Paper 65/2, 127 pp., processed, 1965. Indo-Pacific Fisheries Council, Food and Agriculture Organization of the United Nations, FAO Regional Office for Asia and the Far East, Bangkok, Thailand. An account of the developments in the Member Countries during 1963-64 in the fields of fishing craft, harbors, gear, fishing enterprises, training of boat builders and fishermen, fish handling, processing, distribution, technical assistance programs, and documentation. Also includes information of action taken by member governments as well as by FAO on recommendations made by the Council at its 10th Session, held at Seoul, Republic of Korea, Oct. 10-25, 1962. Member countries are Cambodia, Ceylon, Hong Kong, India, Japan, Korea, Malaysia, Pakistan, Philippines, Thailand, the United States, and Viet Nam.

Yearbook of Fishery Statistics, 1963 (Fishery Commodities), vol. 17, 450 pp., processed in French, Spanish, and English, 1965, \$6.50. Food and Agriculture Organization of the United Nations, Rome, Italy. (Available from Columbia University Press, International Documents Service, 2690 Broadway, New York, N. Y. 10027.) This volume covers disposition of the world's catches and both production and international trade data by types of fishery commodities during 1963. The tables are arranged in 8 sections. The first section consists of 3 subsections showing summaries for: (1) disposition of catch; (2) production of preserved and processed fishery commodities; (3) international trade in fishery products. The remaining 7 sections are devoted to these fishery commodity groups: fresh, chilled, or frozen fish; dried, salted, or smoked fish; fresh, frozen, dried, salted, and otherwise processed crustaceans and molluscs; fish products and preparations, whether or not in airtight containers; crustacean and mollusc products and preparations, whether or not in airtight containers; oils and fats of aquatic animal origin, crude or refined; and meal, solubles, and similar animal feedstuffs of aquatic origin. Each of the 7 sections contains 3 subsections: (1) production of the commodity subgroups, by countries and products; (2) imports and exports of the commodity group, by countries; and (3) exports from principal exporting countries, by commodity subgroups, broken down by national items.

FOOD MANAGEMENT:

Available from the Cooperative Extension Service, University of Massachusetts, Amherst, Mass.:

Care and Handling of Prepared Frozen Foods in Service Establishments, by A. T. Miller and others, Food Management Leaflet 9, 8 pp., illus., printed, Jan. 1965. Reviews briefly the way that foods are prepared to freezing and frozen storage; discusses the reasons why prepared frozen foods require special care in handling; and suggests measures which will help the food service operator to protect both the quality of his product and the health of his customers.

Purchasing Food for Food Service Establishments, Charles E. Eshbach and Albert L. Wrisley, Food Management Leaflet 10, 22 pp., illus., printed, Jan. 1965. Good food purchasing can best be described as having the right product at the right place at the right time, and at a price that you wish to pay. It is one of the major activities in the operation of any food service establishment, according to the authors. The leaflet covers the requirements of the food buyer: a variety of knowledge and how to acquire that knowledge--of the needs of the establishment, of the market in which he buys, of the products he must purchase, of the procedures he must use, and of the results (including handling) of his purchases. The operator who maintains a close contact with the needs of his customers is able to adjust to change before his operation is adversely affected, concludes the leaflet.

FRANCE:

Bulletin d'Information, no. 19, May 1965, 23 pp., processed in French. Comité Local des Pêches Maritimes de Bayonne, Bayonne, France. Contains, among others, these articles: "La campagne thonière sardinière" (African tuna season); "La campagne expérimentale du 'Tutina' dans le Golfe d'Aden" (The exploratory cruise of the "Tutina" in the Gulf of Aden); "L'organisation de la campagne sardinière" (The organization of the sardine season); and "La campagne de l'anchois" (The anchovy season).

"Le Panorama des pêches françaises" (Panorama of French fisheries), articles, France Pêche, no. 15, May 1965, pp. 52-87, illus., printed in French, copy 2.50 F. (about US\$0.50). France Pêche, BP Postale 179, Lorient, France. A complete overview of the French fishing industry in 1964. Contains information on the Law of the Sea, international fisheries conventions, protection of coastal waters, imports and exports, the Common Market, and third countries in the Franc Zone. Also covers at length the development of the French fish market in 1964, its general organization, with special attention to price stabilization problems. Discusses production difficulties in a complex economy, further exploitation of resources in foreign and domestic fisheries, personnel improvements in the fishing industry, and fishery research programs in effect. Finally, conclusions by J. S. Parquière, president of the Central Committee on Maritime Fisheries are presented. Included is a four-page spread of statistical graphs and tables. Among them: a graph showing the value and quantity of French fish production in 1964; a graph showing the changes in catches by principal species, 1959-64; a table of values and tonnage of France's Mediterranean catch by port of entry.

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Grouped by species, 1962-64; and a graph of the comparative increase in production of 11 of France's principal ports, 1963-64.

FRENCH:

"Continuous mechanical IQF freezer for fillets, sea-developed," article, Quick Frozen Foods, vol. 22, no. 9, April 1965, pp. 52-54, illus., printed. E. Williams Publications, Inc., 1776 Broadway, New York, N. Y. 10019.

FRESHWATER FISHERIES:

"Conservation of Fresh-Water Fisheries Resources in the U. S. A., by Y. Yamanaka, K. Yagi, Tsuchida, Overseas Fishery Series 7, 64 pp., printed in Japanese, March 1965. Japan Fish-Resource Conservation Association, 6th Floor, Akiba Choson Kaikan Bldg., 17-banchi, 1-chome, Akiba-cho, Chiyoda-ku, Tokyo, Japan.

FRESH FISH:

"Metodospob defrostatsii ryby" (New method of freezing fish), by I. I. Vedernikov, article, Kholodil'naya Tekhnika, no. 3, 1965, pp. 45-46, illus., printed in Russian, single copy 60 Kop. (about US\$0.65). Continent Book Corp., 822 Broadway, New York, N. Y. 10003.

"Brunswick vessel tests new gear," article, Fishing News, vol. 17, no. 10, April 1965, pp. 8-9, processed. Information and Educational Services Department of Fisheries, Ottawa 8, Canada. Reports on the highly successful introduction of the drum hauler to Atlantic provinces. Fishermen are enthusiastic about the gear, especially after experiencing favorable results in the initial Atlantic tests--getting good catches in February and April, a speed-up in fishery operations, and the drum hauler's easy installation.

GERMAN FEDERAL REPUBLIC:

"Forschungsergebnisse von der Bundesforschungsanstalt für Fischerei, Palmallee 9, Hamburg-Altona 2, Federal Republic of Germany.:"

"Forschungsergebnisse für Fischereiwissenschaft, vol. 15, no. 3, May 1965, 114 pp., illus., printed in German with English abstracts. Some of the articles are: "Observations on the depth range of tagged bluefin tuna (*Thunnus thynnus* L.) based on pressure marks on the Lea tag," by Hamre (in English); "Enzyme des Aminosäurewechsels in der Kabeljau-muskulatur" (Enzymes of amino acid assimilation in the musculature of herring) by G. Siebert, A. Schmitt, and I. Bottke; "Über die Bedeutung proteolytischer Fermente bei der Herstellung nichtsterilisierter Fischwaren" (On the significance of proteolytic enzymes in the production of sterilized fishery products), by V. Meyer; and "Über den quantitativen Nachweis von milchsäurebakterien in mariniertem Heringsfleisch" (On the quantitative proof of lactic acid bacteria in marinated herring meat), by F. Gehring.

"Informationen für die Fischwirtschaft (Information for the Fishing Industry), vol. 12, no. 1, 1965, 40 pages, processed in German. Includes, among other things, articles: "Die erste Suchreise des FFS 'Anton Dohrn' im Jahre 1965 (85. Reise)" (The first

research cruise of the FRS "Anton Dohrn" in 1965--85th voyage); "Deutsche Fischereientwicklungshilfe für Thailand" (German aid for fisheries development in Thailand); "Internationale Bestimmungen über Mindestmengenrößen und Scheuerschutzvorrichtungen in der Hochseefischerei" (International determination of minimum mesh size and chafing gear standards in the high-seas fisheries); and "Internationaler Fischereifahrzeug-Kongress der FAO vom 23.-29.10.65 in Göteborg" (FAO's International Congress on Fishing Vessels, Oct. 23-29, 1965, in Göteborg).

GREAT LAKES:

"Economic Aspects of the Great Lakes Fisheries of Ontario, by Harold C. Frick, Fisheries Research Board of Canada Bulletin No. 149, 160 pp., illus., printed, 1965, \$2.50. Queen's Printer and Controller of Stationery, Ottawa, Canada.

HERRING:

"Herrings are attracted by electric light," by G. Filimonov, article, Rybnoe Khoziaistvo, vol. 40, no. 8, 1964, pp. 61-62, printed in Russian, single copy 50 Kop. (about US\$0.55). Rybnoe Khoziaistvo, V. Krasnaya ulitsa 17, Moscow B-140, U.S.S.R.

"Vintersildinnsigene 1965" (Winter herring prospects for 1965), by Finn Devold, article, Fiskets Gang, vol. 51, no. 26, July 1965, pp. 378-380, illus., printed in Norwegian. Fiskets Gang, Fiskeridirektoratet, Radstuplass 10, Bergen, Norway.

Articles from Fiskaren, vol. 42, no. 20, May 19, 1965, printed in Norwegian. Norges Fiskerlag, Postboks 172, Bergen, Norway:

"Vintersildfiskarane kan vente sluttoppgjør i slutten av mai" (Winter herring fishermen can expect final settlement by the end of May), pp. 1, 7.

"Vintersildkvantumet 1965 ble 2.434.408 hl" (Winter herring catch in 1965 is 2,434,408 hectoliters), p. 1.

Articles from Scottish Fisheries Bulletin, no. 23, June 1965. Fisheries Division, Department of Agriculture and Fisheries for Scotland, Edinburgh, Scotland:

"Forecast for Scottish North Sea and west coast herring fisheries in 1965," by B. B. Parrish and A. Saville, pp. 3-5.

"Herring trawling off the west coast of Scotland," by I. G. Boxter, pp. 23-25, illus.

ICE:

"Which Kind of Ice is Best?" by J. J. Waterman, Torry Advisory Note No. 21, 9 pp., printed, March 1965. Torry Research Station, Ministry of Technology, P. O. Box 31, Aberdeen, Scotland.

INDIA:

"Annual Report of the Department of Fisheries, Maharashtra State, Bombay, for the Year 1962-63, 58 pp., illus., printed, July 1, 1963. Department of Fisheries, Government of Maharashtra, Taraporevala Aquarium, Netaji Subhas Rd., Bombay-2, India. Reviews the progress achieved by the fishing industry, difficulties met and overcome, and projects continued or begun by the Maharashtra State Government for development of the fisheries during the year, July 1, 1962-

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June 30, 1963. Includes information on the marine fisheries; provisions for the fishing industry contained in the Third Five Year Plan; financial assistance to the fish trade; preservation, transport, and marketing; and fish-curing yards. Also discusses the Taraporevala Aquarium and research, fisheries schools and training, cooperatives and socio-economic development, fresh-water fisheries, and technological projects. Contains statistical data on fresh fish shipments into Bombay, 1962/63; trawler landings by month and type of fish; landings by Government of India deep-sea vessels; arrivals of fish at Greater Bombay markets; salt-fish production; and financial statement of shark-liver oil manufacture.

INDIAN OCEAN:

"New data on Indian Ocean fishes," by V. V. Nekrasov, article, *Rybnoe Khoziaistvo*, vol. 40, no. 8, 1964, pp. 9-11, printed in Russian, single copy 50 Kop. (about US\$0.55). *Rybnoe Khoziaistvo*, V. Krasnosel'skaia 17, Moscow B-140, U.S.S.R.

INTERNATIONAL COMMISSIONS:

(International Pacific Salmon Fisheries Commission) *Annual Report 1964*, 37 pp., illus., printed, 1965. *International Pacific Salmon Fisheries Commission*, P. O. Box 1120, New Westminster, B. C., Canada. Explains briefly the origin, history, and purpose of the Commission, and gives a detailed description of its activities in 1964. Discusses the twelve formal meetings of the Commission held in 1964, regulations for fishing in Canadian and United States Convention waters, and emergency amendments promulgated. Reports on the 1964 sockeye fishery: a decline much smaller than predicted, sockeye escapement, and rehabilitation. Analyzes comparative data on numbers of fry per pink salmon spawned from 1961-1964. Discusses the Commission's continued concern for watershed improvement on the salmon rivers, investigation of the problems presented by increased log transport on the rivers, and further construction of fishways and other means of protection.

IRRADIATION PRESERVATION:

Radiation Preservation of Foods Program: Proceedings of Contractors' Meeting (8th), U. S. Army Natick Laboratories, Natick, Massachusetts, October 7-9, 1963, edited by Frank R. Fisher and Edward S. Josephson, 196 pp., printed, 1964, \$1.25. U. S. Army Natick Laboratories, Natick, Mass.

Radioactive Isotopes in Soviet Food Industry, FSTC-381-T64-144, 33 pp., printed, March 1965. (Translated from the Russian, *Pishchevaya Promyshlennost' i Sel'skoye Khozyaystvo SSSR*, 1961, pp. 77-101.) U. S. Army Foreign Science Technical Center, Washington, D. C. 20315.

Study of Irradiated-Pasteurized Fishery Products, Oct. 1, 1963-Sept. 30, 1964, by Joseph W. Slavin and Louis J. Ronsivalli, TID-21600, 54 pp., printed, Nov. 30, 1964, \$3. U. S. Atomic Energy Commission, Washington, D. C. (For sale by the Clearinghouse for Federal Scientific and Technical Information, U. S. Department of Commerce, Port Royal and Braddock Rds., Springfield, Va. 22151.)

JAPAN:

Marine Fisheries Catches for 1964 (Preliminary), 11 pp., illus., printed in Japanese, 1965. Statistical Research Division, Ministry of Agriculture and Forestry, 2-1, Kasumigaseki, Chiyoda-ku, Tokyo, Japan.

"The modern fish finder and its application in Japan" by Y. Tawara, article, *IPFC Current Affairs Bulletin* no. 42, April 1965, pp. 1-16, illus., printed. Indo-Pacific Fisheries Council, Food and Agriculture Organization of the United Nations, Regional Office for Asia and the Far East, Maliwan Mansion, Phra Ath Rd., Bangkok, Thailand.

Yearbook of Fisheries--1965, No. 12, 608 pp., illus., printed in Japanese, 1,900 yen (about US\$5.28) plus postage. Suisansha, 8banchi, Sanei-cho, Shinjuku-ku, Tokyo, Japan.

LAW OF THE SEA:

"Offshore claims and problems in the North Sea," by Richard Young, article, *American Journal of International Law*, vol. 59, no. 3, July 1965, pp. 505-521, printed, single copy \$3.50. American Journal of International Law, 2223 Massachusetts Ave. NW, Washington, D. C. 20008. Investigation of possibly very large petroleum and natural gas deposits in the continental shelf under the North Sea is now being made. However, for centuries the North Sea has been one of the world's major fishery regions and the avenue to the world's busiest seaports. Thus all three of the principal uses of the seas--fishing, navigation, and the exploitation of mineral resources--are expected to meet for the first time on a large scale in an area where all are of major importance. The diplomatic and legal process of reconciling the various interests will provide the first thoroughgoing test of the adequacy of the principles laid down by the 1958 Geneva Convention on the Continental Shelf. This article reviews some of the geographical and economic factors involved in the North Sea situation, notes some of the technical and legal developments that have already occurred, and considers those elements in the light of the various interests of adjacent countries and legal principles concerned.

MACKEREL:

"Minimipriset pa makrill hojt med 5 ore--koparna hade tillstyrkt 15 ores hojning" (The minimum price for mackerel increased by 5 ore--buyers have agreed on a 15-ore increase), by Ingemar Gerhard, article, *Svenska Vastkustfiskaren*, vol. 35, no. 10, May 28, 1965, pp. 172-173, printed in Swedish. Svenska Vastkustfiskarnas Centralforbund, Ekonomiutskottet, P. O. box 1014, Goteborg 4, Sweden.

MARICULTURE:

"Mariculture--its recent development and its future" by Victor L. Loosanoff, article, *Agricultural Engineering*, vol. 46, no. 2, Feb. 1965, pp. 73, 93, 97, printed. American Society of Agricultural Engineers, 505 Pleasant St., St. Joseph, Mich.

MARINE AIDS:

Light List, Vol. V--Mississippi River System, 292 pp., illus., printed, 1965, \$1.75. U. S. Coast Guard, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) Contains a list of lights, fog signals,

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buoys, and daybeacons for the Mississippi River system of the United States, Second Coast Guard District.

NETHERLANDS:

Vijf in Cijfers 1964 (Fisheries in Figures, 1964), Wageningen No. 129, 62 pp., illus., processed in Dutch, 1965. Landbouw-Economisch Instituut, Conrade 175, 's-Gravenhage, Netherlands.

NORTH AMERICA:

"The state of North American fisheries examined," article, Trade News, vol. 17, no. 11-12, May-June 1965, pp. 10-16, illus., processed. Information and Consumer Service, Department of Fisheries, Ottawa, Canada.

NORWAY:

Arbeides fra Fiskets Gang, vol. 51, 1965, printed in Norwegian. Fiskets Gang, Fiskeridirektoratet, Radstrasse 10, Bergen, Norway:

"Sikkerheten av fiskerfartoyer over 40 fot i 1963" (Safety of fishing vessels of over 40 feet in length), no. 20, May 20, pp. 277-286, illus.

Report til fiskeridirektoren vedrorende leitetjenesten ved M/S 'Arne Hovden' pa stor- og varsildfiske i Nordsjoen in 1965" (Report to the Fishery Department concerning fish-scouting with R/V "Arne Hovden" in the large- and spring-herring fishery in the North Sea in 1965), by Vermund Dahl, no. 19, May 27, pp. 310-312.

Report om forskning og veiledningstjeneste i Senjaområdet, Svendsgrunnen og Malanggrunnen, Vesterålen og yttersiden av Lofoten" (Report on research and exploratory fishing in the Senja region, Malang Ground, Malang Ground, Vesterålen Grounds, and outside Lofoten), by O. Chr. Jenssen. no. 25, May 24, 1965, pp. 361-364.

OCEANOGRAPHIC VESSELS:

Evaluation of Recent Research Vessel Construction in the United States, by John Dermody, Jonathan Leiby and Maxwell Silverman, 18 pp., printed, 1964. Scripps Institution of Oceanography, University of California, La Jolla, Calif.

OCEANOGRAPHY:

Canadian fisheries research extends to Caribbean waters," by S. N. Tibbo, L. M. Lauzier, and A. C. Kohler, article, Trade News, vol. 17, no. 11-12, May-June 1965, pp. 3-9, illus., processed. Information and Consumer Service, Department of Fisheries, Ottawa, Canada. Describes in detail an exploratory cruise made by the Canadian oceanographic vessel "Hudson" between St. Andrews, N. B., Cape Hatteras, N. C., and the eastern Caribbean in February 1965. The team of Canadian and American oceanographers and biologists studied the breeding grounds and wintering areas of swordfish and tuna. The program was designed primarily to provide biological information on the distribution, movements, size, food and feeding habits, spawning areas, and seasons of those species, and oceanographic information on temperature and salinity in which those fish live. Long-lining, plankton tows, and hydrographic observations were the principal activities.

Current Measuring by Towed Electrodes; Observations in the Arctic and North Seas, 1953-59, Fishery Investigations Series, II, vol. 23, no. 8, printed, 1965, 47s. 6d. (US\$9.60 when ordered in the United States). Ministry of Agriculture, Fisheries and Food, London, England. (Available from the British Information Services, 845 Third Ave., New York, N. Y. 10022.)

Development of Buoy-Mounted Oceanographic Sensors (BMOS), by Don J. Cretzler and others, 131 pp., illus., printed, Feb. 15, 1965, \$1. Bisset-Berman Corp., G Street Pier, San Diego, Calif.

F.R.V. "Derwent Hunter," Scientific Reports of Cruises 1950-56, Report 39, 156 pp., illus., processed, 1965. Marine Laboratory, Division of Fisheries and Oceanography, Commonwealth Scientific and Industrial Research Organization, Cronulla, Sydney, Australia.

"The jet net, a new high-speed plankton sampler," by William D. Clarke, article, Journal of Marine Science, vol. 22, no. 3, 1964, pp. 284-287, illus., printed. Sears Foundation for Marine Research, Bingham Oceanographic Laboratory, Yale University, New Haven, Conn.

Oceanographic Cruise USCGC NORTHWIND, Chukchi, East Siberian and Laptev Seas, August-September 1963, Oceanographic Report No. 6, CG 373-6, 75 pp., illus., printed, March 1965. U. S. Coast Guard Oceanographic Unit, Bldg. 159E, Navy Yard Annex, Washington, D. C. 20390.

Available from Compass Publications, Inc., 1111 N. 19th St., Arlington, Va. 22209:

A Glossary of Ocean Science and Undersea Technology Terms, edited by Lee M. Hunt and Donald G. Groves, 180 pp., illus., processed, 1965, \$5.95. "Oceanography is not a science, but rather it is the magnificent combination of all other sciences that are in any way applicable to the watery seven-tenths of our planet," explains the preface. Today, interest in our global sea has reached international proportions and has brought into the field many firms, scientists, engineers, and technicians to whom at least part of the language of oceanography is new. This book is for those people and for any others interested in the sea. It is an alphabetical compilation of terms defined concisely and briefly. It describes the most important words in the basic areas of: oceanography, including physical, biological, chemical, geological, and meteorological; oceanographic instrumentation; underwater sound; ocean engineering; diving physiology; and general terms, including abbreviations and acronyms (i.e. AFS - American Fisheries Society).

"Technical Meetings Draw Record Attendance," by Larry L. Booda and Charles W. Covey, article, Under Sea Technology, vol. 6, no. 7, July 1965, pp. 20-23, 25-35, 43. Ocean engineers, the practical men of the sea, are increasingly active applying to operational systems the wealth of information furnished them by oceanographers and other marine scientists. The entire "ocean fraternity" is now benefiting from discovery. Part of the discovery process is the exchange of information through presentation of technical papers. The first half of 1965 was exceptionally fruitful in technical conferences and symposia, climaxed by the Ocean Science and Ocean Engineering

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Conference and Exhibit in Washington, June 14-17. This article is a digest of the activities and noteworthy papers given at 10 technical sessions held in the United States during that period.

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

Manual for Coding and Key punching Biological Data-- Phytoplankton Deck, Primary Productivity Deck, Phytoplankton Pigment Deck, Zooplankton Deck, Benthos Deck, Publication M-4 (Provisional), 125 pp., illus., processed, 1965, \$1.25. This manual provides the necessary instructions and conversion tables for reducing biological and related data collected at biological oceanographic stations to the standard format developed by the National Oceanographic Data Center (NODC). It is intended for use by institutions, agencies, and other contributors interested in furnishing data to NODC for processing; copies of the forms are also available in volume to those who wish to maintain a system compatible with that of the national archive.

Manual for Processing Current Data. Part I--Instructions for Coding and Key punching Drift Bottle Data, Publication M-6 (Provisional), 26 pp., processed, 1965, 40 cents. During the December 1963 meeting of the Committee for the Scientific Exploration of the Atlantic Shelf, a suggestion was made and implemented to set up a storage and retrieval system for drift bottle data at the National Oceanographic Data Center. This provisional publication gives instructions for reporting both reduced release and release-recovery drift bottle data on either the NODC coding form or punch card.

Reference Sources for Oceanographic Station Data. Vol. I; Vol. II, compiled by Carmen Johnson, Publication C-1 in NODC Catalog Series, 185 pp., 146 pp., respectively, processed, 1965, \$2 each. This catalog contains a completely revised and updated collection of the material presented in 1961; it is intended as an index of the National Oceanographic Data Center's station data holdings and of the bibliographic reference from which the existing holdings were obtained. The sources are in numerical order and are printed on card stock which may be cut into 3" x 5" cards for use as a card file. Appendixes contain NODC Reference Cruise Number Index by Country, and List of Final Processed Cruises as of July 1, 1964. Additions to this publication, as well as updating and revision of cards, are scheduled to be made periodically.

OYSTERS:

Reprints of articles available from the Virginia Institute of Marine Science, Gloucester Point, Va. 23062:

Neurosecretory Changes in the Nervous System of the Oyster, CRASSOSTREA VIRGINICA, Induced by Various Experimental Conditions, by R. Nagabhushanam, Contribution No. 180, 4 pp., illus., printed. (From the Indian Journal of Experimental Biology, vol. 2, no. 1, 1964, pp. 1-4.)

Preliminary Report on the Cytochemical Study of the Neurosecretory Cells in the Visceral Ganglia of the Oyster, CRASSOSTREA VIRGINICA, by R. Nagab-

hushanam, Contribution No. 174, 3 pp., printed. (From Science and Culture, vol. 29, Oct. 1963, pp. 506-507.)

PAKISTAN:

Foreign Trade Regulations of Pakistan, by Jackson Hearn, OBR 65-31, 12 pp., printed, May 1965, 15 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

PHYSIOLOGY:

"Methods of aging fish provide interesting scientific study," by Wayne E. Swingle, article, Alabama Conservation, vol. 35, no. 2, Feb.-March 1965, pp. 12-13, illus., printed. Alabama Department of Conservation, 64 N. Union St., Montgomery, Ala. 36104.

PILCHARD:

"Pilchard fisheries: A study," by M. B. Culley, article, Fishing News International, vol. 4, no. 2, April-June 1965, pp. 183-184, 187-188, illus., printed, single copy 6s. 6d. (about 90 U. S. cents). Arthur J. Heighway Publications Ltd., Ludgate House, 110 Fleet St., London EC4, England. A comparison of the pilchard fisheries of Cornwall, where demand is high and catches are declining; and those of South and South-West Africa, where waters are extremely fertile, but where home demand is comparatively small. The urgent need for Britain to turn its attention to this potentially valuable, now under-exploited resource of the Channel is stressed.

POLAND:

"The fisheries of Poland," article, Trade News, vol. 17, no. 11-12, May-June 1965, pp. 21-22, processed. Information and Consumer Service, Department of Fisheries, Ottawa, Canada.

Articles from France Pêche, no. 95, May 1965, printed in French, single copy 2.50 F. (about US\$0.50). France Pêche, Boîte Postale 179, Lorient, France:

"L'industrie des pêches polonaises" (The Polish fishing industry), pp. 34-35, illus.

"Le plan d'expansion de la flotte de pêche polonaise" (The plan for expanding the Polish fishing fleet), pp. 36-38, illus.

Available from Maritime Branch, Polish Chamber of Foreign Trade, ul. Pulaskiego 6, Gdynia, Poland:

"Export of fish and fish products in 1964," article, Polish Maritime News, vol. 8, no. 81, May 1965, pp. 31-32, illus., printed.

"Odra' fishery of Swinoujscie"; "'Gryf' deep sea fishery"; "Deep sea fishing bases," article, Polish Maritime News, vol. 8, no. 82, June 1965, pp. 17-20, illus., printed.

Polish Maritime Economy Facts and Figures, edited by Bohdan Sienkiewicz, 160 pp., illus., printed, 1966. Contains sections on Poland's seaborne trade, port shipping, and the shipbuilding industry. A section on sea fisheries discusses the history of the Polish industry; organization of the fisheries; and fishery products landings, processing, and foreign trade. In 1965

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

(the last of the pre-war years) Polish fishermen landed a total of 23,300 metric tons of salt-water fish, mostly sprats. In 1964, about 244,400 tons of sprats were landed. A list of addresses includes the Federal Government agencies concerned with the fish industry and various fishing companies.

POLLUTION:
"Méthode d'évidence de stéroïdes oestrogènes par chromatographie dans l'ovaire salé du colin d'Alaska, Theragra chalcogramma Pallas" (Demonstration on color plates of estrogenic steroids in the salted ovaries of the Alaska pollock, Theragra chalcogramma Pallas), by Tadasi Nomura and Yasuhiko Tsuchida, article, The Tohoku Journal of Agricultural Research, vol. 14, no. 4, March 1964, pp. 307-313, printed in French. Library, Faculty of Agriculture, Tohoku University, Sendai, Japan.

POLLUTION:
Pollution-Caused Fish Kills in 1964, Public Health Service Publication No. 847 (revised), 32 pp., illus., printed, 1965, 25 cents. Public Health Service, U. S. Department of Health, Education, and Welfare, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) Presents data on pollution-caused fish kills by State, source of pollution, type of water body, month, severity of damage, and other data; and cumulative listing of fish kills by river or lake affected.

POND FISHERIES:
Water Ponds for Fishing, by W. W. Neely, W. E. Davison, and Lawrence V. Compton, Farmers Bulletin 2210, 16 pp., illus., printed, May 1965, 10 cents a copy. U. S. Department of Agriculture, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C., 20402.)

POTOMAC RIVER:
Regulations--Potomac River Fisheries Commission
Licensing and Taking of Finfish, Crabs, Oysters,
and Shell Clams from the Waters of the Potomac
River (effective July 29, 1965), 23 pp., processed, Potomac River Fisheries Commission, P. O. Box 128, Colonial Beach, Va. 22443. Included in these regulations are general instructions pertaining to all fishermen, duties of officers, arrests, and other matters; and those governing licensing of fishermen and gear; the oyster fishery, the oyster inspection, and the shell clam fishery.

PROCESSING MACHINERY:
Annals from Rybnoe Khoziaistvo, vol. 40, no. 7, 1964, printed in Russian, single copy 50 Kop. (about US\$0.55). Rybnoe Khoziaistvo, V. Krasnosel'skaia 17, Moscow U.S.S.R.:

"Technique for breeding of fish," by I. I. Smirnov, S. I. Kovalev, and K. M. Sharaev, pp. 77-78.

"The effect of angle parameters of the knife on the cutting force during slicing of (tuna) fish," by M. A. Kovalev, pp. 75-77.

PRODUCTION:
"The effect of changes in nitrogenous constituents of muscle during autoclaving," by G. N. Kushnarenko, article, Chemical Abstracts, vol. 62, April 12,

1965, Abstract No. 9693h, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

PUERTO RICO:

Progress Report, Marine Biology Program, FY-1965, PRNC No. 60, 229 pp., illus., processed, April 1965. Puerto Rico Nuclear Center, University of Puerto Rico, Mayaguez, P. R. Reports on the program of research at the Puerto Rico Nuclear Center, including projects on: measurements of biological productivity (of plankton); analysis for selected trace elements (in sea water, marine organisms, river water, and other materials); measurements of concentration factors of selected organisms (sea urchin, some algae) for certain radioisotopes; measurements of radioactivity and radioisotopes now present in the marine organisms, waters, and bottom sediments off Puerto Rico; and background observations in physical and chemical oceanography off the west coast of Puerto Rico. A marine ecology project has been carried out on a limited scale in connection with 2 of the other projects. Ecological studies are concerned primarily with food web relationships.

QUALITY:

Temperature Measurement and Fish, by J. Graham, Torry Advisory Note No. 20, 12 pp., illus., printed, Jan. 1965. Torry Research Station, Ministry of Technology, P. O. Box 31, Aberdeen, Scotland.

RADIATION:

Effects of Nuclear Explosion on Marine Biology, edited by M. B. Schaefer, 144 pp., printed, Aug. 1956, \$1. Scripps Institution of Oceanography, University of California, La Jolla, Calif.

RETAILING:

The Care of the Fishmonger's Fish, by G. H. O. Burgess, Torry Advisory Note No. 1, 8 pp., illus., printed, Nov. 1963. Torry Research Station, Ministry of Technology, P. O. Box 31, Aberdeen, Scotland.

SALMON:

"Experiment using electrical fencing to stop the salmon on at Luven'ga River," by L. A. Petrenko and G. M. Mishelovich, article, Rybnoe Khoziaistvo, vol. 40, no. 8, 1964, pp. 41-43, printed in Russian, single copy 50 Kop. (about US\$0.55). Rybnoe Khoziaistvo, V. Krasnosel'skaia 17, Moscow B-140, U.S.S.R.

Processed leaflets from the Alaska Department of Fish and Game, Subport Bldg., Juneau, Alaska 99801.

Abundance, Size, Age and Survival of Red Salmon Smolts from the Ugashik Lakes System, Bristol Bay, 1964, by Michael L. Nelson, Informational Leaflet 62, 34 pp., illus., June 5, 1965.

The Age Composition of King Salmon Caught on Sport Fishing Gear in Southeastern Alaska, by Gary Finger and Robert Armstrong, Informational Leaflet 60, 15 pp., illus., May 25, 1965.

King Salmon (ONCORHYNCHUS TSHAWYTSCHA) Spawning Ground Surveys in the Behm Canal Area of Southeastern Alaska, by Vaughn Anthony, Gary Finger, and Robert Armstrong, Informational Leaflet 63, 39 pp., illus., processed, June 9, 1965.

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

Red Salmon Spawning Ground Surveys in the Nushagak and Togiak Districts, Bristol Bay, 1963, by Michael L. Nelson, Informational Leaflet 61, 24 pp., illus., June 1, 1965.

SANITATION:

"Diocid, a new disinfecting agent for the fishing industry," by L. N. Smolina and Yu. A. Ravich-Shcherbo, article, Rybnoe Khoziaistvo, vol. 40, no. 7, 1964, pp. 63-66, printed in Russian, single copy 50 Kop. (about US\$0.55). Rybnoe Khoziaistvo, V. Krasnoselskaia 17, Moscow B-140, U.S.S.R. Diocid is a mixture of 1 hexa-decyl pyridinium bromide with ethanol mercurio-chloride.

SARDINES:

"Technochemical properties of Atlantic sardines and factors affecting their quality in industrial processes," by G. S. Khristoferzen and N. V. Timofeeva, article, Chemical Abstracts, vol. 62, April 12, 1965, Abstract No. 9695g, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

Articles from Tidsskrift for Hermetikindustri (Norwegian Canners Export Journal), vol. 51, no. 6, June 1965, illus., printed. Tidsskrift for Hermetikindustri, Stavanger, Norway:

"Brisling--a product of Norway," pp. 214-220, in English.

"Sortering og frysing av brisling" (Grading and freezing of brisling sardines), by Per Tollefsen, pp. 209-211, in Norwegian.

SEALS:

"Feeding habits of the New Zealand fur seal (Arctocephalus forsteri)," by R. J. Street, article, Fisheries Technical Report No. 9, pp. 1-20, illus., printed, 1964. New Zealand Marine Department, P. O. Box 2395, Wellington, New Zealand.

SEA WEED:

"Syr'evye zapasy morskikh vodoroslei i perspektivy dal'neishego razvitiya promysla vodoroslei i trav v moryakh Dal'nego Vostoka" (Reserve stocks of marine seaweeds and prospects for the subsequent development of the algal and grass industry in the seas of the Far East), by V. F. Sarochan, article, Referativnii Zhurnal-Biologiya, 1964, Abstract No. 7V38, printed in Russian. Akademiia Nauk SSSR, Institut Nauchnoi-Informatsii, Moscow, U.S.S.R.

SHARK:

"Sharks and Survival--Some valuable tips revealed in new book," article, Sealift Magazine, vol. 15, no. 6, June 1965, pp. 15-18, illus., printed, single copy 20 cents. MSTs Sealift Magazine, U. S. Department of the Navy, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

SHELLFISH:

National Shellfish Sanitation Program Manual of Operations. Part III--Public Health Service Appraisal of State Shellfish Sanitation Programs, 27 pp., illus., processed, 1965, 40 cents. Public Health Service, U. S. Department of Health, Education, and Welfare, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office,

Washington, D. C. 20402.) Since 1925 the Public Health Service has worked with the states and the shellfish industry to insure that shellfish shipped in interstate commerce will be safe to eat. Each shellfish-shipping state adopts laws and regulations for sanitary control of the shellfish industry, makes sanitary and bacteriological surveys of growing areas, delineates and patrols restricted areas, inspects shellfish plants, and conducts any additional work necessary to insure that shellfish for consumption are healthful. Each state annually issues numbered certificates to shellfish dealers who comply with the sanitary standards, and forwards copies of the interstate certificates to the Public Health Service. This manual has been developed in response to a recommendation that objective procedures be established to guide the Public Health Service in reviewing each state shellfish sanitation program and that specific criteria be set up for PHS endorsement of those programs. The manual contains sections on: exercise of Public Health Service responsibilities in the National Shellfish Sanitation Program; the appraisal procedure; preparation of the rating officer's report and supplemental program statistics required.

Proceedings, 5th National Shellfish Sanitation Workshop, November 17-19, 1964, edited by Leroy S. Houser, 249 pp., illus., processed, 1965. Shellfish Sanitation Branch, Public Health Service, U. S. Department of Health, Education, and Welfare, Washington, D. C. 20201. Contains the agenda of the 1964 Shellfish Sanitation Workshop, a report of papers presented, and related discussions. The appendixes consist of complete texts of papers read. Principal subjects covered are: status of the cooperative program for the certification of interstate shellfish shippers; status of shellfish depuration on a national scale and in the various states; pollution abatement in relation to shellfish sanitation; advances in oyster culture; conference of state sanitary engineers' actions evaluating need for certification program for crabmeat and scallops; and regulatory problems on certified shellfish imports. Some other topics are: bacteriological criteria for shellfish growing areas; interim bacteriological criteria for oysters; initial survey on Clostridium botulinum toxin, type E; new shock method of preparation of oysters for shucking and workshop resolution pertaining to pesticides.

SHRIMP:

Effect of Low Salinity on Oxygen Consumption in the Prawn PALAEMONETES VULGARIS, by R. Nagabhushanam and R. Sarojini, Contribution No. 177, printed. (Reprinted from the Indian Journal of Experimental Biology, vol. 1, no. 4, 1963, pp. 231-238.) Virginia Institute of Marine Science, Gloucester Point, Va. 23062.

"Remarkable resource research," by Lyle S. St. Amant, article, Louisiana Conservationist, vol. 17, nos. 7-8, July-Aug. 1965, pp. 20-23, illus., printed. Louisiana Wild Life and Fisheries Commission, Wild Life and Fisheries Bldg., 400 Royal St., New Orleans, La. 70130. Evaluates 3½ years of intensive research on shrimp in waters along Louisiana's coastline, discussing the merit of that research in relation to the State's shrimp industry as a whole. Gives an overview of the gains in knowledge of shrimp as a result of the research program, including information on the basic shrimp cycle, factors controlling the cycle.

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able production for 1965, breeding success and larval densities, juvenile distribution, density growth, and early production. Finally, outlines program's invaluable contribution to the industry.

SHRIMP AND BEER PARTY U. S. A., 6 pp., illus., printed, Shrimp Association of the Americas, 919 E. ... Brownsville, Tex. 78521. A recipe leaflet . . . serving 8 to 18 to 80 . . . Here are 8 classic . . . to adapt to almost any occasion, any number . . . ests." Preparation and serving instructions given for shrimp dunk/U.S.A., neat shrimp in . . . marinated shrimp broil, stuffed shrimp appetizers, and other dishes.

Utilization of Bering Sea shrimp (review of foreign literature), by V. S. Gordievskaya, article, *Rybnoe Khoziaistvo*, vol. 40, no. 7, 1964, pp. 79-80, printed in Russian, single copy 50 Kop. (about US\$0.55). *Rybnoe Khoziaistvo*, V. Krasnosel'skaia 17, Moscow 140, U.S.S.R.

Comercio exterior de conservas en 1964 (Foreign Trade in canned goods in 1964), by Mareiro, article, *Industria Conservera*, vol. 31, no. 309, March 1965, pp. 67-68, printed in Spanish. *Industria Conservera*, Calle Marques de Valladares, 41, Vigo, Spain. Dwells principally on canned fishery products--anchovy fillets, sardine, tuna, squid, and other.

SHRIMP LOBSTER:

Living wells in cray boats, by W. D. Hughes, article, *Commercial Fishing*, vol. 3, no. 9, May 1965, pp. 31, 33, illus., printed. Trade Publications Ltd., Albert St., Auckland, New Zealand.

SPOILAGE:

Microbiology of spoilage of fish muscle. III--Characterization of spoilers, by Peter Lerke, Ralph Adams, and Lionel Farber, article, *Applied Microbiology*, vol. 13, no. 4, July 1965, pp. 625-630, printed, single copy \$3. The Williams and Wilkins Co., 428 E. Preston St., Baltimore, Md. 21202.

Chemical and nutritional studies on East Pakistan fish. VIII--Acetylcholinesterase activity in fresh and decomposed fish tissue and its relation with age characteristics, by M. Qudrat-i-Khuda, M. De and N. M. Kahn, article, *Chemical Abstracts*, vol. 58, June 24, 1963, Abstract No. 14485e, printed. American Chemical Society, 1155 16th St. N.W., Washington, D. C. 20006.

SHRIMP FISHING:

Fishing Today and Tomorrow, Overseas Fisheries Series 6, 44 pp., illus., printed in Japanese. Japanese Fisheries Resource Conservation Association, 1st Floor, Zenkoku Choson Kaikan Bldg., 1-17, Nishi-cho, Chiyoda-ku, Tokyo, Japan.

SIGNALS:

Fiskesignaler fran den 1 september 1965 (New fishery signals after September 1, 1965), article, *Svenska Vastkustfiskaren*, vol. 35, no. 10, May 25, 1965, p. 174, printed in Swedish. Svenska Vastkustfiskarnas Centralforbund, Ekonomiskt Postbox 4, Goteburg 4, Sweden.

TARIFFS:

"World customs tariffs", article, *International Commerce*, vol. 71, no. 31, Aug. 2, 1965, pp. 2-12, illus., printed, single copy 35 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.) The import tariff systems of about 120 foreign governments are summarized in this article, an initial survey of world markets to aid businessmen. The summary includes most countries--other than those whose foreign trade is a Governmental monopoly (principally communist countries). Where foreign countries' tariff schedules have been published abroad and are fairly current, their availability (including updating services) is reported in the summary. The countries are grouped by region--Western Hemisphere, Europe, Africa, Near East and South Asia, and Far East and Oceania.

TEXAS:

Let's Go Fishing, compiled by W. R. Long, 20 pp., printed, 1965. Texas Parks and Wildlife Department, Reagan State Office Bldg., Austin, Tex. 78701.

THAILAND:

First Update to the Literature of the Aquatic Sciences and Fisheries in Bangkok, Thailand, Kasetsart University Fishery Research Bulletin No. 2, 50 pp., printed, April 15, 1965. Committee on Fishery Literature, Faculty of Fisheries, Kasetsart University, Bangkok, Thailand.

TIDES:

Manual of Tide Observations, Publication 30-1 (Revision of Special Publication No. 196), 72 pp., printed, June 1965, \$2. Coast and Geodetic Survey, U. S. Department of Commerce, Washington, D. C., 20230. Contains instructions for observing and recording the rise and fall of the tide and for making the necessary reductions to determine the datum planes and the non-harmonic quantities published in the Tide Tables.

TOXICITY:

Ciguatera and other marine poisoning in the Gilbert Islands, by M. J. Cooper, article, *Pacific Science*, vol. 18, no. 4, 1964, pp. 411-440, printed. Pacific Science, University of Hawaii, Honolulu, Hawaii 96814.

The Distribution of Ciguatera in the Tropical Pacific, by Albert H. Banner and Philip Helfrich, Technical Report Series No. 3, 48 pp., processed, 1964. Hawaii Marine Laboratory, University of Hawaii, Honolulu, Hawaii.

TOXINS:

Biochemistry and Pharmacology of Biotoxins from Marine Animals, by F. Ghiretti, 21 pp., printed, Jan. 1965. Naples Zoological Station, Naples, Italy.

"Marine biotoxins. III--The extraction and partial purification of ciguatera toxin from *Lutjanus bohar*; use of silicic acid chromatography", by Donald W. Hessel, article, *Chemical Abstracts*, vol. 61, Oct. 26, 1964, Abstract No. I0920c, printed. American Chemical Society, 1155 16th St. N.W., Washington, D. C. 20006.

TRADE LISTS:

The following mimeographed trade lists may be bought by U. S. firms from the Commercial Intelligence Di-

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vision, Office of International Trade Promotion, Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. 20230, or from Department of Commerce field offices at \$1 each:

Boat and Ship Builders, Repairers and Chandlers--India, 19 pp., May 1965. Lists the names and addresses, size of firms, and types of vessels (including fishing craft) and provisions handled by each firm. Also contains basic industry and trade data on shipbuilding, repairing, and chandlery (includes fishing vessels).

Canneries and Frozen Foods--Producers and Exporters--Argentina, 10 pp., July 1965. Lists the names and addresses, size of firms, and types of products (including fish and shellfish) handled by each firm. Also contains trade and industry data (including fishery products) on production, exports and imports of canned and frozen foods.

TRANSPORTING FISH:

"Transporte de sardinha em camioneta isotérmica" (Transportation of sardines in isothermal trucks), by Alberto de Moraes Lobo, article, Conservas de Peixe, vol. 20, no. 230, May 1965, pp. 15, 17-19, 32, printed in Portuguese. Sociedade de Revista Conservas de Peixe, Lda., Regueirão dos Anjos, 68, Lisbon, Portugal.

TRAWLING:

Available from White Fish Authority, Lincoln's Inn Chambers, 2/3 Cursitor St., London EC4, England:

An Acoustic Telemetry Link between Trawl and Ship--Measuring the Performance of the Trawl in Fishing Conditions, by Means of Sound Waves, Research Development Bulletin No. 7, 2 pp., processed, Jan. 1965.

Double-Rig Beam Trawling, Research Development Bulletin No. 8, 3 pp., illus., processed, March 1965.

Summarized Report of a Study of the Operation and Performance of the Trawl Winch on a Large Stern Trawler, Research Development Bulletin No. 1, 3 pp., processed, April 1964.

Trawl Gear Investigations, Research Development Bulletin No. 10, 3 pp., processed, May 1965.

Warp Load Meters for Stern Trawlers, Research Development Bulletin No. 6, 3 pp., illus., processed, Dec. 1964.

TRINIDAD AND TOBAGO:

Foreign Trade Regulations of Trinidad and Tobago, by Elliot Werner, OBR 65-33, 4 pp., printed, June 1965, 15 cents. Bureau of International Commerce, U. S. Department of Commerce, Washington, D. C. (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

TROUT:

"Trout industry of the Soviet Carpathians," by K. A. Altukhov, article, Rybnoe Khoziaistvo, vol. 40, no. 8, 1964, pp. 27-28, printed, single copy 50 Kop. (about US\$0.55). Rybnoe Khoziaistvo, V. Kransnoel'skaia 17, Moscow B-140, U.S.S.R.

TUNA:

"Le 'Boréal' champion de la campagne thonière africaine" (The "Boréal," champion of the African tuna season), by J. Lamarche, article, France Pêche, no. 95, May 1965, p. 31, illus., printed in French, single copy 2.50 F. (about US\$0.50). France Pêche, Boite Postale 179, Lorient, France.

Chosasen Shoyo Maru Hokokusho (Higashitaiheiyo Niokeru Maguroshigenchosa Oyobi Kokai-Hokokusho) (Report of the Experimental Boat Shoyo Maru--Cruise Report of Investigations on Tuna Resources in the Eastern Pacific), 465 pp., illus., printed in Japanese with English titles and legends, Aug. 1964. Research Division, Japanese Fisheries Agency, Ministry of Agriculture and Forestry, 2-1, Kasumigaseki, Chiyoda-ku, Tokyo, Japan. The first section of this detailed report outlines the tuna investigations conducted during a cruise of the Eastern Pacific--purpose and particulars of the investigations, course and dates of the cruise, technical data on the vessel "Shoyo Maru," and Japanese and United States researchers on board and their research work. Results of the investigations are presented in the second section--species of tuna, marlin, and other fish landed; results of oceanographic observations; and evaluation of a special type of long-line gear. The third section discusses problems of Samoa-based Japanese long-line operations. The fourth section covers problems encountered by a long-line vessel calling at a foreign port in the Eastern Pacific. And the final section presents information on business matters related to the cruise--log-book records; a narrative account of the cruise; and reports of deck, engine room, communications, administrative and medical operations.

"Tuna spotting from a balloon," article, Australian Fisheries Newsletter, vol. 24, no. 7, July 1965, pp. 23, 26, illus., printed. Fisheries Branch, Department of Primary Industry, Canberra A.C.T., Australia.

Available from Kanagawa Prefectural Fisheries Experiment Station, 2451, Rokugo, Misaki-cho, Miura-shi, Kanagawa Prefecture, Japan:

On the Distribution of Mean Fork Length and Age Composition of Yellowfin Tuna and Albacore as Related with Distribution of Water Temperature and Distance from Continent in the Tropical Atlantic Ocean, by Nakagome and others, 4 pp., illus., printed in Japanese with English summary, Aug. 1964.

Relation between Monthly Variation of Hooking Rate of Yellowfin Tuna and Monthly Variation of Surface Water Temperature, and between Annual Variation of Hooking Rate of the Fish and Annual Variation of Surface Water Temperature in the Tropical Atlantic Ocean, by Jun Nakagome, 5 pp., illus., printed in Japanese with English summary, March 1965.

TURTLES:

"The navigation of the green turtle," by Archie Carr, article, Scientific American, vol. 212, no. 5, May 1965, pp. 78-86, illus., printed, single copy 60 cents. Scientific American, Inc., 415 Madison Ave., New York N. Y. 10017. These turtles are known to migrate regularly to and from nesting beach and feeding grounds. Now it appears they can also navigate well enough to make an island landfall after 1,400 miles at sea.

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UNITED KINGDOM:

Future Prospects in the Distant-Water Fisheries, by **Darwin Farrod and John Gulland**, Laboratory Leaflet (No. 8, 50 pp., illus., processed, May 1965), Fisheries Laboratory, Ministry of Agriculture, Fisheries and Food, Lowestoft, Suffolk, England. There is widespread concern in the United Kingdom regarding the effects of increased fishing on the fields of the distant-water grounds in the North Atlantic and Arctic Oceans traditionally exploited by British fishermen; there is also a growing interest in the potential yields of fishing grounds in the North Atlantic and South Atlantic. In this leaflet, the authors have examined the future prospects for the Eastern Atlantic--Northeast Arctic cod and haddock, Iceland cod and haddock, and East Greenland cod; for the Western Atlantic--West Greenland, Labrador and Newfoundland and New England/Nova Scotia and Newfoundland haddock, and ocean perch. The long-term prospects for distant-water fisheries are also discussed. "In some stocks the level of production could actually be improved by reducing the amount of fishing, so that, for the purpose of obtaining a maximum amount of protein for the minimum of fishing effort, there is much to be said for some control of the amount of fishing," assert the authors. Appendixes include information on the fishing power of trawlers, sources of data, and the factors causing the decline in catch per unit of effort in North Atlantic stocks. Several statistical tables are also included.

White Fish Authority, by Robert E. Lloyd, article, *Gene Marine Technology*, vol. 1, no. 7, July 1965, pp. 14-17, processed. Intel, Inc., 1075 National Press Bldg., Washington, D. C. 20004. The British White Fish Authority has given the equivalent of US\$96,600 to the Civil Engineering Department, University of Strathclyde, Scotland, to develop engineering criteria for commercial-scale ocean fish farming installations. Three experts will: (1) investigate problems of fishing coastal waters; (2) conduct hydrographic studies of several sea lochs; and (3) evaluate the use of warm water effluent from thermoelectric power stations to achieve rapid growth rate of fish. This report on the White Fish Authority's functions examines the status of aquaculture in Britain.

White Fish Authority, Annual Report and Accounts for the Year Ended 31st March 1965, 55 pp., illus., printed, June 1965, 4s. 6d. (about US\$0.65). Her Majesty's Stationery Office, York House, Kingsway, London WC2B 6BP, England. Covers white fish production, distribution and marketing, research and development, and administration of regulations. Appendixes contain information on quantity and value of white fish landed, 1964-65; the fishing fleet; grant and loan activities; the fish subsidy for vessels; conservation of stocks; training; and costs and earnings in the industry. Also includes the financial statement of the White Fish Industry Board, for the year ended March 31, 1965.

U.S.S.R.:

Soyuzne polineasyshchennykh zhirnykh kislot v zhidkoy osnovnykh promyslovykh ryb Azovsko-Chernomorskogo Basseina (The content of polyunsaturated fatty acids in the fats of the main commercial fish stocks in the Azov-Black Sea basin), by G. S. Kikferzen, article, *Voprosy Pitaniya*, vol. 23,

no. 5, 1964, pp. 17-20, illus., printed in Russian with English summary. *Voprosy Pitaniya*, Gosudarstvennoe Izdatel'stvo Meditsinskoi Literatury, Moscow, U.S.S.R.

Soviet Research in World Ocean, by L. A. Zenkevich and S. D. Osokin, Technical Translation No. 65-30827, 18 pp., printed, April 26, 1965, \$1. (Translated from the Russian, *Morskoy Sbornik*, no. 2, 1961.) Clearinghouse for Federal Scientific and Technical Information, U. S. Department of Commerce, Port Royal and Braddock Rds., Springfield, Va. 22151.

Articles from *Rybnoe Khoziaistvo*, vol. 40, 1964, printed in Russian, single copy 50 Kop. (about US\$0.55). *Rybnoe Khoziaistvo*, V. Krasnosel'skaia 17, Moscow B-140, U.S.S.R.:

"Experience of Volgograd Fishing Trust in the improvement of the organization of work and in the mechanization of loading and unloading operations in the production of refrigerated fish," by Yu. M. Danilov, no. 7, pp. 71-74.

"Improving the planning in the fishing industry," by E. P. Grinko, no. 8, pp. 3-5.

"New successes of Sakhalin fishing kolkhozes," by A. A. Taranov, no. 7, pp. 61-62.

"Some results of the work of the fishing industry in the Azov-Black Sea basin," by I. F. Denisenko, no. 8, pp. 6-8.

VESSELS:

Decay in Wooden Fishing Boats, Research Development Bulletin No. 4, 3 pp., processed, Nov. 1964. White Fish Authority, Lincoln's Inn Chambers, 2/3 Cursitor St., London EC4, England.

"Konceptje konstrukcyjne malych statkow rybackich" (Constructional designs of small fishing craft), by Tadeusz Wojcik, Witold Wakula, and Lucjan Debski, article, *Budownictwo Okretowe*, vol. 10, no. 5, May 1965, pp. 144-146, printed in Polish with English table of contents and abstract. Wydawnictwa Czasopism Technicznych NOT, Czackiego 3/5, Warsaw, Poland. Presents the specifications of small fishing vessels (seiner-trawlers) intended both for Polish fisheries and export.

VITAMINS:

"Physicochemical determination of vitamin D in marine products," by Takeshige Yamakawa, article, *Chemical Abstracts*, vol. 62, Feb. 1, 1965, Abstract No. 3324f, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

"The relation between vitamin A content in livers and the feeding habitat of fishes in the Red Sea," by M. M. Abdallah and M. K. Salah, article, *Journal of Pharmaceutical Science of the United Arab Republic*, vol. 2, no. 1, 1961, pp. 135-138, printed. *Journal of Pharmaceutical Science of the U.A.R.*, Al-Majlis Al-A'La Lil-'Ulum, Cairo, United Arab Republic.

WEATHER CHARTS:

The following processed weather charts, 4 pp., each, are published by the Weather Bureau, U. S. Department of Commerce, Washington, D. C., and are for

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sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402, 10 cents each. Charts show stations displaying small craft, gale, whole gale, and hurricane (for coastal chart only) warnings; explanations of warning displays; and schedules of AM and FM radio and TV stations that broadcast weather forecasts and warnings.

Coastal Warning Facilities Chart, Eastport, Me. to Montauk Point, N. Y. 1965.

Small Craft, Gale, and Whole Gale Warning Facilities Chart, Great Lakes: Superior and Michigan, 1965.

WHALE OIL:

"Utilization of sperm whale oil. I--Preparation of edible oil. 1--Monoglycerides from whale oils and their molecular distillation," by Mikio Mori and Mitsuo Nagata, article, Chemical Abstracts, vol. 58, April 10, 1963, Abstract No. 7049a, printed. American Chemical Society, 1155 16th St. NW., Washington, D. C. 20006.

WHALES:

The Scientific Reports of the Whales Research Institute, no. 19, April 1965, 146 pp., illus., printed. Whales Research Institute, No. 4, 12 Chome, Nishi-gashi-dori, Tsukishima, Chuo-ku, Tokyo, Japan. Some of the articles are: "Reproduction of the sperm whale in the north-west Pacific," by S. Ohsumi; "Some information on minke whales from the Antarctic," by T. Kasuya and T. Ichihara; and "Foods of baleen whales in the Gulf of Alaska in the North Pacific," by T. Nemoto and T. Kasuya.

WHALING:

"Whales and whaling," article, Norsk Hvalfangst-Tidende (The Norwegian Whaling Gazette), vol. 54, no. 4, April 1965, pp. 77-79, printed in Norwegian and English. Hvalfangerforeningen, Sandefjord, Norway

YELLOWTAIL:

Present State and Problems of the Hamachi (Young Yellowtail) Culture in Seto Inland Sea, by F. Matsuo K. Yashiro, and M. Tachibana, Overseas Fishery Series 4, 60 pp., illus., printed in Japanese. Japan Fisheries Resource Conservation Association, 6th Floor, Zenkoku Choson Kaikan Bldg., 1-17, Nagatacho, Chiyoda-ku, Tokyo, Japan.



TUNA PIZZA BURGERS FOR THE GANG

Here's a unique blend from the Tuna Research Foundation that brings together three of America's favorite foods--burgers, pizzas, and tuna. This is a great recipe to fix when people drop in unexpectedly. (Of course it's fine for company you expect, too.)

Because they're made with convenient canned tuna, you won't have to wait around the broiler forever until the tuna pizza burgers are done. They only take 10 minutes to heat and brown, and you can open up the soda pop in the meantime.

TUNA PIZZA BURGERS

$\frac{1}{3}$ cup mayonnaise	$\frac{1}{2}$ cup diced celery
$\frac{1}{2}$ teaspoon salt	2 cans ($6\frac{1}{2}$ or 7 ounces each) tuna
$\frac{1}{4}$ teaspoon each oregano and basil	in vegetable oil
1 tablespoon minced onion	6 burger buns
	1 can (8 ounces) tomato sauce
	Grated Parmesan cheese

Blend together mayonnaise, salt, oregano, basil, and onion. Mix in celery and tuna. Pile tuna mixture on bottom halves of buns. Spoon tomato sauce on top. Sprinkle with Parmesan cheese. Place under broiler heat until heated through and brown on top (about 10 minutes). Top with other bun halves. Makes 6 servings.